

# UNITED STATES INTERNATIONAL TRADE COMMISSION

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**In the Matter of:**  
**CERTAIN MOBILE AND PORTABLE ELECTRONIC  
DEVICES INCORPORATING HAPTICS (INCLUDING  
SMARTPHONES AND LAPTOPS) AND COMPONENTS  
THEREOF**

) **Investigation Nos.:**  
) **337-TA-1004**  
) **337-TA-990**  
) **Consolidated**  
)

## OPEN SESSIONS

**Pages: 1053 – 1322 (with excerpts)**  
**Place: Washington, D.C.**  
**Date: Wednesday, May 3, 2017**



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1 UNITED STATES OF AMERICA

2 BEFORE THE

3 INTERNATIONAL TRADE COMMISSION

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6 IN THE MATTER OF: : Investigation

7 CERTAIN MOBILE AND PORTABLE ELECTRONIC : Numbers

8 DEVICES INCORPORATING HAPTICS (INCLUDING : 337-TA-1004

9 SMARTPHONES AND LAPTOPS) AND COMPONENTS : 337-TA-990

10 THEREOF : Consolidated

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12

13 HEARING

14

15 Wednesday, May 3, 2017

16 Courtroom C

17 U.S. International Trade

18 Commission

19 500 E Street SW

20 Washington, DC

21

22 The Hearing commenced, pursuant to notice of the Judge, at

23 9:02 a.m., before the Honorable Charles E. Bullock,

24 Administrative Law Judge for the United States

25 International Trade Commission.

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1 P R O C E E D I N G

2 JUDGE BULLOCK: Back on the record.

3 Good morning.

4 Let's start with time from yesterday. What's  
5 wrong with this picture? I'll be right back.

6 (Laughter.)

7 (Discussion off the record.)

8 JUDGE BULLOCK: Back on the record.

9 Time from yesterday?

10 MR. PAYNE: Good morning, your Honor. Stephen  
11 Payne for Complainant Immersion.

12 The time from yesterday was for Complainant, 231  
13 minutes, for Respondents, 77 minutes and for Staff, 23  
14 minutes.

15 JUDGE BULLOCK: Okay. Any other preliminary  
16 matters? Hearing none, let's resume with our current  
17 witness.

18 MR. CHU: Good morning, your Honor, Morgan Chu  
19 for Complainant Immersion.

20 JUDGE BULLOCK: Good morning.

21 Whereupon,

22 ANDY COCKBURN

23 was recalled as a witness and, having previously been duly  
24 sworn, was examined and testified further as follows:

25 CROSS-EXAMINATION (Continued):

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1 BY MR. CHU:

2 Q Good morning, Dr. Cockburn.

3 A Good morning.

4 Q Going to pick up where we left off yesterday.

5 A Sure.

6 Q Just to reorient ourselves, we're talking about  
7 the '507 patent, and we were on the second requirement, the  
8 change in pressure threshold; right?

9 A We had referred to it as the second of the  
10 criteria.

11 Q Okay. And the change in pressure threshold can  
12 be a positive number, such as positive 40; correct?

13 A Yes.

14 Q And it could be a negative number, such as  
15 negative 40; correct?

16 A Yes, it could.

17 Q So I'm going to show you a little hand-drawn  
18 chart here, and I want you to assume that in terms of a  
19 patent, and I'm just talking about the patent now, the  
20 change in pressure threshold is a positive 20 grams, all  
21 right?

22 A Okay.

23 Q So if there is a press -- excuse me.

24 If there is a change in pressure of 21 grams, it  
25 would meet the second requirement in claim 1?

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1           A       In this hypothetical, yes.

2           Q       And if it was a change in pressure of only  
3 positive 19, it would not meet it?

4           A       Yes, that's correct.

5           Q       And there would not be a press at positive 19?

6           A       That's correct.

7           Q       And there would not be a press at negative 19?

8           A       That's correct.

9           Q       With the Judge's claim construction in mind,  
10 would there be a press or not a press at negative 25?

11          A       With the Judge's construction, it could go  
12 either way.

13          Q       If all of the other criteria of the elements of  
14 claim 1 of the '507 patent are met and we are only focusing  
15 on the second requirement involving change of pressure  
16 threshold, if the change of pressure is a negative 25,  
17 would there be a press or not a press?

18          A       There could be. Doing so would satisfy the  
19 limitations.

20          Q       At negative 25, there could be a press?

21          A       Yes.

22                   MR. CHU: I'm going to mark this as CDX-102 for  
23 later use.

24                   (Exhibit CDX-102 identified.)

25                   BY MR. CHU:

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1           Q       So you are saying in this example, where the  
2   change of pressure threshold is positive 20, there would be  
3   a press at anything at positive 20 or above; correct?

4           A       Needs to exceed the threshold, so greater than  
5   20, yes.

6           Q       And there would not be a pressure at anything  
7   less than 20 grams positive, all the way to a negative 20  
8   grams; correct?

9           A       That's correct.

10          Q       But your interpretation of the Court's claim  
11   construction is that at a negative 21, there would be a  
12   press; correct?

13          A       Yes, there could be in this hypothetical. Yes.

14          Q       And there would be if all of the other elements  
15   of claim 1 are met; correct?

16          A       Not necessarily would be. It depends how this  
17   hypothetical device is engineered.

18          Q       I'm not talking about a hypothetical device.  
19   I'm just talking about your interpretation of the claim.

20                 So you're certain that if it's between a  
21   positive 20 and a negative 20, there would not be a press,  
22   and at least you would say if it's above -- if it is below  
23   a negative 20, if it's a larger negative number, you're  
24   saying at least there could be a press?

25          A       That's correct.

1           Q       Let's look at the Judge's claim construction. I  
2 think it's CDX-93.04.

3                   On the right-hand side is the chief ALJ's claim  
4 construction. You are reading the words "magnitude of the  
5 change in pressure (positive or negative)" as meaning the  
6 absolute value of the magnitude of the change in pressure;  
7 correct?

8           A       Wrong.

9           Q       Sir, explain how you're reading it.

10          A       I read it exactly as stated there. I can  
11 provide clarifying examples if you wish.

12          Q       Yes -- well, no. First start by explaining  
13 exactly how you're reading it and why there would be a  
14 press at negative 25 in the hypothetical example we started  
15 with this morning.

16          A       In the example of negative 25, the magnitude of  
17 that change is negative -- sorry, is positive 25, which  
18 exceeds the threshold at 20. So there could be a press in  
19 that condition.

20                   Also, at positive 25 --

21          Q       Can I stop you for just a second?

22          A       Sure.

23          Q       You're reading magnitude here to compare two  
24 numbers, one is the positive 20 threshold and the other is  
25 the minus 25. And in your mind, when you're doing that

1 comparison, you're taking off the positive or negative  
2 sign, you're just asking which number is larger, without  
3 regard to whether it's positive or negative?

4 A No, that's not quite correct.

5 Q Well, go on with your explanation, sir.

6 A The magnitude of the change in pressure at minus  
7 25 exceeds the threshold, which is 20. The magnitude of  
8 minus 25 is 25, which exceeds the threshold, and therefore,  
9 there could be a Pop.

10 Similarly, at plus 25, a change of pressure of  
11 plus 25, the magnitude of that change in pressure is plus  
12 25, which exceeds the threshold, which is 20.

13 So either of those situations would permit a  
14 Pop. It needn't occur in -- sorry, would permit the Peek.  
15 But neither of those -- sorry, not both of those are  
16 essential. One or the other could satisfy the limitation.

17 Q You understand the Court's claim construction to  
18 mean that a negative 25 change in pressure is greater than  
19 a positive 20 change in pressure threshold; is that right?

20 A Yes. The magnitude of minus 25 is 25, which  
21 exceeds your hypothetical threshold at positive 20.

22 Q Let's look at the actual claim language on the  
23 left of this slide. It says, "determining a press if the  
24 change in pressure is greater than a change in pressure  
25 threshold."

1 Do you see that?

2 A Yes, I do.

3 Q If you were just interpreting that language and  
4 there was no claim construction here, in our hypothetical,  
5 would a negative 25 change in pressure be greater than a  
6 change in pressure threshold of 20 grams, of positive 20  
7 grams?

8 A Could you repeat the question, please?

9 Q We're just looking at the actual language in the  
10 claim.

11 A Sure.

12 Q We're not considering, for now, the chief ALJ's  
13 claim construction. If you look at just the language in  
14 the claim, is it correct that if there is a positive 20  
15 gram change in pressure threshold, a negative 25 change in  
16 pressure would not be greater than the pressure threshold;  
17 correct? Yes or no.

18 A In the context of the patent, I think that is  
19 no.

20 Q Sir, I'm going to ask it again pretty carefully.

21 JUDGE BULLOCK: Could I ask where you're going  
22 with this? I mean, you're saying, and maybe I'm  
23 misunderstanding your question, that -- it seems like your  
24 hypothetical is, well, if there were a different claim  
25 construction, then what would happen. Is that where we're

1 going?

2 MR. CHU: No, no.

3 JUDGE BULLOCK: Because it sure sounds like it.

4 MR. CHU: I was just sticking with the actual  
5 claim language. But let me sort of shift a little bit  
6 here.

7 BY MR. CHU:

8 Q Let me give you a different hypothetical. In  
9 this other hypothetical, the change in pressure threshold  
10 is a negative 30 grams. Are you with me?

11 A Yes.

12 Q And we're just talking about the patent, okay?

13 A Okay.

14 Q And we have the chief ALJ's claim construction  
15 in mind; correct?

16 A In mind, yes.

17 Q So if the change in pressure is a negative 31,  
18 there would not be a press; correct?

19 A No, that's incorrect.

20 Q So when there's a negative change in pressure,  
21 the finger is backing away from a device; correct?

22 A Yes.

23 Q And the negative 31, you're saying, is a greater  
24 number than negative 30?

25 A The magnitude of that change in pressure,

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1 negative 31, the magnitude of negative 31 is 31. That  
2 exceeds the change in pressure threshold.

3 Q So a way to do that, what you're doing is you're  
4 just ignoring the negative signs and you're asking  
5 yourself, is 31 greater than 30; correct?

6 A I think that's what magnitude is defined as.

7 Q So in this example, if the change in pressure  
8 threshold is a negative 30 and the change in pressure was a  
9 negative 20, you would say there is no press?

10 A That's correct.

11 Q Before I write on this, in fact, you would say  
12 there's no press from a negative 29 through a positive 29;  
13 correct?

14 A That's the change in pressure, is in that range?

15 Q Yes.

16 A That's correct.

17 Q So, again, you're ignoring the positive or  
18 negative signs because if it is a positive 29, you would  
19 say the pressure -- change in pressure is not greater than  
20 a negative 30, you would say, oh, I'll use the word  
21 "magnitude" to mean that a positive 29 is less than a  
22 negative 30; correct?

23 A I think that's entirely incorrect.

24 Q But you are saying that if the threshold --  
25 change in pressure threshold is a negative 30, there would

1 not be a press between a negative 29 and a positive 29;  
2 correct?

3 A That's correct.

4 Q And then you would only get to a press, let's  
5 say, at a positive 31 as an example?

6 A No, that's incorrect.

7 Q Is it because the change in -- you're reading  
8 the change in pressure threshold as 30 or greater?

9 A No. The magnitude of the change is -- can you  
10 give me the hypothetical again?

11 Q Yes. The change in pressure threshold is a  
12 negative 30.

13 A Yes.

14 Q At a positive 31, there would be a press;  
15 correct?

16 A No, that's incorrect.

17 Q Okay. Would you explain that, please.

18 A Any value compared to the negative 30 threshold  
19 that is above negative 30, there is no determination that  
20 this is -- the magnitude of this change in pressure is  
21 greater than a change in pressure threshold that you're  
22 referring to.

23 Q Let me give you another hypothetical. And I'm  
24 going to mark as CDX-103 the hand-drawn chart with the  
25 change in pressure threshold at a negative 30.



1 (Exhibit CDX-103 identified.)

2 MR. CHU: I will mark later as CDX-4 the  
3 hand-drawn chart which is now shown on the Elmo.

4 (Exhibit CDX-104 identified.)

5 BY MR. CHU:

6 Q This has a change in pressure threshold at a  
7 positive 20.

8 Do you see that?

9 A Yes, I do.

10 Q So if the change in pressure is 21 grams or  
11 higher, there will be a press?

12 A Yes.

13 Q And if there's a change in pressure from a  
14 positive 19 through a negative 19, there would not be a  
15 press?

16 A That's correct.

17 Q And then if it is a negative 21 change in  
18 pressure, you would say there could be a press; correct?

19 A That's correct.

20 Q And that's how you read the '507 patent, sir?

21 A Yes, it is. With the chief ALJ's construction  
22 on pressure, yes, the change in pressure threshold.

23 Q In the context of the '507 patent, claim 1 is  
24 focused on determining whether there is a press; correct?

25 A I'm not sure I would describe it as focused on.

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1     There are several criteria. That's one of them.

2           Q       Well, the claim does say "determining a press."

3           A       Yes, it does.

4           Q       And in the context of the '507 patent, you think  
5     a person of skill in the art would interpret the patent to  
6     mean that a person pulling their finger away from a  
7     touchscreen would be a press?

8           A       Sorry, can you clarify your question, please?

9           Q       Yes. We'll stay with the hypothetical that's on  
10    the screen right now. And when someone has a negative 21  
11    grams change in pressure, where the change in pressure  
12    threshold is a positive 20 grams -- are you with me so far?

13          A       Yes, I am.

14          Q       So the person who is holding the device is  
15    moving their finger away from the device, reducing the  
16    amount of pressure when the person is at negative 21 grams;  
17    correct?

18          A       They're not at negative 21 grams. That would be  
19    the pressure. We're talking about a change in pressure.

20          Q       Oh. If there is a change in pressure and the  
21    change in pressure in an instant of time is a negative 21  
22    grams. Are you with me?

23          A       Yes.

24          Q       That person is pulling their finger away, they  
25    are reducing the pressure on the screen. Are you with me?

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1           A       Yes.

2           Q       And you would say that a person of ordinary  
3 skill in the art would read the '507 patent as setting up a  
4 system where the human being pulling their finger away  
5 would have the device determine that that's a press;  
6 correct? Yes or no?

7           A       I can't answer that question.

8           Q       Let's go back to the Court's claim construction  
9 for a moment. You are putting your own interpretation on  
10 the chief ALJ's claim construction; is that correct?

11          A       No, that's not correct.

12          Q       Well, I want you to assume that the chief ALJ's  
13 claim construction really means that the change of pressure  
14 is greater than the change in pressure threshold, okay?

15          A       I don't understand that.

16          Q       Let's go back to the CDX-4. I think you've  
17 already established that the blue area on CDX-4 would not  
18 be a press, correct, under your view of the Court's claim  
19 construction?

20          A       As labeled on this figure, yes. So the change  
21 in pressure threshold is at plus 20 grams.

22          Q       And your interpretation of the chief ALJ's claim  
23 construction would mean that the red areas would be a  
24 press; correct?

25          A       Both of the red areas could be a press. Both of

1     them need not be a press. One would satisfy it. The other  
2     would satisfy it. But both need not do it in any  
3     particular device.

4           Q       If all of the other elements of claim 1 of the  
5     '507 patent are met, then the red areas would be a press  
6     under your interpretation of the chief ALJ's claim  
7     construction; correct? Yes or no?

8           A       I can't answer that question.

9           Q       The red areas, you could have a press under your  
10    interpretation; correct? Yes or no?

11          A       I can't answer that question.

12          Q       If the device meets all of the other elements  
13    and we're only looking at the second requirement, change in  
14    pressure threshold, and asking whether that is met or not  
15    met, then the arrow on the right side would be a press;  
16    correct?

17          A       Could be a press, yes.

18          Q       In other words, positive 21 grams and higher  
19    would be greater than the change in pressure threshold;  
20    correct?

21          A       Yes.

22          Q       And a negative 21 grams or higher, in your mind,  
23    would be greater than the change in pressure threshold of a  
24    positive 20 grams; correct?

25          A       You said negative 20 or higher. I think you

1 mean negative 20 or lower. But that would be correct.

2 Q Yes, excuse me, you're right. So negative 21,  
3 negative 22, negative 25 and the like would be considered  
4 to be greater than the positive 20 change in pressure  
5 threshold under your interpretation of the chief ALJ's  
6 claim construction; correct?

7 A I can't remember if you said "would" or "could."  
8 It certainly could, that would be correct.

9 Q Thank you. So the two red areas, you could have  
10 a press?

11 A Correct.

12 Q I'm going to go to a new subject. I'd like to  
13 ask you just some general questions about one of the pieces  
14 of prior art, and that's the Toda reference, you're  
15 familiar with that, T-o-d-a?

16 A Yes, I am.

17 Q Let's put the front page of Toda up on the  
18 screen. And let's go to figure 3 of Toda. And I'm just  
19 going to ask you several questions so we're all oriented  
20 basically to what Toda is about.

21 Toda describes and depicts in figure 3 a  
22 TrackPad on rails number 1; correct?

23 A Correct.

24 Q And what it's showing is that that TrackPad or  
25 touchpad can roll into the laptop in figure 3, and then

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1     when the user wants to use it, he or she can roll it out;  
2     correct?

3           A       That's correct.

4           Q       And Toda also discusses the fact that in other  
5     designs at the time, there would be a separate button to  
6     implement a click; is that correct?

7           A       I think that's fair. I'd like to check, but I  
8     think that's fair.

9           Q       Just to make it simple, there were devices  
10    before Toda where there was a touchpad for moving the  
11    cursor, and then if one wanted to do the equivalent of a  
12    left click of a mouse, there would be a little button  
13    someplace on the device and another button if someone  
14    wanted to do a right click; correct?

15          A       Sure, on devices other than Toda, yes.

16          Q       And what Toda is trying to do is to have what it  
17    considers to be an improvement so that the equivalent of a  
18    click could be done on the touchpad number 1 in figure 3;  
19    correct?

20          A       That and other things, yes.

21          Q       And it considers the phrase "switching input" to  
22    be that click; correct?

23          A       No, this is very imprecise, and I think wrong.

24          Q       What do you consider switching input to be in  
25    Toda?

1           A       Switching input in Toda is the determination of  
2   a dragging gesture.

3           Q       And Toda addresses the question about how does  
4   one tell what the human being really intended by the  
5   human's gestures; correct?

6           A       Can you repeat the question, please?

7           Q       Toda uses experimental data of real human beings  
8   to see what human beings do when they want to have a click;  
9   correct?

10          A       There is empirical data contained in the patent.  
11   I don't -- I don't think that's part of the invention.

12          Q       Well, I'm not saying it's part of the claims.  
13   Let's just go to figure 9 as an example.

14                 So figures 9 (a) and 9 (b) are part of the  
15   experimental data collected by Toda to see what happens  
16   when real human beings are trying to have a click by  
17   pressing down on the touchpad; correct?

18          A       That's generally fair, yes.

19          Q       And let's look at figure 12, 13, 15, 16, and my  
20   question will be these generally are more experimental  
21   data; correct?

22          A       I think they're -- they're demonstrating some of  
23   the capabilities of Toda and its intentions. And they are  
24   empirical -- based on empirical data.

25          Q       Okay. So because human beings are different,

1 Toda has a flowchart, and under certain conditions, the  
2 switching input can be completed on the first flowchart,  
3 but in other conditions, the computer would then go to a  
4 second flowchart or a third flowchart to determine whether  
5 a particular gesture for a click was intended; right?

6 A I think there are several parts of that question  
7 that I disagree with.

8 Q Let me break it up. Let's go to figure 11.  
9 This is one of the flowcharts; is that correct?

10 A Yes, it's one of the flowcharts in Toda.

11 Q And one could start at 1 at the very top, come  
12 down to 2 and have a switch input, correct, just on this  
13 flowchart alone?

14 A To 2 or just before 2 that you're referring to?

15 Q At the box 110 just slightly above the number 2,  
16 one could get there from the number 1 staying on the single  
17 flowchart in figure 11; correct?

18 A Yes, correct.

19 Q And a different human being, depending on how he  
20 or she is interacting, might end up going to another  
21 flowchart; correct?

22 A That's reasonable.

23 Q Okay. And, in fact, at the diamond box 103,  
24 that's one possibility where you see on the left-hand side,  
25 if the answer is no to the question, there's another



1 diamond, and then it could switch to 3. Do you see the 3  
2 with the circle around it?

3 A I see that.

4 Q So a different human being using the Toda device  
5 might get switched to a different flowchart; correct?

6 A It doesn't need to be a different human being,  
7 but a different human being might, yes.

8 Q Or it could be the same human being, but the  
9 amount of pressure and the type of gesture is different;  
10 correct?

11 A According to the criteria exposed in the  
12 flowchart in Toda, yes.

13 Q So a different flowchart might then be used by  
14 the computer, and let's just go to figure 17 as an example.

15 So you see the 3 with the circle around it at  
16 the top?

17 A Yes.

18 Q So then the computer that's been switched off of  
19 figure 11 would then go to the flowchart in figure 17;  
20 correct?

21 A I think that's a slight mischaracterization.  
22 This is one continuous flowchart that's linked via these  
23 numbers 1, 3, 2, 3 prime and so on.

24 Q Okay. So that's Toda in general. Now I'm going  
25 to ask you some more specific questions.

1           A       Okay.

2           Q       So let's go back to figure 11. The switch input  
3 at the very bottom in box 110 is what you consider to be a  
4 press; correct?

5           A       It is one of the conditions in which a press is  
6 determined. There are many other places in the flowchart  
7 where switching input is on -- or switch inputting is  
8 turned on.

9           Q       The meaning of "switch inputting on" is a press,  
10 in your mind. I'm not being critical. That was your  
11 analysis; correct?

12          A       Yes.

13          Q       Thank you. And the process begins with box 101  
14 at the top; correct?

15          A       Yes.

16          Q       And unless it gets switched to another  
17 flowchart, it proceeds down to boxes 103, 104 and so forth;  
18 correct?

19          A       I would still refer to it as the same flowchart,  
20 but linked via the boxes. Without reservation or  
21 clarification, yes.

22          Q       But I'm just assuming that we're not getting  
23 switched to figure 17 or branching off to a different part  
24 of the flowchart.

25          A       Okay.

1 Q Are you with me?

2 And you use box 103 as the time interval check  
3 as it relates to claim 1 of the '507 patent; correct?

4 A Correct.

5 Q And why don't you read what is in that diamond  
6 box first.

7 A "Is peak point P1 detected when T is less than  
8 30 milliseconds."

9 Q What happens if it is less than 30 milliseconds?

10 A Then the time period has not elapsed and it will  
11 branch down to box 105.

12 Q So box 103 isn't looking for a minimum lapse of  
13 time; correct?

14 A Yes, it is.

15 Q Well, if the lapse of time is 1 millisecond, it  
16 will go straight down in the yes branch; right?

17 A That's correct.

18 Q And the same is true if it is 29 milliseconds;  
19 correct?

20 A Yes.

21 Q And if it gets to 30 milliseconds, it will  
22 branch off; correct?

23 A That's correct. That's the elapsed time period.

24 Q Okay. So if 30 milliseconds has not passed, the  
25 process follows the yes branch and it goes to 105; correct?

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202-347-3700

1           A       Correct.  Sorry, sorry, I misspoke.  If the peak  
2     has not been detected in less than 30 milliseconds -- if  
3     the peak is detected in less than 30 milliseconds, it  
4     follows the 105 branch.

5           Q       Right.  And by the peak, when we went to some of  
6     the figures like 9 and 12 with the experimental data, he's  
7     looking at the peaks and valleys that he's charted with the  
8     experimental data; correct?

9           A       Yes.  It's looking for a peak in the pressure  
10    signal.

11          Q       Okay.  Then if we go to 105, there isn't a check  
12    for time; correct?

13          A       In 105?

14          Q       Right.

15          A       No, no.  That's an assignment of zero to a time  
16    counter.

17          Q       Okay.  Now, 106, read it first.

18          A       "Is the force greater than F greater than 15  
19    grams?"

20          Q       And you would say oh, that's checking whether  
21    the pressure is greater than a pressure threshold, the  
22    first requirement for determining a press in claim 1;  
23    correct?

24          A       You could read it that way.  I'm not using it  
25    that way in my analysis.

1           Q       And then if the answer is yes, it goes to box  
2   107; correct?

3           A       Yes.

4           Q       And then if that answer is no, it goes to the  
5   next box, 106; correct?

6           A       Correct.

7           Q       And the answer is yes, it goes to 109; correct?

8           A       Correct.

9           Q       And then if the answer is yes there, we have the  
10   switch input or a press; correct?   Correct?

11          A       Not to the press of the '507 patent, no.

12          Q       You don't think the switch input is a press at  
13   all, as it relates to the '507 patent?

14          A       That one, no, because it hasn't satisfied the  
15   criteria for the '507 patent.

16          Q       Okay.   But what would happen in the Toda  
17   device -- first, why hasn't it satisfied the criteria?

18          A       In that particular path through the flowchart,  
19   the time period criteria has not been met.

20          Q       What else has not been met?

21          A       I need to think about it.   I think that's  
22   probably it.

23          Q       In this figure 11, going from 1 all the way down  
24   through 2, is there a check for whether the change of  
25   pressure exceeds a change of pressure threshold?

1           A       I haven't done that analysis. This calls for a  
2 new opinion. But I can -- I can look now if you like.

3           Q       Well, you have no opinion that figure 11 flowing  
4 from 1 all the way down to 2 actually shows a change of  
5 pressure greater than change of pressure threshold;  
6 correct? Yes or no?

7           A       I haven't offered that opinion -- sorry. No.

8           Q       Is the following correct? And this is going to  
9 be a yes-or-no answer.

10          A       Okay.

11          Q       You have no opinion in figure 11 from number 1  
12 to the bottom at number 2 whether the change in pressure is  
13 shown to exceed the change in pressure threshold. That's  
14 correct, yes or no?

15          A       It's correct that I have no opinion.

16          Q       Okay. So you either have no opinion or have an  
17 opinion that two of the three requirements of claim 1 are  
18 not shown in figure 11 moving from number 1 to number 2 at  
19 the bottom?

20          A       Could you repeat the question, please?

21          Q       One of the requirements for determining a press  
22 in claim 1 is asking whether the change in pressure exceeds  
23 the change in pressure threshold. And on that score, you  
24 have no opinion for figure 11? Is that correct, yes or no?

25          A       Correct.

1           Q       And the third requirement in claim 1 of '507 is  
2       that there must be a minimum time interval that has  
3       elapsed; correct?

4           A       I think you said the third line. I think you  
5       mean the third criteria.

6           Q       Excuse me if I misspoke, yes. Is it correct the  
7       third requirement or criterion of claim 1 of the '507  
8       patent is to have a minimum time elapse?

9           A       That's not the language that's used, but  
10      effectively that's the case, yes.

11          Q       Right. And that doesn't appear in figure 11  
12      from number 1 to number 2; correct?

13          A       That's incorrect. Sorry, from 1 to 2? In that  
14      straight line --

15          Q       If the flowchart is moving straight down from 1  
16      to 2, there isn't a minimum time period that has elapsed;  
17      correct?

18          A       There has been a test to see if it has elapsed,  
19      and it hasn't in that path.

20          Q       Right. So moving from 1 to 2 in figure 11, two  
21      of the requirements of claim 1 are not met; correct?

22          A       That's -- that's substantially incorrect. There  
23      was a test at 103. If you are going straight down that  
24      path from 102 -- from 1 to 2, then that's okay.

25          Q       Yes. We're going straight down the path.

1           A       Okay.

2           Q       If we go straight down the path, then the second  
3       requirement and the third requirement for determining a  
4       press in claim 1 were not met; correct?

5           A       I haven't offered an opinion on this analysis,  
6       but yes, I think that's fine.

7           Q       Now, the box 110, you do have the opinion -- let  
8       me ask without regard to box 110.

9                   In your analysis of Toda, a switch input is  
10       considered to be a press; correct?

11          A       Yes.

12          Q       So in figure 11, there could be a press without  
13       meeting two of the three criteria of claim 1; correct?

14          A       The same press could occur. It wouldn't be a  
15       press that satisfies the criteria.

16          Q       But a press would occur when two of the three  
17       criteria of claim 1 are not met. In Toda, a press would  
18       occur in figure 11 when two of the three criteria of claim  
19       1 are not met; correct?

20          A       Yes.

21                   MR. CHU: Thank you.

22                   May I have a moment, your Honor?

23                   JUDGE BULLOCK: Yes.

24                   BY MR. CHU:

25          Q       Toda doesn't discuss haptics; correct?



1           A       That's correct.

2           Q       It doesn't discuss tactile feedback, tactile  
3 sensations; correct?

4           A       Correct.

5           Q       It doesn't discuss vibrations in any way  
6 whatsoever; correct?

7           A       I'm not sure that's entirely correct, because  
8 changes in pressure exerted on the device. But there's no  
9 production of haptic output.

10          Q       Let's go to the Astala reference, A-s-t-a-l-a.  
11 And that's patent 6,590,568. And generally speaking,  
12 Astala, which is also RX-275, discloses a method for  
13 dragging and dropping something like an icon on a screen;  
14 correct?

15          A       Yeah, at a high level, that's right.

16          Q       So a way to think about it is if I have, on an  
17 iPhone, or for that matter a Samsung Galaxy phone, have an  
18 icon for the weather and I just want to move it to a higher  
19 position, a lower position or a separate screen, I would  
20 have a gesture, it happens to be a press of a certain kind,  
21 and then the icons will start jiggling. And then I can  
22 have another gesture to drag it to a new location, and then  
23 another gesture to set the icon down where I have moved it.  
24 Generally that's correct?

25          A       I disagree with some of the phrases you've used

1     there.

2           Q       But Astala is doing this drag and drop gesture;  
3     correct?

4           A       Yes.

5           Q       And the Astala drag and drop gesture has three  
6     steps to it; correct?

7           A       I think that's fair.

8           Q       And you consider the first step to be a press;  
9     correct?

10          A       Yes, the first step is -- of the gesture is a  
11     press.

12          Q       And then the second gesture in Astala is the  
13     drag; correct?

14          A       Can you repeat the question, please?

15          Q       The second step in Astala is a drag; correct?

16          A       Correct.

17          Q       And the third step in Astala is a press to drop  
18     the icon; correct?

19          A       Yes.

20          Q       For the first step in Astala, it involves a  
21     touch with a pressure greater than a pressure threshold and  
22     longer than a predetermined time; correct?

23          A       At least those two items, yes. And one more.

24          Q       When you did your expert report, you were very  
25     careful; correct?

1           A       Yes, I was.

2           Q       And, in fact, when you did your expert report,  
3       you stated that the first part of Astala, which you just  
4       described as a press, included a touch with a pressure  
5       greater than a pressure threshold  $zA$  and longer than a  
6       predetermined time; is that correct?

7           A       I said it includes those.

8           Q       Let's see CX-3510C, page 4. And let's highlight  
9       where -- you see in the second paragraph, the second line,  
10      you stated, "the gesture includes three main parts"?

11                   Do you see that?

12          A       I do.

13          Q       And the first part is what you consider to be a  
14      press; correct?

15          A       That's omitting the change in pressure. I just  
16      didn't put --

17          Q       Sir, did you consider the first part of the  
18      three main parts to be a press? That's correct, yes or no?

19          A       I can't answer that question.

20          Q       But at least in your expert report, you said  
21      that there were two requirements for the first part;  
22      correct?

23          A       That's mischaracterizing the report.

24          Q       Your report states, "1) a touch with a pressure  
25      greater than a pressure threshold  $zA$  and longer than a

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202-347-3700

1 predetermined time."

2 That's correct, yes or no?

3 A That's correct.

4 Q And that does not have the second criterion for  
5 claim 1 of the '507 patent in number 1 in your expert  
6 report; correct?

7 A Yes, it's not included in any of those three  
8 steps.

9 Q Thank you. Now, the second step I think you  
10 identified as a drag step; correct?

11 A Yes.

12 Q And the drag step includes "a subsequent  
13 dragging sequence at reduced pressure." Is that correct?

14 A That's correct. That's what it says.

15 Q And then the third step you identified as a  
16 touch and it includes "3) a subsequent touch with a  
17 pressure greater than a pressure threshold zB."

18 Correct?

19 A That's what it says.

20 Q And that's how you described the press, drag and  
21 press in Astala in your expert report; correct?

22 A There is much more explanation and description  
23 than just this one paragraph.

24 Q But when you were breaking up the three steps,  
25 this is exactly how you did it in your expert report;

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202-347-3700

1 correct? Yes or no?

2 A I can't answer that question.

3 Q So I want you to assume that step 1 is a press.

4 You would agree with me that in your expert report, you

5 left out the second requirement of claim 1 of the '507

6 patent; correct?

7 A Yes, I omitted that.

8 Q Thank you. And then when you got around to

9 doing your witness statement, you made a major change; is

10 that correct?

11 A I put the change in pressure --

12 Q Is that correct, yes or no? I'm sorry.

13 A Can you repeat the question, please?

14 Q When you got around to submitting your expert

15 witness statement, you made a very significant change in

16 your description of Astala; is that correct? Yes or no?

17 A That's not correct.

18 Q Let's put up the change in your witness

19 statement. Okay. On top we have your expert report that

20 we were looking at.

21 Do you see that?

22 A I do.

23 Q And on the bottom, we have the way you described

24 Astala; is that correct?

25 A Yes.

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202-347-3700

1           Q       And you added the words to the press step, "and  
2   also a sufficiently large reduction in pressure."  Correct?

3           A       Correct.

4           Q       And that was a significant change from how you  
5   described Astala in your expert report; correct?  Yes or  
6   no?

7           A       I can't answer that question.

8           Q       In your witness statement, you said that your  
9   description here is substantially identical to the chart  
10   you included in your expert report; correct?  Yes or no?

11          A       Correct.

12          Q       The chief ALJ construed the term "pressure" to  
13   mean "an application of force from a contact"; correct?

14          A       Yes.

15          Q       And that was Immersion's proposed construction;  
16   correct?  Yes or no?

17          A       Yes.

18          Q       And you did not offer any opinion regarding  
19   whether the accused products practice the pressure under  
20   the chief ALJ's claim construction; correct?  Yes or no?

21          A       I can't answer that question.

22          Q       Let's go to your expert witness statement,  
23   RX-93C, at question and answer number 72.  In this figure  
24   that you put in your expert witness statement, the  
25   left-hand side --

1           MR. BUERGI: Your Honor, may we go on the Apple  
2 confidential record, please?

3           MR. CHU: Excuse me, yes.

4           JUDGE BULLOCK: On the confidential record.

5           (Confidential session follows.)

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202-347-3700

1 OPEN SESSION CONTINUED

2 JUDGE BULLOCK: Back on the record.

3 Please call the next witness.

4 MS. GIBSON: Your Honor, we are switching topics  
5 to public interest. Respondents call Mr. Michael Allen  
6 Martin Davies.  
7 Whereupon,

8 MICHAEL ALLEN MARTIN DAVIES

9 was called as a witness and, having first been duly sworn,  
10 was examined and testified as follows:

11 JUDGE BULLOCK: Thanks. Please be seated.

12 DIRECT EXAMINATION

13 BY MS. GIBSON:

14 Q Good morning, Mr. Davies.

15 A Good morning.

16 Q There should be two binders in front of you.  
17 Could you turn, please, to RX-94C.

18 A There are three binders in front of me but yes.

19 Q Is RX-94C a copy of your direct witness  
20 statement?

21 A Yes.

22 Q Could you turn to the last page of RX-94C. Is  
23 that your signature?

24 A Yes, it is.

25 Q Mr. Davies, are these your answers to questions

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202-347-3700



1 from counsel?

2 A Yes, they are.

3 MS. GIBSON: Your Honor, Respondents move to  
4 admit RX-94C.

5 MS. MURRAY: No objection from the Staff.

6 MS. CARSON: No objection.

7 JUDGE BULLOCK: Exhibit RX-94C is received in  
8 evidence.

9 (Exhibit RX-94C received.)

10 MS. GIBSON: Respondents also tender Mr. Davies  
11 as an expert in the telecommunication and mobile device  
12 industries field.

13 JUDGE BULLOCK: Okay.

14 BY MS. GIBSON:

15 Q Mr. Davies, could you turn next to RX-95C.

16 A Yes.

17 Q Is this a copy of your rebuttal witness  
18 statement?

19 A Yes, it is.

20 Q And could you turn to the last page of that  
21 exhibit for us, please. Is that your signature?

22 A Yes, it is.

23 Q Are these your answers to questions from  
24 counsel?

25 A Yes, they are.

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202-347-3700

1 MS. GIBSON: Your Honor, Respondents move to  
2 admit RX-95C.

3 MS. CARSON: No objection from Complainant.

4 MS. MURRAY: No objection, your Honor.

5 JUDGE BULLOCK: Exhibit RX-95C is received in  
6 evidence.

7 (Exhibit RX-95C received.)

8 MS. GIBSON: I tender the witness for  
9 cross-examination.

10 MS. CARSON: Good morning, your Honor, Rebecca  
11 Carson for Complainants.

12 JUDGE BULLOCK: Good morning.

13 MS. CARSON: May I proceed?

14 JUDGE BULLOCK: Please.

15 CROSS-EXAMINATION

16 BY MS. CARSON:

17 Q Good morning, Mr. Davies.

18 A Good morning.

19 Q You provided opinions in this case concerning  
20 public interest; correct?

21 A Yes.

22 Q It was very important to consider all the  
23 relevant evidence before you formed your opinions; correct?

24 A Yes.

25 Q It is also important to apply common sense when

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202-347-3700

1 forming your opinions; correct? Yes or no?

2 A Yes.

3 Q The opinions included in your witness statements  
4 are premised on the idea that Apple would complete a  
5 careful redesign of the accused products that takes 30 to  
6 36 months; correct? Yes or no?

7 A Yes.

8 Q It is your understanding that disabling the  
9 accused haptic technology may require a redesign of the  
10 hardware of the device in addition to a redesign of the  
11 software; correct? Yes or no?

12 A Yes.

13 Q Now, you reviewed Apple's responses to the  
14 Staff's interrogatories when you were forming your  
15 opinions; correct?

16 A Yes.

17 Q And in particular, you reviewed Apple's  
18 supplemental response to Staff's Interrogatory Number 31;  
19 correct?

20 A Yes, I believe so. Would you like to refer me  
21 to a particular document?

22 MS. CARSON: If we could go on the Apple  
23 confidential record, please.

24 JUDGE BULLOCK: On the confidential record.

25 (Confidential session follows.)

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202-347-3700

1 OPEN SESSION CONTINUED

2 BY MS. MURRAY:

3 Q Mr. Davies, if at any time I ask you a question  
4 that you need to answer with confidential information,  
5 please let us know before answering and we'll go back on  
6 the confidential record.

7 A Certainly.

8 Q Your analysis of the U.S. competitive conditions  
9 in the smartphone market is limited to smartphones selling  
10 for \$400 or more or high performance smartphones; is that  
11 right?

12 A Yes, with the following qualification. We were  
13 focused on fully functional and up-to-date smartphones, and  
14 we used price as a proxy for that. It corresponds closely  
15 with the fully functional and up-to-date smartphones, so it  
16 is for these purposes the best analysis.

17 But our focus is on what smartphones could do,  
18 rather than how much they cost. And we're using price as a  
19 proxy for that.

20 Q So is it your position that a smartphone is not  
21 functional unless it costs more than \$400?

22 A No. It depends upon the customer. There is a  
23 significant set of customers whose requirements are such  
24 that they require fully functional, up-to-date smartphones.  
25 There's a separate set of customers who, although they use

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202-347-3700

1 smartphones make little, if any, use of the smartphone  
2 features.

3 Now, that separate group of customers, who are  
4 the ones who tend to use them and use the more powerful  
5 features of smartphone little, if at all, their needs could  
6 certainly be met by smartphones which cost less money.

7 But if you try and meet the needs of people who  
8 are demanding users of smartphones with devices that lack  
9 full functionality and not up-to-date, they're not going to  
10 meet their requirements.

11 It's like somebody saying, well, I have four  
12 kids and therefore I need an SUV and you're saying we're  
13 terribly sorry, we only have small cars that seat four  
14 people.

15 Q In your example, would a small car in all cases  
16 be an unacceptable substitute for an SUV?

17 A Again, it depends upon -- well, I was going with  
18 the minivan rather than SUV. But the comparison is  
19 inapposite. I have four daughters. The two older ones are  
20 5'10" and 5'11" and I need two car seats. I can't get all  
21 four of my daughters and I in a four person car.

22 Q But there are many families that can; correct?

23 A I'm not -- there are families who have -- who  
24 are just coupled or who have kids, and for that segment of  
25 the market, lower end phones which lack full functionality

1 and lack those capabilities are certainly a suitable  
2 substitute.

3 We focused our analysis on the segment of the  
4 market who require fully functional and up-to-date phones  
5 as reflected in their purchasing and usage behaviors.

6 Q So to return back to smartphones, there is a  
7 large segment of the market that could use either what you  
8 referred to as a fully functional phone or could use a  
9 lower, mid-range phone, and they would be equally  
10 substitutable, wouldn't they?

11 A No, that's not consistent with our analysis.  
12 When we look -- the key question here is from the  
13 perspective of the customer, does this do what I need it to  
14 do, in terms of being fully functional, up to date.

15 The reason people spend more money on fully  
16 functional, up-to-date devices is because of their very  
17 capabilities. They buy -- they don't buy -- they buy  
18 minivans because they need the space that a minivan  
19 prefers. Now, there may be some tiny portion of that who  
20 aren't using their full functionality.

21 But when you look at the -- at people's buying  
22 habits, the Apple users tend to use their phones more,  
23 download more applications, spend more time on the phone,  
24 all of those things.

25 Q And what was the source for the information you

1 just provided?

2 A The source for time would be Flurry Mobile. The  
3 source for application usage is, I think, Slice. Those are  
4 the ones that come immediately to my mind. They're cited  
5 in my report.

6 Q And you conclude that in the event of an  
7 exclusion order, there would be a "massive and ongoing  
8 shortfall of smartphones in the United States"; correct?

9 A Yes.

10 Q Are you familiar with the recall of the Samsung  
11 Galaxy Note 7?

12 A Yes, in some depth.

13 Q The Note 7 was a high performance device,  
14 according to your definition, wasn't it?

15 A Yes, when it wasn't on fire.

16 Q Yes. Was there a massive and ongoing shortfall  
17 of smartphones when the Note 7 was recalled?

18 A No, because relatively speaking, it's a low --  
19 it's a low volume device. The total volume shipped was of  
20 the order of only a couple million devices, which is about  
21 a week and a half's worth of Apple's shipments.

22 Q So in terms of the recall, there were 2-1/2  
23 million devices that disappeared from the United States  
24 overnight; correct?

25 A As close to overnight. However, there's a

1 couple of very significant differences. The volumes are  
2 small. We're talking about, you know, 2 million, versus I  
3 think when I was just looking at Apple sells somewhere  
4 between 55 and 60 million a quarter.

5 MS. GIBSON: Your Honor, I'm sorry, I just want  
6 to make sure we go on the Apple confidential record if  
7 we're discussing Apple confidential sales information.

8 THE WITNESS: Sorry.

9 MS. GIBSON: I don't know if you were or not,  
10 but it sounded like it to me.

11 THE WITNESS: That was from IDC, so --

12 JUDGE BULLOCK: I'm sorry. Where are we?

13 MS. GIBSON: Are we fine staying on the --  
14 Ms. Murray --

15 MS. MURRAY: Well, I don't know. Your witness.

16 (Laughter.)

17 THE WITNESS: I think -- thank you for the  
18 reminder. I will make sure I think about that before I  
19 open my mouth.

20 MS. GIBSON: Sorry for the disruption, your  
21 Honor. We can stay on the public record.

22 JUDGE BULLOCK: Okay. No, it's good to get  
23 these things right.

24 THE WITNESS: The numbers I just quoted were  
25 from third-party data, so --

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202-347-3700



1 BY MS. MURRAY:

2 Q Okay.

3 A Moreover, there was nothing that prevented  
4 Samsung from shipping and offering the replacements. So  
5 Samsung undertook a very active campaign to provide mostly  
6 Samsung Galaxy phones, in some cases, the prior model of  
7 the Note which they were still able to deliver. And that's  
8 also a completely different situation.

9 You had a choice of taking the previous model of  
10 the note or the contemporaneous model of a Samsung Galaxy.

11 Q So in your opinion, would -- in the event of an  
12 exclusion order, would Apple not undertake a strenuous  
13 campaign to provide alternative products to its customers?

14 A I believe it would, and that would require a  
15 careful redesign and that's going to take time.

16 Q Apple was able to boost its production of the  
17 iPhone 7 by 10 percent shortly after news of the recall of  
18 the Note 7 broke; is that correct?

19 A There's no reliable evidence that that's the  
20 case that I've seen. I've seen assertions in the press  
21 that it did so, but let's put this in perspective.  
22 Boosting its -- the size of the boost in its purported  
23 output was much larger than the portion of Note 7  
24 replacements that were not already being met by Samsung.  
25 Overwhelmingly, what was happening was Note 7s were being

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202-347-3700

1 replaced by Samsung with other Note devices.

2           There appears to have been some increase in the  
3 sales of the Google Pixel phone, which is another Android  
4 phone, and the logical switching candidate because it's a  
5 large format, fully functional, up-to-date device. But  
6 there's no demonstrable evidence that there was any cross  
7 substitution from the Android ecosystem into the Apple  
8 ecosystem at the time.

9           Q       Apple was able to boost its production after the  
10 recall; correct?

11          A       The increase in Apple's production was  
12 completely unrelated and coincidental, and it didn't do it  
13 overnight. That reflected decisions that it had been  
14 making for a while.

15          Q       So yes or no, Apple was able to boost its  
16 production of the iPhone 7 by 10 percent shortly after the  
17 recall?

18          A       No. It didn't -- it boosted its production, but  
19 the conjunction you put in there was "after the Note 7  
20 recall" implies that what happened was the Note 7 recall  
21 happened and then it boosted its production.

22                The fact that an increase in Apple's production  
23 happened afterwards doesn't mean that it happened because  
24 of that, or it happened in the time between that recall and  
25 the rest. That boost in production reflects decisions made

1 over significant period of time.

2 It's just not possible to turn the output up on  
3 a complex supply chain in a couple of weeks' time.

4 So the fact that you see recall, which is not  
5 having an impact on Apple sales, and subsequently an  
6 increase in Apple sales, doesn't mean that it was able to  
7 do this after it, just in that window.

8 I know this may seem like I'm being picky, but  
9 it's really important here. It takes time to do that. And  
10 when you see something happen like a launch, which  
11 represents a huge surge in the output of a particular  
12 device, like an infinite, that actually reflects decisions  
13 made many months ago.

14 So the number of products, for instance, you see  
15 in the marketplace associated with the launch of a new  
16 device is three or four months of cumulative production  
17 immediately prior to the launch of that device. So it  
18 doesn't happen overnight.

19 It reflects the long buildup to go do it.

20 Q The iPhone 7 --

21 JUDGE BULLOCK: Excuse me. Let's take our  
22 midmorning break. We'll come back at 11:00.

23 (Recess.)

24 JUDGE BULLOCK: Back on the record.

25 BY MS. MURRAY:

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202-347-3700

1           Q       The iPhone 7 and the Galaxy Note 7 were  
2 introduced at roughly the same time, weren't they?

3           A       Approximately, within a few weeks of each other,  
4 yes.

5           Q       So when Apple boosted its production, it was  
6 doing so on a very short time frame, was it not?

7           A       No. Again, when you see a boost in production,  
8 it reflects decisions made many months beforehand. The  
9 nature of the supply chain is one in which you can't just  
10 turn it up.

11                   The increase in Apple's output related to  
12 iPhones was not related to Samsung Galaxy Note series. Let  
13 me just illustrate it with some data from my expert report.

14          Q       That was actually a yes-or-no question.

15          A       Oh, sorry.

16          Q       Apple's decision to boost its production is  
17 evidence that it is possible to increase the production of  
18 smartphones, is it not, yes or no?

19          A       Yes.

20          Q       And it is possible that Apple's competitors  
21 could do the same, yes or no?

22          A       Yes.

23                   MS. MURRAY: I have no further questions. Thank  
24 you.

25                   JUDGE BULLOCK: Please proceed.

1 MS. GIBSON: Thank you.

2 REDIRECT EXAMINATION

3 BY MS. GIBSON:

4 Q Mr. Davies, you were asked questions about the  
5 time required for a careful redesign.

6 Do you recall that?

7 A Yes, I do.

8 Q What happens if Apple compromises design  
9 standards with a less than careful redesign?

10 A The -- it's unlikely to have commercial --  
11 commercially viable products.

12 Q Why is that?

13 A If you're not careful in a redesign and you  
14 don't go through the appropriate steps in terms of the  
15 design and testing, you may end up -- in fact, you'd be  
16 likely to end up, if you're not careful enough, with errors  
17 that mean customers return products, you make them unhappy  
18 and you are actually losing money on every unit shipped.

19 Q Are there any parallels with what you discussed  
20 in any recent recalls?

21 A A couple spring to mind. The Note 7 recall,  
22 which is an example of what happens when the development  
23 cycle is accelerated.

24 The situation there was that with insufficient,  
25 inadequate testing, a less than careful design process,

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202-347-3700

1     that cost Samsung on the order of \$5.6 billion. I think  
2     everybody in the industry who makes devices has been  
3     scarred by that experience. So the last thing anybody in  
4     the industry would do at the moment is do a less than  
5     careful redesign.

6           Q       You were asked about the time to implement a  
7     simple software redesign.

8                   Do you recall that?

9           A       Yes, I do.

10                   (Confidential session follows.)

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202-347-3700

1 OPEN SESSION CONTINUED

2 BY MS. GIBSON:

3 Q You were also asked about the technical  
4 possibility of disabling haptics.

5 Do you recall that?

6 A Yes, I do.

7 Q In considering a redesign, is whether something  
8 is technically feasible the end of the process?

9 A No, by no means. You also need to figure out  
10 whether or not it's commercially viable. There are many  
11 things you could do which were technically feasible which  
12 would result in a product that was not commercially viable.

13 Q Are there other steps in the redesign process?

14 A Yes. If you look at it, at the steps that are  
15 involved in the redesign, there's some prior steps in  
16 understanding what it is that you have to do, figuring out  
17 what it affects, figuring out how you're going to go do it,  
18 deciding how to implement it -- sorry, figuring out the  
19 changes you will make to preserve the user experience,  
20 implementing -- deciding how you will implement it. Then  
21 there's the actually doing of it, which may be the shortest  
22 and easiest part of the problem.

23 And then there's this cycle where you have to  
24 actually test it, iterate it and actually get it into the  
25 flow of devices which were already flowing through the

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202-347-3700

1 production system.

2 Q Does the process you just described relate to  
3 your opinion of the time required for a redesign?

4 A Yes, it does.

5 Q You were also asked questions about  
6 substitutability between iPhones and certain Android  
7 phones.

8 Do you recall?

9 A Yes, I do.

10 Q Is there economic evidence of substitutability  
11 in the record?

12 A Yes. I was struck, because it provides solid,  
13 quantitative microeconomic foundations by the substitution  
14 analysis of Dr. Vander Veen. It showed that there is  
15 negligible cross substitution between Apple's products and  
16 Android products on the basis of price.

17 I think the cross price elasticity was of the  
18 order of .03 or .033 to .09.

19 In essence, what I understand an economist would  
20 conclude as there's no cross substitution or negligible.

21 MS. GIBSON: No further questions, your Honor.

22 MS. CARSON: Rebecca Carson for Complainants  
23 again.

24 RECROSS-EXAMINATION

25 BY MS. CARSON:

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202-347-3700



1           Q       Mr. Davies, you understand that an exclusion  
2       order would only require Apple to remove the accused  
3       features from their products; correct?  Yes or no?

4           A       Yes.

5           Q       Would the accused products be commercially  
6       viable if one were to remove the accused features from  
7       their products?  Yes or no?

8           A       I can't answer that question.

9           Q       How important are the accused features to the  
10      products?

11          A       I can't answer that question.

12          Q       It's not a yes-or-no question.

13          A       Oh.

14                   (Laughter.)

15                   Sorry, my apologies.  There's two degrees of  
16      importance.  One is the importance in terms of their  
17      correct functioning, and from that point of view, because  
18      of the way in which they are being implemented, you can't  
19      just pull them out.

20                   There's a separate question about the extent to  
21      which they are valued by consumers.  Ironically, not  
22      necessarily highly valued by consumers and not necessarily  
23      much used, but important to the correct functioning of the  
24      product.

25          Q       Does a software update require a change to

1 Apple's supply chain? Yes or no?

2 A I can't answer that question.

3 Q You're an independent expert; right?

4 A Yes.

5 Q So when you were responding to Staff's questions  
6 a little while ago, you kept referring to "we." Who is we?

7 A I'm sorry, you would need to remind me about  
8 what I said.

9 Q You don't recall referring to we?

10 A Would you -- I don't recall a context in which I  
11 used the word "we." Sorry.

12 MS. CARSON: Thank you, your Honor.

13 MS. MURRAY: Nothing further from the Staff,  
14 your Honor.

15 JUDGE BULLOCK: Okay. Thank you, sir. You are  
16 excused.

17 (Witness excused.)

18 JUDGE BULLOCK: Let's go off the record while we  
19 set up for our next witness.

20 (Discussion off the record.)

21 JUDGE BULLOCK: Back on the record.

22 Please call the next witness.

23 MR. WILLIAMS: Good morning, your Honor. Rob  
24 Williams representing Respondents. Respondents call as our  
25 next witness Dr. Tony Givargis, which is our expert on

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202-347-3700

1     invalidity, noninfringement and the lack of technical  
2     domestic industry for the '710 patent.  
3     Whereupon,

4                             TONY GIVARGIS  
5     was called as a witness and, having first been duly sworn,  
6     was examined and testified as follows:

7                     JUDGE BULLOCK:   Thank you.   Please be seated.

8                             DIRECT EXAMINATION

9                     BY MR. WILLIAMS:

10            Q       Good morning, Dr. Givargis.

11            A       Good morning.

12            Q       Do you have a binder in front of you with your  
13     invalidity witness statement, which should be labeled  
14     RX-99C?

15            A       I do, yes.

16            Q       Does that binder contain your witness statement  
17     regarding invalidity of the '710 patent?

18            A       Yes, it does.

19            Q       Could you please turn to the last page of your  
20     witness statement. Does that page contain your signature?

21            A       Yes, it does.

22            Q       Does your witness statement, RX-99C, include  
23     your answers to questions from counsel?

24            A       Yes, it does.

25                     MR. WILLIAMS:   Your Honor, I offer into evidence

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                           202-347-3700

1 Dr. Givargis's invalidity witness statement, RX-99C.

2 MS. GLASSER: No objection, your Honor.

3 MS. MURRAY: No objection, your Honor.

4 JUDGE BULLOCK: Exhibit RX-99C is received in  
5 evidence.

6 (Exhibit RX-99C received.)

7 MR. WILLIAMS: Thank you, your Honor. And for  
8 the reasons set forth in Dr. Givargis's witness statement,  
9 I also tender him as an expert in computer science and  
10 embedded systems.

11 JUDGE BULLOCK: Okay.

12 BY MR. WILLIAMS:

13 Q Dr. Givargis, do you also have in front of you a  
14 binder that contains your witness statement regarding  
15 noninfringement and the lack of technical domestic industry  
16 for the '710 patent?

17 A Yes.

18 Q Is that one labeled RX-100C?

19 A Yes.

20 Q And does RX-100C, is that a copy of your witness  
21 statement?

22 A Yes.

23 Q And would you please turn to the last page of  
24 RX-100C.

25 A Okay.

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202-347-3700

1 Q Is that your signature on the last page?

2 A Yes, it is.

3 Q And does this witness statement also contain  
4 your answers to questions from counsel?

5 A Yes, it does.

6 MR. WILLIAMS: Your Honor, I offer into evidence  
7 Dr. Givargis's witness statement regarding noninfringement  
8 and lack of technical domestic industry for the '710  
9 patent, which is RX-100C.

10 MS. GLASSER: No objection, your Honor.

11 MS. MURRAY: No objection, your Honor.

12 JUDGE BULLOCK: Exhibit RX-100C is received in  
13 evidence.

14 (Exhibit RX-100C received.)

15 MR. WILLIAMS: Thank you, your Honor. I tender  
16 the witness for cross-examination.

17 CROSS-EXAMINATION

18 BY MS. GLASSER:

19 Q Good morning.

20 A Good morning.

21 MS. GLASSER: Your Honor, I think it makes sense  
22 to go on the Apple confidential record.

23 JUDGE BULLOCK: On the confidential record.

24 (Confidential session follows.)

25

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202-347-3700

1 OPEN SESSION CONTINUED

2 JUDGE BULLOCK: I apologize, I misspoke.

3 MS. GLASSER: My fault, your Honor.

4 JUDGE BULLOCK: No, you're fine, go ahead.

5 BY MS. GLASSER:

6 Q So regarding the domestic industry, there's two  
7 devices at issue in this case for the '710, the UL20 phone  
8 from Huawei and then Immersion's pressure demo units;  
9 correct?

10 A Yes.

11 Q And one of the things that you did was to visit  
12 our law firm's offices in Century City to inspect those  
13 devices; correct?

14 A Yes.

15 Q And you felt that that was useful and helpful to  
16 your analysis to come to physically inspect the devices;  
17 correct?

18 A Yes.

19 Q And another thing that you did was to review the  
20 DRV2605 datasheet; correct?

21 A Yes.

22 Q From your analysis, which included a physical  
23 inspection of the UL20 phone, the demo units, and also your  
24 analysis of that lengthy TI datasheet, you were able to  
25 determine how the UL20 device works vis-à-vis the

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202-347-3700

1 technology in the '710 patent; correct?

2 A Okay. Yes.

3 Q And the same is true for the pressure demo unit;  
4 correct?

5 A Yes.

6 Q You were not lacking any information at all that  
7 you wished you had in rendering your opinions regarding the  
8 Huawei UL20 smartphone; correct?

9 A That's not correct, no.

10 Q Let's read from your deposition at page 70, line  
11 24 through page 71, line 3.

12 "Question: And regarding the Mate S, are you  
13 lacking any information that you wished you had had in  
14 rendering your opinions regarding the technical prong of  
15 the domestic industry?

16 "Answer: No."

17 Did I read that correctly?

18 A Yes.

19 Q Was that testimony under oath truthful and  
20 accurate?

21 A Yes.

22 Q Okay. So with respect to the domestic industry  
23 products, there are just two limitations in dispute;  
24 correct?

25 A Correct, yes.

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202-347-3700

1           Q       And maybe we could put those up on the screen.

2       I think this is Q/A 175.

3                   While we're putting that up there, I want to ask  
4       you, so you did indicate that you had sufficient  
5       information about the UL20 phone to perform your analysis;  
6       correct? You said that a moment ago?

7           A       I'm sorry, is that the question you asked in  
8       here or the deposition?

9           Q       Yes. I am asking you whether you said a moment  
10       ago that you had enough information regarding the UL20  
11       phone.

12          A       I had sufficient information to do what I had to  
13       do.

14          Q       And I want to be very clear, though, about what  
15       you ultimately are saying and what your testimony is to the  
16       chief ALJ.

17                   You do not actually have an opinion that the  
18       UL20 does not practice the '710 patent; correct? Yes or  
19       no?

20          A       No, not correct.

21          Q       You have not done an analysis to make a  
22       determination of whether the UL20 or the pressure demo  
23       units indeed practice or don't practice the '710 patent;  
24       correct? Yes or no?

25          A       No, not correct.

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202-347-3700



1           Q       Let's read from your deposition at page 252,  
2   line 19 through 23, carrying over to 253, lines 4 through  
3   8.

4                   "Question: Right. I just want to be absolutely  
5   clear that you do not have an opinion as to whether those  
6   two products actually practice the claims. You haven't  
7   done that analysis; is that correct?

8                   "The witness: At this point I have not done  
9   that analysis to make a determination if they indeed  
10  practice or don't practice."

11                  Did I read that correctly?

12          A       Yes.

13          Q       And that was truthful testimony that you gave at  
14  your deposition in this case; correct?

15          A       Yes.

16          Q       And that deposition, just to be clear, was after  
17  you had already submitted your expert opinions in your  
18  report; correct?

19          A       Yes.

20          Q       And as you sit here now, you still believe that  
21  your testimony at the deposition with respect to this issue  
22  was accurate; correct?

23          A       Yes.

24          Q       All right. So let's talk about, first, the  
25  processor limitation of the '710 patent as applied to the

1     UL20. Are you with me so far?

2           A       Yes.

3           Q       And when I say "the processor limitation," I  
4     mean the language "a processor configured to generate a  
5     first/second actuator signal and to transmit the  
6     first/second actuator signal." Correct?

7           A       Yes.

8           Q       Those are the processor-related elements that  
9     you're disputing; correct?

10          A       Yes.

11          Q       And when I say "disputing," it's again in this  
12     construct, you're not actually disagreeing with Dr. Oliver,  
13     you're just saying you didn't have enough information;  
14     correct?

15          A       No, I cannot answer that.

16          Q       You can't answer the question, you said? I just  
17     didn't hear you. You said you cannot answer my previous  
18     question?

19          A       Yes. Was it a yes/no question?

20          Q       Can you answer my previous question yes or no?

21          A       Could you repeat it, please?

22          Q       The question was whether you have affirmatively  
23     reached conclusions with respect to the '710 patent, as  
24     opposed to merely critiquing Dr. Oliver and his  
25     conclusions.

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202-347-3700

1           A       So I can -- I can -- I recall being asked that  
2       question at deposition. And at the time, the answer that I  
3       gave was that my primary task was to look at Dr. Oliver's  
4       analysis of how the DI products practice the claim.

5                   And while that was my original task, I since  
6       then had the time to reflect. And indeed it was --

7           Q       Let me stop you there, then. Because you  
8       understand, sir, that you aren't allowed to provide  
9       brand-new opinions here today; correct?

10          A       That's correct. I have not provided new  
11       opinions.

12          Q       All right. So let's confine your analysis,  
13       then, to what you actually said in your report and at your  
14       deposition, okay?

15          A       Okay.

16          Q       Is that fair?

17          A       Yes.

18                   JUDGE BULLOCK: When you say report, do you mean  
19       witness statement?

20                   MS. GLASSER: In theory the witness statement is  
21       supposed to confine to the report, and I think he did use  
22       very, very similar language in the two. But at the  
23       deposition, we were discussing his report.

24                   JUDGE BULLOCK: Oh, okay.

25                   BY MS. GLASSER:

1           Q       All right. So with respect to the application  
2 processor in the UL20, the way in which applications  
3 request effects in the UL20 is that that application  
4 processor generates a digital ID signal for a haptic effect  
5 and transmits it to the DRV2605 chip; correct?

6           A       Yes. An integer, yes.

7           Q       And could we quickly call up your RDX-100C.19  
8 demonstration. What we're looking at here is a chart from  
9 page 57 of that very lengthy TI datasheet, Exhibit JX-131;  
10 correct?

11          A       Yes.

12          Q       And this is a library of stored haptic effects  
13 on the DRV2605 chip; correct?

14          A       Yes.

15          Q       And what happens here is that the effect ID we  
16 just mentioned determines which of these haptic effects to  
17 retrieve from the memory of the DRV2605; correct?

18          A       Yes, from the ROM.

19          Q       From the ROM, spelled R-O-M; correct?

20          A       R-O-M, yes.

21          Q       And after the effect ID comes in through the  
22 2605's interface, the 2605 generates signals to drive the  
23 actuator; correct?

24          A       Yes, the DRV generates a signal, that is  
25 correct.

1           Q       And the way in which the 2605 generates signals  
2     to drive the actuator is based upon the stored haptic  
3     effect definitions in the chip corresponding to what we see  
4     up here on your RDX-100.19; correct?

5           A       Yes, the content of the signal is stored in the  
6     chip, yes.

7           Q       And do you understand that applications  
8     interface with the 2605 chip through an I2C interface?

9           A       Yes, I2C.

10          Q       And what they do is they send signals in through  
11     the I2C interface, and they write data to certain registers  
12     in the chip; correct?

13          A       Yes, there is a ritual they go through. Yes.

14          Q       And that's the way in which the applications  
15     actually register on the 2605 chip; correct?

16          A       I mean, that's how applications will -- will  
17     interact with the DRV chip, yes.

18          Q       What happens after that occurs, then, is that  
19     the interface of the 2605 chip will actually retrieve the  
20     stored haptic effects from the ROM and they will get played  
21     back to the user; correct?

22          A       I mean, the chip will generate the signal to the  
23     actuator, which will eventually presumably be felt by the  
24     user.

25          Q       So my statement was correct?

1           A       Yes, yeah.

2           Q       Now, you do not dispute that the application  
3 processor in the UL20 and the LG Nexus phones receive data  
4 from a sensor; correct?

5           A       No, I don't dispute that.

6           Q       And you don't dispute that the applications  
7 processor in the UL20 and the LG Nexus phones transmit data  
8 to the actuator; correct?

9           A       I don't agree with that, no.

10          Q       While you may or may not have done the detailed  
11 analysis yourself, you would expect that the primary  
12 application processor ultimately receives data from a  
13 sensor and transmits data to an actuator; correct?

14          A       No, I don't agree with that.

15          Q       Let's read from your deposition at page 274,  
16 lines 2 through 19. And actually, could we highlight the  
17 last portion beginning with "I think one." Could you just  
18 read that testimony into the record.

19          A       Oh, you want me to read it?

20          Q       Yes, please.

21          A       Sure. "I think one would expect the  
22 application -- the primary application processor to  
23 ultimately receive data from a sensor and transmit data --  
24 through some complicated path and a number of components --  
25 to an actuator."

1 Q Is that testimony still true and accurate today?

2 A Yes.

3 Q That's true with respect to both the UL20 and  
4 the LG Nexus units; correct?

5 A Yes.

6 Q You also have offered arguments with respect to  
7 the "otherwise" clause regarding the domestic industry  
8 products; correct?

9 A Yes.

10 Q And is it fair to say that your disagreement  
11 with Dr. Abowd is the same disagreement that you have with  
12 him with respect to infringement?

13 A Yes.

14 Q Do you offer any different or distinct arguments  
15 at all with respect to the domestic industry products on  
16 the "otherwise" clause that you didn't offer already with  
17 respect to infringement?

18 A No.

19 Q Could we please display claim 12 on the screen  
20 of the '710 patent. Now, the plain meaning of the term  
21 "command" in the context of the '710 patent is an  
22 instruction to a computer program that causes an action to  
23 be carried out; correct?

24 A Yes.

25 Q And one of the problems that the inventors of

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202-347-3700

1 the '710 patent were trying to solve was letting a user  
2 know if the command that they intended to execute had  
3 actually been carried out; correct?

4 A I mean, that among other things, yes. The  
5 status of the operation was the intent here, to be  
6 communicated to the user, yes.

7 Q And, for example, you would agree that one of  
8 the things that the '710 patent was trying to address was  
9 that confirmation of a command could be beneficial in  
10 trying to solve the problem of letting a user know if the  
11 function that they intended to execute indeed was executed;  
12 correct?

13 A That would be one form of status, yes.

14 Q And claim 12, in fact, captures what we have  
15 just been discussing, by requiring that the first haptic  
16 effect for this dependent claim provide "information on the  
17 status of the operation"; correct?

18 A Yes.

19 Q An example of an operation that's provided in  
20 the '710 patent is downloading an application on a cell  
21 phone; correct?

22 A I believe so, yes.

23 Q And an example of information on the status of  
24 the operation that the '710 patent provides is a haptic  
25 indication when the download is complete; correct?



1           A       Yes.

2           Q       And in that situation described by the '710  
3 patent, the command is the instruction in the code to  
4 download and the operation is the actual download; correct?

5           A       It's the execution of that function or command,  
6 yes.

7           Q       The execution of the download; correct?

8           A       Yes.

9           Q       An example of a command is an instruction to  
10 display an action menu; correct?

11          A       Yes.

12          Q       And in the Apple accused -- you know what, let's  
13 go ahead and go on the Apple confidential record.

14                   JUDGE BULLOCK: On the confidential record.

15                   (Confidential session follows.)

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1 OPEN SESSION CONTINUED

2 BY MS. GLASSER:

3 Q Now, sir, you are not presenting any opinion  
4 that there exists prior art which anticipates the '710  
5 patent; correct?

6 A Yes.

7 Q You are presenting obviousness-only opinions;  
8 correct?

9 A Yes, that is correct.

10 Q And we spoke a moment ago about the fact that  
11 you read the '710 patent claim 1 to require a binary logic  
12 structure of some kind; correct?

13 A Among other things, yes.

14 Q One of the other things that you read the '710  
15 patent to require is that the first and second haptic  
16 effects that correspond to the two branches of the binary  
17 logic structure must be distinct enough to be able to  
18 communicate two paths to the user; correct?

19 A Yes, the first and second have to be different.

20 Q And not only different, they have to be distinct  
21 enough to actually communicate to the user that there are  
22 the two distinct paths; correct?

23 A Okay, yes.

24 Q Can we please display figure 9 of the Martin  
25 reference, JX-0005 at page 13.

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202-347-3700

1           What we're looking at here is figure 9, which  
2   supplies the basis for your opinion regarding Martin, this  
3   figure and some of the text describing the figure; correct?

4           A       Yes.

5           Q       We've highlighted the function column there.

6                   Do you see that?

7           A       Yes, I do.

8           Q       And your contention is that the function entries  
9   in figure 9 correspond to the commands of the '710 patent;  
10   correct?

11          A       Yes, the command here is the function, yes.

12          Q       Now, table 9 also has a column entitled "Tactile  
13   Sensation," which lists 23 effects; correct?

14          A       Yes.

15          Q       You didn't identify in your direct testimony  
16   anything in Martin discussing the sensations being  
17   sufficiently distinct to communicate the binary paths;  
18   correct?

19          A       I believe each one of these sensations is  
20   distinct. I mean, it's -- they're different sensation  
21   essentially.

22          Q       And in forming your opinion, I think what you're  
23   saying is you made the assumption that because they had  
24   different numbers, they must be distinct. Is that fair?

25          A       I mean, that and as well as what the spec -- or

1     what this patent is intended to do at the high level  
2     informs me that these are distinct, yes.

3           Q       Did you make the assumption that the fact that  
4     the sensations are given each their own number meant that  
5     they were sufficiently distinct to distinguish different  
6     paths to the user?   Yes or no?

7           A       Yes, that would have been obvious.   These would  
8     have been distinct sensations.

9           Q       Would you agree that in Martin, each of the  
10    haptic effects, the tactile sensations listed, can be the  
11    same or different?

12          A       No, they're different.

13          Q       So as you read Martin, you read it  
14    inconsistently with the viewpoint that the tactile  
15    sensations in Martin can be the same or they can be  
16    different.   Is that a fair statement, yes or no?

17          A       I cannot answer that.

18          Q       Is the opinion that you render regarding Martin  
19    consistent or inconsistent with the statement I am about to  
20    make?   In Martin, the haptic effects can be the same or  
21    they can be different.

22          A       I suppose they can be the same, but I believe  
23    it's the more likely -- or the way it would have been  
24    understood by a person skilled in the art is that they are  
25    distinct.

1           Q       A person of ordinary skill in the art reading  
2 Martin appreciates that the tactile sensations can all be  
3 the same; correct?

4           A       Again, I think perhaps. But the more logical  
5 interpretation would be that they're distinct. I mean, in  
6 some implementations, one might choose to make some of them  
7 the same, I suppose. But the natural reading of the patent  
8 would suggest that they're distinct.

9           Q       And the reason -- the way in which you read the  
10 patent for purposes of your analysis is that the haptic  
11 effects in this column "Tactile Sensation" are not the  
12 same; correct?

13          A       Well, certainly sensation 22, for instance,  
14 would be distinct from sensations 1 through 21. Some of  
15 the sensations 1 through 21 may be the same.

16          Q       You reviewed the Court's claim construction  
17 order in connection with your opinions as it relates to the  
18 construction of the '710 patent; correct?

19          A       Yes.

20          Q       Did you review the portion of the Court's claim  
21 construction regarding the '260 patent?

22          A       I don't recall reviewing that, no.

23          Q       As you sit here now, do you recall whether or  
24 not you considered the Court's construction of the '260  
25 patent in formulating your opinions about whether or not

1 Martin anticipates -- or renders obvious the '710 patent?

2 A No, I did not.

3 Q All right. So going back to your viewpoint that  
4 in order to render obvious the '710 patent, we are to  
5 assume that the function heading -- that the entries under  
6 the function heading in figure 9 are the commands of the  
7 '710 patent.

8 Let's look at the very first entry in that row.  
9 It's entitled "search"; right?

10 A Yes.

11 Q And under your theory, the function entry  
12 identified as search is a command associated with the  
13 indicated user input; correct?

14 A Yes, it's a function of the device.

15 Q And a command, as I think you stated earlier, is  
16 an instruction to a computer program that actually causes  
17 an action to be carried out; correct?

18 A Yes.

19 Q All right. Let's see how that maps onto what  
20 the Martin patent says about the search entry. Can we  
21 split the screen and show -- still have this up here --  
22 yes, perfect. This is showing from column 15, lines 13  
23 through 45. And you see here that column 15, lines 30  
24 through 45 are referring to figure 9?

25 A Yes.

1           Q       And what's described here with respect to the  
2       search entry in the function column is that this is  
3       associated with "a user simply searching or feeling for the  
4       location of the desired button or key."

5                   Are you with me so far?

6           A       Yes.

7           Q       And it goes on to state, "therefore, the  
8       controller does not provide a function input to the  
9       electronic device."

10                  Did I read that correctly?

11          A       Yes.

12          Q       So for this entry in the function column,  
13       there's actually no command that executes in the electronic  
14       device; correct?

15          A       No, I disagree with that.

16                  JUDGE BULLOCK:   Okay.   Let's take our lunch  
17       break.   We'll come back at 1:30.

18                  (Whereupon, at 12:28 p.m., the hearing was  
19       recessed, to be reconvened at 1:30 p.m. this same day.)

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1                                   AFTERNOON SESSION                   (1:31 p.m.)

2   Whereupon,

3                                   TONY GIVARGIS

4   resumed the stand and, having been previously duly sworn,  
5   was examined and testified further as follows:

6                   JUDGE BULLOCK:   Back on the record.

7                   Please proceed.

8                   MS. GLASSER:   Thank you, your Honor.

9                   CROSS-EXAMINATION (Continued)

10                  BY MS. GLASSER:

11           Q       Could we please put back up on the screen Figure  
12   9 of Martin.

13                  Now, referring to the bottom of the Martin  
14   Figure 9, you would agree that there are two entries on the  
15   table where there is no "function" at all; correct?

16           A       I mean, in this table, those two entries do not  
17   have a function in that column, yes.

18           Q       And the two entries that don't have a function  
19   or are not listed as having any corresponding function,  
20   they are labeled "ambiguous" and "function failure,"  
21   correct?

22           A       Yes.

23           Q       And you'd agree that the sensations  
24   corresponding to those entries have nothing whatsoever to  
25   do with functions; correct?

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202-347-3700



1           A       No, I don't agree with that.

2           Q       Let's read from your deposition at page 148,  
3 lines 14 through 24.

4                   "Question: Okay. Which functions are only --  
5 which functions are not output when the function is  
6 complete?

7                   "The witness: If you look at Figure 9, there  
8 are two table entries where there is no function." Let me  
9 stop there for a moment. That's the ambiguous and function  
10 failure that you were referring to?

11          A       Yes.

12          Q       And you go on to testify, "and those are  
13 examples of sensations that have nothing to do with  
14 functions or pressure or location," correct? Did I read  
15 that correctly?

16          A       Yes.

17          Q       Now, the Court has not construed the language of  
18 claim 12, and so it carries its plain and ordinary meaning;  
19 correct?

20          A       Yes.

21          Q       And I have one question a little out of sequence  
22 about the Apple-accused products. I don't think it  
23 requires confidential information, but if you're not able  
24 to answer it without doing so, let us know and we'll go on  
25 the confidential record.

1           A       Okay.

2           Q       Would you agree that the accused products and  
3   the domestic industry products are integrated devices in  
4   which each component is reachable by any other component?  
5   Yes or no?

6           A       I would say most components are reachable, yes.  
7                   (Confidential session follows.)

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202-347-3700

1 OPEN SESSION CONTINUED

2 BY MR. WILLIAMS:

3 Q Dr. Givargis, you provided some -- did you  
4 provide some opinions in this case regarding the '710  
5 patent?

6 A Yes.

7 Q Have you formed any opinions in this case  
8 regarding the '051 patent?

9 A None.

10 Q Have you performed any analysis of the meaning  
11 of any claim terms in the claims of the '051 patent?

12 A I have not.

13 MR. WILLIAMS: No further questions, your Honor.

14 MS. GLASSER: No further questions, your Honor.

15 MS. MURRAY: Your Honor, the Staff has no  
16 further questions.

17 JUDGE BULLOCK: Thank you, sir. You are  
18 excused.

19 (Witness excused.)

20 JUDGE BULLOCK: Let's go off the record, prepare  
21 for our next witness. When we return, we'll be on the  
22 public record.

23 (Discussion off the record.)

24 JUDGE BULLOCK: Back on the record.

25 MS. GIBSON: Thank you, your Honor.

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202-347-3700

1           Two housekeeping matters. First, during a small  
2   portion of Mr. Davies' testimony, some of the answers the  
3   witness gave revealed Apple confidential information, so  
4   we've conferred with Immersion and worked it out with the  
5   court reporter that we would have those particular portions  
6   on the confidential record.

7           JUDGE BULLOCK: Okay. Did you talk to Staff as  
8   well?

9           MS. GIBSON: No, I have not had the opportunity  
10   to talk to the Staff yet.

11          MS. MURRAY: The Staff has no objection as long  
12   as the parties are in agreement, your Honor.

13          JUDGE BULLOCK: Okay. All right. Then those  
14   corrections can be made.

15          You had another one?

16          MS. GIBSON: Yes. We are prepared to offer  
17   certain exhibits into evidence and Mr. Anderson will  
18   address that.

19          JUDGE BULLOCK: Okay.

20          MR. ANDERSON: Good afternoon, your Honor. We  
21   just have some exhibits to move in through some of the  
22   testimony that was offered yesterday.

23          JUDGE BULLOCK: Okay.

24          MR. ANDERSON: May I approach?

25          JUDGE BULLOCK: Please. Okay. I have a

1 four-page document entitled "Index of Exhibits for  
2 Dr. Blake Hannaford." All of the exhibits on this document  
3 are received in evidence.

4 (Exhibits received here to be listed in index.)

5 JUDGE BULLOCK: I have a five-page document  
6 entitled "Index of Exhibits for Majid Sarrafzadeh. All of  
7 the exhibits listed on this document are received in  
8 evidence.

9 (Exhibits received here to be listed in index.)

10 JUDGE BULLOCK: Finally, I have a four-page  
11 document entitled "Index of Exhibits for Richard Mihran."  
12 Those exhibits are received in evidence.

13 (Exhibits received here to be listed in index.)

14 MR. ANDERSON: Thank you, your Honor.

15 JUDGE BULLOCK: Thank you.

16 MR. CUNNINGHAM: Good afternoon, your Honor.

17 JUDGE BULLOCK: Good afternoon.

18 MR. CUNNINGHAM: Our next witness to be called  
19 is Dr. Thomas Vander Veen.

20 Whereupon,

21 THOMAS VANDER VEEN

22 was called as a witness and, having first been duly sworn,  
23 was examined and testified as follows:

24 JUDGE BULLOCK: Thank you. Please be seated.

25 DIRECT EXAMINATION

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202-347-3700

1 BY MR. CUNNINGHAM:

2 Q Good afternoon, Dr. Vander Veen.

3 A Good afternoon.

4 Q Would you please locate a binder labeled  
5 RX-102C.

6 A I have it.

7 Q Is this your direct witness statement that you  
8 submitted in this case?

9 A Yes, it is.

10 Q And if you'll look at the page ending in .64.

11 A Okay.

12 Q Is that your signature, sir?

13 A Yes, it is.

14 Q And does this witness statement reflect your  
15 answers to questions from counsel?

16 A Yes, it does.

17 MR. CUNNINGHAM: Your Honor, I offer RX-102C  
18 into evidence.

19 MS. CARSON: No objection, your Honor.

20 MS. MURRAY: No objection, your Honor.

21 JUDGE BULLOCK: Exhibit RX-102C is received in  
22 evidence.

23 (Exhibit RX-102C received.)

24 MR. CUNNINGHAM: At this time, I offer  
25 Dr. Vander Veen as an expert in economics in the evaluation

1 of public interest, remedy and domestic industry.

2 JUDGE BULLOCK: Okay.

3 BY MR. CUNNINGHAM:

4 Q Now, could you take a look at the other binder  
5 in front of you, RX-103C, please.

6 A I have it.

7 Q Is this your rebuttal witness statement?

8 A Yes, it is.

9 Q And if you look at the page ending in .36, is  
10 that your signature?

11 A Yes, it is.

12 Q Are these your answers to questions from  
13 counsel?

14 A Yes.

15 MR. CUNNINGHAM: I'd offer RX-103C into  
16 evidence, your Honor.

17 MS. CARSON: No objection, your Honor.

18 MS. MURRAY: No objection, your Honor.

19 JUDGE BULLOCK: Exhibit RX-103C is received in  
20 evidence.

21 (Exhibit RX-103C received.)

22 MR. CUNNINGHAM: No further questions of the  
23 witness at this time, your Honor.

24 MS. CARSON: Good afternoon. Rebecca Carson for  
25 Complainant Immersion.

1 CROSS-EXAMINATION

2 BY MS. CARSON:

3 Q Good afternoon, Dr. Vander Veen.

4 A Good afternoon.

5 Q You provided opinions in this case on the issues  
6 of domestic industry, public interest and bonding; correct?

7 A That's correct.

8 Q I'd like to start by talking about your opinions  
9 relating to economic domestic industry.

10 A Okay.

11 Q Now, you would agree that in assessing the  
12 domestic industry factors, one needs to understand what is  
13 being asserted as the basis for the domestic industry;  
14 correct?

15 A That's part of the analysis, yes.

16 Q You would describe the industry that Immersion  
17 operates in as being haptic technology for electronic  
18 devices; correct? Yes or no?

19 A I'm not sure what you mean by industry in that  
20 sentence.

21 Q So yes or no?

22 A I can't answer that question as you stated it.

23 Q You do not understand the word "industry"?

24 A I'm not sure how you're using it. If you're  
25 using it as a generic term in terms of industry or industry

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202-347-3700



1 classification, domestic industry. There's many ways that  
2 you may mean industry and I just want to make sure I  
3 understand what you mean.

4 Q You have no dispute with the fact that Immersion  
5 operates in the field of haptic technology; correct?

6 A That's correct.

7 Q And you have no dispute that Immersion produces  
8 haptic software; correct?

9 A That's correct.

10 Q So you would describe the industry that  
11 Immersion operates in as being haptic technology for  
12 electronic devices; correct? Yes or no?

13 A Again, a similar issue related to --

14 Q So I asked you to answer the question yes or no.

15 A I can't answer that without further  
16 clarification what you mean by industry.

17 Q Okay. If we could see your deposition at page  
18 100, lines 10 to 15. So the question here is, "how would  
19 you describe the industry that Immersion operates in?

20 "Answer: I don't know that I've defined the  
21 industry that Immersion operates in. I would describe it  
22 as being haptic technology for electronic devices."

23 Did I read that correctly?

24 A Yes, I believe you did.

25 Q And you stand by your testimony from your

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202-347-3700

1 deposition?

2 A Yes, I do.

3 Q You did not research whether there were other  
4 haptic software providers; correct? Yes or no?

5 A That's correct.

6 Q You also did not perform any quantitative  
7 analysis of the significance or substantiality of  
8 Immersion's investments in the context of just haptic  
9 software; correct? Yes or no?

10 A Yes, that's correct.

11 Q It is your belief that if a demo unit is made or  
12 used or sold in the United States, then that would be a  
13 factor in favor of saying it is an article protected by the  
14 patent; correct? Yes or no?

15 A That's correct.

16 Q It is also your belief that if there is evidence  
17 that Immersion's demo units were made in the United States,  
18 that would resolve the issue of whether or not they are  
19 domestic; correct? Yes or no?

20 A I'm sorry, could you repeat the question?

21 Q It is your belief that if there is evidence that  
22 Immersion's demo units were made in the United States, that  
23 would resolve the issue of whether or not they are  
24 domestic; correct? Yes or no?

25 A I think I would answer that that element of it,

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202-347-3700

1     yes.

2           Q       If we could pull up your rebuttal witness  
3     statement, which is RX-103C, and turn to page .12. I want  
4     to direct your attention to question and answer 22 here and  
5     the highlighted portion.

6                    So you testified here that "as of the close of  
7     fact and expert discovery, I was aware of no evidence in  
8     the record that any particular demo unit was made, used,  
9     offered for sale, or sold in the U.S. as of the time of the  
10    filing of the complaint, with the exception of a marketing  
11    demonstration at CES in Las Vegas."

12                   Did I read that correctly?

13          A       I believe you did, the portion of the sentence  
14    you read.

15          Q       And that's your testimony under oath; correct?

16          A       Yes, that's correct.

17          Q       Now, you considered Immersion's responses to the  
18    Staff's interrogatory requests when you were forming your  
19    opinions; correct?

20          A       Yes, I believe I did.

21          Q       And in particular, you considered Immersion's  
22    response to Staff's Interrogatory Number 8; correct?

23          A       I didn't memorize the numbers. I don't know  
24    precisely what number 8 is.

25          Q       Okay. If we could pull up once again your

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202-347-3700

1     rebuttal -- let's actually pull up your rebuttal expert  
2     report and go to -- that's CX-3533C.0067.

3             And do you see there that that item that's  
4     highlighted, that says "Complainant Immersion corporation's  
5     supplemental responses to Staff's interrogatory numbers  
6     4-8," and then there's some other numbers there as well?

7             A       I see that.

8             Q       So does that refresh your recollection that you  
9     considered Immersion's response to Staff's Interrogatory  
10    Number 8 in connection with your analysis?

11            A       It was among the documents that I considered,  
12    yes.

13            Q       Immersion's response to Interrogatory Number 8  
14    states, "although Immersion does not mass produce mobile  
15    phones and other electronic devices, it creates its own  
16    prototype devices, often called demonstration units, in its  
17    San Jose facility," correct? Yes or no?

18            A       If you're representing that that's what you're  
19    reading, then that's what it states. I certainly didn't  
20    memorize it, so I can't confess -- state that.

21            Q       I'd ask that you respond to my questions yes or  
22    no when I request that. Do you understand?

23                    MS. MURRAY: Your Honor, I'm going to object to  
24    this question. Immersion is reading its own interrogatory  
25    responses into the record. The witness has already said he

1 doesn't have the answer memorized.

2 MS. CARSON: So I'm using the interrogatory  
3 response as impeachment with respect to the statements that  
4 were made in the expert's witness statement.

5 MS. MURRAY: The expert said that he didn't  
6 know. There's nothing to impeach here.

7 MS. CARSON: Your Honor, the witness has said  
8 that he wasn't aware of any evidence in the record as of  
9 the time of his witness statement or as of the time of the  
10 close of fact and expert discovery, and I am trying to show  
11 that there was, indeed, evidence in the record.

12 JUDGE BULLOCK: Okay. I'm going to allow the  
13 question, since we're using these as impeachment.

14 BY MS. CARSON:

15 Q So if we could pull up RX-2280C at page 63. And  
16 do you see, sir, there it says, "although Immersion does  
17 not mass produce mobile phones and other electronic  
18 devices, it creates its own prototype devices (often called  
19 demonstration units) in its San Jose facility"?

20 Did I read that correctly?

21 A I believe you did.

22 Q That was Immersion's interrogatory response to  
23 the Staff's interrogatory number 8; correct?

24 A I'll take your representation.

25 Q And that was evidence that was in the record as

1 of the time you completed your expert report; correct?

2 A The interrogatory response would have been at  
3 the time of my report, yes. Whether that's considered  
4 evidence or not, I don't know. That's a legal question.

5 Q Immersion's San Jose facility is in the United  
6 States; correct?

7 A Yes.

8 Q And, in fact, the offices that Immersion has in  
9 San Jose are its headquarters, correct?

10 A I believe that's correct.

11 Q And it has had offices in San Jose since its  
12 founding in 1993; correct?

13 A I don't know that for a fact.

14 Q Immersion currently has over 40,000 square feet  
15 of office space in San Jose; correct? Yes or no?

16 A I don't know the answer to that.

17 Q The majority of Immersion's employees work out  
18 of the San Jose office; correct?

19 A I believe based on Mr. Green's representation,  
20 it would be a little bit over half, that would be correct.

21 Q And over half is a majority; correct?

22 A Yes, a little bit over half.

23 Q For example, in its San Jose office, Immersion  
24 has employees who work in the engineering department;  
25 correct?

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202-347-3700

1           A       Yes.  There's an engineering, research, and  
2   development and design department.

3           Q       And there are also employees in Immersion's San  
4   Jose office who work in engineering services; correct?

5           A       That's correct.

6           Q       And Immersion also has employees in its San Jose  
7   office who work in user experience; correct?

8           A       Yes, I believe that's correct.

9           Q       And it also has employees in its San Jose office  
10  who work in product management; correct?

11          A       Yes, that's correct.

12          Q       You agree that Immersion's business is largely  
13  focused on the TouchSense products; correct?  Yes or no?

14          A       I believe that's correct.

15          Q       You agree that looking at Immersion's  
16  investments in the TouchSense software are relevant to the  
17  domestic industry analysis; correct?  Yes or no?

18          A       Yes, that's correct.

19          Q       You would also agree that investments related to  
20  the article protected by the patent are relevant whether or  
21  not there are multiple components to that product; correct?  
22  Yes or no?

23          A       Yes, that's correct.

24          Q       So if you could direct you now to questions 45  
25  and 46 of your rebuttal witness statement, which are at

1 103C.25 and 26.

2 One of the issues that you raised here with  
3 Mr. Green's analysis is that he allegedly relies on  
4 marketing expenditures in his analysis; correct?

5 A That's correct.

6 Q And more specifically, later on in the response  
7 to question 46, you state, "any investments related to  
8 product management employees on which Mr. Green relies to  
9 support his domestic industry opinions are not properly  
10 allocated because they are marketing expenditures."

11 That was your testimony; correct?

12 A Yes, that's correct.

13 Q You would agree that marketing activities are  
14 activities related to either the development of materials  
15 to advertise and sell a product, advertising expenditures  
16 or the direction of advertising; correct? Yes or no?

17 A Those are examples of marketing activities, yes.

18 Q Now, you reviewed Mr. Modarres's witness  
19 statement in connection with submitting your witness  
20 statement; correct?

21 A That's correct.

22 Q And Mr. Modarres is -- was the senior product  
23 manager at Immersion responsible for the TouchSense  
24 products; correct?

25 A I'll accept your representation that was his

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202-347-3700



1 title. I didn't memorize his exact title, but I believe  
2 that's correct.

3 Q Mr. Modarres has a BE in mechanical engineering  
4 and a PhD in electromechanical and computer engineering;  
5 correct?

6 A I don't know.

7 Q So if we could pull up Mr. Modarres's witness  
8 statement at question 4, which is CX-2311C.0002.

9 Does this refresh your recollection as to  
10 Mr. Modarres's background?

11 A He describes his educational background in  
12 question 4.

13 Q And he describes that as consisting of a BE in  
14 mechanical engineering and a PhD in electromechanical and  
15 computer engineering; correct?

16 A That's correct.

17 Q And you relied on his witness statement;  
18 correct?

19 A I -- I reviewed, and it was a part of the  
20 information that I reviewed, yes.

21 Q Mr. Modarres is more knowledgeable about what  
22 the product management team at Immersion does than you are;  
23 correct? Yes or no?

24 A Yes, I believe he would be.

25 Q Mr. Modarres testified that even though product

1 management is technically part of Immersion's marketing  
2 department, its functions are not purely marketing;  
3 correct? Yes or no?

4 A I believe there was testimony along those lines.

5 Q And, in fact, Mr. Modarres testified that the  
6 product management team at Immersion works very closely  
7 with the engineering-related departments to develop  
8 Immersion's software and High Value Use Cases; correct?  
9 Yes or no?

10 A If you want to show me a particular passage,  
11 that's fine. I didn't memorize his statements, but that's  
12 possible that he stated that.

13 Q Sure. If we could take a look at question and  
14 answer 69 from Mr. Modarres's witness statement. This is  
15 at CX-2311C.0030.

16 Does this refresh your recollection that  
17 Mr. Modarres testified that the product management team at  
18 Immersion works very closely with the engineering-related  
19 departments to develop Immersion's software and High Value  
20 Use Cases?

21 A I see the statement here.

22 Q According to Mr. Modarres, one of the specific  
23 engineering groups that the product management team at  
24 Immersion is in very close collaboration with is the  
25 engineering services team; correct?

1           A       Again, if that's a statement that's in his  
2       witness statement, then that's what he testified to.

3           Q       The engineering services function at Immersion  
4       helps customers integrate Immersion's technology; correct?

5           A       Again, I -- if there's a statement, that  
6       Mr. Modarres has stated that, then that's his testimony.

7           Q       You agree that engineering work to customize a  
8       product for a customer is generally not considered  
9       marketing activity; correct?   Yes or no?

10          A       That's correct.

11          Q       There are multiple methodologies one can employ  
12       to allocate activities to the domestic industry product.  
13       Fair statement?

14          A       That's correct.

15          Q       One way to allocate employee investments is to  
16       allocate based on employee time; correct?   Yes or no?

17          A       Yes, that's one method one could use.

18          Q       And you agree that if the records are  
19       sufficient, time records can be a reasonable allocation of  
20       employee time; correct?   Yes or no?

21          A       Correct.

22          Q       You did not dispute Mr. Green's methodology at a  
23       high level of using project codes to allocate investments;  
24       correct?   Yes or no?

25          A       That's correct.   At a high level, I did not

1     dispute it.

2           Q       And you also did not provide an alternative  
3     allocation of the numbers presented by Mr. Green; correct?  
4     Yes or no?

5           A       That's correct.

6           Q       All right. I'd like to move on now to your  
7     opinions on the public interest issue.

8           A       Okay.

9           Q       When you are considering the impact of an  
10    exclusion order on the public interest, it's important to  
11    have an understanding of which particular products are  
12    accused; correct? Yes or no?

13          A       Yes, that's correct.

14          Q       At the time of your deposition, you did not know  
15    whether the MacBook Air was an accused product; correct?

16          A       I don't recall the exact question. I don't  
17    recall.

18          Q       If we could pull up your deposition at page 202,  
19    lines 6 to 11. This reads.

20                   "Question: Is the MacBook Air an accused  
21    product?

22                   "Answer: Well, I don't know. The MacBook and  
23    MacBook Pro are. If it's -- whether it includes the  
24    MacBook Air, I'm not sure. If this precise specific  
25    product is part of the accused products, I don't know."

1                   Did I read that correctly?

2           A        I believe you did.

3           Q        Now, when you formed your opinions regarding  
4 public interest and at the time of your deposition, you did  
5 not know if the vibrating notifications or alerts were  
6 accused features in this case; correct?

7           A        That's correct.

8           Q        At the time of your deposition, you also could  
9 not describe what the Quick Actions feature is; correct?

10          A        That's correct, at a technical level.

11          Q        Let's turn to page 26 of your witness statement,  
12 which is RX-102C.29. If we could take a look a little  
13 above that at the heading.

14                   The heading here of section 5 states, "an  
15 exclusion order would significantly reduce access to  
16 devices used in education." Correct?

17          A        That's correct.

18          Q        All of the examples of educational uses that you  
19 include in your testimony in response to question 68 on  
20 this issue relate to laptops; correct?

21          A        I believe that's correct.

22          Q        So you do not provide any testimony in this  
23 section about smartphones or smart watches in the  
24 educational context; correct?

25          A        That's correct.

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1           Q       If an exclusion order issues, Apple would still  
2     be able to import MacBook Air computers without the Force  
3     Touch trackpad; correct?

4           A       I believe that's correct. Of course it depends  
5     on what the exact language of the exclusion order would be.  
6     But I believe that's generally correct.

7           Q       And that's because the MacBook Air are not  
8     actually an accused product in this case; correct?

9           A       That's correct, as you described it.

10          Q       You do not have an opinion on whether MacBook  
11     Airs would be a suitable substitute for the MacBook Pro  
12     with haptics for educational purposes; correct? Yes or no?

13          A       I'm sorry, could you repeat the question?

14          Q       Sure. You do not have an opinion on whether  
15     MacBook Airs would be a suitable substitute for the MacBook  
16     Pro with haptics for educational purposes; correct? Yes or  
17     no?

18          A       That's correct, I did not make that precise  
19     comparison.

20          Q       Just to return to an earlier line of  
21     questioning, when we were speaking about Mr. Modarres's  
22     testimony, you don't have any reason to dispute  
23     Mr. Modarres's testimony with respect to the functions of  
24     the product management team at Immersion; correct?

25          A       I'd have to review exactly what his statements

1     were, and if there were any -- any inconsistencies that  
2     arose from it. But certainly, that's his testimony.

3           Q       And you again agree that Mr. Modarres is more  
4     knowledgeable than you about what the product management  
5     team at Immersion does; correct?

6           A       He certainly has more access to the team than I  
7     do.

8                   (Confidential session follows.)

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1 OPEN SESSION CONTINUED

2 CROSS-EXAMINATION

3 BY MS. MURRAY:

4 Q Good afternoon.

5 A Good afternoon.

6 Q There's a difference between haptic  
7 notifications and haptic feedback. Would you agree?

8 A Yes.

9 Q And which is at issue in this case?

10 A I understand here would be haptic feedback.

11 Q You provide in your witness statement some  
12 examples of communities that would -- that you allege would  
13 be impacted by an exclusion order, one of those being the  
14 special needs community.

15 Do you recall that?

16 A Yes, I do.

17 Q And do you recall any particular applications  
18 that the special needs community relies on in the accused  
19 products?

20 A There are a number that I listed in my witness  
21 statement, and we can look at that if you'd like.

22 Q One of those would be Speak Screen, does that  
23 sound familiar?

24 A Yes.

25 Q Voiceover?

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1           A       Yes.

2           Q       Siri?

3           A       Yes.

4           Q       Facetime?

5           A       That's correct.

6           Q       Grayscale?

7           A       That's correct.

8           Q       Monoaudio?

9           A       I believe that's correct.

10          Q       Magnifier?

11          A       Yes.

12          Q       Now, can you tell me which of those apps rely on

13   haptic feedback in response to a user's contact with a

14   touchscreen or trackpad?

15          A       I don't know that any of those functionalities

16   or features involve a haptic feedback.

17          Q       Can you identify a single feature in the accused

18   products used by the special needs community that would be

19   affected by removal of haptic feedback from the accused

20   products?

21          A       Not sitting here right now, I can't think of a

22   specific functionality. Again, the context of my analysis

23   was to look at what would be the impact of an exclusion of

24   the accused product, not the exclusion of functionalities.

25          Q       Another community that you identify is the

1 medical community; correct?

2 A That's correct.

3 Q And one of the applications that -- or features  
4 that the medical community uses is called HealthKit; is  
5 that right?

6 A Yes, that's correct.

7 Q Another one is ResearchKit?

8 A Yes.

9 Q And those are software platforms?

10 A I believe that's fair.

11 Q Now, the U.S. Food and Drug Administration does  
12 not consider Apple's devices to be medical devices, does  
13 it?

14 A I don't believe so.

15 Q These are just devices that are used by people  
16 who happen to be medical professionals; correct?

17 A Yes, that's correct.

18 Q Which medical apps rely on haptic feedback in  
19 response to a user's contact with a touchscreen?

20 A Again, it's a similar answer. I wasn't focusing  
21 on what functionalities are impacted by -- or that include  
22 haptic feedback. Again, it's what is the impact on  
23 particular users of the exclusion of the accused products.

24 Q And another community you identify is first  
25 responders; correct?

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1           A       That's correct.

2           Q       And there are various apps that use vibration  
3 notifications for first responders; correct?

4           A       Those were in the examples, yes.

5           Q       Are you aware of any public-safety-related apps  
6 that use haptic feedback?

7           A       Again, it's a similar answer. The focus of my  
8 analysis was on the impact of the exclusion of the accused  
9 products, not the accused functionality.

10          Q       Okay. One more. The education community. You  
11 recall expressing opinions about that community?

12          A       Yes, I do.

13          Q       Are you aware of any education-related apps that  
14 use haptic feedback as opposed to vibration notifications?

15          A       Again, it's a similar answer. I don't have  
16 specific apps to point to here. The focus of my analysis  
17 was what was the impact of the exclusion of the accused  
18 products.

19          Q       In your view, would a two-month delay in  
20 obtaining a new device constitute a threat to public  
21 welfare?

22          A       I believe that a period of two months would  
23 result in significant disruptions to the market.

24          Q       My question was with regard to public welfare.  
25 Would there be a threat to public health or safety if

1 consumers had to wait a couple of months to get a new Apple  
2 device?

3 A Well, I think it would be a similar disruptive  
4 impact on ability to obtain devices and disruption on those  
5 users. Now, specifically, the impact on public health and  
6 welfare, certainly there would be a delay in the ability to  
7 make use of those devices. But I think it's in the context  
8 of disruptive effects which would occur overall.

9 Q So yes or no, would a two-month delay constitute  
10 a threat to public health and safety?

11 A I don't believe a two-month delay would  
12 constitute --

13 JUDGE BULLOCK: Excuse me, did you want a yes or  
14 no?

15 THE WITNESS: I'm sorry.

16 MS. MURRAY: Yes, I did, your Honor.

17 JUDGE BULLOCK: Yes, no or I can't answer yes or  
18 no.

19 THE WITNESS: No, I don't believe it would.

20 BY MS. MURRAY:

21 Q Now I'm going to read you a statement from  
22 Apple's Form 10-K for the fiscal year ending September  
23 2016. And my question will be whether you agree with the  
24 statement. Do you understand?

25 A Yes.

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1           Q       The statement is, "the markets for the company's  
2 products and services are highly competitive, and the  
3 company is confronted by aggressive competition in all  
4 areas of its business."

5                   Yes or no, do you agree with that statement?

6           A       Yes, I believe that's correct.

7           Q       All right. I'm going to show you a page that I  
8 believe you saw at your deposition. This is also in your  
9 binder as SX-19 in case you can't read that.

10                   SX-19 is an iPhone 7+ environmental report, and  
11 I'd like to draw your attention to the highlighted  
12 sentence, "Apple conservatively assumes a three-year period  
13 for power use by first owners. Product use scenarios are  
14 based on historical customer use data for similar  
15 products."

16                   Do you understand that sentence to mean that  
17 consumer, on average, is expected to use an iPhone 7+ for  
18 approximately three years?

19           A       Yes, I believe that's correct. I think in the  
20 context of this report, they are trying to measure  
21 environmental impacts. And so by saying it's  
22 conservatively assuming, that means that that device would  
23 be around for three years.

24                   But I think in the context of the environmental  
25 report, that's a fair reading of the statement.

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1           Q       And as an environmental report, it would be  
2       conservative to err on the side of shorter use; correct?  
3       That, in fact, it is entirely possible that the consumer  
4       would use it for more than three years?

5           A       No, I think in the context of an environmental  
6       report, where you're talking about the amount of power use,  
7       longer would be conservative, because you're saying how --  
8       how much power is this device going to use. And if it  
9       exists for three years versus two years, that's more power  
10      use.

11                  So I think here being conservative would be a  
12      longer period of time.

13          Q       I see. So if you've got an assumption, a  
14      working assumption, that a consumer is going to use a  
15      product for three years, on average, I understand there are  
16      Christmas rushes and introduction of new products that  
17      generate excitement, but on average, is it fair to say that  
18      about a third of Apple consumers would purchase a new  
19      smartphone in a given year? Given Apple's assumption in  
20      its environmental report?

21          A       I have to think about that, because what you  
22      have happening is people who had prior versions, every  
23      three years -- I'm not sure. So there would be a third --  
24      a turnover of one-third, so one-third of the user base of  
25      Apple products would purchase new products in a given year?

1 Maybe that's right.

2 Q And it follows, then, there's a gross  
3 overgeneralization that on average, in an average two-month  
4 period, so say a period not including Christmas, but an  
5 average two-month period, only 2/36 or 5.6 percent of Apple  
6 consumers would be trying to replace their phones?

7 A So what is the number of Apple users that you're  
8 taking the percent of? I'm sorry. What's the total pool?

9 Q Well, we've got one-third of Apple consumers  
10 purchasing a new smartphone in any given year, so if you've  
11 got three years, 12 months a year, you have 36 months;  
12 correct?

13 A Yes.

14 Q So two of those 36 months would be 2/36ths?

15 A Yes.

16 Q And I'll represent to you that that math works  
17 out to be 5.6 percent.

18 A Well, I'd have to think through the implications  
19 of that. We know that there are -- we could look at the  
20 number of phones, right. So we know that there's six or  
21 seven million iPhones sold per month. I don't know what  
22 the total user base of Apple users is, sitting here right  
23 now. But you could look at it that way and say if there's  
24 6 million phones sold each month, then there are -- and you  
25 can see what the total number of Apple customers is or user

1 base of iPhones and do the math that way, that would  
2 probably be the more accurate way of doing it.

3 Q Let me change subjects slightly and turn to  
4 market shares in the U.S. smartphone market. Market shares  
5 have changed dramatically over the last 10 years when it  
6 comes to smartphones, hasn't it?

7 A Yes, that's true.

8 Q RIM and Palm, for example, have largely  
9 disappeared; is that right?

10 A Yes, that's correct.

11 Q And Apple is a much more significant player in  
12 the smartphone market than it was 10 years ago?

13 A Yes, that's correct.

14 Q Is the smartphone market less competitive today  
15 than it was in, say, 2010?

16 A The smartphone market today is very different  
17 than it was in 2010. The size of the smartphone market  
18 relative to all cell phones, feature phones, was much  
19 smaller. So that market has changed pretty dramatically  
20 since 2010.

21 I don't know if you could say it's more or less  
22 competitive. Certainly, I think there still remains a  
23 great deal of competition for the marginal user, the user  
24 that may decide to select or to change platforms.

25 But we also know that there is a significant

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1 user base who is sticky to their brand or to the platform.  
2 And so in that context, yes, there's a high degree of  
3 competition for new users or switching users, but there's  
4 also a large base of consumers who are going to be sticky  
5 to their brand, they're not going to change platforms very  
6 easily.

7 Q Let me focus for a moment on the marginal users  
8 that you just referred to. These would be users that would  
9 be more amenable to switching platforms. Is that what you  
10 were trying to -- is that how you were using that term?

11 A Yes. So I was thinking of there's a set of  
12 consumers who either do not have a smartphone, so they  
13 would be new smartphone purchasers, and then there would be  
14 a category of users who would be more open to switching  
15 between platforms. Those would both be in that category.

16 Q And yet you limited your analysis, didn't you,  
17 to users who would only use high-performance smartphones, I  
18 believe Mr. Davies referred to them as fully functional and  
19 up-to-date smartphones; correct?

20 A That's not correct. I provide analysis of the  
21 high-performance smartphone category as well as all  
22 smartphones.

23 Q So your analysis was based on a different set of  
24 data than Mr. Davies'?

25 A No, there was certainly a category which was the

1 same, we both looked at the high-performance smartphones.  
2 I also included market share data, for example, of Apple or  
3 the accused devices relative to all smartphones, not just  
4 the high-performance smartphones.

5 Q All right. Let's turn back to the market  
6 shares. And we have established that Apple believes that  
7 we currently have a competitive market; correct?

8 A Yes.

9 Q So even if a large player, such as RIM, exits  
10 the market, is it fair to say that it's not necessarily the  
11 result that competitive conditions in the market are  
12 adversely affected for the market as a whole?

13 A If a player like RIM were to exit the market?

14 Q Yes.

15 A That would have a -- given the relative size,  
16 which is very small, and role in the smartphone market,  
17 that would not have a significant impact on competitive  
18 conditions.

19 Q All right. But I was referring -- I was  
20 unclear, I apologize. I was referring to RIM's former role  
21 as a leading player in the market, say, in 2010. And they  
22 have effectively exited the market at this point; isn't  
23 that correct?

24 A Yes, that's correct.

25 Q And yet the market as a whole continues to be

1 competitive; correct?

2 A Well, I think we need to be careful on how we're  
3 thinking about this. Certainly, if we look at what has  
4 happened between, say, 2007 and 2017, that's a period of  
5 time where you would see dramatic change in the performance  
6 of RIM, certainly, the market has been highly competitive.  
7 But there's been dramatic changes.

8 You know, 2007, introduction of the first iPhone  
9 really redefines the smartphone space. And so there's a  
10 lot of upheaval that occurred in that 10-year time period.

11 And so there is competition, but there's also a  
12 lot of upheaval.

13 Contrast that to what we're looking at here, and  
14 what I'm analyzing in my report is not changes that might  
15 happen over a 10-year period but what would be more like an  
16 instantaneous change of removing a very large portion of  
17 the market on a particular day at the issuance of an  
18 exclusion order.

19 So that's a very different dynamic, if you're  
20 looking at an impact that would occur in a very short  
21 period of time, as opposed to changes we see happening over  
22 a 10-year period.

23 Q Not all changes are adverse effects; correct?

24 A No, that's correct. Well -- that's correct.  
25 And then there may be winners and losers.

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202-347-3700

1           Q       All right. You estimate that Apple has a 75  
2 percent share of the smart watch market; correct?

3           A       I believe that's correct.

4           Q       Okay. And that's at question 91 of your witness  
5 statement. That refers to the global market, doesn't it?

6           A       I believe the data we had was globally, not for  
7 U.S. only.

8           Q       All right. I have on the ELMO SX-18, which I  
9 believe you also saw at your deposition?

10          A       Yes, I believe that's correct.

11          Q       This is from the Kantar Worldpanel. Do you see  
12 the highlighted sentence reading "Apple continues to  
13 dominate this segment with a 33.5 percent share"?

14          A       I see the sentence, yes.

15          Q       That would be a more accurate depiction of  
16 Apple's share of the U.S. smart watch market, wouldn't it?

17          A       I'm not sure what the category is that they are  
18 analyzing here. So whether that is the same set of smart  
19 watches or if it's a broader category, it's hard to tell  
20 from this.

21                   But certainly, this represents that -- this is a  
22 data point that, you know, Apple dominated a segment with  
23 about a third of the market, which is a pretty big share.

24          Q       So it would be fair to say that Apple's share of  
25 the U.S. market is much smaller than 75 percent?

1           A       I don't know that for sure. I mean, based on  
2     the data -- I don't know that these are two -- these two  
3     statements are looking at comparable sets of products.

4                   I think in both cases, while 33 percent is a lot  
5     smaller, we're still talking about very significant portion  
6     of the market, the dominant player, as it states here.

7           Q       Now, turning to laptops, you testified that in  
8     the laptop market, Apple provides a competitive  
9     counterweight to at least HP and Dell that no other  
10    portable computer manufacturer provides. Does that sound  
11    familiar?

12          A       Yes, it does.

13          Q       How would an increase in HP and Dell's market  
14    share as the result of an exclusion order harm competition  
15    in the U.S. portable computer market?

16          A       Well, it would -- what we would have here is the  
17    removal of a significant player in the laptop market. And  
18    so -- and certainly, one that has an alternative platform,  
19    being the iOS platform.

20                   So there would be an impact on the laptop market  
21    because there would be, you know, fewer players, and one  
22    that is concentrated in certain segments of the market.

23                   So certainly, for certain segments of the  
24    market, you would see upward price pressure and less  
25    availability of product.

1 JUDGE BULLOCK: Let's take our midafternoon  
2 break, come back at 3:15.

3 (Recess.)

4 JUDGE BULLOCK: Back on the record.  
5 Please proceed.

6 MS. MURRAY: Thank you, your Honor.

7 BY MS. MURRAY:

8 Q So we were discussing HP and Dell's market share  
9 in the event of an exclusion order.

10 Do you recall that?

11 A Yes.

12 Q And it's your opinion that they would gain  
13 market share at Apple's expense if Apple were excluded from  
14 the laptop market?

15 A Yes, I think by definition, if a player is  
16 excluded from the market, the remaining players will gain  
17 market share. It mathematically has to happen that way.

18 Q You referred earlier to the fact that the Apple  
19 laptop has a different operating system.

20 Do you recall that?

21 A Yes.

22 Q And you referred also to, I believe you called  
23 them, sticky consumers, sticky players?

24 A Yes.

25 Q Who are unwilling to change platforms?

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202-347-3700

1           A       That's correct.

2           Q       If Apple consumers do not view non-Apple laptops  
3       to be suitable alternatives, how would HP and Dell gain in  
4       market share if there were an exclusion order?

5           A       Well, definitionally, if you -- if you reduce  
6       the denominator but the numerators stay the same, market  
7       share would go up. So the fact that there's fewer products  
8       in the market, fewer sales being made, by default,  
9       mathematically, those market shares would go up.

10                  I think the issue we have here is that -- so if  
11       anything were to happen, HP and Dell's market shares would  
12       go up. But in the context of these sticky consumers, what  
13       that means is that a brand -- or a platform-conscious  
14       consumer is going to be less likely to switch, so that  
15       means that the availability of alternatives is going to  
16       have less of a mitigating effect of an exclusion order.

17                  And so that platform stickiness, if you will, is  
18       going to mean that any impact, any disruptive impact of an  
19       exclusion order, is going to be longer in this world than  
20       in a world in which there were substitutes that consumers  
21       would -- or alternatives that consumers would readily  
22       switch to.

23           Q       Now, you can't have both, can you? Either Apple  
24       is a competitive counterweight because it's taking sales  
25       away from HP and Dell or Apple's products are not

1     substitutable with other products.  You can't have both,  
2     can you?

3           A       Yes, I think you can.  Again, not all consumers  
4     are the same.  So we have a category of consumers who are  
5     going to be platform-sticky, if you will, that are going to  
6     be less likely to change.  You're going to have other  
7     consumers who will be more likely to change.

8                    So for the consumers that are more likely to  
9     change, it's going to cause a shift in market share.  For  
10    those that are not, of course, it's not.

11                   The more that you have of the sticky platform,  
12    the longer that disruptive effect is going to be, because  
13    there's not going to be an alternative product to come in  
14    and replace the one that's been excluded.

15           Q       An exclusion order won't affect existing  
16    products in the United States; correct?

17           A       Products that have already been sold you mean;  
18    correct?

19           Q       Yes.

20           A       Yes, that's correct.

21           Q       So consumers who prefer Apple products and who  
22    have an Apple product will not be affected by the exclusion  
23    order until the end of life of that product, will they?

24           A       That's correct.  So what it may mean is that a  
25    consumer who has that product and would like to get the



1 next generation will delay the time to when they purchase  
2 the next product.

3 So, again, that's another factor which would  
4 suggest the disruptive effects are going to continue for  
5 longer in this world, where there's a platform of  
6 stickiness.

7 Q Doesn't it, in fact, suggest that there would be  
8 a delay before there would be disruptive effects?

9 A No, I don't think so. Again, there would be --  
10 there would be disruptive effects that occur immediately  
11 because of the dramatic removal of a significant portion of  
12 the market.

13 There are some consumers who would delay their  
14 purchase. Now, that -- that doesn't mean -- that means  
15 that for that consumer, they continue to use the product  
16 they had, and so in a sense, it's not disruptive. But, you  
17 know, think about the retailer where they would have  
18 purchased the product from. The fact that they are taking  
19 longer to buy the product means that they're not buying the  
20 new computer today. It may be sometime in the future.

21 So that means that that disruptive effect, that  
22 lost sale for the retailer, is going to occur today. So  
23 disruptive effects would occur right away.

24 Q So the consumer that delays their purchase, if  
25 Apple is able to reintroduce a new product before that

1 consumer needs to buy a new product, in fact, there is no  
2 disruptive effect on that set of U.S. consumers, is there?

3 A Again, similar answer to before. That would  
4 mean that that consumer is -- has delayed their purchase  
5 and is able to get a replacement product. There's still a  
6 disruptive effect because they're not able to upgrade the  
7 computer when they would have in a world without the  
8 disruptive effect. So they're still being disruptive --  
9 disrupted.

10 Certainly, in terms of the market impact or the  
11 economic impact, those are sales that are not occurring  
12 when they would have occurred, and so that's a disruptive  
13 effect as well.

14 MS. MURRAY: I have no further questions. Thank  
15 you.

16 MR. CUNNINGHAM: Good afternoon, your Honor.  
17 May I proceed?

18 JUDGE BULLOCK: Please.

19 MR. CUNNINGHAM: I'd like to go on the Immersion  
20 confidential record, please.

21 JUDGE BULLOCK: On the confidential record.

22 (Confidential session follows.)  
23  
24  
25

1 OPEN SESSION CONTINUED

2 MR. FOWLER: Your Honor, subject to the seeking  
3 admission of some remaining exhibits, tomorrow morning,  
4 Respondents rest their case at this point.

5 JUDGE BULLOCK: Okay. Thank you.

6 MS. GLASSER: We also have a few exhibits to  
7 enter before the next witness, at your Honor's convenience.

8 JUDGE BULLOCK: Okay.

9 Ready to proceed with the exhibits, sir?

10 MR. PAYNE: Yes, your Honor, Stephen Payne for  
11 Complainant Immersion. Your Honor, there are two sets of  
12 exhibits we'd like to enter today. First, we would like to  
13 move in two lists from previous examinations that have  
14 concluded.

15 May I approach?

16 JUDGE BULLOCK: Please. Okay. I have a  
17 one-page document entitled "Gregory Abowd Supplemental  
18 Index of Exhibits." All of the exhibits listed on this  
19 document are received in evidence.

20 (Exhibits received here to be listed in index.)

21 JUDGE BULLOCK: I have a one-page document  
22 entitled "James Oliver Supplemental Index of Exhibits."  
23 All of the exhibits on this document are received in  
24 evidence.

25 (Exhibits received here to be listed in index.)

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202-347-3700

1           MR. PAYNE: Second, your Honor, Complainant has  
2 an unopposed request to admit a short list of physical  
3 exhibits without a sponsoring witness. What these exhibits  
4 consist of are actual physical devices, a sample of the  
5 accused products in this investigation. So Apple Watches,  
6 iPhones and MacBook devices.

7           The parties have agreed that Immersion may offer  
8 these exhibits without a sponsoring witness and have no  
9 objection to admitting these exhibits into evidence.

10          JUDGE BULLOCK: Okay.

11          MR. PAYNE: May I approach?

12          JUDGE BULLOCK: Yes. Thank you.

13          I have a one-page document entitled "Physical  
14 Exhibits -- Accused Products." All of the exhibits listed  
15 on this one page document are received in evidence.

16          (Exhibits received here to be listed in index.)

17          MR. PAYNE: Thank you, your Honor.

18          JUDGE BULLOCK: Thank you.

19          Are we ready to proceed with our next witness?

20          MS. GLASSER: Yes, your Honor, Immersion calls  
21 Professor Daniel Wigdor to the stand.

22          Whereupon,

23                                 DANIEL WIGDOR

24 was called as a witness and, having first been duly sworn,  
25 was examined and testified as follows:

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202-347-3700

1 JUDGE BULLOCK: Thank you. Please be seated.

2 THE WITNESS: Thank you.

3 DIRECT EXAMINATION

4 BY MS. GLASSER:

5 Q Good afternoon, Dr. Wigdor.

6 A Good afternoon.

7 Q Do you have in front of you CX-3993C?

8 A I do.

9 Q Is this your witness statement?

10 A It is, yeah.

11 Q Could you please turn to page 138.

12 A Okay.

13 Q Do you recognize your signature on that page?

14 A I do, yes.

15 MS. GLASSER: Immersion moves CX-3993C into  
16 evidence.

17 MR. FOWLER: No objections, your Honor.

18 MS. MURRAY: No objection, your Honor.

19 JUDGE BULLOCK: Exhibit CX-3993C is received in  
20 evidence.

21 MS. GLASSER: I tender the witness for  
22 cross-examination.

23 (Exhibit CX-3993C received.)

24 CROSS-EXAMINATION

25 BY MR. FOWLER:

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202-347-3700

1           Q       Good afternoon, Dr. Wigdor. My name is Mark  
2       Fowler. I represent the Respondents. How are you?

3           A       I am well, thank you. Nice to meet you.

4           Q       Thank you.

5                   Now, your direct witness testimony includes  
6       opinions in response to the opinions of Respondents' expert  
7       Dr. Cockburn regarding the invalidity of the '507 patent;  
8       is that correct?

9           A       That is correct, yes.

10          Q       Now, Dr. Cockburn has identified two obviousness  
11       combinations that he opines render obvious the asserted  
12       claims of the '507 patent; is that correct?

13          A       That's right.

14          Q       And one of those combinations is Astala with  
15       Shahoian and the other one is a combination of Toda with  
16       Shahoian; is that right?

17          A       Yes.

18          Q       Now, Dr. Cockburn also asserts that all of the  
19       asserted dependent claims of the '507 patent are invalid  
20       under Section 112 for lack of written description. Is that  
21       true?

22          A       That's right, yeah.

23          Q       Okay. Now, in your direct testimony, you  
24       disagree with Dr. Cockburn as to all three of these  
25       opinions; is that correct?

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202-347-3700

1           A       That's correct, yes.

2           Q       Okay. Now, what I'm going to focus on today, in  
3 the interest of time, is the obviousness combination of  
4 Astala with Shahoian, which are RX-275 and RX-270  
5 respectively. Is that okay?

6           A       Sure, yeah.

7           Q       Okay.

8           A       Is it in this binder here; is that right?

9           Q       You don't need to do anything yet.

10          A       Okay.

11          Q       Soon enough. The Astala patent describes a  
12 touchscreen device where the user can drag and drop items  
13 displayed on the screen; is that correct?

14          A       Yeah. At a high level, yeah.

15          Q       I'm sorry?

16          A       That's right. At a high level. I'm sorry.

17          Q       Now, you're familiar with Astala; is that  
18 correct?

19          A       I am, yes.

20          Q       So let's do this. Let's put up RX-275, which  
21 Astala, and we'll put up Figures 6b to 6d. Could you  
22 please do that. You are familiar with these?

23          A       I am, yes.

24          Q       Astala Figures 6b through 6d show the drag and  
25 drop process; is that right?

1           A       That's fair, yeah.

2           Q       And Figure 6b at the top, the user -- first of  
3   all, a user, can you tell us where the user is doing  
4   something on 6b?

5           A       Sure. So my recollection is that this oval  
6   labeled 732 is where the user's finger is and that they're  
7   about to start interacting or have started interacting with  
8   file 1.

9           Q       Great. In figure 6b, the user is pressing on  
10   what's been labeled the file 1 icon; is that correct?

11          A       I certainly remember at some point during the  
12   process the user performs this sort of press action.  
13   Whether that's happened and is described in 6b in  
14   particular, I don't remember. But certainly in this  
15   sequence, that would happen.

16          Q       Okay. And just to break this down a little bit,  
17   what we're looking at in 6b, 6c and 6d is a display screen;  
18   right?

19          A       That's how it's been described, yeah.

20          Q       And each of these squares that in this instance  
21   on the right have file 1, file 2, file 3 and so forth,  
22   those are icons that are being displayed or images being  
23   displayed on this screen; is that correct?

24          A       That's fair, yeah.

25          Q       Okay. And as you said, the oval represents the



1 user's finger in contact with the screen; is that right?

2 A As I said, that's my recollection, yeah.

3 Q Okay. Now, in Figure 6c, the next figure, the  
4 user has dragged his finger to the directory 2 icon; is  
5 that right?

6 A That matches my recollection, yeah.

7 Q Okay. And in Figure 6d, down at the bottom,  
8 what that indicates is that the file 1 that we saw in 6b  
9 has been moved to directory 2; is that right?

10 A That matches my recollection, yes.

11 Q And one way we know that is that file 1 is no  
12 longer in the right in directory 3; right?

13 A Yes, I believe it's described in the text as  
14 well.

15 Q It's also described in the specification; right?  
16 Correct?

17 A Yes, it is.

18 Q Okay. We're all on the same page. Now, so it  
19 would be fair to say that this drag and drop gesture that  
20 we've just gone through has three parts; right?

21 A Well, there are many parts to the gesture.

22 Q Well, would you say that drag and drop gesture  
23 of Astala has three -- it's a three-step process? Would  
24 you say that?

25 A In Astala, there's a figure that describes a

1     rather lengthy process that has more than three steps.

2           Q       Okay. Well, let's do this. Let's look at  
3     question 50 of your witness statement, which is CX-3493C.  
4     If we could put that on the screen, please.

5                    So in the middle of your answer there, you say,  
6     "the drag and drop process described in Astala has three  
7     separate steps," and then you enumerate them. Is that  
8     correct testimony?

9           A       Yes, that's correct.

10          Q       Okay. Thank you.

11                   Now, those three steps in kind of shorthand are  
12     a user press, is that right? That's the first step?

13          A       The user presses on an icon such as a file to  
14     select it.

15          Q       And then the second one would be the drag;  
16     right?

17          A       They reduce their applied pressure and then they  
18     drag the icon across the screen.

19          Q       And the third step is another press; is that  
20     right?

21          A       The user presses on the destination, yep.

22          Q       Let's tie those into the figure. So I've put  
23     up -- actually, you have the figure right there.

24                   So we have your testimony and we have the  
25     figures that we've put right below them. So in Figure 6b,

1 the first press occurs on file 1; right?

2 A That's -- yeah, that's right.

3 Q Okay. And then the user drags file 1, this is  
4 the second step, to directory 2; is that correct?

5 A Yeah, that's -- that's fair.

6 Q And then step 3, we see in figure 6c the user  
7 presses on directory 2; correct?

8 A Somewhere in between 6c and 6d, the user has  
9 performed a press on directory 2. The press itself isn't  
10 depicted but it's certainly in there somewhere, yes.

11 Q Let's -- let's turn right now to the '507 patent  
12 itself and put up claim 1. And in particular, I'd like to  
13 look at the limitation that is at column 10, line 38  
14 through 42. So maybe we could highlight that. 38 through  
15 42. One more. Thank you.

16 So there we see a limitation "determining a  
17 press if," and then it lists three criteria; is that right?

18 A That's correct, yes.

19 Q Are you okay with calling them criteria?

20 A I have no objection to that.

21 Q Okay. The second criterion at column 10:40  
22 through 41 reads, "the change in pressure is greater than a  
23 change in pressure threshold."

24 You see that; right?

25 A I do, yes.

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202-347-3700

1           Q       Now, in Astala, the drag movement that we  
2       discussed before -- strike that.

3                   In Astala, the drag movement that we were  
4       discussing earlier occurs at a reduced pressure; is that  
5       right?

6           A       That is true, yes.

7           Q       Okay. And the Astala system determines that  
8       there has been a reduction in pressure; right?

9           A       Part of what Astala does to determine that the  
10      drag is beginning is that there's a reduction in pressure,  
11      that's right.

12          Q       And, in fact, let's look at Astala itself,  
13      RX-275 at column 9, lines 36 through 39, please. So here  
14      we see it says, "at step 712, a determination is made that  
15      the value of pressure z of the object on the touchscreen 70  
16      has been reduced by an amount greater than a predetermined  
17      pressure differential," is that delta z? Is that right?  
18      Did I read that correctly?

19          A       I'm Canadian, I'd say delta zed but --

20          Q       Is this what you had in mind when you answered  
21      my prior question about --

22          A       This is a description of a reduction in  
23      pressure, yes.

24          Q       And a determination being made that that has  
25      happened; right?

1           A       I see that, yes.

2           Q       Okay. You agree with me that's what that says?

3           A       Yeah, I see the text right here, "a  
4       determination is made."

5           Q       Great. Now, Dr. Cockburn and you dispute  
6       whether the determination of the reduction in pressure is  
7       part of the Astala initial press or part of the drag  
8       movement; is that fair?

9           A       Yes, that's fair.

10          Q       Okay. Now, you contend that the determination  
11       of the reduction in pressure is part of the drag portion,  
12       the second step; right?

13          A       I contend that the determination of the  
14       reduction of pressure is the signal to the system that it  
15       should start the dragging mode, yes.

16          Q       And Dr. Cockburn contends that the determination  
17       of the pressure reduction occurs as part of the initial  
18       press; is that right?

19          A       At a high level, yes.

20          Q       So let's go back up to Figure 6a again. Not  
21       again. To 6a.

22                    You recognize Figure 6a?

23          A       I do, yes.

24          Q       This describes a system's detection of the drag  
25       and drop gesture; correct?

1           A       Yes, that's fair.

2           Q       Okay. So let's leave that up, and let's put up  
3 column 9 next to it from Astala. Can we maybe blow up just  
4 9? Can you do that? Okay, great.

5                   Now, I'm not going to ask you to read this whole  
6 thing, but you know that column 9 of Astala basically  
7 describes the steps that are in Figure 6a; right?

8           A       Certainly there's text in column 9 that  
9 describes 6a, yes.

10          Q       Now, let's blow up that text at lines 36 through  
11 39.

12                   Now, Astala describes that the determination of  
13 the reduction of pressure occurs in step 712; is that  
14 right?

15          A       It's describing step 712 here.

16          Q       Okay. And then we've highlighted step 712 on  
17 the left.

18                   Do you see that?

19          A       I do.

20          Q       Okay. So now let's look farther down in the  
21 specification, as a matter of fact starting in the next  
22 line, at Astala lines 40 through 43 again in column 9. And  
23 Astala discloses that the next step after the determination  
24 of the reduction in pressure is that the object is dragged  
25 across the face of the touchscreen at a reduced pressure;

1 right?

2 A Right. After they enter the drag mode in the  
3 previous step, the next step is to drag your finger.

4 Q Astala discloses that it -- I'm sorry, let's go  
5 to 44 through 48, which is the next series of lines in the  
6 specification, if you could blow that up. Got that?

7 Great.

8 A Could I just get a little bit more for context?  
9 I'm sorry.

10 Q You can have as much as you like.

11 A Thank you. It's moving around a lot.

12 Q Is that enough?

13 A Hopefully.

14 Q Okay. Now, at 44 through 48, Astala discloses  
15 that a determination that a drag operation is occurring may  
16 be discerned by detecting changes in the x and y  
17 coordinates of the user's touch; is that right?

18 A That's right, yeah. Once the drag gesture has  
19 begun, they detect that it's ongoing with the x and y  
20 coordinates.

21 Q Detecting changes in the x and y coordinates  
22 means that the user's finger or a stylus is being moved to  
23 a different position on the screen; correct?

24 A That -- certainly you would get a change in the  
25 x/y coordinates if your finger or stylus or whatever object

1 is moving across the screen, that is true.

2 Q In Astala, a determination that pressure has  
3 been reduced by itself will not cause the file icon to move  
4 across the touchscreen; is that correct?

5 A The reduction in pressure enables the mode.  
6 Then the next step is to do this dragging action across the  
7 screen. Both are required.

8 Q Okay. Just to be clear, though, the  
9 reduction -- a determination of the reduction in pressure  
10 alone will not cause the file icon to move across the  
11 touchscreen; correct?

12 A That's true.

13 MR. FOWLER: Okay. Thank you, Dr. Wigdor.

14 I have no further questions.

15 JUDGE BULLOCK: Go ahead.

16 CROSS-EXAMINATION

17 BY MS. MURRAY:

18 Q The originally filed application contained a  
19 claim 7 that didn't make it into the final version of the  
20 '507 patent; correct?

21 A That's my understanding, yes.

22 Q And that claim 7 recited "the method of claim 1  
23 wherein the pressure signal comprises a pseudo pressure  
24 signal," correct?

25 A That's correct, yes.

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202-347-3700



1           Q       Okay. And you testified that a person of  
2       ordinary skill in the art reading this disclosure would  
3       understand that the inventors of the '507 patent were in  
4       possession of the concept of combining pseudo pressure and  
5       actual pressure at the time of filing. Did I read that  
6       correctly?

7           A       I'm sorry, were you quoting me and you wanted me  
8       to confirm?

9           Q       That was -- it's question 109 of your witness  
10      statement, but the general question is just is that your  
11      testimony?

12          A       Certainly that in light of the rest of the  
13      patent, yes.

14          Q       And that's because the claim included the word  
15      "comprises," correct, "comprises a pseudo pressure signal"?

16          A       Certainly the word "comprises" is important to  
17      that analysis. It's not that alone, but yes, it's  
18      important.

19          Q       So because claim 7 of the originally filed  
20      application included the word "comprises," you were able to  
21      conclude that a person of ordinary skill in the art would  
22      understand that the inventors possessed the concept of  
23      combining pseudo pressure and actual pressure; is that  
24      right?

25          A       Certainly, the word "comprises" formed part of

1 my analysis. It's not that alone that led to that  
2 conclusion.

3 Q The word "comprises" would not indicate to one  
4 of ordinary skill that the pressure signal must include an  
5 actual pressure, would it?

6 A It would not indicate that it must include an  
7 actual pressure, that's true.

8 Q And it also would not preclude the case in which  
9 the pressure signal consists of pseudo pressure alone,  
10 would it?

11 A It would not, in and of itself, preclude that  
12 case.

13 MS. MURRAY: I have no further questions. Thank  
14 you.

15 THE WITNESS: Thank you.

16 MS. GLASSER: May I proceed, your Honor?

17 JUDGE BULLOCK: Please.

18 REDIRECT EXAMINATION

19 BY MS. GLASSER:

20 Q Could we call up Figure 6a that counsel for  
21 Respondents was using during cross-examination. Thank you.

22 So counsel asked you some questions about box  
23 712.

24 Do you recall that?

25 A I do, yes.

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202-347-3700

1           Q       To the extent any of the boxes in Astala's  
2     Figure 6a can be analogized to a press, which boxes is that  
3     occurring in?

4           A       The press is described here in box 710 and again  
5     there's another one in box 716.

6           Q       At step 710, is there any use of a change in  
7     pressure threshold?

8           A       There's not, no.

9           Q       What about at step 17 -- sorry, 716?

10          A       There's no use of a change in pressure threshold  
11     there.

12          Q       And how do we know from Astala that the step 716  
13     is only using pressure rather than a change in pressure?

14          A       The text of Astala that describes step 716  
15     describes it in some detail. It matches the other press  
16     gesture described in 710 and that it looks at the other two  
17     factors.

18          Q       When you say it matches the other, specifically  
19     which are you referring to?

20          A       I'm sorry, so the press that's described in step  
21     716 is described as the same sort of press that's described  
22     in step 710.

23          Q       Is there anything else in Astala that informs  
24     your opinion about whether or not box 712 is included as  
25     part of determining a press?

1           A       Sure, there's the whole of the specification, to  
2   be sure. Step 712 is describing this change, this upward  
3   change in pressure that occurs after the press has already  
4   finished.

5           Q       Are there any other portions of the  
6   specification or claims that further support your view that  
7   the press gesture consists of the recognition of pressure  
8   rather than the change in pressure?

9           A       Certainly, there's the column that we were  
10   focused on. There is an initial description in the patent  
11   on the first page. Claim 14, for example, describes the  
12   same sort of gesture but omits the drag portion. And it,  
13   of course, also omits the reduction in pressure as well,  
14   because it's part of the drag.

15          Q       Could you elaborate on that, Professor?

16          A       Sure. So claim 14 describes a version of this  
17   gesture where the user presses on the original file and  
18   then could, for example, lift their finger entirely off the  
19   screen without doing a drag, and then presses down on the  
20   target destination.

21                 So there's no description of this dragging the  
22   finger along the screen. And when they remove the  
23   description of the dragging the finger along the screen,  
24   they also, of course, remove the description of the  
25   reduction in pressure, because it's not needed, you're not

1 detecting the drag.

2 Q Now, counsel asked you about whether or not the  
3 drag determination in Astala could be made just by looking  
4 at changes in the x/y coordinates.

5 Do you recall that?

6 A I certainly remember discussing the topic.

7 Q And to a person of skill in the art, does Astala  
8 contain any teaching as to whether or not you could  
9 determine that the drag has begun solely by looking at x/y  
10 coordinates? What does it speak to from a person of  
11 ordinary skill in the art?

12 A So Astala describes the sequence -- if I can  
13 have the figure 6a up again, that would be helpful to  
14 answer the question. Thank you.

15 So the sequence, there are a bunch of steps  
16 here. This is the flow of processing the user's input, of  
17 course. And at step 710, we see the press gesture where  
18 the user is pushing down to select the file icon on the  
19 screen, for example, shown in the other figure.

20 The next step where the user then reduces their  
21 pressure on the screen, step 712, and that's described very  
22 explicitly as lifting their finger up from the screen,  
23 reducing the amount of pressure they are applying.

24 The next sequence after that, follow drag, this  
25 is the part we were speaking about earlier where there is a

1 change in the x/y and now the icon is following your  
2 finger. You couldn't rely just on 714 alone, just on the  
3 change in x/y to determine the beginning of the drag  
4 gesture.

5 And that's because any time you're touching a  
6 touchscreen with variable amounts of pressure, the  
7 touchscreen is reporting different x and y values, because  
8 your finger is pushing down and it's moving a little bit on  
9 the screen. You get a lot of noise and sort of random  
10 switches in mode where you will be in the middle of trying  
11 to press and instead the icon would start moving.

12 So there needs to be a much more clear delimiter  
13 of the beginning of this drag gesture, and that's described  
14 as step 712, where the user is reducing their pressure and  
15 it's detecting that.

16 MS. GLASSER: Thank you, Professor Wigdor.

17 THE WITNESS: Thank you.

18 MS. GLASSER: No further questions.

19 MR. FOWLER: No questions, your Honor.

20 MS. MURRAY: Nothing further, your Honor.

21 JUDGE BULLOCK: Thank you, sir. You are  
22 excused.

23 THE WITNESS: Thank you, your Honor.

24 (Witness excused.)

25 JUDGE BULLOCK: Let's go off the record while we

1 set up for our next witness. When we return, we will be on  
2 the public record.

3 (Discussion off the record.)

4 JUDGE BULLOCK: Back on the record.

5 Please call the next witness.

6 MR. REDJAIAN: Good afternoon, your Honor.

7 Babak Redjaian representing Immersion.

8 Immersion calls Dr. Sigurd Meldal to the stand.

9 Whereupon,

10 SIGURD MELDAL

11 was called as a witness and, having first been duly sworn,

12 was examined and testified as follows:

13 JUDGE BULLOCK: Thank you. Please be seated.

14 MR. REDJAIAN: May I proceed, your Honor?

15 JUDGE BULLOCK: Please.

16 DIRECT EXAMINATION

17 BY MR. REDJAIAN:

18 Q Good afternoon, Dr. Meldal.

19 A Good afternoon.

20 Q You have before you Exhibit CX-3490C?

21 A Yes.

22 Q Is this your direct witness -- is this your  
23 rebuttal witness statement in this case?

24 A Yes, it is.

25 Q Please turn to the last page. Is that your

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202-347-3700

1 signature?

2 A Actually, it's an S representing my signature,  
3 but yes.

4 Q Can you pull up the microphone closer so we can  
5 hear.

6 A There we go. It's a letter S representing my  
7 signature.

8 Q And that's your signature?

9 A Yes.

10 Q Does Exhibit CX-3490C reflect your testimony in  
11 this case?

12 A It does.

13 MR. REDJAIAN: Thank you, Professor Meldal.

14 I tender the witness for cross-examination.

15 JUDGE BULLOCK: Do you need to move the witness  
16 statement?

17 MR. REDJAIAN: Oh, I apologize. I move Exhibit  
18 CX-3490C into evidence.

19 MR. FOWLER: Your Honor, I've not encountered  
20 this situation before, but his witness statement actually  
21 isn't signed. Isn't he supposed to sign his witness  
22 statement?

23 JUDGE BULLOCK: As long as the witness -- as far  
24 as I'm concerned, as long as the witness is here and he or  
25 she swears that that's the testimony they gave in response



1 to answers -- questions by counsel, that's fine with me.

2 MR. FOWLER: Fine by me. Just wanted to check.

3 No objection, your Honor.

4 JUDGE BULLOCK: Okay.

5 MS. MURRAY: No objection, your Honor.

6 MR. REDJAIAN: I tender the witness. Thank you.

7 JUDGE BULLOCK: CX-3490C is received in  
8 evidence.

9 (Exhibit CX-3490C received.)

10 CROSS-EXAMINATION

11 BY MR. FOWLER:

12 Q Dr. Meldal, am I pronouncing your name  
13 correctly, by the way?

14 A As well as my wife does, which is all we can  
15 hope for.

16 Q Thank you.

17 In your witness statement, you opine -- I'm  
18 sorry, I'm Mark Fowler. I represent the Respondents. Nice  
19 to meet you.

20 In your witness statement, you opine that all of  
21 the asserted claims of the '260 patent, the '488 patent and  
22 the '356 patent are valid against the prior art that have  
23 been identified by the Respondents; correct?

24 A That is correct.

25 Q Let's start with a couple of high-level

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202-347-3700

1 observations. First, the '260, '488 and '356 patents share  
2 a common specification; is that correct?

3 A That is correct.

4 Q Now, second, the United States Patent and  
5 Trademark Office, and in particular the Patent Trial and  
6 Appeal Board of the United States Patent and Trademark  
7 Office, has instituted inter partes review proceedings as  
8 to the validity of the '260 patent, the '488 patent and the  
9 '356 patent; correct?

10 MR. REDJAIAN: Objection, your Honor. Your  
11 Honor excluded those exhibits with respect to the IPR.

12 MR. FOWLER: I don't -- I don't think I've shown  
13 him an exhibit, your Honor.

14 MR. REDJAIAN: He shouldn't be able to inquire  
15 into the IPRs, your Honor.

16 JUDGE BULLOCK: Let's go off the record for a  
17 moment.

18 (Discussion off the record.)

19 JUDGE BULLOCK: Back on the record.

20 Certainly in either the high priority objections  
21 or the motions in limine, I believe there was an issue  
22 there and I said they could come in. Now, whether they  
23 have actually been offered into evidence as of yet, but I  
24 did not exclude them.

25 MR. FOWLER: There was a MIL actually on this

1 point on IPRs, and you denied the MIL, their MIL.

2 MR. REDJAIAN: Your Honor, he hasn't offered any  
3 opinions on IPRs in connection with his witness statement.  
4 The ones that Counsel is asking about. And your Honor  
5 excluded two IPR documents on the first day of trial.

6 MR. FOWLER: Because they were not on the  
7 exhibit list in time, not because the subject matter was  
8 wrong. And I'm not asking him about the documents. I'm  
9 asking him about a fact, the fact that it's happened in the  
10 world.

11 MR. REDJAIAN: Your Honor, there's no  
12 foundation. Your Honor excluded two documents that they  
13 produced late.

14 JUDGE BULLOCK: I think Mr. Fowler is correct  
15 that they were late, but I didn't exclude them based on  
16 subject matter. As long as we don't get too much in  
17 detail, I will allow the question.

18 BY MR. FOWLER:

19 Q Thank you.

20 Do you have the question in mind, Mr. Meldal?

21 A I would like to hear it again, please.

22 Q I would be happy to repeat it. The United  
23 States Patent and Trademark Office and particularly the  
24 Patent and Trademark Appeals Board of the United States  
25 Patent and Trademark Office has instituted inter partes

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202-347-3700

1 proceedings as to the validity of the '260, '488 and '356  
2 patents; correct?

3 A See, I am aware of there being an institution on  
4 the '260 and the '488. I believe there was one petition  
5 for '356 that was denied. I may have heard -- I probably  
6 have heard that the '356, there was a petition in motion,  
7 and may have been instituted.

8 Q Well, let me ask you, so you do know that there  
9 has been an institution of IPR proceeding as to the '260  
10 and '488. Is that what you're saying?

11 A I believe -- I believe that to be the case.

12 Q Okay. And you think it might be the case for  
13 the '356 patent; correct?

14 A I think that's a fair summary.

15 Q So you're opining on the subject of validity of  
16 these three patents; correct?

17 A Yes.

18 Q And when you were evaluating the validity of the  
19 patents, you looked at the file history for these three  
20 patents in the Patent Office; right?

21 A Yes, that is correct.

22 Q And that's because it's informative to an expert  
23 in evaluating the validity of a claim to know what's  
24 proceeded in front of the Patent Office; correct?

25 A In understand being the patents, it's helpful to

1 see the file history leading up to the patents.

2 Q And it's informative to know what the Patent  
3 Office thinks about the claims as well in evaluating  
4 whether the claims are valid; true?

5 A Sure.

6 Q Okay. Well, since it's sure true that it would  
7 be useful or at least informative to know what the Patent  
8 Office thinks about the claims, did you read the  
9 institution orders for the '260, '488 or '356 patents?

10 A Could you state that again, please?

11 Q Sure. Did you read the Patent Office's  
12 institution decisions for the '260, '488 or '356 patents?

13 A No.

14 Q Why not?

15 A In evaluating the validity of the patents, I  
16 looked at the file history and, of course, the patents  
17 themselves. The -- my response was to Dr. Sarrafzadeh's  
18 testimony that these were invalid. So in that response,  
19 there didn't seem to be any need, nor was I provided with  
20 the '356 institution, if that is the one you're referring  
21 to.

22 Q Well, all three of the decisions, you didn't  
23 read any of them; right?

24 A That's correct.

25 Q Did you ask to see them?

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202-347-3700

1 A No.

2 Q Did you ask not to see them?

3 A No.

4 Q Now, you submitted -- well, let me back up. As  
5 to each of the three patents, the PTAB already has found --  
6 let me back up.

7 When I say PTAB, do you know what that is?

8 A I do.

9 Q I'm sorry, sometimes I fall into nomenclature.  
10 So as to each of the three patents, the PTAB has already  
11 found that it is reasonably likely that certain asserted  
12 claims of the patents are invalid; right?

13 MR. REDJAIAN: Your Honor, I object, no  
14 foundation. He's trying to get in evidence through  
15 questioning, the documents were excluded, and he is trying  
16 to bring in that evidence through this questioning. The  
17 witness has not seen those decisions.

18 JUDGE BULLOCK: Okay. Somebody refresh my  
19 recollection. Were these the untimely ones that were  
20 excluded?

21 MR. REDJAIAN: Two of them were the untimely  
22 ones, your Honor, and a third one, he's not even an expert  
23 on that declaration for that IPR.

24 MR. FOWLER: But he is an expert on this patent.  
25 What he's saying is that the witness here submitted

1     declarations in two of those IPRs, not the third. But the  
2     third, the decision was not subject to your order for it  
3     being late.

4             MR. REDJAIAN: Your Honor, he's not -- he did  
5     not offer an expert declaration in connection with that  
6     third IPR, the '356 patent. And he hasn't seen the  
7     decisions.

8             JUDGE BULLOCK: Okay. Isn't it -- well, let's  
9     go with that. Isn't it true that the witness has said he  
10    hasn't seen them, he's not aware of them, hasn't read them?

11            MR. FOWLER: That's true.

12            JUDGE BULLOCK: So haven't you made your point?

13            MR. FOWLER: Very well. Thank you, your Honor.

14            BY MR. FOWLER:

15            Q     Let me just follow up on one final point on  
16    this. Well, let's lay the foundation. We've heard a lot  
17    of lawyers say things, but we are not offering testimony.

18                    You did submit a declaration under oath in the  
19    '260 and '488 PTAB proceedings in those IPR proceedings;  
20    correct?

21            A     I submitted a declaration as part of the  
22    proceedings prior to the decision by the PTAB.

23            Q     In the '260 and '488 proceedings; right?

24            A     That is correct.

25            Q     And you do know, at least, that ultimately, the

1 Patent Office rejected your analysis; is that true?

2 MR. REDJAIAN: Your Honor, now he is doing the  
3 same thing. I object to this questioning.

4 JUDGE BULLOCK: Yeah, I think the declaration  
5 part is fine, but I think we're getting right back where we  
6 were, so I'm going to ask you to move on.

7 BY MR. FOWLER:

8 Q Let's go on, then. So let's talk about the '488  
9 patent, and in particular, I'd like to talk about the Tsuji  
10 reference. You are familiar with the Tsuji reference?

11 A I am.

12 Q That's RX-182 for the record. So let's turn to  
13 the '488 patent, that's JX-4, and we're going to talk about  
14 independent claims 1, 9 and 17 of the '488 patent, in light  
15 of Tsuji, okay?

16 A Okay.

17 Q Now, as an initial matter, in analyzing Tsuji,  
18 you grouped together independent claims 1, 9 and 17; isn't  
19 that right?

20 A I believe that is correct.

21 Q And that's because in your view, if claim 1 were  
22 to be valid or invalid, the same analysis would apply to 9  
23 and 17; is that right?

24 A Well, I would rather say it slightly differently  
25 and say the failures of Tsuji to anticipate carries across



1 all three.

2 Q Okay. So let's look at independent claim 1 of  
3 the '488 patent, if we could. Now, in your witness  
4 statement, you only identify two claim limitations that you  
5 contend are not disclosed by Tsuji; is that correct?

6 A Let me just count the ways. I count at least  
7 three.

8 Q Well, let's look at your witness statement, if  
9 we could, that's 3490C, at question 115. I may have the  
10 wrong question there.

11 Could you put up 116 for me, please.

12 Excuse me, your Honor.

13 Can we put up 116, please. There we are. Yes,  
14 it is 115.

15 So looking at 115 first, you're asked the  
16 question, "turning to claims 1, 9 and 17, do you have an  
17 opinion regarding whether Tsuji discloses 'determine an  
18 interaction between the object contacting the touch  
19 sensitive surface and the graphical object based at least  
20 in part on the pressure'?"

21 And then you go on to explain that you do not  
22 believe that's present in claim 9 --

23 A Excuse me, Mr. Fowler, could you speak up a  
24 little bit?

25 Q Sure, I'm sorry.

1           A       Thank you.

2           Q       Get this closer to me.

3                   At question 115, the question is, "turning to  
4   claims 1, 9 and 17, do you have an opinion regarding  
5   whether Tsuji discloses 'determine an interaction between  
6   the object contacting the touch sensitive surface and the  
7   graphical object based at least in part on the pressure'."

8                   And then you begin your answer by, I'm  
9   paraphrasing now, that Tsuji does not disclose that  
10   limitation is recited in claim 9, nor does it disclose  
11   similar limitations in claims 1 and 17. So that's one of  
12   the limitations that you say is absent; correct?

13          A       Correct.

14          Q       And you hadn't subdivided that into more than  
15   one limitation in your mind when you said you thought there  
16   were at least three; is that right?

17          A       That is correct.

18          Q       Okay. So let's go to question 116, and then  
19   you're asked the question, "do you have an opinion  
20   regarding whether Tsuji discloses wherein the actuator  
21   signal is configured," and that limitation goes forward  
22   through the words "second pressure threshold."

23                   And you indicate, again I'm paraphrasing here,  
24   that Tsuji does not disclose that limitation as recited in  
25   claim 9 or the similar limitations of claims 1 and 17;

1 correct?

2 A That is correct.

3 Q Okay. Now, when you gave me your answer that  
4 there were three limitations that were lacking, had you  
5 subdivided this one into two?

6 A Let me just consult with the claim.

7 I'm sorry, you're right, I had subdivided  
8 incorrectly.

9 Q So is it the case that it's your -- you've only  
10 opined that two claim limitations out of claim 1 are not  
11 disclosed by Tsuji; is that correct?

12 A Well, there is. These two cover the arguments  
13 with respect to Tsuji.

14 Q I'm sorry, now I have to ask you to move closer  
15 to the mike, please.

16 A It is correct that the analysis of these two  
17 claim elements covers the Tsuji argument completely.

18 Q Okay. So you would acknowledge that all of the  
19 other claim limitations of claim 1 are disclosed by Tsuji;  
20 correct?

21 A No.

22 Q Have you formed an opinion as to whether any of  
23 the other claim limitations of claim 1 are disclosed by  
24 Tsuji, other than the two covered in questions 115 and 116?

25 A If you pull up Tsuji, the claim 1, can we show

1     that on the screen?

2           Q       Let me ask you a question.  Is there anything in  
3     your witness statement, other than at questions 115 and  
4     116, where you identify an actual claim limitation that is  
5     absent in Tsuji?

6           A       If I can point to claim element 1, where it  
7     says --

8           Q       I've asked you to look at your witness  
9     statement.  Can you tell us where in your witness statement  
10    you've identified a claim limitation other than the two  
11    that we just described that you contend is absent from  
12    claim 1 of -- or that's absent from Tsuji?

13          A       No.

14          Q       Thank you --

15          A       Could you read back the question just to make  
16    sure I have the correct answer?

17          Q       My question to you roughly was is there anything  
18    in your direct witness statement where you identify any  
19    claim limitations that you contend are -- of claim 1 that  
20    you contend are absent from Tsuji other than the ones you  
21    identify in paragraphs or questions 115 and 116?

22          A       Okay.  So just to make sure I understand the  
23    question, the two claim elements that I have provided an  
24    analysis of are the two that you put up on the screen, in  
25    answers 115 and 116.

1           Q       And you don't analyze any other limitations of  
2       claim 1 for purposes of Tsuji; right?

3           A       For purposes of Tsuji, I have not performed a --  
4       that is not correct. I have not provided a description of  
5       other claim elements in isolation.

6                   MR. FOWLER: Thank you.

7                   Your Honor, would you like -- we only have a  
8       couple minutes. Should I ask the next question? It's  
9       going to --

10                  JUDGE BULLOCK: No, it sounds like you're moving  
11       to a different issue. So we can end for today.

12                  And then we will resume tomorrow at 9:00 a.m.

13                  MR. FOWLER: Thank you, your Honor.

14                  JUDGE BULLOCK: Thank you.

15                  (Whereupon, at 4:27 p.m., the hearing was  
16       adjourned, to be reconvened at 9:00 a.m., on Thursday, May 4,  
17       2017.)

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1 C O N T E N T S

2 VOIR

3 WITNESSES: DIRECT CROSS REDIRECT RECROSS DIRE

4 ANDY COCKBURN

5 by Mr. Chu 1058 1102

6 by Mr. Buergi 1094

7 M.A.M. DAVIES

8 by Ms. Gibson 1104 1123

9 by Ms. Carson 1106 1127

10 by Ms. Murray 1109

11 TONY GIVARGIS

12 by Mr. Williams 1130 1197

13 by Ms. Glasser 1132

14 by Ms. Murray 1195

15 THOMAS VANDER VEEN

16 by Mr. Cunningham 1217 1259

17 by Ms. Carson 1220

18 by Ms. Murray 1240 1271

19 DANIEL WIGDOR

20 by Ms. Glasser 1274 1287

21 by Mr. Fowler 1274

22 by Ms. Murray 1285

23 SIGURD MELDAL

24 by Mr. Redjaian 1292

25 by Mr. Fowler 1294 -- continued --

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1  
 2 CONFIDENTIAL SESSIONS: Pages 1091-1103, 1108-1113,  
 3 1125-1125, 1133-1165,  
 4 1178-1182, 1192-1214,  
 5 1236-1239, 1259-1271  
 6  
 7  
 8

9 E X H I B I T S

10	EXHIBITS:	IDENTIFIED	RECEIVED
11	CDX-102	1060	
12	CDX-103	1068	
13	CDX-104	1068	
14	RX-94C		1105
15	RX-95C		1106
16	RX-99C		1131
17	RX-100C		1132
18	RX-102C		1218
19	RX-103C		1219
20	CX-3993C		1274
21	CX-3490C		1294

22  
 23 JOINT EXHIBITS COVERED BY ORDER 41  
 24 (NO SPONSORING WITNESS)  
 25 Patents

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1	Exhibit Number
2	JX-0001
3	JX-0002
4	JX-0003
5	JX-0004
6	JX-0005
7	JX-0006
8	JX-0007
9	JX-0017
10	JX-0021
11	
12	Certified File Histories and Assignments:
13	Exhibit No.
14	JX-0008
15	JX-0009
16	JX-0010
17	JX-0011
18	JX-0014
19	JX-0015
20	JX-0018
21	JX-0019
22	JX-0020
23	JX-0022
24	JX-0023
25	JX-0024

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1 JX-0025  
2 JX-0026  
3 JX-0027  
4 JX-0028  
5 JX-0031  
6 JX-0032  
7  
8 Stipulations:  
9 Exhibit No.  
10 JX-0035  
11 JX-0036  
12 JX-0037  
13 JX-0382  
14  
15 PHYSICAL EXHIBITS - ACCUSED PRODUCTS  
16 TABLE OF EXHIBITS  
17 Hearing Exhibit  
18 CPX-0026  
19 CPX-0027  
20 CPX-0028  
21 CPX-0029  
22 CPX-0030  
23 CPX-0031  
24 CPX-0033  
25

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1 GREGORY ABOWD SUPPLEMENTAL INDEX OF EXHIBITS  
2 Direct Examination of Gregory Abowd (CX-2318C)  
3 Hearing Exhibit  
4 CX-2435C  
5 CX-3050C  
6  
7 JAMES OLIVER SUPPLEMENTAL INDEX OF EXHIBITS Direct  
8 Examination of James Oliver (CX-2317C)  
9 Hearing Exhibit  
10 JX-0145  
11 JX-0146  
12 JX-0148  
13  
14 INDEX OF EXHIBITS FOR RICHARD MIHRAN  
15 DIRECT EXAMINATION OF RICHARD MIHRAN (RX-107C)  
16 INDEX OF EXHIBITS  
17 EXHIBIT NO.  
18 RX-0107C  
19 RDX-0107C  
20 RX-0006  
21 RX-0015  
22 RX-0140  
23 RX-0143  
24 RX-0155  
25 RX-0166

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1 RX-0167  
2 RX-0177  
3 RX-0182  
4 RX-0187  
5 RX-0188  
6 RX-0190  
7 RX-0192  
8 RX-0193  
9 RX-0254  
10 RX-0279  
11 RX-0280  
12 RX-0382  
13 RX-0384  
14 RX-0385  
15 RX-0386  
16 RX-0387  
17 RX-0388  
18 RX-0389  
19 RX-0390  
20 RX-0454  
21 RX-1776C  
22 RX-1909  
23 RX-2068C  
24 RX-2073C  
25 RX-2136

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1 RX-2144  
2 RX-2187  
3 RX-2263C  
4 RX-2284C  
5 RX-2290C  
6 RX-2490C  
7 RX-2491C  
8 RX-2492C  
9 RX-2510C  
10 RX-2511  
11 RX-2512  
12 RX-2526C  
13 RX-2639  
14  
15 REBUTTAL EXAMINATION OF RICHARD MIHRAN (RX-108C)  
16 INDEX OF EXHIBITS  
17 EXHIBIT NO.  
18 RX-0108C  
19 RDX-0108C  
20 JX-0159  
21 JX-0259C  
22 JX-0354C  
23 RX-0024  
24 RX-0454  
25 RX-0458

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1 RX-2190  
2 RX-2191  
3 RX-2196  
4 RX-2693C  
5 RX-2694C  
6  
7 CROSS EXAMINATION OF RICHARD MIHRAN  
8 EXHIBIT NO.  
9 CDX-101  
10  
11 INDEX OF EXHIBITS FOR DR. BLAKE HANNAFORD  
12 DIRECT EXAMINATION OF BLAKE HANNAFORD (RX-0096C)  
13 INDEX OF EXHIBITS  
14 EXHIBIT NO.  
15 RX-0096C  
16 RDX-0096C  
17 RDX-0111C  
18 RDX-0112C  
19 CX-0021C  
20 RX-0134  
21 RX-0137  
22 RX-0138  
23 RX-0156  
24 RX-0170  
25 RX-0172

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1 RX-0175  
2 RX-0176  
3 RX-0178  
4 RX-0179  
5 RX-0180  
6 RX-0183  
7 RX-0186  
8 RX-0213  
9 RX-0315  
10 RX-0795  
11 RX-0796  
12 RX-2216  
13 RX-2284C  
14 RX-2460  
15 RX-2589  
16  
17 CORRECTED REBUTTAL EXAMINATION OF DR. BLAKE HANNAFORD (DI)  
18 (RX-0097C)  
19 INDEX OF EXHIBITS  
20 EXHIBIT NO.  
21 RX-0097C  
22 RDX-0097C  
23 RX-0396  
24 RX-0397  
25 RX-0398

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1 RX-0399  
2 RX-0403  
3 RX-0404  
4 RX-0405  
5  
6 REBUTTAL EXAMINATION OF DR. BLAKE HANNAFORD (NI) (RX-0098C)  
7 INDEX OF EXHIBITS  
8 EXHIBIT NO.  
9 RX-0098C  
10 RDX-0098C  
11 JX-0224  
12 JX-0250C  
13 JX-0251C  
14 JX-0371C  
15 JX-0377C  
16 RX-0406  
17 RX-0429  
18 RX-0554  
19 RX-0555  
20 RX-0556  
21 RX-0557  
22 RX-0559  
23 RX-0942C  
24 RX-0946C  
25 RX-0947C

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1 RX-0949C  
2 RX-0963C  
3 RX-2239  
4 RX-2240  
5 RX-2241  
6 RX-2242  
7 RX-2681C  
8  
9 INDEX OF EXHIBITS FOR MAJID SARRAFZADEH  
10 DIRECT EXAMINATION OF MAJID SARRAFZADEH (RX-0104C)  
11 INDEX OF EXHIBITS  
12 EXHIBIT NO.  
13 RX-0104C  
14 RDX-0104C  
15 CX-1649C  
16 CX-1651C  
17 JX-0122C  
18 JX-0191C  
19 RX-0005  
20 RX-0131C  
21 RX-0132C  
22 RX-0140  
23 RX-0145  
24 RX-0155  
25 RX-0156

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1 RX-0166  
2 RX-0167  
3 RX-0177  
4 RX-0182  
5 RX-0188  
6 RX-0189  
7 RX-0195  
8 RX-0198  
9 RX-0200  
10 RX-0269  
11 RX-0274  
12 RX-0278  
13 RX-0285  
14 RX-0321  
15 RX-0322  
16 RX-0324  
17 RX-0343  
18 RX-0344  
19 RX-0345  
20 RX-0346  
21 RX-0379  
22 RX-0382  
23 RX-0384  
24 RX-0385  
25 RX-0386

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1 RX-0387  
2 RX-0388  
3 RX-0389  
4 RX-0390  
5 RX-1776C  
6 RX-1777  
7 RX-2095C  
8 RX-2096C  
9 RX-2284C  
10 RX-2285C  
11 RX-2594  
12  
13 REBUTTAL EXAMINATION (DOMESTIC INDUSTRY) OF MAJID  
14 SARRAFZADEH (RX-105C)  
15 INDEX OF EXHIBITS  
16 EXHIBIT NO.  
17 RX-0105C  
18 RDX-0105C  
19 JX-0139  
20 RX-0373C  
21 RX-0374C  
22 RX-0392  
23 RX-0393  
24 RX-0394  
25 RX-0395

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1 RX-0400  
2 RX-0401  
3 RX-0412  
4 RX-0739  
5 RX-1843  
6 RX-1861C  
7 RX-2098C  
8 RX-2667C  
9 RX-2680C  
10 RX-2682  
11  
12 REBUTTAL EXAMINATION (NON-INFRINGEMENT) OF MAJID  
13 SARRAFZADEH (RX-0106C)  
14 INDEX OF EXHIBITS  
15 EXHIBIT NO.  
16 RX-0106C  
17 RDX-0106C  
18 CX-0024C  
19 CX-0900  
20 CX-0906  
21 CX-0908  
22 CX-0910  
23 CX-0915  
24 CX-0918  
25 CX-0927

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1 RX-0417  
2 RX-0511C  
3 RX-0513C  
4 RX-0812C  
5 RX-0944C  
6 RX-2479C  
7  
8  
9  
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11  
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ELECTRONIC DEVICES INCORPORATING  
HAPTICS (INCLUDING SMARTPHONES AND  
LAPTOPS) AND COMPONENTS THEREOF

INVESTIGATION NOS: 337-TA-1004 and 337-TA-990 Consolidated

HEARING DATE: 5-3-17

LOCATION: Washington, DC

NATURE OF HEARING: Hearing

I hereby certify that the foregoing/attached  
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of the above-referenced proceeding(s) of the U.S.  
International Trade Commission.

DATE: 5-3-2017

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Signature of the Contractor or the  
Authorized Contractor's Representative

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transcript of the proceedings of the U.S.  
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aforementioned Court Reporter's notes and  
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SIGNED: Christopher Weiskircher

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proceedings.

SIGNED: Carmen Smith

Signature of Court Reporter

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