UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

APPLE INC.,

Petitioner,

v. IPR2024-01085

SMITH INTERFACE TECHNOLOGIES, LLC, Patent No. 10,649,580

Patent Owner.

_____

DEPOSITION OF MARK P. MAHON, PH.D.

July 31, 2025

10:32 a.m. Eastern Time

Reported by: Lori J. Goodin, RPR, CRR, RSA,
California CSR #13959

_____

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REMOTE DEPOSITION of
MARK P. MAHON, PH.D.,
Witness in the above-titled action, held on Thursday, July 31, 2025, commencing at approximately 10:32 a.m. before Lori J. Goodin, RPR, CRR, RSA, California CSR #13959, Registered Professional Reporter, Certified Realtime Reporter, Realtime Systems Administrator, and Certified Shorthand Reporter, and Notary Public of the State of Florida, State of California, and District of Columbia.

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Thursday, July 31, 2025
Lori J. Goodin, RPR, CRR, RSA,
California CSR #13959

PREVIOUSLY MARKED EXHIBITS

PRIOR MARKED EXHIBITS	FIRST REFERRAL
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THURSDAY, JULY 31, 2025, 10:32 a.m.
PROCEEDINGS
* * *
Whereupon,
MARK P. MAHON, PH.D.,
a witness called for examination, having been first duly sworn, was examined and testified as follows:
THE REPORTER: Unless an objection is heard at this time, all parties to this deposition are appearing remotely and have agreed to the witness being sworn in remotely.
* * *
EXAMINATION
BY MS. HUANG:
Q. Good morning, Dr. Mahon.
A. Good morning.
MS. HUANG: This is Jenny Huang, speaking for petitioner, Apple. The witness is Dr. Mark P. Mahon.
For the record this deposition

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addresses the inter partes review proceeding for IPR 2024-01085 regarding U.S. Patent Number 10,649,580, titled Devices, Methods, and Graphical Use Interfaces For Manipulating User Interface Objects With Visual And/Or Haptic Feedback.
BY MS. HUANG:
Q. Before we get going, I'm going to discuss a series of ground rules and other preliminary matters.
If I refer to U.S. Patent Number 10,649,580 as the '580 patent, will you understand what I mean?
A. Yes.
Q. Dr. Mahon, is there anyone in the room with you today?
A. No, there is not.
Q. And do you understand that you cannot communicate with anyone verbally or nonverbally during the examination?
A. Yes.
Q. Can you confirm you are not

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communicating with anyone, not using any type of instant messaging application or phone or the like?
A. Yes.
Q. Do you have any programs running on your computer right now beyond Zoom for this deposition?
A. I have a folder open to a clean copy of my declaration and a clean copy of the '580 patent only.
Q. Can I ask that you close that. If you need any documents, I would be happy to provide those to you.
A. Okay. I closed it.
Q. Thanks. And I will ask that you not consult any of your own documents during.
If you need something, please just ask.
Does that sound okay to you?
A. Yes.
Q. Do you have any notes or papers with you, either physical or electronic?

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A. No.
Q. And again for the exhibits that we discuss today, I will upload a copy of each document into the Zoom chat feature when we get there.
And I just ask again that you use the copy that I provide through the Zoom chat for the deposition.
Do you agree to that?
A. Yes.
Q. And since this is a remote deposition, we are using video conferencing equipment. There is likely to be a slight delay in our communications.
So, can we both agree to try to speak slowly and try not to speak over one another?
A. Yes.
Q. If I ask you a question and you do not understand it, can you please ask me to rephrase or clarify that question?
A. Yes.

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Q. Is it fair for me to assume that if you answer my question, then you understand my question?
A. Yes.
Q. And do you understand that even though we are conducting the deposition remotely, you are under oath today, just as if you were providing sworn testimony in front of a judge or a jury?
A. Yes.
Q. And you remain under oath for as long as this deposition is ongoing?
A. Yes.
Q. Is there any reason you cannot give true and accurate testimony today?
A. No.
Q. I will try to break at least every hour or so. But, if I -- if you do need a break, can you just let me know?
A. I will.
Q. And I just ask that if you need a break and there is a question pending, that you

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answer that question before we take the break. Is that fair?
A. Yes, it is.
Q. And when we return from breaks, I will ask whether you have had any discussions with anyone regarding the substance of your testimony today.
Is that okay?
A. Yes.
Q. And you understand that those kinds of discussions are prohibited, right?
A. Yes, ma'am.
Q. Okay.
MS. HUANG: I'm going to go ahead and just upload a document here.
(Whereupon, previously marked Apple Exhibit 1001, first referral.)
BY MS. HUANG:
Q. Can you please let me know when you get that?
A. I see it. I am downloading it. And

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let me go to my downloads folder. Okay. I have it open.
Q. Do you recognize the document that I uploaded through the Zoom chat feature?
A. Yes. This is a copy of the '580 patent.
Q. If I refer to the '580 patent as Exhibit 1001 or as the '580 patent, will you understand what I mean?
A. Yes.
Q. As part of your preparation, did you read the '580 patent?
A. Yes, I did.
Q. And did you read the '580 patent in its entirety?
A. I have read various sections. I certainly scanned the entire copy of the '580 patent.
Q. About how long did you spend reviewing the '580 patent in preparation for drafting your declaration?
A. My estimate would be about two

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hours.
Q. And about how long did you spend reviewing the '580 patent in preparation for this deposition?
A. I probably spent another 45 minutes to an hour.
Q. Is it fair to say then that you have spent a little under three hours of time in total reviewing the '580 patent?
A. That is reasonable, yes.
Q. Did you review the figures of the '580 patent?
A. I did, yes.
Q. Can I direct you to Page 2 of the '580 patent, on the left column.
A. Okay.
Q. Do you see the header that says Related U.S. Application Data?
A. Yes, I do.
Q. Did you review each of these applications?
A. Not that I recall, no.

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Q. Did you review any of them?
A. I would have to check my declaration and materials considered to be sure.
Q. Did you review any of those applications in preparation for your deposition?
A. Not that I recall now.
Q. About how long did you spend preparing for this deposition?
A. I spent probably somewhere between eight and ten hours, something like that, over the last couple of weeks.
Q. Does that include time both spent reviewing materials on your own and meeting with others?
A. That would be my time only.
Q. How much time did you spend meeting with others in preparation for this deposition?
A. I met with counsel a few times, and the total amount of time would be approximately, about six hours, I would say.
Q. Just trying to get a sense of it. I'm not trying to eye at your bills, so -- let's

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see.
Do you see a little bit further down on Page 2, on the left-hand column of the '580 patent, a section labeled References Cited?
A. Yes.
Q. And if you kind of page through the '580 patent, you will see that that list goes on to Page 16 of the '580 patent.
Do you see that?
A. Yes, I do.
Q. Do you know what it means to be a references cited on the '580 patent?
A. These are references cited by the inventor with respect to their specification and inventive disclosure.
Q. Did you review any of the references listed in the references cited on Pages 2 through 16 of the '580 patent?
A. I would have to do a search and comparison with my materials considered to see if they overlay.
I -- this is a very long list. I

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can't say for sure just without doing that, performing that functionality and making sure that none of the materials considered are in this list.
Q. Would it be fair to say that if these references did not appear in your declaration, that you did not review them?
A. That is reasonable. I, again, I do not recall specifically looking at this list and going to a specific reference.
But, that would be reasonable to say.
Q. Can you turn to Page 45 of the '580 patent. That should be where Column 1 starts.
A. Okay. I am there.
Q. And do you see the header, Cross-Reference to Related Applications?
A. Yes, I do.
Q. Did you review any of these related applications in preparation for your declaration or deposition?
A. Again, I would need to reference my

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materials considered to be positive whether that is the case or not. I do not recall going to individually each one of these.
But, I would have to look at my materials considered to be accurate.
Q. But would it be fair to say if these applications do not appear in your declaration, that you didn't review them?
A. I do not recall reviewing any of the ones that wouldn't be listed in my materials considered.
Based on my memory, that would be reasonable.
Q. Can you look just a little bit further down on Page 45 of the '580 patent in Column 1.
A. Okay.
Q. Do you see the header labeled Brief Description of the Several Views of the Drawings?
A. Yes, I do.
Q. And those descriptions go from, I guess, the bottom of Column 1 until about halfway

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down Column 3 of the '580 patent.
Do you see that?
A. Yes, I do.
Q. Did you review these descriptions?
A. Yes, I did.
Q. Did you find them to be accurate?
A. Again, my review is from the perspective of a person of ordinary skill in the art, and I do not recall anything specific in the descriptions that I thought was inaccurate.
Q. If you found anything inaccurate, is that something you would have put in your declaration?
A. Well, my declaration was focused on responding to Dr. Cockburn's declaration regarding invalidity of the '580 patent.
And as part of that process, if I went to review a specific citation and I noted something that was incorrect, I would have included that in my declaration.
Q. Can you turn to Page 90 of the '580 patent. That is Column 91.

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A. Okay. I am there.
Q. Can you look at Column 91 starting at Line 29?
A. Okay. I am at Line 29.
Q. And at Line 29, the '580 patent starts, pretty long section, that says, "In various optional embodiments, the features, capabilities and technology, et cetera" -- sorry -- "and/or technology, et cetera, of the tablets, mobile devices, computing devices, networks, hardware and/or software, et cetera, disclosed in the following patents/applications, may or may not be incorporated into any of the embodiments disclosed herein."
And then, there is a list of lots of patents, publications and applications.
Do you see that?
A. Yes, I do.
Q. And it looks like that list goes from Column 91 until the top of Column 102.
Can you check that and make sure that is accurate?

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A. Yes, that is correct.
Q. Did you review any of the patents or publications listed in the '580 patent from Column 91, Line 34 to Column 102, Line 3?
A. I would again have to cross-reference my materials considered. I do not recall specifically going to a citation in this -- these columns and going on from there to review a particular prior art reference.
If I cite it in my declaration, then I did review it. If I did not, I don't recall reviewing it.
Q. So, to confirm, would it be fair to say that if these applications do not appear in your declaration, then you did not review them?
MR. LICYGIEWICZ: Objection, form.
THE WITNESS: Again, I, I would have to take a look back at all of the materials that I looked at.
But, if it is not cited in my declaration, I don't recall going and reviewing a specific citation here.

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I would have to look at a particular one and see if it causes me to recall looking at it at some point in time.
But, I -- nothing is jumping into my mind at this point in time.
BY MS. HUANG:
Q. Can you look at the '580 patent, starting at Column 102, Line 11.
A. 102, Line 11. Yes.
Q. Do you see where the claims of the '580 patent start at Line 11 of Column 102?
A. Yes, I do.
Q. Do you understand that the petitioner in this IPR did not challenge all of the claims of the '580 patent?
A. That is my understanding.
Q. Did you review all of the claims of the '580 patent or just the challenge claims?
A. Well, I certainly, as I mentioned before, I have read the '580 patent which would include the various claim elements.
But, preparing my report and

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responding to Dr. Cockburn's declaration, I reviewed these specific claims that he was citing to.

Q. Did you form any opinions about the -- any claims in the '580 patent that were not among the challenged claims?

A. No.

Q. Was anything in the '580 patent unclear to you when you reviewed it?

MR. LICYGIEWICZ: Objection to form.

THE WITNESS: When I was again performing my analysis to respond to Dr. Cockburn's declaration and reviewing the '580 patent from the perspective of a person of ordinary skill in the art, I do not recall anything as part of that process as being unclear based on my recollection.

BY MS. HUANG:

Q. Is it fair to say that you understood the '580 patent, based on your review?

A. Yes. Based on my review from the perspective of a POSITA, yes.

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Q. Is Claim 1 one of the claims that you reviewed in preparation for this case?

A. Yes, it is.

Q. Based on your review does Claim 1 of the '580 patent allow for only a portion of the second display layer to be transparent?

A. The Claim 1 states and discloses that there in -- one limitation associated with Claim 1 is to "detect, via the touchscreen, at least a portion of touch on the at least one user interface," as well as "at least a portion of the second virtual display layer is at least partially translucent."

So, based on its plain and ordinary meaning, is that to a POSITA, that at least the second virtual display layer is at least partially translucent.

Q. Does it suffice for at least -- excuse me. Strike that.

Would it suffice for Claim 1 of the '580 patent for only a portion of the second display layer to be at least partially translucent?

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MR. LICYGIEWICZ: Objection to form.

THE WITNESS: Well, the language specifically says in the -- again in the context of the claim, "where at least a portion of the second virtual display layer is at least partially translucent, so that at least a portion of the contents of the virtual -- first virtual display layer is visible through at least a portion of a second virtual display layer."

BY MS. HUANG:

Q. Based on your review, does Claim 1 of the '580 patent require the entirety of the second virtual display layer to appear to have a lesser depth than the first display layer?

MR. LICYGIEWICZ: Objection to form.

THE WITNESS: The claim discloses that once an aspect of touch is detected above a threshold, that a display via the touchscreen, a plurality of markings in the second virtual display layer that appears to have a lesser depth than the first virtual display layer.

Based on the plain and ordinary meaning that is stating that the second virtual display layer appears to have a lesser depth.

And it doesn't limit it from a perspective of a POSITA under the plain and ordinary meaning beyond that.

BY MS. HUANG:

Q. So, is it your understanding that Claim 1 is stating that all of the second virtual display layer appears to have a lesser depth?

Or would it suffice for it to have a portion of the second virtual display layer to appear to have a lesser depth?

MR. LICYGIEWICZ: Objection, form.

THE WITNESS: Well, my position is that from the perspective of a POSITA, the plain and ordinary meaning is exactly what the claim term discloses which is that the second virtual display layer is displayed

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that appears to have a lesser depth than the first virtual display layer.

And it doesn't provide any additional restrictions or limitations other than the plain and ordinary meaning of that.

BY MS. HUANG:

Q. Based on your understanding of the plain and ordinary meaning of Claim 1, would it be okay for part of the second virtual display layer to not appear to have a lesser depth than the first virtual display layer?

A. Again, there is no limitations or -- associated with the claim element based on the disclosure with respect to the second virtual display layer, other than it appears to have a lesser depth.

And based on my analysis, that is my understanding of what is being disclosed.

Q. Based on your review, would having a portion of the contents of the first virtual display layer obstructed by at least a portion of the second virtual display layer meet the

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requirement of Claim 1?

MR. LICYGIEWICZ: Objection to form. Scope.

THE WITNESS: Based on my review and in response to Dr. Cockburn's declaration, I don't recall him making that argument with respect to invalidity.

And, I am not sure how that is -- how to answer that question without seeing some assertion with respect to the claim elements from Dr. Cockburn.

And if he would like to make that assertion, I would be happy to perform an analysis at some point in time.

But, I don't recall that assertion being made.

BY MS. HUANG:

Q. So, in preparing your opinions, did you consider whether having a portion of the contents of the first virtual display are obstructed by at least a portion of the second virtual display layer would meet Claim 1?

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MR. LICYGIEWICZ: Objection.

THE WITNESS: Again, I performed my analysis based on Dr. Cockburn's assertions to review the patent specification and the claims.

And I don't recall that assertion being made so I did not perform that specific analysis. I could certainly do that in the future if asked to.

BY MS. HUANG:

Q. In the context of the '580 patent, what is your understanding of a touch?

A. The analysis of the claims and the plain and ordinary meaning of the terms that were -- that I reviewed, the '580 patent is consistent that a touch involves a physical contact with the touchscreen.

Q. What is an aspect of a touch in the context of the '580 patent?

A. Claim 1 does disclose that when an aspect of the touch is detected to surpass a threshold.

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And based on the plain and ordinary meaning of the claim, as well as the language in the claim and the disclosures in the specification, that that portion of the claim is talking about when a specific characteristic of the touch that is the physical contact surpasses a threshold, then the rest of that claim element would come into play regarding display via the touchscreen, et cetera.

Q. In the context of the '580 patent, what is a portion of the touch?

MR. LICYGIEWICZ: Objection to form.

THE WITNESS: The claim discloses, Claim 1 that is, discloses "detect via the touchscreen at least a portion of touch on the at least one user interface element."

And the plain and ordinary meaning with respect to that disclosure is that there is a part of the touch occurs on at least one user element and that is being detected.

So, based on the plain and ordinary meaning, that is where essentially a user

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would be at least touching -- at least a portion of that user's touch is in contact with a one user element.

BY MS. HUANG:

Q. So, does a touch include finger contact with a touchscreen?

MR. LICYGIEWICZ: Objection to form.

THE WITNESS: The '580 patent discloses in the specification the, again physical contact, and it doesn't limit it to any particular implement.

BY MS. HUANG:

Q. Would finger contact with a touchscreen be understood to be a touch in the context of the '580 patent?

MR. LICYGIEWICZ: Same objection.

THE WITNESS: With respect to the analysis of the claim terms, if the touch is meeting the limitations within the claim terms as disclosed, then it would be considered a touch.

BY MS. HUANG:

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Q. So, can you clarify to me what would be required for finger contact with a touchscreen to be considered a touch?

MR. LICYGIEWICZ: Objection to form. Scope.

THE WITNESS: What I was saying was with respect to the analysis of the claim terms and the disclosures associated with a touch on a touchscreen.

And as I perform my analysis, my review is based upon Dr. Cockburn's assertions of the aspects of the claims and the prior art disclosing the aspects of the claim.

And I would be happy to go to any part of my declaration that is responding to my analysis with respect to his assertions and discuss the context of the touch within those responses.

BY MS. HUANG:

Q. If I touch my finger in contact with a touchscreen on the at least one user interface element, would that be considered at least a portion of a touch detected?

MR. LICYGIEWICZ: Objection to form. Scope.

THE WITNESS: Again, I discussed in detail in my declaration the assertions put forward by Dr. Cockburn with respect to elements involving touch.

And I would be happy to go to those specific elements in my responses to discuss my analysis in response to Dr. Cockburn. Touch comes into play multiple times, and I would be happy to go to specific sections in my declaration to discuss those.

BY MS. HUANG:

Q. To understand the meaning of touch as used in the '580 patent, did you review the '580 patent?

A. As I said, I did review the '580 patent and the claim terms and the disclosures in the claim terms in the context of both the terms and the specification as part of my analysis.

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Q. You mentioned that you spent about three hours reviewing the '580 patent.

In your review of the '580 patent, did you identify any specific sections of the '580 patent specification that describes the inventions recited in the claims?

MR. LICYGIEWICZ: Objection, form.

THE WITNESS: My analysis was based upon Dr. Cockburn's assertions of invalidity based on the prior art.

I went to those citations. I reviewed in context about the claim elements and the areas cited in the specification from the perspective of a POSITA. And I present those in my declaration.

MS. HUANG: I am uploading Exhibit 2012. Can you let me know when you get that.

(Whereupon, previously marked Apple Exhibit 2012, first referral.)

THE WITNESS: Okay, I have it open.

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BY MS. HUANG:
Q. Do you recognize this document?
A. Yes. This is my declaration associated with this IPR.
Q. Does it appear to be an accurate copy of your declaration?
A. Yes, it does.
Q. Do you recall about how long you spent working on this declaration?
A. My estimate would be somewhere around ten hours or so.
Q. Can you turn to Paragraph 32 of your declaration. That is Page 14 or 17, depending on where you are looking at a page. It is 17 of the PDF.
A. Okay. Section 6, Overview of the '580 patent.
Q. Yep.
Did you write this section?
A. As part of the process of drafting this declaration, I worked with counsel. I provided an original draft. I do not recall if I

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specifically wrote these paragraphs. I certainly edited them if I did not draft them.
And I have thoroughly reviewed. And this is -- these reflect my opinions.
Q. So, do you feel comfortable with this characterization of the overview of the '580 patent?
MR. LICYGIEWICZ: Objection, form.
THE WITNESS: I'm not sure what you specifically mean. But, I certainly don't see anything here that I am uncomfortable with.
BY MS. HUANG:
Q. Did you discuss in your declaration any exemplary scenarios from the '580 patent that Claim 1 covers?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Well, I, in my declaration, I respond specifically and present my analysis based on Dr. Cockburn's assertions.
I would characterize it that way.

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And I could certainly go to those responses and discuss any specific aspects of my analysis to answer that question, if you can point me to what you are referring to.
BY MS. HUANG:
Q. In your review of the '580 patent, did you look for exemplary scenarios in the '580 patent that covered Claim 1?
MR. LICYGIEWICZ: Same objection.
THE WITNESS: Well, as I said, my analysis was in response to Dr. Cockburn's assertions, and I performed my analysis based on what he presented in, regarding his analysis.
And certainly various sections of the patent discuss various embodiments.
My analysis is presented in my declaration and incorporates specific sections of the '580 patent or citations of the '580 patent.
And, I guess I would have to look at a particular section in my analysis to be

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able to both understand and answer your question.
BY MS. HUANG:
Q. Can you point to anything in your overview of the '580 patent that includes an exemplary scenario that covers Claim 1 of the '580 patent?
MR. LICYGIEWICZ: Object to form.
THE WITNESS: Well, the overview of the '580 patent is just that.
I did not perform an analysis with respect to embodiment or any other aspects, other than my role was to respond to the assertions by Dr. Cockburn and I did that in my declaration.
BY MS. HUANG:
Q. When you did review the '580 patent, do you recall identifying any exemplary scenarios in the '580 patent that cover Claim 1?
MR. LICYGIEWICZ: Same objection.
THE WITNESS: Again, that was not my role for my analysis in this case. So, I --

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it is outside the scope of what I was asked to do.

BY MS. HUANG:

Q. Can you turn to Paragraph 82 of your declaration, please. It is PDF Page 40.

A. PDF Page 40?

Q. Yes.

A. And you said Paragraph 82?

Q. That's right.

A. Okay. I am there.

Q. So, do you see in Paragraph 82 where you talk about first virtual display layer and second virtual display layer?

A. Yes.

Q. Does Claim 1 recite a first virtual display layer?

A. Claim 1 does have elements that disclose a first virtual display layer.

Q. Does Claim 1 also recite a second virtual display layer?

A. Claim 1 does include elements that cite a second virtual display layer.

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Q. What is your understanding of a virtual display layer?

MR. LICYGIEWICZ: Objection to form.

BY MS. HUANG:

Q. What is your understanding -- I'm sorry. I will reword the question to be a bit more clear.

In the context of the '580 patent, what is your understanding of a virtual display layer?

MR. LICYGIEWICZ: Same objection.

THE WITNESS: The claim terms in Claim 1 specifically, is -- cites to a second virtual display layer that appears to have a lesser depth than the first virtual display layer.

The patent specification discloses that virtual display layers are a collection of user interface elements that appear or are assigned the same apparent virtual depth, is how the claim term discloses it and how the patent specification discusses it.

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BY MS. HUANG:

Q. Based on your understanding, can the first virtual display layer include more than one layer?

MR. LICYGIEWICZ: Objection to form.

THE WITNESS: Well, the plain and ordinary meaning of the first virtual display layer is just that, it is a first virtual display layer.

The claim does not cite to any additional aspects of the first virtual display layer with respect to how that is to be understood.

So, a person of ordinary skill in the art would use its plain and ordinary meaning as disclosed in the claim term.

BY MS. HUANG:

Q. Based on your understanding, can a second virtual display layer include more than one layer?

MR. LICYGIEWICZ: Objection, form.

THE WITNESS: I would have the same

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answer for the second virtual display layer based upon the claim, the wordings in the claim and the disclosures in the claim from the perspective of a POSITA's use of the plain and ordinary meaning.

There is -- with respect to the understanding of what a second virtual display layer is, the claim discloses that, based upon plain and ordinary meaning.

BY MS. HUANG:

Q. So, does the plain and ordinary meaning prevent the second virtual display layer from having more than one layer?

MR. LICYGIEWICZ: Objection to form.

THE WITNESS: My answer to that is that the plain and ordinary meaning with respect to the disclosure of the second virtual display layer in the claim are -- or my understanding is based upon the plain and ordinary meaning.

I don't see any particular contents that you are referring to or recall any

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analysis based on that from Dr. Cockburn's assertions.

If you can point me to some point -- part of my declaration where I am discussing that, and I could refine my answer.

Beyond that, that is my analysis and that is the best way I can articulate that.

BY MS. HUANG:

Q. If I direct your attention back to Exhibit 1001, the '580 patent.

A. '580, yes.

Q. And can you go to Column 104?

A. 104.

Q. Can you go to Line 42, please?

A. Okay. I am there.

Q. Do you see the text, "A second virtual display layer includes at least one of an operation layer, an emphasis layer, or a clipboard layer"?

A. I do see that.

Q. Do you think it is fair to say then that the second virtual display layer can include

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more than one layer?

MR. LICYGIEWICZ: Objection to form. Scope.

THE WITNESS: Again, I don't recall Dr. Cockburn making an assertion based on this claim element or the aspect of that claim element.

If he were to put forward a discussion or assertion based on that, I would be happy to perform an analysis and provide a response in the future.

But, I don't recall that assertion being made unless you can point to somewhere in my declaration where I am discussing that.

BY MS. HUANG:

Q. Did you review Claim 21 as part of your preparation for this case?

A. Well, as I said, I did review the entirety of the '580 patent.

Q. Did you consider Claim 21 when forming an understanding of the independent claims?

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A. My declaration contains my responses.

And my understanding of my role which was to analyze Dr. Cockburn's positions and analyze the claim term and the disclosures in the specification based on those assertions.

And that is what I did in my declaration.

Q. But you didn't cite to Claim 21 in your declaration, did you?

A. I don't recall citing to Claim 21. I could take a look, but I don't recall doing that.

Q. Can you please turn back to your declaration, this is Exhibit 2012.

A. Yes.

Q. And then please go to Paragraph 74, that is on PDF Page 36.

A. Okay. I am there.

Q. In Paragraph 74 you wrote the '580 patent explains that "virtual display layers (like the second virtual display layer) may be

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given the appearance of depth through the use of 3D depth cues.

In the context of the present description a 3D depth cue can be an effect, manipulation, transformation, animation, or operation which gives a visual indication of simulated depth." And there is a citation.

Did I read that right?

A. Yes.

Q. Can you give me an example of a, quote, effect, manipulation, transformation, animation, or operation which gives a visual indication of simulated depth?

MR. LICYGIEWICZ: Objection to form, potentially to scope.

THE WITNESS: Well, in my response to Dr. Cockburn and his assertions regarding invalidity, and specifically associated with the virtual display layers and what is disclosed as I cite to here in the '580 patent, that it is a person of ordinary skill in the art would understand that there are

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aspects of the elements in the layer that make it appear that the elements have a 3D depth, that is the 3D depth cue, to allow a user to perceive that the layer is at a depth that is indicated by the possible listing of operations and/or characteristics shown as you read or listed as you read in the citation to Column 68, Lines 25 through 30.

And specifically the specification says "can be". It doesn't limit it to other possible operations, for example.

But, the ones listed are given as possible operations that can be performed to provide the viewer the perception of a 3D depth cue which is consistent with a POSITA's understanding of how that might be performed.

BY MS. HUANG:

Q. Does transparency of one object offer a 3D depth cue?

MR. LICYGIEWICZ: Objection to form. Scope.

THE WITNESS: I don't recall an

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analysis of a single object transparency being made to assert a understanding of a 3D depth cue.

The specification doesn't limit how that is being done. What it specifically states is that it has to provide -- or essentially it is providing the user a 3D depth cue.

If Dr. Cockburn made that assertion, I could certainly go to my other part of my declaration to discuss my response to that. But, I don't recall that being made.

BY MS. HUANG:

Q. Does semi-transparency of part of one virtual layer offer a 3D depth cue as to other virtual display layers that may be displayed?

MR. LICYGIEWICZ: Objection to form and scope.

THE WITNESS: Again, I don't recall that specific argument being made. And, therefore, I don't recall a specific part of

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my declaration discussing that, certainly partial to the touchscreen.

And that certainly falls under possible 3D depth cues to a person of ordinary skill in the art.

But, if you can direct me to another part of my declaration where I am discussing that, I would be happy to go into a more thorough discussion.

MS. HUANG: Okay. Let's take ten. Does that sound good to you?

MR. LICYGIEWICZ: Sounds good.

THE WITNESS: Perfect.

MS. HUANG: Thanks.

(Recess taken -- 11:31 a.m.)

(After recess -- 11:42 a.m.)

BY MS. HUANG:

Q. Welcome back, Dr. Mahon.

Did you talk to anybody during the break?

A. I saw my wife in the kitchen, but no, nothing about the case.

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Q. All right, thank you.

MS. HUANG: I'm going to upload an exhibit for you. Can you let me know when you get that.

(Whereupon, previously marked Apple Exhibit 1004, first referral.)

THE WITNESS: Okay, I have it open.

BY MS. HUANG:

Q. Are you familiar with it?

A. Yes, I am.

Q. And what is the document I just uploaded?

A. This is a paper titled Zliding: Fluid Zooming and Zliding for High Precision Parameter Manipulation.

MS. HUANG: And for the benefit of the court reporter, the word that you hear us saying repeatedly is Zliding with a Z, just to let you know.

BY MS. HUANG:

Q. If I refer to Exhibit 1004 as the

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Ramos paper, will you understand what I mean?
A. Yes.
Q. As part of your preparation, did you read the Ramos paper?
A. I did.
Q. About how long did you spend reviewing it in preparation for this deposition?
A. I probably spent for the deposition itself about 20 minutes re-reviewing it.
Q. And about how long have you spent reviewing it in preparation for preparing your expert declaration?
A. I don't recall the amount of time. I would estimate it was somewhere around 45 minutes or so reviewing this.
Q. Did you read the entirety of the Ramos paper?
A. I certainly reviewed the entire paper, certainly focusing on specific aspects associated with Dr. Cockburn's assertions. But, yes.
Q. Did you review the figures of the

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Ramos paper?
A. I focused on the figures that Dr. Cockburn cited in my review.
Q. But did you review all of the figures?
A. All of the figures were part of my review, yes.
Q. Was anything in the Ramos paper unclear to you when you reviewed it?
A. Nothing is coming to mind as far as I can recall.
Q. Is it fair to say that you understood the Ramos paper?
A. I certainly understood what was being disclosed or discussed in the Ramos paper.
Q. Can you please look at Figure 1 of the Ramos paper. That should be on the first page.
A. Yes.
Q. What do you seeing in Figure 1 of the Ramos paper?
A. The, what Ramos calls the Zlider

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widget in two particular aspects, A and B.
Q. If I refer to the Zlider widget as just the Zlider, will you understand what I am talking about?
A. Yes.
Q. And what is your understanding of the Zlider disclosed in the Ramos paper?
A. That it is used for high precision parameter manipulation based on the Ramos paper.
Q. In Figure 1 of the Ramos paper, do you see different components of the Zlider?
A. As shown, the Zlider has several components that are displayed and cited by Dr. Cockburn.
Q. And what are those components?
A. They are referred to as the working area. There is a designation of a Vernier, a needle, and a pressure cursor.
Q. Sorry, did you say pressure cursor?
A. Yes.
Q. Okay. So there is a working area, a Vernier, a needle, and a pressure cursor that is

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all parts of a Zlider?
A. As shown in this figure and as cited to by Dr. Cockburn, yes.
Q. And what is a Vernier?
A. That Vernier is a, basically measurement grid.
MS. HUANG: All right. I'm going to upload another exhibit, but I may just share the screen so we are all literally on the same page due to the nature of it. But I'm going to upload it to you anyway in case you want to reference it.
Bear with me. This is a little bit bigger of a file. Let me know when you get that.
(Whereupon, previously marked Apple Exhibit 1005, first referral.)
THE WITNESS: Okay. I have the video open.
BY MS. HUANG:
Q. Are you familiar with this exhibit?

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A. Yes, I am.
Q. And this is Exhibit 1005?
A. That is correct.
Q. Can you tell me what this exhibit is?
A. Yes. It is titled Zliding: Fluid zooming and Zliding For High Parameter -- I'm sorry, High Precision Parameter Manipulation.
It is basically a demonstration video of the Zlider.
Q. Is it the same Zlider from the Ramos paper?
A. Yes.
Q. As part of your preparation -- strike that.
If I refer to Exhibit 1005 as the Ramos video, will you understand what I mean?
A. Yes.
Q. As part of your preparation, did you watch the Ramos video?
A. I did.
Q. Did you watch the Ramos video in its

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entirety?
A. Yes, I did.
Q. Do you know about how many times you watched the Ramos video?
A. I am guessing about a half dozen times or so.
Q. Do you recall how many times you watched it in preparation for your deposition?
A. Well, maybe I would up my overall estimate to be a little bit higher, because I probably did look at it two or three times, at least portions of it, in preparation for the video --
Q. And how --
A. I mean, demonstration -- I'm sorry -- the deposition. Third time.
Q. Third time is a charm.
A. Yes.
Q. How many times did you watch the Ramos video in preparing your expert report?
A. Again, there I would say overall certainly in its entirety at least three or four

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times. Parts of it several times.
Q. Was anything in the Ramos video unclear to you when you reviewed it?
A. Well, certainly the video is a little fuzzy at certain points in time, if that is what you mean by unclear.
Q. Were you able still to understand what was being shown to you in the video?
A. Yes.
Q. I'm going to share my screen, just because of the nature of this video, as opposed to asking you to advance to certain seconds because we potentially would end up at different points.
So, I'm going to share.
THE REPORTER: Let me just ask, am I taking down the video as you play it or --
MS. HUANG: I know this is an unorthodox or oftenly-used type of exhibit. I am going to advance --
MR. LICYGIEWICZ: Jenny -- excuse me Jenny.

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What may make sense is, if we are at a certain part of the video, to at least indicate the time of the video that we are looking at, at that point in time, so the court reporter can have it referenced in the transcript to the time aspect.
MS. HUANG: Absolutely.
MR. LICYGIEWICZ: So, if we need to go back.
MS. HUANG: Yeah, that is what I am intending to do, but if I miss it, I would appreciate anybody jumping in and letting me know. All right.
I'm going to advance the video to 14 seconds, although it will require me to play it a little bit, because it doesn't show me the time. All right. Let's see -- okay. It says 15.
So, if I scroll manually, this doesn't automatically update. But, let's see if I can do this. Now it says 15. Okay.
I have advanced the Ramos video to

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14 seconds.
BY MS. HUANG:
Q. Can you see that on your screen?
A. Yes.
Q. Do you see the Zlider widget at 14 seconds of the Ramos video?
A. Yes.
Q. And can you describe to me the components of the Zlider that you see at 14 seconds in the Ramos video?
A. I see the working area, the Vernier, and the pressure cursor.
Q. Is it your understanding that this is the same Zlider widget that was described in the Ramos paper?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: It is my understanding that this is a demonstration of the use of the Zlider and its functionalities.
Certainly it would seem to make sense that they are demonstrating what they are presenting in the Ramos paper.

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BY MS. HUANG:
Q. Is it your understanding that the person who created this video is the same coauthor as the Ramos paper?
A. That is my understanding.
Q. Can you see the pressure cursor in the Ramos video at 14 seconds?
A. Yes.
Q. If I refer to the pressure cursor or the pie-wedge-shaped object, will you know what I'm talking about?
A. Yes.
MS. HUANG: Okay. I'm going to toggle the time in the Ramos video now to 3 minutes and 16 seconds. One second. Oh, right there. Okay.
BY MS. HUANG:
Q. Can you tell me what you see in the Ramos video at 3 minutes and 16 seconds?
A. It is an image. And then I see next to the image, I see the Zlider in this freeze frame.

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Q. And what components of the Zlider do you see in the Ramos video at 3 minutes and 16 seconds?
A. I see the working area, the needle, the Vernier and the pressure cursor.
Q. In your opinion, is the pressure cursor of the Zlider widget shown at 3 minutes and 16 seconds of the Ramos video opaque?
MR. LICYGIEWICZ: Objection, form.
THE WITNESS: I specifically address this frame in my declaration in response to Dr. Cockburn's assertions.
I don't recall an analysis of whether that is opaque. I can certainly go to that section in my declaration and discuss the -- my analysis in response to Dr. Cockburn in that context if you would like.
BY MS. HUANG:
Q. Well, looking at this video right now at 3 minutes and 16 seconds, would you characterize the pressure cursor as at least

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partially translucent?
MR. LICYGIEWICZ: Objection, form.
THE WITNESS: Again, I would cite back to my declaration and my analysis with respect to the assertions by Dr. Cockburn in the context of my discussion of this particular image in my declaration.
BY MS. HUANG:
Q. Do you understand the pressure cursor to be the entirety of the pie-wedge-shaped object?
A. Again, I don't recall any analysis that it is made up of segments or any information that would lead a POSITA could understand that it is segmented.
And so, I didn't perform an analysis of whether it is segmented. Certainly it appears to be one element.
Q. Let's turn to your declaration -- I. Will leave this video up for now. But, let's turn to your declaration. So, Exhibit 2012.

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A. Okay.
Q. At Paragraph 95, please. And that would be PDF Page 76.
A. Paragraph 95, PDF Page 46 --
Q. 76.
A. I'm sorry. I'm sorry. So I'm going to which paragraph?
Q. 95.
MR. LICYGIEWICZ: Jenny, there is only 67 pages in the PDF. I think you mean 46.
MS. HUANG: Yeah, I mean -- okay, hold on. I mean Paragraph 95 and Page 76 of the declaration. Am I in the right -- oh, I'm in the wrong document. I'm sorry.
MR. LICYGIEWICZ: That is all right.
MS. HUANG: Apologies, I will be right there. Hold on.
BY MS. HUANG:
Q. All right. Coincidentally, same Paragraph 95 and Page 42 -- 43, which is also just to make it nice and confusing, Page 46 of the PDF.

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A. I am there.
Q. Okay. All right. Do you see on, in Paragraph 95 you wrote, "As shown and consistent with Figure 6 of the Ramos paper, the translucency of parts of the pressure cursor change the appearance of both the markings of the Vernier and the underlying content"?
A. Yes.
Q. Would it be fair to say that the pressure cursor is at least partially translucent?
MR. LICYGIEWICZ: Objection to form. Mischaracterizes testimony.
THE WITNESS: What I'm stating here in this paragraph is that based on my review of both the Ramos paper and the video, that the pressure cursor appears to the viewer that the pressure cursor changes during its activation in the working area.
And that you could still see underlying elements under that pressure cursor. And that is what I am discussing here in this paragraph.

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BY MS. HUANG:
Q. What underlying elements do you see under the pressure cursor in -- at page -- I'm sorry, at time 3:16 of the Ramos video?
A. At this particular freeze frame, the pressure cursor is overlying the edge of the working area. And it is over top of at least certain parts of the Vernier associated with the Zlider.
Q. Are there any other underlying elements that you see the pressure cursor on top of, in the image at time 3:16 of the Ramos video?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Could you repeat the question, please?
BY MS. HUANG:
Q. Yes. Are there any other underlying elements that you see the pressure cursor on top of, in the image at time 3:16 of the Ramos video?
MR. LICYGIEWICZ: Same objection.

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THE WITNESS: This freeze frame, it appears that the -- and it is a little fuzzy, but it appears that the needle may be intersecting it underneath the pressure cursor. Certainly at other points in the video, you can see that more clearly.
And, the pressure cursor is extending here to the -- within the image region of this particular freeze frame.
BY MS. HUANG:
Q. Is the portion of the pressure cursor that extends within the image region of the freeze frame at least partially translucent?
A. The change in appearance of the pressure cursor, as I said, does give the appearance that it is -- the image is underlying content of the pressure cursor, based upon this freeze frame and to someone viewing this freeze frame.
Q. So, to clarify, does the pressure cursor appear at least partially translucent over the underlying content that is the image?

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MR. LICYGIEWICZ: Objection, form.
THE WITNESS: Well, the pressure cursor is certainly changing the appearance of what is underneath it, and that does include the image.
MS. HUANG: I'm going to stop sharing for a second here.
BY MS. HUANG:
Q. Can I direct your attention, Dr. Mahon, to Exhibit 1004, the Ramos paper.
A. Yes.
Q. And can you please go to Figure -- one second.
Can you please go to Figure 6 of the Ramos paper, that is on Page 6 of the Ramos paper.
A. Okay. I am there.
Q. Is this one of the figures you considered in your analysis?
A. Yes, I do. I did respond to Dr. Cockburn and I did include Figure 6 as part of my analysis.

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Q. Do you see a Zlider in the Figure, in Figure 6 of the Ramos paper?
A. Yes.
Q. And where is that in the image?
A. In Figure 6, the Zlider is to the right side of the other elements of that figure.
Q. Does that Zlider include a pressure cursor?
A. Yes.
Q. And then to the left of the Zlider, there is a viewport, as labeled by Figure 6.
Do you see that?
A. Yes, I do.
Q. And then in that viewport, there appear to be grid lines as labeled in Figure 6.
Do you see that?
A. Yes, I do.
Q. Do some of the grid lines in the viewport -- strike that.
Is a portion of a grid line in the viewport visible through the pressure cursor of the Zlider in Figure 6?

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MR. LICYGIEWICZ: Objection to form. Scope.
THE WITNESS: In my response to Dr. Cockburn, specifically in Paragraphs 87 through 90-plus, I am responding to his assertions regarding Figure 6.
And I am discussing, for example, that his assertion that translucency associated with the pressure cursor, since he is asserting that, why that can't be met based upon the citation to Figure 6.
And I discuss that for several different reasons in my analysis and conclusions for several different reasons in my section of that declaration.
BY MS. HUANG:
Q. I guess my question is simpler than that.
It is just that in Figure 6 of the Ramos paper, is a portion of the grid lines visible through the pressure cursor of the Zlider?

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A. Well, in this section, I am stating that if the assertion that the pressure cursor is translucent, is true, that it appears then to a person of ordinary skill in the art, that it is above the other elements of the Zlider, as well as what we just looked at that is cited as the viewport.
And why that is inconsistent with the assertion -- that previous assertion that the Zlider itself and its elements are in a layer above the viewport.
If the pressure cursor is part of the elements in the same layer of the Zlider, then the assertion that it is -- demonstrates translucency would then put it at a higher layer than the other elements of the Zlider.
And that is what I am referring to here.
Q. You just stated that in this section I'm stating that if the assertion that the pressure cursor is translucent is true, and then you went on to say more.

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Is the pressure cursor translucent?
A. Well, in this section, I am again responding to Dr. Cockburn's analysis of the pressure cursor's characteristics, and that if you are citing to that characteristic of the pressure cursor, that is the visual characteristic of the pressure cursor, why that is inconsistent with the other assertions made with respect to the second virtual display layer being -- requirement being met by the pressure cursor is what I am discussing in this section.
Q. Can you go to Paragraph 91 of your declaration.
A. Okay. I am there.
Q. The second sentence you wrote, "The translucency of the pressure cursor is seen over both the content area (which Dr. Cockburn identifies as being in a first virtual display layer) and the Zlider widget (which Dr. Cockburn identifies as being in a second virtual display layer)."
Do you agree that the pressure

Page 71

cursor is translucent?
A. Again, this is my analysis in response to Dr. Cockburn's assertion of the pressure cursor meeting the translucency requirement for the claim.
And, from that context, I am responding here that that supposed translucency of the pressure cursor places it to the -- from the perspective of analysis of being over the elements I discussed in that paragraph.
So, therefore, it couldn't satisfy the claim requirement of both being in the first virtual display layer, as well as over top of or overlaying the first virtual display layer.
Q. You said supposed translucency in your answer here.
Are you saying that it is not translucent, the pressure cursor, specifically?
A. No. I am saying that I am responding to his assertion that it is, is what I'm saying.
Q. Are you acknowledging the

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translucency of the pressure cursor in the second sentence of Paragraph 91?
A. I am saying that certainly the pressure cursor, based upon his citation to Figure 6, certainly has a characteristic that changes the underlying elements such as the grid line and the content area.
And, if -- again my analysis is based on his assertions so I'm responding to that. I am not making a specific determination here of whether it is translucent or not.
Certainly it would appear to change the characteristics of the underlying elements. And if it is, again, translucent based on his assertions, then my conclusions and analysis flow from that perspective.
Q. You just said that the pressure cursor would appear to change the characteristics of the underlying elements.
How are the underlying elements changing based on your analysis?
A. The intensity of the shades of gray,

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for example, of the grid line in the Zlider and the grid line in the area to the left of the Zlider, is lower.
It is a lower intensity gray. So, that is changed to the user or the viewer.
Q. Are you saying that the portions of the pressure cursor that are to the left of the Zlider appear more white than they do green?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: I'm sorry. Could you say that again?
BY MS. HUANG:
Q. Yeah. The question was: Are you saying that the portions of the pressure cursor that are to the left of the working area of the Zlider appear to be more white in color than green in color?
MR. LICYGIEWICZ: Objection to form. Mischaracterizes the prior testimony.
THE WITNESS: I'm not sure you understood what I said and/or based on that, I can't understand the context of the

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question.
BY MS. HUANG:
Q. I'm trying to understand, you said earlier that the pressure cursor has a characteristic that changes the underlying elements.
How are the underlying elements changing as it relates to the pressure cursor?
A. What I said was from the perspective of a viewer, you have, for example, a gray horizontal grid line on the left that is perpendicular to the vertical Zlider, for example.
And that you can see that the gray of that grid line changes in intensity as it intersects with the pressure cursor, is what I'm saying.
Q. Thank you.
MS. HUANG: I'm going to share my screen again. I'm going to advance the video here to 4:01, which is 4 minutes into the video. I'm just shy of 4 minutes.

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BY MS. HUANG:
Q. But, what do you see in the screen capture at 3 minutes and 59 seconds of the Ramos video?
A. I see a person's hand holding what appears to be a stylus and an image -- a picture of some structure underneath the person's hand and stylus.
And this is in the context of the -- there is like a, a dropper that has a green bulb on top of it that seems to be underlying the stylus.
MS. HUANG: I'm just going to play about the next 20 seconds without audio, hoping that is fine. If you want the audio on, I can turn it on.
I mostly just want you to see it and then I will come back and see it and then I will ask you some questions.
MR. LICYGIEWICZ: Jenny, can you turn the audio on for us?
MS. HUANG: Yes, I can turn it on.

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Let's see, I don't know how loud it is going to be so bear with me. Hang on. Here we go.
(Video plays.)
MS. HUANG: All right. Counsel appeared to enjoy the music with the benefit of the audio?
MR. LICYGIEWICZ: We didn't get any audio, Jenny, but that is all right.
MS. HUANG: Oh, okay, it is just music for what it is worth.
MR. LICYGIEWICZ: Okay.
MS. HUANG: If you guys want to play it on your own, I'm happy to have you play it. You can hear the audio. I was just amused because I didn't know this until I played it either that it was literally just music.
MR. LICYGIEWICZ: I am happy taking your representation that it is music.
MS. HUANG: Yeah, okay. I'm going to bring it back to 4:01.
(Video plays.)

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BY MS. HUANG:
Q. All right. So, we are at 4 minutes and 1 second of the Ramos video.
So, is it fair to say that if the pressure cursor at 4 minutes and 1 second is displayed in the Ramos video?
A. Yes.
Q. And is it fair to say that that pressure cursor is connected to an eye dropper tool?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Well, certainly the pressure cursor is there and there is an eye dropper depicted.
So, the perception would be that the, the eye dropper is associated with the pressure cursor.
But, beyond that, I don't recall a specific analysis based on that. But, from the perspective of a viewer, that seems to be reasonable.
BY MS. HUANG:

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Q. Does the eye dropper tool in the Ramos video at 4 minutes and 1 second appear to be a color picker?

MR. LICYGIEWICZ: Objection, form.

THE WITNESS: Again, I don't recall a specific analysis associated with this. If you can point to me in my declaration about this, I would be happy to discuss it further.

BY MS. HUANG:

Q. Did you watch this portion of the Ramos video?

A. Yes, I did.

Q. And, when you viewed this portion of the Ramos video, were you familiar with -- or understanding what you saw at this portion at 4 minutes and 1 second to about 4 minutes and 18 seconds of the Ramos video?

A. Well, I certainly watched the demonstration of the Ramos video between that time frame.

Q. And what was your understanding of what was being shown there?

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MR. LICYGIEWICZ: Object to the form.

THE WITNESS: Another demonstration of what the inventors are -- or, you know, the authors are disclosing as the use of their presentation and their paper of that widget.

BY MS. HUANG:

Q. And what did the widget appear to be doing in the Ramos video from about 4 minutes to 4 minutes and 18 seconds?

A. Again, I don't recall a discussion of specifically this part of the video with respect to my analysis of Dr. Cockburn's assertions.

I would be happy to discuss that if you can point me to where that is in my declaration.

Q. Sitting here right now, can you tell what is happening when viewing the Ramos video at 4 minutes and 1 second to about 4 minutes and 18 seconds?

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A. Well, as I said, I didn't discuss an analysis based on Dr. Cockburn's assertions of this particular section of the video.

If there is specific assertions made with it, I would be happy to perform an analysis and give you my opinion on it.

MS. HUANG: I'm going to hit play and just play it back again so you can watch this portion of the video. I turned the audio down on my end for my benefit because I can hear it.

(Video plays.)

BY MS. HUANG:

Q. So, can you explain to me what you just saw in the Ramos video from about 4 minutes to about 4 minutes and 18 seconds?

MR. LICYGIEWICZ: Objection to form. Beyond the scope.

THE WITNESS: Again, I don't recall Dr. Cockburn making an assertion with respect to this aspect.

And certainly if he did, I have an

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analysis of it in my declaration and I would be happy to go to my declaration and discuss that.

BY MS. HUANG:

Q. You said you don't recall Dr. Cockburn making an assertion with respect to this aspect.

Do you recall discussing this portion of the Ramos video in your declaration?

A. To be clear, what I was saying is I don't remember Dr. Cockburn pointing to that particular section of the video.

And if he did, I certainly responded to that in my declaration or encompassed it in my declaration.

I would have to look in my declaration to remind myself of his -- both his assertions and my analysis to discuss it.

Q. Did you refer to this section of the Ramos video from about 4 minutes to 4 minutes and 18 seconds in your declaration?

And please feel free to look. It is

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not meant to be a memory test.

A. I don't cite to this specific portion of the video that I can see in my declaration.

Q. So, if you don't cite to this portion of the video from 4 minutes to 4 minutes and 18 seconds of the Ramos video, is it fair to say that the opinions in your declaration didn't rely on those portions, either?

A. I would characterize it as in response to Dr. Cockburn's assertions, I certainly would have taken into account any aspects of this section of the video that he pointed to.

But, in my analysis -- in my presentation of my analysis in my declaration, I am not citing to any aspects that he pointed to in this section of the video. That is all.

Q. Do your opinions rely on this portion of the Ramos video from 4 minutes to 4 minutes and 18 seconds?

A. Again, based on the characterization

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and the context that I just explained, certainly my opinions and my analysis would take that into account.

But, beyond that, I can't characterize it beyond that.

Q. Is there any specific way that your analysis took into account the Ramos video from 4 minutes to 4 minutes and 18 seconds?

A. It would have been in response to Dr. Cockburn making an assertion with respect to this section of the video. It would have taken that into account.

Q. But if Dr. Cockburn did not make any assertions with respect to the Ramos video from 4 minutes to 4 minutes and 18 seconds, is it fair to say that your opinions did not rely on any portion of the Ramos video from 4 minutes to 4 minutes and 18 seconds?

A. Well, again, any aspects that he would have pointed to that, even without referencing, if he made an allusion to this section without citing to it, certainly in my

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analysis I would have been looking for what aspects he was alluding to, and this, as part of the video, would have been part of that analysis.

But, I wouldn't characterize it beyond that.

Q. Sitting here right now, do you recall any specific way that you relied on the Ramos video from 4 minutes to 4 minutes and 18 seconds in your declaration?

A. Again, based on my overall analysis in response to Dr. Cockburn's assertions, it would be part of that analysis.

But, beyond that, I can't characterize it more specifically.

MS. HUANG: Let's take a quick break. Another ten if that is good with everybody.

THE WITNESS: That works for me.

MR. LICYGIEWICZ: Sounds good.

MS. HUANG: Thanks.

(Recess taken -- 12:41 p.m.)

(After recess -- 12:52 p.m.)

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BY MS. HUANG:

Q. Welcome back, Dr. Mahon.

A. Thank you.

Q. During the break, did you talk to anybody about this case?

A. No, I did not.

Q. Prior to August of 2011, did you have any experience with user interface widgets that were transparent or semitransparent?

A. Yes.

Q. Could you tell me about your experiences?

A. Yes. One of my research projects involved multi data fusion and that included aspects of various enduser context, including mobile screens, laptops, bit clients, as well as CAVE environments, which are 3D immersive environments.

So, in various implementations, the group of software engineers I was leading were integrating in our data fusion techniques into visual elements or visual displays across a range

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of types of devices that included using various graphic tools or operations to enhance the user's perception of the analysis that we were performing and to present our fusion results within those environments.

Q. What -- could you talk a bit about your data fusion techniques.

What does that mean?

A. We developed a software application that went across boundaries of intelligent systems to gather data. Also included unclassified data sources. And we would fuse that together based upon what we called the user's needs, what the role of the user was, what their object and what their desired goal was for completing their job functionality, essentially.

And then we would use various aspects of metadata and data types for bringing together disparate types of information to be able to present it to the user as an additional element in their, for example, analysis of inputs for performing their role.

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So, the data fusion was executed as part of that functionality.

Q. And what aspect of your research project included user interface widgets that were transparent or semitransparent?

A. Well, specifically integrating our results into a user display.

And as I said, the user displays were very varied between users with handheld devices, users with laptops, with heavy clients, and as I mentioned various CAVE environments, which could include two-dimensional, three-dimensional CAVE environments.

So, users would put on specially made glasses that would enhance their depth perception, for example, of particular data that was being presented so they could perceive different groups of data within the 3D space, for example.

Or, a 2D, a -- basically a 2D screen that would be perceived by the user as having three dimensions by integrating in shading and

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other aspects of the data to enhance that perception.

Q. I am very intrigued by this mention of CAVE environments.

Was this like a simulation that you were working with or was it for people who are actually in a cave?

A. It is a term that is used -- was used to provide a broad umbrella term for immersive environments.

So, for example, at JIATF South, Joint Interagency Task Force, F-O-R-C-E South, they had -- in the beginning they had a two-dimensional screen that was their immersive environment.

And they eventually turned that into one, two, three, four, five, five different walls that would allow the user to walk in and then look around and see the data at various angles and from different perspectives.

Q. And what part of those immersive environments were transparent or semitransparent?

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MR. LICYGIEWICZ: I'm just going to caution the witness not to disclose any substance of government communications that may be designated as secret or top-secret because of the security clearances required.

THE WITNESS: Understood. Thank you.

So, in order to, if it was just a wall, a single wall, you would have to present that data. For example, if there is clusters of data that were connecting various sources of intelligence together, you would want those clusters to be rendered both in various locations on that two-dimensional screen.

But, you would also want them to be -- appear to be closer, further away from the user, to be able to provide additional context for how those -- all of that data which could overwhelm the user given the limited amount of space, could be perceived, and then rotated and changed to kind of look

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at the different data connections. That would be an example of that.
BY MS. HUANG:
Q. So, depending on whether the user would be interested in particular data at a certain time, it might change its appearance?
A. Well, certainly it would be --
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: -- yeah, if they change aspects of their desired output, meaning they are asking for additional data sources to be brought in, et cetera, et cetera, that would change the perspective or what they are seeing, right, that changes the output.
So, therefore, the data would change to reflect that. They could also interact with the data by, for example, just a single example, moving it around.
Meaning you have, for basically lack of a better description, star clusters. And each one of those little stars represents a

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data source.
You can drill in and get into the cluster, so you are kind of inside the cluster. Or you can zoom out and you can see clusters, behind clusters, depending upon how you change your angle of looking at the data.
And also within a, obviously a 3D immersive environment, where you have again imaging above you, to left and right, as well as in front of you, then that comes into play, too, because when you change your angle of view, then the data is going to change to reflect that change in angle of view from the user's perspective.
BY MS. HUANG:
Q. Would the way that the data is presented change depending on whether that data was selected?
A. It could.
Q. How might it change?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Well, again, in the

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operational environment we had, you could select it. You would highlight it. You would bring up metadata for you to look at, and look at particular elements that went in to make up that particular piece of data.
Where it came from, et cetera.
BY MS. HUANG:
Q. Was this data something that might appear to be transparent or semitransparent?
MR. LICYGIEWICZ: Objection to form. Beyond the scope.
THE WITNESS: Again, I am just discussing my experience with being able to -- or interacting with and displaying data that appeared to have depth associated with it.
An element of data would be considered a visual object. That visual object would have characteristics. You could, as I said, you could select that object and look at what makes up that object. That object could be represented in many

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different ways.
So, it is, it was very varied. It depended upon our implementation. And we had different end users, and they each had slightly different requests for the way they wanted to try to consume the data.
BY MS. HUANG:
Q. But, there were a lot of ways that you could adjust it, depending on the user's needs and what they needed to see?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Again, it would -- we would use standard graphics techniques for meeting the requirements of the end user.
BY MS. HUANG:
Q. Thank you for that. I didn't mean to ask anything that may be secret government things. So, hopefully I didn't get you into any trouble there.
All right. Let's shift gears here. Let's go back to the '580 patent. So, Exhibit 1001, please.

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A. Okay. I'm there.
Q. Okay. And can you go to, it would be PDF Page 53.
A. One second.
Q. Yes.
A. Okay. I am there.
Q. And Column 17. There is a paragraph that starts around 22. We will look at Line 23.
A. Okay. I am there.
Q. If you want to take a second and just read that paragraph, that might be helpful. And just let me know when you are done.
A. Okay. I have read it.
Q. Do you see in the '580 patent at Column 17, around Line 27 where the '580 patent talks about four predefined touch states: No touch, light touch, medium touch, and heavy touch?
A. Yes, I do.
Q. Can you tell me which of the four predefined touch states represents the lowest touch state?

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A. In the '580 patent, it does disclose touch states, as you read. And specifically, those touch states are examples at least of those touch states are listed.
And so, in terms of a POSITA's understanding, no touch doesn't involve a touch. Then there is a light touch, a medium touch, and a heavy touch.
And that obviously no touch is different than a light touch, for example.
In terms of the characterization of that being low, it is just -- it is not a touch. The touch doesn't exist in that state.
Q. So, which of those touch states would you consider to be the lowest touch state?
MR. LICYGIEWICZ: Object to the form.
THE WITNESS: Well, again, the touch state, it lists four. And, the term "touch state" is distinct from, for example, ISO patent discloses the touch. And the patent is very clear in many places that a proximity

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is different than a touch.
With respect to the touch states, there is four listed. And the no touch is certainly one of those states.
BY MS. HUANG:
Q. Is no touch the lowest of the four touch states listed in Column 17 of the '580 patent?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Well, if you are referring to the following line, which is: "As an option, the lowest touch state may require some form of proximity."
Again, that is consistent with both the differentiation and distinctness of proximity and touch which involves physical contact.
And, if, in that part of the specification, that line, it is referring to what it calls the lowest touch state and then also may require some form of proximity.
And the only thing that would make

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sense there is probably the leading term which is no touch.
But again, that is distinct from what a proximity is, and that is why the specification, I think, believe uses that language.
BY MS. HUANG:
Q. You said "but again that is distinct from proximity."
What are you saying is distinct from proximity?
A. The touch.
Q. Does that statement that says "as an option, the lowest touch state may require some form of proximity."
Does that mean that a touch state can be accomplished without actual physical contact?
MR. LICYGIEWICZ: Objection to form.
THE WITNESS: Well, the specifications specifically says that the lowest touch state may require some form or

proximity.

It doesn't provide any detail beyond that. It is up to the implementer in how to approach that.

BY MS. HUANG:

Q. How would a POSITA understand that sentence?

MR. LICYGIEWICZ: Object to form.

THE WITNESS: Again, I certainly respond to Dr. Cockburn's assertions in my declaration. And my responses are based upon the clear distinctions in the -- based on my analysis of the '580 patent, that it defines a touch as physical contact with the touch screen.

And that it, in many places, it provides a clear distinction between proximity and touch.

So, a person of ordinary skill in the art reading these sentences understands that a touch state is not the same thing as a touch. And that it lists four possible touch

states.

And it also says that it is one of the -- or what it calls the lowest touch state may require some form of proximity. And I think that is understandable from the POSITA's perspective that you could include some form of proximity if you wanted to define the lowest touch state to involve proximity.

BY MS. HUANG:

Q. And does that mean that the touch states referred to as no touch may require some form of proximity?

A. Those are listed, again, separately. The no touch, as it means that there is no physical contact, is a possible touch state.

That is separate and also distinct from if you want to implement some lowest form of touch state to include proximity, as an implementer, it is just pointing to the possibility of doing that.

MS. HUANG: All right. I have no

further questions.

MR. LICYGIEWICZ: I don't have any questions for the witness at this time. We will reserve the opportunity to read and sign the deposition.

(Whereupon, signature not having been waived, the deposition suspended at 1:12 p.m.)

* * *

CERTIFICATE OF NOTARY

* * * * *

I, LORI J. GOODIN, RPR, CRR, RSA, CA CSR # 13959 the Notary for this proceeding, do hereby certify that the witness whose testimony appears in the foregoing proceeding was sworn by me; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, or financially or otherwise interested in the outcome of this action.

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Notary Commission Number: GG987804
My Commission expires: May 12, 2028
STATE OF CALIFORNIA, CA CSR# 13959
My Commission expires: February 22, 2026

DISTRICT OF COLUMBIA, WASHINGTON DC
My Commission expires: June 1, 2026

Mark P. Mahon, Ph.D., c/o
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Case: Apple Inc. v. Smith Interface Technologies, LLC
Date of deposition: July 31, 2025
Deponent: Mark P. Mahon, Ph.D.

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