

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

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APPLE INC.,

PETITIONER

V.

SMITH INTERFACE TECHNOLOGIES, LLC,

PATENT OWNER

-----X

IPR2024-01087

PATENT 10,656,755 B1

-----X

10:33 a.m.

June 26, 2025

REMOTE DEPOSITION OF MARK P. MAHON, Ph.D

Reported By: Randi J. Garcia, RPR

DIGITAL EVIDENCE GROUP

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1 Transcript of the deposition of
2 MARK MAHON, Ph.D., called for Oral
3 Examination in the above-captioned matter,
4 said Deposition being taken pursuant to
5 Federal Rules of Civil Procedure by and
6 before RANDI J. GARCIA, Registered
7 Professional Reporter, CCR, and Notary
8 Public, via Zoom, on Wednesday, June 26,
9 2025, commencing at approximately 10:33 a.m.

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I N D E X

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WITNESS: MARK MAHON, Ph.D

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EXAMINATION

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By Ms. Huang: 7

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1 M A R K M A H O N, Ph.D. after having been
2 first duly sworn, was examined and testified
3 as follows:

4 EXAMINATION

5 BY MS. HUANG:

6 Q. Good morning, Dr. Mahon.

7 A. Good morning.

8 MS. HUANG: So this is Jenny Huang
9 speaking for petitioner, Apple, the
10 witness is Dr. Mark P. Mahon. And for the
11 record, this deposition addresses the
12 inter partes review proceeding for
13 IPR2024-01087, regarding U.S. Patent
14 Number 10,656,755, titled Gesture Equipped
15 Touch Screen System Method and Computer
16 Program Product.

17 BY MS. HUANG:

18 Q. Before we get going, I'm just going
19 to discuss a series of ground rules and other
20 preliminary matters. Does that sound good?

21 A. That's fine.

22 Q. If I refer to U.S. Patent Number

1 10,656,755 as the '755 patent, will you

2 understand what I mean?

3 A. Yes.

4 Q. Dr. Mahon, is there anyone in the
5 room with you today?

6 A. No.

7 Q. Do you understand that you cannot
8 communicate with anyone verbally or nonverbally
9 during the examination?

10 A. I do.

11 Q. And can you confirm that you're not
12 communicating with anyone using any type of
13 instant messaging application or phone or the
14 like?

15 A. I can confirm I am not doing that.

16 Q. Do you have any programs running on
17 your computer right now beyond the Zoom
18 application for this deposition?

19 A. No.

20 Q. And I'll ask that you not open any
21 other applications unless it's, I guess, a
22 media PDF displayer or program to view

1 exhibits. Does that sound okay?

2 A. That's fine.

3 Q. Do you have any notes or papers,
4 physical notes or papers in front of you?

5 A. I do not.

6 Q. Any other electronic devices?

7 A. I have my phone in my room with me.

8 Q. Okay. Can you -- can we both agree
9 that you won't be using your phone during the
10 deposition?

11 A. Yes.

12 Q. For the exhibits that we discuss
13 today, I'll upload a copy into the Zoom chat
14 feature. So when we get there, I ask that you
15 only use the copy I provide through the Zoom
16 chat feature for the deposition. Can you agree
17 to that?

18 A. Yes.

19 Q. And since this is a remote deposition
20 and we're using video conferencing equipment
21 here, there may be a slight delay in our
22 communications, so can we both agree to try to

1 speak slowly and try not to speak over one
2 another?

3 A. Yes, I will try.

4 Q. I will try too.

5 If I ask a question and you do not
6 understand it, can you please ask me to
7 rephrase or clarify that question?

8 A. Yes.

9 Q. So is it fair for me to assume that
10 if you answer my question that you understand
11 the question?

12 A. Yes.

13 Q. And you understand that even though
14 we're conducting the deposition remotely, you
15 are under oath today just as if you were
16 providing sworn testimony in front of a judge
17 and a jury?

18 A. Yes.

19 Q. And you remain under oath for as long
20 as this deposition is ongoing. Do you
21 understand that?

22 A. Yes, I do.

1 Q. Is there any reason you cannot give
2 true and accurate testimony today?

3 A. No, there is not.

4 Q. I'm going to try to take a break
5 every hour or so, but if you do need a break,
6 and I haven't given you one, can you just let
7 me know if you need that?

8 A. Yes. In particular, I only eat two
9 meals a day, so I may have to break somewhere
10 between like 11:30 to 12:00 or somewhere in
11 there if I'm feeling the need to eat my first
12 meal.

13 Q. Well, please just let me know if you
14 need that.

15 A. Okay.

16 Q. And I just ask that if there is a
17 question pending, that we answer that question
18 before we take a break.

19 A. Okay.

20 Q. And when we do return from breaks,
21 I'll ask whether you had any discussions with
22 anyone regarding the substance of your

1 testimony today. Do you understand that?

2 A. Yes, I do.

3 Q. Those kinds of discussions are
4 prohibited. Do you understand?

5 A. That's my understanding.

6 Q. I also ask that you not consult any
7 notes or documents during the breaks, is that
8 fair?

9 A. Yes.

10 Q. Dr. Mahon, who is your current
11 employer?

12 A. Pennsylvania State University.

13 Q. And what's your current job title at
14 Penn State University?

15 A. A professor of electronic engineering
16 and computer science.

17 Q. And have you held any other positions
18 at Penn State University?

19 A. Yes, I have. I was research faculty
20 for approximately 25 years before I switched
21 over to the academic side.

22 Q. What kind of research did you do?

1 A. I did a broad range of research
2 mainly dealing with wireless communication
3 systems and system development for DoD projects
4 as well as data fusion efforts, which included
5 a lot of software elements and user interface
6 development work, for example, for supporting
7 warfighters.

8 Q. I guess to the extent that you're
9 able to talk about it, what kind of
10 communication devices did you develop for
11 warfighters?

12 A. As far as the devices themselves are
13 concerned, as I said, my work was research
14 focused, so typically the cycle is you come up
15 with some ideas and make proposals. It's on a
16 theoretical basis. You get funded to do a
17 theoretical study.

18 If you're follow-on funded, then
19 you -- typically creates and in a -- a
20 laboratory environment where you basically
21 prove that your theory is true. And then from
22 there you move on to additional work to develop

1 an engineering model. And then once you have
2 the engineering model, you go out and you prove
3 that the engineering model works.

4 As a university affiliated research
5 center, we are -- were a trusted agent of the
6 federal government.

7 So typically how we work is that our
8 engineering models, if they work, they'd be
9 handed off to corporations, defense contractors
10 to build in large numbers. However, there were
11 certain instances where we actually built
12 engineering models that were directly put in
13 the field to support the warfighter.

14 The type of hardware equipment that
15 we built was -- in general had to deal with
16 communication systems, so interaction with all
17 kind of wireless and wireless devices, so that
18 would range anywhere from infrared to obviously
19 cellular to Wi-Fi to Zigbee, Bluetooth, HF, et
20 cetera, et cetera.

21 With respect to software development,
22 as part of the warfighter effort we were

1 involved in the global information grid
2 secretary defense research effort and we
3 developed something called the UA, which is
4 ubiquitous automated information manager, but
5 that work was mainly for performing data fusion
6 across multilevel intelligence systems. And
7 then what we would do is we'd fuse data
8 together to present it to the warfighter.

9 Now, that software would have to be
10 deployed and it was deployed both at the
11 dismounted soldier level, where they would have
12 the capability of interacting with the system
13 via VoiceComm or limited electronic devices all
14 the way up through combat operation centers
15 where you would have generals and lieutenants
16 that would access systems, heavy systems, large
17 clients to interface with our product as part
18 of that effort.

19 So we developed user interfaces
20 associated with that as well as obviously the
21 data fusion software that would bring those
22 products to the warfighter.

1 Q. Thank you for that. That's
2 fascinating.

3 You mentioned VoiceComm. Is this
4 because the warfighters are inactive warfare
5 potentially --

6 A. Correct. If they're --

7 Q. Sorry.

8 A. That's all right.

9 Correct. If they're kicking down
10 doors, which a lot of them were at the time,
11 they needed to be -- and there was intelligence
12 that needed to be delivered to them, they would
13 have a comm device on their person and a ear
14 piece and microphone, obviously, to be able to
15 interact with the system.

16 And so if there was a piece of
17 intelligence to say there is a person of
18 interest in a given area that they were
19 located, for example. And if that information
20 were fused it would be pushed out to the
21 warfighter to interact verbally with the
22 system.

1 Q. So the way that the warfighter would
2 communicate with the device is verbally?

3 A. They could actually -- so typically,
4 the typical deployment would have a mule and
5 there would be several soldiers on a mule that
6 would then drive to a given area. The mule
7 obviously had electronic components so they
8 would typically have somebody on a mule and
9 might be a lightweight, lighter weight device,
10 or in certain cases they could have a slightly
11 heavier, more capable device on the mule.

12 But once the soldiers dismounted,
13 they weren't dragging that equipment with them.
14 So then they would be interacting via voice
15 communications through their comms.

16 Q. Forgive my ignorance here, but I'm
17 going to ask it. When you say "mule", do you
18 mean the actual animal, a mule, or is it
19 something else?

20 A. Oh, I'm sorry. No. A mule is a
21 rugged vehicle, kind of like a four-wheeler,
22 but it's bigger. It's obviously built to

1 withstand some punishment that they would go
2 out to use. That would be similar to -- and it
3 would include a Humvee, for example. A Humvee
4 would be another mechanism that they would go
5 out to a site to do their mission.

6 Q. My dad worked on lots of devices like
7 that and so I will not tell him I asked that
8 question. I think he may be disappointed. No,
9 that's super interesting.

10 So what aspect of the device that the
11 warfighter was carrying did you help develop?

12 A. Well, again if it was the slightly
13 heavier client on the Humvee or mule, it would
14 be -- basically our interface would be a visual
15 interface that they would interact with and
16 they could have the option of audio but
17 typically that wasn't done.

18 And then for the warfighter, excuse
19 me, we would use a comms link for pushing out
20 our information to notify them. So a --
21 typically an analyst, our information would be
22 presented to an analyst, an analyst would make

1 a decision, determination of what needed to
2 be -- notifications needed to be pushed out to
3 the warfighter.

4 And then our manager would then push
5 that notification out to the warfighter via
6 VoiceComm, person of interest or a particular
7 name or -- and a location, for example, could
8 be pushed out to the warfighter via audio.

9 Q. Would the warfighter be able to
10 communicate back to whoever was pushing that
11 notification to the warfighter?

12 A. Well, it would be consumed by the
13 system. So the software, there were components
14 that would be doing voice recognition and
15 analysis and then that would be pushed back as
16 part of the system or they'd be talking
17 directly to an analyst, which is most typically
18 the case just because voice recognition at the
19 time was kind of spotty.

20 So they would talk to an analyst,
21 analyst would type it in the system,
22 electronically would be put into the data feeds

1 that we would continue to consume. And that
2 would be part of the process.

3 Q. So is the warfighter providing
4 information back verbally?

5 A. They could. They also had the
6 ability to, with their radios, to type in
7 information, brief bits of information and send
8 that back to -- again, to an analyst that can
9 consume that. And then additionally, basically
10 put that into the data feeds going through the
11 system.

12 Q. How would the warfighter type in
13 information into the radio?

14 A. Well, they would have -- again, it
15 depended upon the system, but -- and what they
16 were carrying. They would have either a
17 small -- a small device that had a user
18 interface on it that would have keys, for
19 example, like a -- kind of like an old style
20 BlackBerry, or they would have literally a
21 radio with a pressure sensitive interface on it
22 that you would type into to hit the keyboard

1 and hit the keys.

2 But typically, they were busy and had
3 their eyes up and were not using that type of
4 interface. That was typically more at an
5 operation center scenario where -- a forward
6 operating basis typically.

7 Q. Because their hands were likely
8 carrying something else?

9 A. Yes. Yes.

10 Q. And were the devices, the radios that
11 they had and the like, did they have touch
12 screens on them?

13 A. I don't recall the -- I'd have to go
14 back and look. I don't recall specifically
15 because it was such a broad range of devices
16 and our development work was integrated into
17 the defense backbone systems.

18 And in terms of when they were pushed
19 out and deployed, we weren't directly
20 interfacing with the warfighter, so our systems
21 were supposed to be flexible, and they were, as
22 far as the software and data fusion was

1 concerned.

2 We would brief, obviously, the
3 military officials and they would give us
4 feedback on what they wanted. But we weren't
5 always -- and for this particular scenario, for
6 example, while we worked with Navy SEALs and
7 others, we weren't working with them
8 specifically in this case for teaching them or
9 testing the -- their interface with our
10 systems.

11 So I just don't recall. I'd have to
12 go back and see if I can figure out exactly
13 what kind of radios they were using at the
14 time, and what the interface exactly looked
15 like.

16 Q. Have you developed touch sensitive
17 interfaces or devices?

18 A. On the hardware side I have not.
19 Just basically, as I was mentioning, my
20 research work would utilize touch sensitive
21 devices and interfaces with -- receiving inputs
22 from those devices to perform certain tasks.

1 Q. So you said currently you're a
2 professor of electrical engineering and
3 computer science at Penn State; is that right?

4 A. That's correct.

5 Q. Are you a teaching professor at the
6 moment?

7 A. Yes, I am.

8 Q. And what kinds of courses have you
9 been teaching in the last couple years?

10 A. Well, I teach neural networks. I
11 teach mobile networks. I teach wireless
12 communications and security, and I'm teaching
13 software defined radio classes.

14 Q. What's a software defined radio?

15 A. A software defined radio is basically
16 a piece of hardware that has computational
17 capability on it and you can program it to do
18 almost anything you wanted to. For example,
19 you can implement a wireless com system made of
20 2.11 or similar.

21 You can implement some neural
22 networks on it, for example, for dual signal

1 processing. So basically it's a piece of
2 hardware that has computational capability that
3 is programmable for you to perform certain
4 functions.

5 Q. Have you been retained as an expert
6 witness in any legal proceeding other than the
7 current IPR we're talking about today?

8 A. Yes, I have.

9 Q. Do you recall how many times you've
10 been retained as an expert witness?

11 A. In the past 10 years, approximately,
12 my guess is two dozen to -- times -- more than
13 probably two dozen times.

14 Q. And how many of those cases were
15 patent cases?

16 A. I can't recall one that was not a
17 patent case.

18 Q. How many of those patent cases
19 related to wireless or cellular 5G and the like
20 types of communication cases?

21 A. Well, in some way most -- almost all
22 of them are related to wireless systems.

1 Whether it's a user interface -- for example,
2 my first case involved the user interface. It
3 was still on a mobile device, so it's related.

4 Q. For how many of those cases was the
5 focus of the technology the communications
6 aspects of the technology?

7 A. I would -- the vast majority of them,
8 so I would say probably 80 percent of them, 90.

9 Q. Would you categorize your work with
10 Smith, the patent owner in the case, as one of
11 those cases?

12 A. Well, this case certainly involves
13 user devices and communication systems but this
14 is primarily focused on user interfaces.

15 Q. How many of your earlier expert
16 witness engagements related to technology
17 having to do -- and focused on more
18 specifically touch screen devices?

19 A. Well, the -- as I said, the -- my
20 recollection is that that first case definitely
21 involved the user interface device having to do
22 with user interaction.

1 I've also been involved in a case
2 that has not moved forward at this point, but
3 it is -- it has to do with a user interface for
4 construction workers or railway workers, I'm
5 sorry.

6 And then I was involved in the
7 Ericsson/Apple case and that had many patents
8 involved in it and that had included user
9 interface patents. Now, obviously that effort,
10 if you're familiar with it, or that litigation,
11 was not primarily focused just on user
12 interfaces but they were part of my review and
13 my analysis in that case.

14 Q. Was the focus of your work on the
15 Apple/Ericsson cases the communications aspects
16 of it?

17 A. It was focused on the 5G, 4G
18 technology mainly.

19 Q. I asked you earlier about the classes
20 that you've been teaching at Penn State. Do
21 you teach any courses relating to graphical
22 user interfaces?

1 A. Well, there's a course which is
2 modern web development and blockchains that I
3 teach and that obviously deals with software
4 development.

5 Q. Does it deal specifically with the
6 development of graphical user interfaces?

7 A. Yeah. It involves web design, so
8 interaction with the user.

9 Q. How many of the classes that you
10 teach are focused on computer human interfaces?

11 A. Well, that course is focused on
12 obviously computer to human interfaces. And
13 with the other courses, as I said, components
14 of those courses, even if they're mobile
15 networks or if it's the neural networks class,
16 there's always aspects of human interaction
17 involved with those. And it's -- obviously
18 you're working with a computational system of
19 some sort. So in some way they also are
20 involved with that.

21 Q. Have you worked on the designer
22 development of graphical user interfaces?

1 A. Yes. As I mentioned, as part of the
2 mulean effort as well as other products we
3 developed for DoD entities that we had to
4 develop user interface so that the user would
5 be able to interact with our system. So yes.

6 Q. Have you guided any graduate students
7 in technology focused on graphical user
8 interfaces or human computer interface?

9 A. Well, again, the work that my grad
10 students have done is involved in that --
11 involves user interfaces tangentially, not the
12 main focus, because user interfaces are
13 basically a tool that you use for accomplishing
14 or implementing something else.

15 For example, if you're implementing a
16 distributed AI neural network for accomplishing
17 a resource management or resource allocation
18 efforts, that's involved because you have to be
19 able to take user input and you have to know
20 the device capabilities for, for example, if
21 you're streaming video or images, you have to
22 know the device interface capabilities, but

1 wouldn't be the main focus just because it's
2 such a limited area.

3 Q. Would you say it's fair that most of
4 your work, including teaching and research, is
5 focused instead on the communications whether
6 wireless or cellular aspects of the technology?

7 A. Well, certainly my main focus is the
8 wireless communications aspects, but certainly
9 well -- knowledgeable about the user interface
10 aspects of the electronic devices as well as
11 having worked with other people that -- for
12 example, at the University that are involved
13 specifically with human factors for interfacing
14 with user interface, so I'm well versed in
15 those areas, but my main focus is wireless
16 comms.

17 Q. Do you hold any patents, Dr. Mahon?

18 A. No. As part of -- as I mentioned, my
19 research work was with a University affiliated
20 research center as a trusted agent for the
21 government. We were not permitted to file
22 patents and, quite frankly, discouraged by our

1 management from doing so. So I did not file
2 any patents during my research efforts.

3 Q. And do you still work for the
4 government or no?

5 A. No. I sit on a couple of boards --
6 well, actually one board at the moment, dealing
7 with testing and integration, but I do not have
8 any direct contacts. I have indirect
9 contracts, money that comes in for supporting
10 some graduate research work, so it's secondary,
11 not direct.

12 Q. When did you stop doing government
13 work?

14 A. Well, I switched over from pure
15 research to -- mainly research, I should say,
16 to the academic side. In 2015 my work with my
17 colleagues at the Applied Research Lab, which
18 is part of Penn State University, continues and
19 it continues today. As a matter of fact, that
20 advisory committee or the board I'm on for
21 testing and evaluation is with a colleague at
22 the Applied Research Lab, so I'm still -- I was

1 still tangentially involved but it ramped down
2 significantly in 2015.

3 Q. Would it be fair to say that you
4 would be free now to apply for patents if you
5 found yourself in that position?

6 A. Well, if it didn't involve the
7 technology or the -- certain aspects of my
8 development work from previously, I would have
9 to look into it, but I would not believe I
10 would be constrained at this point in time.

11 Q. Have you ever applied for any patents
12 since 2015?

13 A. I have not.

14 Q. All right. I'm going to try to
15 upload a file here, so bear with me. I
16 apologize for the delay, the file is not worth
17 the wait, but here we go. I am uploading.

18 Do you see it in the chat?

19 A. I do.

20 Q. Can you open that document?

21 A. Yes.

22 Q. Are you familiar with that document?

1 A. I'm still accessing it. Sorry.

2 Q. Oh, sorry.

3 A. Okay. I have it open.

4 Q. Do you recognize the document?

5 A. Yes, I do.

6 Q. And what is it?

7 A. This is the Hackborn reference that
8 was put forward as part of the petition and the
9 expert declaration.

10 Q. Is this Exhibit 1004?

11 A. Yes, it is.

12 (Thereupon, Exhibit 1004 was marked for
13 identification.)

14 BY MS. HUANG:

15 Q. And so if I refer to Exhibit 1004 as
16 Hackborn, we understand that I'm -- what I'm
17 referencing?

18 A. Yes.

19 Q. As part of your preparation, did you
20 read Hackborn?

21 A. Yes, I did.

22 Q. Did you read the entirety of

1 Hackborn?

2 A. Yes, I did.

3 Q. Did you review all the figures?

4 A. Yes, I did.

5 Q. Did you read all the claims?

6 A. I read through the claims.

7 Q. Did you understand everything you
8 read and saw in Hackborn?

9 A. I believe I did, yes, from the
10 perspective of a person of ordinary skill in
11 the art and the plain and ordinary meanings of
12 the terms.

13 Q. Was anything in Hackborn unclear to
14 you when you reviewed it?

15 A. Not that I can recall.

16 Q. What is your understanding of a
17 foreground?

18 A. I'm sorry, is that the complete
19 question?

20 Q. It is.

21 A. Foreground, and as disclosed in
22 Hackborn --

1 (Clarification by the reporter.)

2 THE WITNESS: To a person of ordinary
3 skill in the art, would be that part of
4 the user interface that appears to be in
5 front of other elements of the user
6 interface.

7 BY MS. HUANG:

8 Q. Have you heard the phrase "foreground
9 object" before?

10 A. Yes.

11 Q. And what's your understanding of a
12 foreground object?

13 A. It would be an object in the layer of
14 the foreground.

15 Q. What is the layer of the foreground?

16 A. Well, so -- and you're talking in
17 generalities with respect to user interfaces as
18 Hackborn itself discloses in -- let's see here.
19 Specifically in Figure 2 it talks about
20 different processes running at different
21 layers, so it displays to a person of ordinary
22 skill in the art what the intent is, that is,

1 there's different layers associated with user
2 interface and that objects can reside in those
3 layers.

4 Q. Are there always foreground objects?

5 A. Under what scenario?

6 Q. In a mobile device like in Hackborn.

7 A. Well, I'm not sure I can answer that
8 question. I would need more constraints.
9 Hackborn discusses many aspects of user devices
10 as well as its focus specifically with
11 interacting with wallpaper in the background of
12 a device. So if you're asking me if Hackborn
13 specifically talks about a device that only has
14 a foreground, that's why I'm asking for
15 clarification.

16 Q. Sure. I can clarify it. You just
17 have to bear with me because I'm the person who
18 thought a mule was an animal, so...

19 If -- let's talk about it in context.
20 Let's look at Figure 1 of Hackborn, if you
21 will. Can you give me an example of a
22 foreground object in the Figure 1 of Hackborn?

1 A. So Hackborn itself discloses that the
2 icon shown in Figure 1 appear on top or over
3 the grass of 105 of the wallpaper 104. So to a
4 person of ordinary skill in the art, the icons
5 would be understood to be in the foreground.

6 Q. Can you name the reference numbers
7 that you think fit into that category?

8 A. So Hackborn, as I said, mentions
9 icons, four icons, 108, so the four icons are
10 said to be on -- appear on the top. And that's
11 all that Hackborn discloses as being in the
12 foreground, or on top.

13 Q. Would you consider anything else that
14 you see in Figure 1 to be in the foreground?

15 A. Well, they're -- it's relative to
16 each other. So the layers that are associated
17 with this display in Hackborn in Figure 1 is
18 discussed in Figure 2, and in Figure 2 it's
19 relating to different layers of the device.

20 So while icons 108 are in front of
21 other objects and, therefore, in the
22 foreground, if there's another object that's in

1 front of something that's disclosed as being in
2 the background, that would be -- that object
3 would be in the foreground with respect to that
4 other object that's described as being in the
5 background.

6 Q. So would it be fair, for example --
7 strike that.

8 What's your understanding of a
9 background?

10 A. It's a layer that is disclosed as it
11 being behind other layers.

12 Q. What's a background with an
13 appearance?

14 MR. STARK: Objection to form.

15 THE WITNESS: Well, with respect to
16 Claim 1, I think you're referencing, is
17 that Hackborn is disclosed to interacting
18 and touching and contact with a wallpaper
19 which is disclosed in Hackborn as being in
20 the background.

21 In the '755 it's talking -- it's
22 talking about any -- any object that is

1 appearing as a background -- appearing as
2 background.

3 BY MS. HUANG:

4 Q. Does the phrase "background with an
5 appearance" mean anything different to you than
6 just a background?

7 MR. STARK: Objection, form. Scope.

8 THE WITNESS: Well, I would have
9 to -- are you talking about my opinions in
10 any particular aspect of my declaration,
11 because I don't recall responding to any
12 assertions by -- in either the petition or
13 Dr. Cockburn with respect to that
14 assertion?

15 BY MS. HUANG:

16 Q. I'm talking about the claim language
17 of Claim 1 of the '755 patent and just trying
18 to get an understanding of your understanding
19 of that language?

20 MR. STARK: Objection, form. Scope.

21 THE WITNESS: Well, I think I discuss
22 in my reports, and I responded in my

1 report, with respect to the assertions
2 that were put forward by -- in the
3 petition, in the declaration. And if you
4 can point to me someplace in my report
5 that's germane to your question I'd be
6 happy to -- to answer -- attempt to answer
7 your question.

8 BY MS. HUANG:

9 Q. Is there any background that doesn't
10 have an appearance?

11 MR. STARK: Objection, form.

12 THE WITNESS: Again, if you can point
13 me to my declaration and an assertion that
14 I'm responding to as put forward in the
15 petition or the declaration, I'd be happy
16 to answer that question in that context.

17 BY MS. HUANG:

18 Q. I'm going to upload a file. Let me
19 know when you receive that.

20 A. Okay, I have it.

21 Q. Can you open it, please.

22 A. Yes. I have it open.

1 Q. Do you recognize this document?

2 A. Yes. This is the -- what we've
3 decided to call the '755 patent.

4 (Thereupon, Exhibit 1001 was marked for
5 identification.)

6 Q. If I refer to it as the '755 patent
7 or Exhibit 1001 will you understand what I
8 mean?

9 A. Yes.

10 Q. And this patent is the subject of the
11 IPR that we're here to discuss today?

12 A. Yes, it is.

13 Q. Did you review the entirety of the
14 '755 patent?

15 A. Yes, I did.

16 Q. I direct your attention to
17 column 101.

18 A. 101.

19 Q. Let me know when you're there.

20 A. I'm there.

21 Q. And then take a look, this is
22 column 101, line 202. I'm sorry, I'm going to

1 start that over again.

2 This is column 101, line 22. And can
3 you see where the language of Claim 1 recites a
4 background with an appearance?

5 A. Yes.

6 Q. And what is your understanding of
7 Claim 1's recitation of a background with an
8 appearance?

9 MR. STARK: Objection, form. Scope.

10 THE WITNESS: So in my analysis as
11 part of this case, I was asked to review
12 the patent and the prior art cited in the
13 declaration and the petition. I've done
14 that. I don't recall the assertion with
15 respect to the -- this element of this
16 claim in my declaration, but if you can,
17 again, point me to that in my declaration,
18 I would be happy to answer that question.

19 BY MS. HUANG:

20 Q. Sure. I will. All right. I'm going
21 to upload another document for you. Can you
22 let me know when you get that.

1 A. Okay. I have it.

2 Q. What is the document that I've just
3 uploaded?

4 A. This is the declaration I filed in
5 this case.

6 Q. Did you draft this declaration
7 yourself, Dr. Mahon?

8 A. It was a collaborative effort with
9 myself and counsel.

10 Q. Are you familiar with your
11 declaration?

12 A. I am.

13 Q. And in your analysis of the
14 '755 patent, did you review the claims of the
15 patent?

16 A. Yes, I did.

17 Q. Did you understand the claims of the
18 patent?

19 A. I used plain and ordinary meaning of
20 the terms with respect to responding to the
21 assertions that -- put forward in the petition
22 and the declaration. Yes.

1 Q. Did you gain an understanding of the
2 terms of the claims in order to put forth your
3 opinions in your declaration?

4 MR. STARK: Objection, form.

5 THE WITNESS: So I again used the
6 perspective of a POSITA as well as plain
7 and ordinary meaning to respond to
8 specific assertions that were put forward
9 for the invalidity of the '755 patent and
10 that's what's in my declaration.

11 BY MS. HUANG:

12 Q. Did you have any questions about any
13 of the terms of the '755 claims?

14 MR. STARK: Objection, form.

15 THE WITNESS: I'm not sure what you
16 mean by that.

17 BY MS. HUANG:

18 Q. Did you understand each of the terms
19 recited in the claims of the '755 patent?

20 MR. STARK: Objection, form.

21 THE WITNESS: Well, yes, I believe
22 I've answered this several times saying

1 that I took the perspective of a person of
2 ordinary skill in the art, and the plain
3 and ordinary meaning of the terms, in my
4 analysis in response to the petition and
5 declaration.

6 BY MS. HUANG:

7 Q. Were there any in terms in the '755
8 patent for which you did not understand what
9 was recited in the claims?

10 MR. STARK: Objection, form.

11 THE WITNESS: I would answer that the
12 same way I just answered the previous
13 question.

14 BY MS. HUANG:

15 Q. So would it be fair to say that you
16 were able to ascertain the plain and ordinary
17 meaning of all of the terms in the claims of
18 the '755 patent?

19 MR. STARK: Objection, form.

20 THE WITNESS: I used the plain and
21 ordinary meaning of the terms in the
22 patent as understood by a POSITA.

1 BY MS. HUANG:

2 Q. And can you tell me what the plain
3 and ordinary meaning of a background with an
4 appearance is as recited in Claim 1?

5 MR. STARK: Objection, form. Scope.

6 THE WITNESS: Again, as I mentioned
7 before, my declaration contains my opinion
8 and analysis in response to the petition
9 and declaration by Apple. And I do not
10 recall Apple asserting anything with
11 respect to that term, if they did, and you
12 can point me to a place in my declaration
13 where I'm performing an analysis based on
14 those assertions, I'd be happy to answer
15 that question.

16 (Thereupon, Exhibit 2005 was marked for
17 identification.)

18 BY MS. HUANG:

19 Q. Sure. Can you take a look at
20 paragraph 104 of your declaration. This is
21 Exhibit 2005.

22 A. Okay. I'm at paragraph 104.

1 Q. Okay. So right above paragraph 104
2 do you see the letter A, and then it says:
3 Hackborn-Westerman-Jobs does not disclose,
4 quote, a background with an appearance, end
5 quote, one or more foreground objects, end
6 quote?

7 A. Yes, I do.

8 Q. In order to -- did you come to this
9 conclusion in preparing your declaration,
10 Dr. Mahon?

11 A. So that statement in 2A there is
12 my -- based on my analysis.

13 Q. And what is your understanding of a
14 background with an appearance as it relates to
15 the statement in 2A right before paragraph 104
16 of your declaration?

17 MR. STARK: Objection, form.

18 THE WITNESS: Well, as I have in the
19 following paragraphs, I discuss my
20 analysis with respect to whether that
21 combination discloses this combination.
22 And again, I would point you to my

1 analysis in this section, and we can go
2 through that if you'd like.

3 BY MS. HUANG:

4 Q. Sure. Where in your analysis in --
5 relating to 2A here, starting at paragraph 104
6 of your expert declaration, do you provide an
7 understanding of the term "a background with an
8 appearance?"

9 MR. STARK: Objection, form.

10 THE WITNESS: Again, so my analysis
11 in this section is with respect to
12 analyzing Claims 18 and 39 with respect to
13 the Hackborn-Westerman-Jobs combination,
14 and I would say that my analysis is
15 contained in these following paragraphs
16 with respect to that conclusion and to
17 support my analysis.

18 BY MS. HUANG:

19 Q. So sitting here today, can you tell
20 me what a background with an appearance is in
21 the '755 patent?

22 MR. STARK: Objection, form. Scope.

1 THE WITNESS: Well, again, I
2 performed an analysis based on the
3 petition and the assertions. And in this
4 response in this section I am responding
5 to the Hackborn-Westerman-Jobs combination
6 for Claims 18 and 39 and that discloses
7 and discusses my analysis based on that
8 combination and it's contained within.

9 BY MS. HUANG:

10 Q. So sitting here today, you're telling
11 me that the Hackborn-Westerman-Jobs combination
12 does not disclose a background with an
13 appearance; is that right?

14 A. I'm saying the
15 Hackborn-Westerman-Jobs does not disclose a
16 background with an appearance in one or more
17 foreground objects, is my analysis.

18 Q. Can you tell me why
19 Hackborn-Westerman-Jobs does not disclose a
20 background with an appearance?

21 A. So in my analysis I start out in
22 paragraph 104 regarding the petitioner's

1 contention with respect to the combination and
2 pointing to the lock screen on the interface
3 citing to Hackborn.

4 So the point I make in this first
5 paragraph is that the combination does not
6 disclose all the required limitations for both
7 Claim 18 and 39 and the claim from which it --
8 those are dependent, which is Claim 1. And
9 Claim 23.

10 Claim 1 requires multiple, one or
11 more, foreground objects, and specifically I
12 cite to the evidence that the petitioner
13 pointed to, which are the screens and the icons
14 and the gadgets that we were talking about
15 previously in Hackborn as disclosing foreground
16 objects, and specifically that they exist on a
17 layer in front of the wallpaper.

18 However, in my analysis I point out
19 that the petitioner doesn't identify any
20 foreground objects in the lock screen interface
21 of Jobs, nor does the petitioner indicate that
22 the foreground objects identified in Hackborn

1 would exist in the lock screen interface of
2 Jobs.

3 So I'm providing my analysis with
4 respect to the combination of Hackborn and
5 Jobs. I then follow on by discussing the
6 composite images of Jobs, interface with
7 Hackborn's live grass wallpaper, and that that
8 combination in the petitioner's composite does
9 not show any objects that appear to be in front
10 of the wallpaper.

11 And I point out in fact that the --
12 in creating the composite image the petitioner
13 apparently left off and excluded foreground
14 objects of Hackborn from its composite image
15 that it created.

16 So I come to -- in my analysis I say
17 that a person of ordinary skill in the art
18 would understand that foreground objects of
19 Hackborn would not be present in a lock screen
20 interface like that of Jobs because those
21 objects had functions in Hackborn such as
22 launching applications that would be

1 undesirable on a lock screen to avoid
2 accidental activation.

3 So I discuss that and then I go
4 additional -- I further state that,
5 "Additionally, though, Hackborn uses the term
6 background in connection with certain instances
7 of its wallpaper as part of the home screen."

8 And I cite to an excerpt from the
9 prior art, "A POSITA would understand that the
10 lock screen interface of Jobs is not a home
11 screen. Nothing in Hackborn indicates that the
12 wallpaper would be a background in the lock
13 screen interface of Jobs where it would no
14 longer be a home screen and, therefore,
15 accordingly, the combination does not disclose
16 a background with an appearance in one or more
17 foreground objects with respect to limitations
18 of Claims 18 and 39."

19 Q. Does a foreground object need to have
20 a function in order to be a foreground object?

21 A. A foreground object, again, depending
22 on context and disclosure, does not necessarily

1 have to have a function.

2 Q. Are foreground objects defined by
3 their position relative to other objects either
4 in front or behind it?

5 A. As a general term, yes. It would be
6 something that's in front of other objects.

7 Q. Do wallpapers exist in user
8 interfaces in scenarios other than home
9 screens?

10 MR. STARK: Objection, form. Scope.

11 BY MS. HUANG:

12 Q. Let me reword. I'll reword that.
13 Do you need to have a home screen in
14 order to have a wallpaper?

15 MR. STARK: Objection, form. Scope.

16 THE WITNESS: So in the context of my
17 declaration I discuss and respond to the
18 assertions as put forward with respect to
19 the declaration and the petition, and
20 wallpaper is part of many of those
21 discussions.

22 If you could point to the context

1 within my declaration of discussion of
2 wallpaper and how it relates to my
3 analysis of the assertions and the claims,
4 I could answer that question.

5 BY MS. HUANG:

6 Q. Sure. Can you look at paragraph 107
7 of your declaration.

8 A. Yes.

9 Q. And it says, "Although" -- I'm sorry.
10 It says, "Additionally, though Hackborn uses
11 the term background in connection with certain
12 instances of its wallpaper, as part of the home
13 screen."

14 Do you see where it says that?

15 A. I do.

16 Q. Does Hackborn require that you have a
17 home screen in order to have a wallpaper?

18 A. Well, here I'm pointing out that
19 Hackborn is specifically referencing the use
20 of -- well, use the term background in
21 connection with certain instances of its
22 wallpaper as part of the home screen is what

1 I'm pointing out in that paragraph. I'm not
2 making the assertion that Hackborn requires
3 wallpaper.

4 Q. Are you making the assertion that
5 Hackborn requires a home screen in order to
6 have a wallpaper?

7 A. Well, Hackborn discloses user
8 interaction with the device, and the
9 embodiments that Hackborn focuses on are the
10 wallpaper as part of the home screen is what
11 I'm saying in that paragraph.

12 Q. But nothing in Hackborn precludes the
13 use of wallpaper in other types of screens that
14 aren't home screens; correct?

15 MR. STARK: Objection, form.

16 THE WITNESS: The disclosures in
17 Hackborn are focused on user interaction
18 on the home screen of the device with the
19 wallpaper. So I'm not -- I don't know how
20 to characterize it more than that.

21 BY MS. HUANG:

22 Q. You read the entirety of Hackborn?

1 A. Yes.

2 Q. Do you recall anywhere in Hackborn
3 that says that wallpaper must exist on a home
4 screen?

5 A. I don't -- I did not do a -- you
6 know, a search for that negative assertion. I
7 don't recall it being stated in Hackborn. I
8 would have to look at it again to see if I can
9 find it.

10 Q. Do you have any recollection of
11 seeing that, though, at this moment?

12 A. I don't recall seeing those specific
13 words strung together, but as I said, the
14 disclosures in Hackborn, from a POSITA's
15 perspective, are focused on the user
16 interacting with the wallpaper on the home
17 screen.

18 Q. Do you need to have a home screen in
19 order to have a background?

20 A. Well, if you -- for example, if you
21 launch another application, your application
22 could have a background in its presentation.

1 But I'm not sure how that relates to my
2 analysis.

3 Q. Is it fair to say that whether
4 something is in the background or foreground
5 just relates to its relative position as
6 compared to other objects that are displayed?

7 MR. STARK: Objection, form.

8 THE WITNESS: Again, that's a general
9 assertion. In my analysis of the
10 assertions put forward in the petition and
11 the declaration discuss in response to the
12 assertions that background and foreground,
13 within that context I hold to those
14 opinions and then that analysis.

15 You're asking a general question and
16 I'd have to see how that is putting -- put
17 forward with respect to the petition and
18 the declaration because I don't recall
19 that being asserted.

20 MS. HUANG: Why don't we take a
21 break, because if I only ate twice a day,
22 I would probably be hungry right now.

1 Does that work for you? Would this
2 be your lunch break, Dr. Mahon?

3 THE WITNESS: Yes. So I can take a
4 break now and eat my -- it'd be my first
5 meal, so I could do that now.

6 MS. HUANG: How long do you need?

7 THE WITNESS: At least 30. I would
8 say, just to be safe, probably 35 minutes
9 minimum, if I could.

10 MS. HUANG: Do you want to -- why
11 don't we -- did you say 35?

12 THE WITNESS: Minimum.

13 MS. HUANG: Quarter after. Would
14 that work? So it would be 12:15 your
15 time, would that work to start back up
16 again?

17 THE WITNESS: Yeah, that should work.
18 Yes.

19 MS. HUANG: You want a little bit
20 more time?

21 THE WITNESS: If I could. If I can
22 have till like 20 after.

1 MS. HUANG: So we'll reconvene at

2 11:20 Central. 12:20 Eastern.

3 (Thereupon, a lunch recess was taken.)

4 BY MS. HUANG:

5 Q. Dr. Mahon, are you good?

6 A. I'm good, yes.

7 Q. Can you go back to Figure 1 of

8 Hackborn.

9 A. Figure 1 Hackborn. Yes.

10 Q. Exhibit 1004. On page 2 of the PDF.

11 A. Yes.

12 Q. What would you consider to be in the

13 background in Figure 1 of Hackborn?

14 MR. STARK: Objection, form.

15 THE WITNESS: Could you ask your

16 question again, please.

17 BY MS. HUANG:

18 Q. Yeah. What would you consider to be

19 in the background in Figure 1 of Hackborn?

20 MR. STARK: Objection, form.

21 THE WITNESS: Well, in this figure

22 Hackborn is disclosing in relation to

1 what's disclosed in Figure 2 with respect
2 to layers, so it's disclosing that, for
3 example, the icons 108 are appearing in
4 front of the grass 105 of the wallpaper
5 104.

6 And it states that the -- since the
7 wallpaper is 104, essentially what you
8 have here is that you have in -- 108 on
9 top and then you have other layers that
10 are disclosed with respect to how the
11 objects are appearing.

12 The concept of which one is in the
13 background, again is a relative -- as
14 disclosed in Hackborn, it's relative to
15 your layer of observation which is, again,
16 just a -- from a perspective of a person
17 of ordinary skill in the art or consistent
18 with their understanding of the plain and
19 ordinary meaning of those terms.

20 BY MS. HUANG:

21 Q. Does anything in Figure 1 appear in
22 the background?

1 A. With respect to what?

2 Q. With respect to the other objects and
3 what's displayed in Figure 1?

4 A. So certainly, objects that are behind
5 other objects would be in the background to the
6 object in the higher layer foreground.

7 Q. Would it be fair to say that the
8 wallpaper 104, the grass 105, are in the
9 background relative to the icons 108 in
10 Figure 1 of Hackborn?

11 A. Yes. That's consistent with
12 disclosure in paragraph 30 of Hackborn.

13 Q. Would it be fair to say that the
14 wallpaper 104 and the grass 105 are in the
15 background relative to the clock 106?

16 A. Hackborn discloses that gadget 106, a
17 clock in this example, is similarly displayed
18 in a partially transparent manner, and it's
19 referencing its previous lines discussing the
20 grass behind icon 102, so you would say that
21 certainly it's displaying that the clock is in
22 a higher layer or layer that appears to be

1 closer to the -- from the user's perspective
2 than the grass.

3 Q. Would it also be fair to say that the
4 wallpaper 104 and grass 105 are in a background
5 layer relative to object 102?

6 A. In paragraph 30 Hackborn is
7 disclosing that the icon 102 still appears on
8 top or over the grass 105 or of the wallpaper
9 104. So from a user's perspective that 102
10 would be closer to them than what's disclosed
11 in this paragraph as the grass and the -- of
12 the wallpaper being behind it, so certainly the
13 grass and the wallpaper would be behind the
14 icon 102.

15 Q. If something appears to be displayed
16 behind another object, is it fair to say it is
17 in the background of the other object?

18 A. Given the disclosures in 30,
19 paragraph 30, with respect to Figure 1, it's
20 consistent that -- that objects that are
21 displayed or partially covered by other objects
22 would be in the background with respect to the

1 objects you're looking at, so that is certainly
2 consistent. As a generalized statement that
3 would be consistent with the disclosure in
4 paragraph 30.

5 Q. So I guess more specifically, would
6 it be fair to say that if the grass wallpaper
7 appears to be displayed behind object 102, for
8 example, then the grass wallpaper is in the
9 background relative to the object 102?

10 A. Again, Hackborn is disclosing and
11 discussing that user interface with respect to
12 layers, and it's disclosing that 102 would be
13 perceived to be in a higher layer closer to the
14 user than the grass or of -- grass of the
15 wallpaper 104.

16 Q. So in that scenario, would the
17 wallpaper be in the background relative to --
18 to object 102?

19 A. In this disclosure it's disclosing
20 that the grass of the wallpaper is behind
21 object 102, which in this context is -- could
22 be understood as -- reasonably as being in the

1 background of object 102, with respect to 102.

2 Q. Is the same true of the relationship
3 between the grass wallpaper and icons 108?

4 A. Hackborn specifically discloses that
5 the icons 108 of the display illustrate that
6 the icons appear on top of or over the grass
7 105 of the wallpaper 104, so they would be
8 perceived by a user as being in the -- in front
9 of the grass in that case.

10 Q. Given the relationship between icons
11 108 and the grass wallpaper 104, 105, would it
12 be fair to say that the icons are foreground
13 objects relative to the wallpaper, grass
14 wallpaper?

15 A. That's consistent with what's
16 disclosed in Hackborn here in paragraph 30.

17 Q. Given the relationship between the
18 clock 106 and the grass wallpaper, would it be
19 fair to say that the clock 106 is a foreground
20 object relative to the grass wallpaper?

21 A. Hackborn in paragraph 30 specifically
22 discloses that the clock is in front of the

1 grass, so it would be considered at a higher
2 layer in this display. And from that
3 perspective would be in the foreground versus
4 the grass being in the background.

5 Q. Is there any limit to the number of
6 layers there can be in Hackborn?

7 A. Well, Hackborn specifically discloses
8 with respect to the discussion of Figure 2 that
9 this particular example shows three
10 environments or processes, but another example
11 is there could be two, four, five or more
12 environments or processes. So I don't recall
13 and I do not see any disclosure that would
14 limit the number of layers as disclosed in
15 Hackborn.

16 Q. Given Hackborn's teachings if we had
17 an object A that appeared in a higher layer
18 than another object, B, is it fair to call
19 object A a foreground object?

20 MR. STARK: Objection, form.

21 THE WITNESS: The disclosures in
22 Hackborn are consistent that it's with

1 respect to a given respective view and one
2 object behind the other. In this
3 disclosure it has 108 is disclosed at the
4 top layer, which would be clearly
5 understood as the foreground.

6 The other layers behind it would
7 certainly be in the background with
8 respect to that layer.

9 If you're looking at an object at a
10 given layer, it is certainly in front of
11 other objects, but with respect to whether
12 it's in a foreground of the entire
13 display, is another -- it would depend
14 upon context. And certainly, if there's
15 objects at a higher layer, it would not be
16 in the foreground, but it could be in
17 the -- in front of another object, since
18 it's a higher layer.

19 BY MS. HUANG:

20 Q. Would it be reasonable to say that
21 foreground objects could exist on more than one
22 foreground layer?

1 MR. STARK: Objection, form.

2 THE WITNESS: Yeah, that's a -- a
3 question that would -- it's devoid of any
4 claim language obviously. But it's
5 certainly, again, as I said, it is with
6 respect, you would -- respect to the
7 context. So as displayed in Figure 1, 108
8 is in the foreground, obviously the other
9 objects are in the background behind that.
10 And so you'd have to have a definitive
11 context for how the term is being used and
12 under what context to understand how it's
13 being disclosed.

14 BY MS. HUANG:

15 Q. Dr. Mahon, can you turn to Figure 2,
16 of Hackborn, please.

17 A. Yes.

18 Q. Would it be fair to say -- strike
19 that.

20 Do you see where it says processes
21 three, processes two and processes one?

22 A. Yes.

1 Q. If I refer to those as layers, just
2 for my sanity, will you understand what I mean?

3 A. Yes.

4 Q. Would it be fair to say that layers
5 two and three or processes two and three are
6 foreground layers relative to process one/layer
7 one?

8 MR. STARK: Objection, form.

9 THE WITNESS: The disclosure in
10 Hackborn in paragraph 31, with respect to
11 Figure 2, is clearly relating or
12 discussing as you said, the multiple
13 layers as presented in Figure 2, and it
14 says that process one is in the lowest
15 layer, process two is in the middle layer
16 and process three would be the top level
17 or top layer of the display.

18 So certainly process two and three
19 are a higher layer than process one. It's
20 not using the term "foreground," again
21 because it's not from a given perspective.
22 If it were discussing specifically the

1 perspective of that figure overall it
2 would certainly say that layer, the top
3 layer and the application 110 is in the
4 foreground and anything running in process
5 one and two are in the background with
6 respect to process three.

7 BY MS. HUANG:

8 Q. And relative to process one or layer
9 one, are processes two and three or layers two
10 and three, foreground layers?

11 MR. STARK: Objection, form.

12 THE WITNESS: As disclosed in
13 Hackborn in paragraph 31, it's saying that
14 process two is in higher layer, process
15 three is in the top layer, which under
16 plain and ordinary meaning to a person --
17 a POSITA would be in the foreground and
18 process two is a middle layer.

19 They're certainly both -- anything in
20 process -- layer two and layer three are
21 at a higher layer than anything in layer
22 one. It's not using and specifically

1 doesn't address the relative perspective
2 of using the term "foreground" here, but
3 to a POSITA, anything in layer three in
4 this figure would be in the foreground,
5 anything in layer two would be in a middle
6 layer and anything in layer one would be
7 in the background.

8 BY MS. HUANG:

9 Q. What does Hackborn teach happens when
10 you swipe the grass in Figure 1?

11 MR. STARK: Objection, form.

12 THE WITNESS: So you're talking about
13 my analysis in the declaration with
14 respect to which claim element?

15 BY MS. HUANG:

16 Q. I was talking about your
17 understanding of Hackborn's teachings as they
18 relate to Figure 1.

19 A. Would you ask that question again,
20 please.

21 Q. Sure. What does Hackborn teach
22 happens when you swipe the grass in Figure 1?

1 MR. STARK: Objection, form.

2 THE WITNESS: Hackborn is --
3 discloses an interactive context for users
4 interacting with their devices,
5 specifically in this case grass residing
6 in the wallpaper and discloses that the
7 user makes contact with the grass to
8 animate the grass, which is disclosed in
9 various parts of Hackborn through its --
10 through the specification. So that would
11 be my general characterization of what's
12 going on in Figure 1.

13 BY MS. HUANG:

14 Q. And if a user swipes the grass
15 displayed in Figure 1, what does the display
16 show?

17 MR. STARK: Objection, form.

18 THE WITNESS: So again, Hackborn
19 discloses that the user is detected to
20 make contact with the grass, and it does
21 not distinguish between a touch or swipe.
22 So in context of just swiping in your

1 question, if the user is making contact,
2 the Hackborn discloses the animation of
3 the grass as either bending or swaying.

4 BY MS. HUANG:

5 Q. Can I direct your attention to
6 paragraph 28 of Hackborn, and let me know when
7 you're there.

8 A. Okay, I'm there.

9 Q. Do you see the text at the beginning
10 of paragraph 28 that reads, "In the example
11 shown in Figure 1, a user is swiping her finger
12 across a touch sensitive display screen of the
13 computing device. In response, the blades of
14 grass 105 displayed in the area of the screen
15 swiped by the user are caused to bend or sway
16 as if contacted by the user's finger during the
17 swipe."

18 Do you see that?

19 A. I do.

20 Q. What's your understanding of what
21 Hackborn teaches happens when a user swipes her
22 finger across the touch sensitive display

1 screen of the computing device in Figure 1?

2 MR. STARK: Objection, form.

3 THE WITNESS: Well, again, I would
4 repeat my previous answer because that's
5 consistent with what's being disclosed,
6 that if what's being disclosed here is
7 that if the user swipes her finger and it
8 makes contact as determined by the device
9 with the grass, that it will animate the
10 grass and cause it to either bend or sway
11 from the perspective of the user.

12 BY MS. HUANG:

13 Q. Does Hackborn say anything about
14 interacting with the grass resulting in the
15 grass no longer being in layer three or -- I'm
16 sorry, strike that.

17 I'm getting my layers confused.

18 Does Hackborn say anything about
19 interacting with the grass -- strike that.

20 Does Hackborn say that swiping on the
21 grass results in the grass wallpaper no longer
22 being in layer one or process one?

1 A. I don't recall any assertions in the
2 declaration or petition with respect to that.
3 I certainly don't recall Hackborn disclosing
4 that a touch of the grass for the purposes of
5 animation causes it to move into a different
6 layer.

7 Q. Does Hackborn have any teaching with
8 respect to the wallpaper being touched or
9 contacted resulting in the wallpaper being
10 moved to a different process or layer?

11 MR. STARK: Objection, form.

12 THE WITNESS: I don't recall making
13 that analysis or putting forth that
14 analysis in my declaration, and I don't
15 recall that being asserted in the petition
16 or declaration. If you're -- I would have
17 to take a look here to see -- to see if
18 there's some disclosure I'm not
19 remembering with respect to that.

20 Certainly I discuss how a tap is
21 contemplated by Hackborn with respect to
22 tap or swipe with animating the grass and

1 that discloses that multiple taps are
2 required to change the mode of the device,
3 in my declaration.

4 BY MS. HUANG:

5 Q. Does Hackborn say anything about an
6 object having to be in a particular layer or
7 process in order for a user to interact with
8 that object?

9 A. Well, Hackborn discloses interaction
10 in general with the device and specifically,
11 for example, launching applications. And I
12 don't recall a limitation associated with
13 certain aspects in particular layers.

14 Although, certainly the discussion that -- of
15 the grass as being in a particular embodiment
16 for the animation of wallpaper is consistently
17 disclosed as being in the background. But I
18 don't recall restrictions on any layers not
19 being able to be interacted with by the user.

20 Q. So is it fair to say that a user can
21 interact with an object in Hackborn regardless
22 of whether it is in process one, two or three?

1 MR. STARK: Objection, form.

2 THE WITNESS: Again, I don't recall
3 this argument being made. I'm
4 certainly -- if the assertion is being
5 made somehow with respect to the
6 disclosures in Hackborn and the
7 combinations and the claim elements that
8 are being -- that are being analyzed by
9 either the petition or the declaration as
10 being invalid based on various
11 combinations, I can consider that.

12 I don't know how to characterize it
13 other than what I said is that Hackborn
14 discloses user interaction with various
15 elements of the display. And I don't
16 recall any limitations associated with it.

17 BY MS. HUANG:

18 Q. Let's turn back to Figure 1.

19 A. Okay.

20 Q. So if I swipe my finger across the
21 grass in Figure 1 of Hackborn, what does
22 Hackborn teach is the result?

1 MR. STARK: Objection, form.

2 THE WITNESS: As I've said before is
3 that in paragraph 28 Hackborn is
4 disclosing that if the user is touching,
5 making contact with the grass, that in
6 response the blades of grass displayed in
7 that area of the screen being touched by
8 the user are caused to bend or sway as if
9 contacted by the user's finger during the
10 contact, in this case a swipe. And I
11 don't know how I'd characterize it other
12 than that.

13 BY MS. HUANG:

14 Q. I want to try to understand kind of
15 the specifics of that a little better, so I'm
16 going to ask some more detailed question. If I
17 swipe my I finger on the grass but only above
18 the mail icon -- strike that.

19 Let me just clarify so we're all on
20 the same page. Do you see the little mail
21 icon, mail, M-A-I-L, icon in the row shown in
22 108 on the far right?

1 A. Yes.

2 Q. So if I swipe on the grass directly
3 above that, does only the grass above the mail
4 icon move?

5 A. Hackborn discloses throughout that
6 the purpose of the disclosures in it are
7 associated with the aesthetics and the apparent
8 real interaction with the background, in this
9 case the grass, to animate it, and our
10 disclosures are consistent with that if the
11 user actually touches the grass, it causes the
12 grass to either bend or sway, and there is
13 nothing in Hackborn that suggests that all of
14 the grass, for example, outside of the touch
15 area are active.

16 Q. So I guess if we take this example
17 literally outside on to the grass and if I
18 touch the grass by my mailbox, only the grass I
19 touch by the mailbox is going to move and the
20 rest of my lawn isn't going to move as a result
21 of my finger touching it, is that fair?

22 MR. STARK: Objection, form.

1 THE WITNESS: Well, with respect to
2 my analysis of how the disclosures in
3 Hackborn, that's, of course, a real
4 world -- actual real world example, that I
5 know Dr. Cockburn agrees that Hackborn
6 discloses high fidelity animation and that
7 the user's expecting the grass in Hackborn
8 to bend or sway in some realistic manner.

9 And certainly a user's experience
10 would be -- expectations I should say
11 would be that that grass blade that
12 they're touching in Hackborn would bend or
13 sway based upon them actually making
14 contact, apparent contact with the grass
15 in Hackborn.

16 BY MS. HUANG:

17 Q. So in a real life situation only the
18 blades of grass that I touch would move
19 responsive to my touch; is that fair?

20 MR. STARK: Objection, form.

21 THE WITNESS: I guess I would say
22 I've never seen grass move before I touch

1 it, unless the wind is blowing. Certainly
2 you can come up with real physical
3 situations where grass is moving
4 irrespective of your contact with it, but
5 that's not what Hackborn is disclosed for.

6 BY MS. HUANG:

7 Q. So in real life, the movement of
8 grass is dependent on an actual force being put
9 on it?

10 MR. STARK: Objection, form.

11 THE WITNESS: Again, Hackborn is
12 clear that the animation of the grass is
13 dependent upon the determination that the
14 user is touching it via swipe or tap, and
15 it causes the blades of grass to bend or
16 sway.

17 BY MS. HUANG:

18 Q. If I swiped on the grass in Hackborn,
19 Figure 1, above the mailbox, would Hackborn's
20 device have the same result if I swiped the
21 grass above the H icon?

22 A. I'm not sure the context of that

1 question. You're saying that -- could you
2 clarify the question and provide additional
3 context.

4 Q. Yeah. So I'm going to have two
5 scenarios using Figure 1 of Hackborn. In the
6 first scenario I'm going to do a small swipe
7 over the H icon in the row of icons 108. And
8 then in a second scenario I'm just going to do
9 the same small swipe but over the mail icon
10 instead.

11 Do you understand those two
12 scenarios?

13 A. Yes.

14 Q. Would the Hackborn device display the
15 same resulting movement of grass as a result of
16 those two scenarios?

17 A. So Hackborn is consistent with the
18 disclosure that the grass moves when the
19 determination that the user is contacting the
20 grass. If you are contacting the grass above
21 the H, Hackborn is disclosing that that grass
22 will bend or sway, which is the same as if you

1 contact the grass above the mail icon you would
2 expect, and Hackborn discloses, that that grass
3 will bend or sway.

4 Q. So you're saying that the resulting
5 display on the Hackborn device is
6 indistinguishable regardless of whether I swipe
7 above the H or whether I swipe above the
8 mailbox?

9 MR. STARK: Objection, form.

10 THE WITNESS: No.

11 BY MS. HUANG:

12 Q. Can you clarify?

13 A. Yes. You mischaracterized what I
14 said. I said Hackborn discloses consistently,
15 that the animation occurs, and specifically the
16 grass, based upon determined user contact with
17 the blades of grass, and that if a user
18 determined to be touching the blades of grass,
19 those blades of grass will bend or sway as if
20 the user is actually touching those blades of
21 grass.

22 Q. So is it fair to say that the

1 resulting display on the Hackborn device is
2 dependent on where in the grass live wallpaper
3 the swiping motion occurs?

4 A. It's dependent upon the device
5 determining that the user is making contact
6 with the grass and from that perspective, if --
7 obviously if the user is not making contact
8 with the grass, Hackborn discloses that the
9 grass will not move.

10 Q. You're saying that the device
11 determines that the user is making contact with
12 the grass. Is the device determining anything
13 else about the user's input?

14 MR. STARK: Objection, form.

15 THE WITNESS: Yeah, that's a vague
16 question. I can't answer that unless
17 there's more context.

18 BY MS. HUANG:

19 Q. Sure. In order for the device in
20 Hackborn to know how to show a resulting
21 display on the device, does the Hackborn device
22 need anything other than a determination that

1 the user is making contact with the grass?

2 MR. STARK: Objection, form.

3 THE WITNESS: I guess if this is with
4 respect to a particular opinion in my
5 declaration, you'll have to take to me to
6 that because I'm not quite understanding
7 the context of the question.

8 BY MS. HUANG:

9 Q. All right. Can you turn to
10 Exhibit 2005, which is your declaration.

11 A. Yes.

12 Q. And then please take a look at
13 paragraph 59.

14 Are you there?

15 A. Yes, I'm there now.

16 Q. Okay. Can you take a look at the
17 fourth line of paragraph 59 where it says,
18 quote, "Hackborn is directed towards live
19 wallpapers that broadly respond to user contact
20 and distinguishes between the intended result
21 of different inputs by determining whether a
22 given input contacts the wallpaper or an icon

1 displayed above the wallpaper."

2 Did I read this correctly?

3 A. Yes.

4 Q. Is your opinion limited to that
5 position that Hackborn is only responding to
6 user contacts and no other feature of a user
7 input?

8 MR. STARK: Objection, form.

9 THE WITNESS: What I'm saying here is
10 that -- specifically that Hackborn is --
11 discloses, and obviously contrasting that
12 with Westerman's disclosures, that the
13 user, as I've said before, is determined
14 to be contacting the grass and it is,
15 therefore, reacting based upon that
16 determination, it's distinguishing what it
17 will do based upon whether that user is
18 making contact, and as a result then, in
19 this case, animating the grass in the
20 wallpaper.

21 BY MS. HUANG:

22 Q. Is Hackborn making a binary decision

1 of whether contact is made or not?

2 A. It's making a determination that the
3 grass is contacted based upon the user's touch.
4 And certainly, if you're saying something is
5 contacted, then you're making determination an
6 affirmative. And if you're making a
7 determination that it isn't contact, you're
8 making a repudiation of that determination. So
9 that's a -- that is a two-state solution for
10 animating the grass.

11 Q. Is Hackborn teaching a two-state
12 solution for animating the grass?

13 A. Well, I'd characterize it as it's
14 clear Hackborn is teaching that if the user is
15 making contact with the grass, the grass will
16 be animated as if being touched by the user.

17 Q. How does Hackborn know how to animate
18 it in a way that reflects how it would look if
19 touched by the user?

20 A. Well, specifically it discloses that
21 the grass will bend or sway.

22 Q. How does Hackborn know what the bend

1 or sway movement should look like?

2 A. I'm not sure what you mean by that
3 question.

4 Q. Why don't we turn to paragraph 64 of
5 your deck.

6 A. Okay. I'm there.

7 Q. Let's go down to line five, which is
8 the fourth line on page 37 of your declaration.

9 Are you there?

10 A. Okay.

11 Q. Do you see the text that you wrote
12 that says, "Hackborn discloses that a user
13 input on the live grass wallpaper generates
14 vector data representing the position direction
15 and speed of contact"?

16 A. Yes.

17 Q. And the next sentence -- and then
18 there's a citation to Exhibit 1004,
19 paragraph 33. Is that paragraph 33 of Hackborn
20 that you're citing?

21 A. Yes.

22 Q. And the next sentence says, "This

1 information is then used to determine whether
2 the finger" -- excuse me. I'll start that over
3 again.

4 "This information is then used to
5 determine whether the user's finger contacts
6 the grass and to generate the 'animation that
7 makes the grass blades look as if the finger is
8 actually contacting them.'" End quote.

9 Did I read that correctly?

10 A. Yes.

11 Q. And then there's another citation to
12 paragraph 33 of Hackborn?

13 A. Yes.

14 Q. What does Hackborn use the vector
15 data for?

16 A. Specifically, as I said there, it
17 is -- discloses that the vector data, which is
18 representing the position and direction and
19 speed of the contact for animating the bending
20 or swaying of the grass.

21 Q. So does Hackborn need vector data to
22 know how to animate the bending or swaying of

1 the grass?

2 A. Hackborn discloses that it could use
3 that vector data for animating the bending or
4 swaying of the grass to make it look like as if
5 the finger is actually contacting the blades.

6 Q. Does it teach any other way of
7 determining how to generate the animation of
8 the bending or swaying of the grass to be
9 reflective of the user's input?

10 A. I don't recall addressing that in my
11 declaration. And certainly, the disclosures in
12 Hackborn are associated with, as we've been
13 talking about, determination of user touching
14 the grass, and I'm not recalling any other
15 discussion in Hackborn of other type of input
16 for bending or swaying the grass.

17 Q. Does Hackborn teach any other
18 movement of the grass as a result of a user
19 input?

20 A. You mean besides bending or swaying?

21 Q. Yes.

22 A. Well, certainly it's -- in general

1 it's discussing animation, and with respect to
2 the grass it specifically mentions bending or
3 swaying. I don't recall any other disclosures.

4 Q. You said in your declaration at
5 paragraph 64 that, "Hackborn discloses that
6 user input on the live grass wallpaper
7 generates vector data representing the
8 position, direction and speed of contact."

9 Is that right?

10 A. Yes.

11 Q. Would a POSITA understand that --
12 strike that.

13 Would a POSITA have understood that
14 all three of those types of data, position,
15 direction and speed of contact are required for
16 the Hackborn device to know how to animate the
17 grass as if the finger had actually contacted
18 grass?

19 A. As disclosed as I reference here in
20 paragraph 33, is that Hackborn, with respect to
21 the vector disclosure of position, direction
22 and speed also discloses, consistent with the

1 rest of the disclosures in Hackborn, that --
2 from a perspective of a POSITA that -- that
3 the -- that information would be used and
4 generated -- used to animate the grass.

5 And as I point out in this paragraph
6 that a POSITA would understand that the
7 magnitude of the vector data would be used to
8 determine the magnitude of the visual effect of
9 the dynamically generated grass animation,
10 which is again the determination that the user
11 is touching the grass, and that's what that
12 vector data is being used for.

13 Q. Do you need vector data -- strike
14 that.

15 Does Hackborn need vector data in
16 order to know how to animate the grass?

17 A. That's a specific example associated
18 with the user dragging her finger across the
19 grass. A touch certainly would be -- you can
20 consider it a single element vector. In that
21 case, it would be consistent with that
22 disclosure of vector data.

1 But if you're -- if you don't
2 consider a single element vector, that is the
3 touch, by, for example, a tap, then it
4 certainly doesn't exclude a tap from animating
5 the grass.

6 Q. We'll get to touches in a bit. I
7 kind of want to explore swipes for a bit. So
8 you say that vector data represents the
9 position, direction and speed of contact;
10 right?

11 A. That's what Hackborn discloses, yes.

12 Q. What does speed of contact mean?

13 A. Is the speed, which is how quickly
14 the user is dragging a finger across the
15 display touching the grass.

16 Q. So if I wanted to see the grass move
17 quickly, I would need to slide my fingers
18 quickly across the grass, is that fair?

19 MR. STARK: Objection to form.

20 THE WITNESS: Well, from a
21 perspective of a POSITA, if you are
22 touching the grass and from the

1 perspective of Hackborn's disclosures, in
2 a -- that the animation is in a realistic
3 manner displayed to the user, that if I
4 drag my finger touching the grass more
5 quickly, excuse me, than I would if I
6 dragged it more slowly, I certainly would
7 expect the grass to respond in kind in
8 terms of the animation.

9 So as I say here, a POSITA would
10 understand that there's no need for
11 threshold determination between swipes and
12 taps because less contact movement on the
13 grass already results in less apparent
14 movement of the grass. And it's a
15 continuum. It's a magnitude determination
16 based upon how quickly the user is swiping
17 their finger and touching the grass on the
18 display.

19 BY MS. HUANG:

20 Q. So swiping across the grass quickly
21 would result in a different animation than
22 swiping my finger across the grass slowly; is

1 that fair to say?

2 A. I would say it's performing the
3 animation, it's just performing at a more rapid
4 pace to be consistent with the user's speed at
5 which they're dragging their finger across the
6 display.

7 Q. Is it fair to say that the vector
8 data associated with swiping my finger across
9 the screen quickly is different than the vector
10 data associated with me dragging or swiping my
11 finger across the screen slowly?

12 A. Well, that's a distinction without a
13 difference because you're measuring --
14 specifically it discloses that the vector data
15 is position, direction and speed. That's the
16 vector data.

17 So if you're making an action, and
18 that action has a position, direction and
19 speed, that's the vector data. And that's
20 associated with whatever movement you're making
21 in terms of swiping speed.

22 So that's the only, I think,

1 reasonable way to provide an answer to that
2 question.

3 Q. Let me clarify. Would it be fair to
4 say that the magnitude of each of the
5 components of vector data -- strike that.

6 Would it be fair to say that the
7 magnitude of the speed of the contact within
8 the vector data is different if I swipe my
9 finger across the screen quickly versus swiping
10 my finger across the screen slowly?

11 A. Well, as I pointed out in the -- this
12 paragraph, based on my analysis, consistent
13 with Dr. Cockburn's analysis too, is that the
14 fidelity discussed in Cockburn -- I mean, in
15 Hackborn, is consistent with the magnitude of
16 the user swipe changing over a whatever range
17 zero to as fast you can swipe, that the grass
18 will be animated based on the magnitude of that
19 swipe speed. And it's a continuum, as I say in
20 the paragraph.

21 Q. So on Hackborn, if I want to see the
22 grass sway from side to side quickly, I can

1 control that by how fast I swipe the screen;
2 right?

3 MR. STARK: Objection, form.

4 THE WITNESS: Hackborn doesn't
5 specifically disclose the -- much about
6 the sway. Certainly, as we've been
7 talking about, it discloses how the user
8 is determined to make contact and the
9 grass will either bend or sway based upon
10 that determination and that it should be
11 consistent with real life animation. It
12 doesn't disclose any other aspects or
13 characteristics of the grass taking into
14 account in terms of how it's going to
15 react.

16 So it doesn't make that
17 determination, doesn't say that
18 specifically anywhere.

19 BY MS. HUANG:

20 Q. Does the speed of the contact dictate
21 the speed of the resulting bending or swaying
22 of the grass in Hackborn?

1 MR. STARK: Objection, form.

2 THE WITNESS: As I've said, Hackborn
3 only discloses that the user's contact
4 with the grass will animate it such that
5 its perceived as if the user was touching
6 the grass. And if there are -- if there
7 were consistent number of blades of grass
8 per unit linear length on the display,
9 obviously if I'm swiping faster, that
10 means more blades of grass per unit length
11 are changing at the same time as if I was
12 swiping at a slower speed.

13 That's consistent with a POSITA's
14 understanding. But beyond that, it
15 doesn't have any other disclosures to go
16 beyond that that I can recall.

17 BY MS. HUANG:

18 Q. How does Hackborn know how fast the
19 grass should be moving in the animation?

20 A. Well, as we've been discussing,
21 Hackborn discloses that the grass is animated
22 to move based upon the determined user's

1 contact, and specifically with determining that
2 the user is contacting the blades of grass, and
3 that the user's finger, for example, is moving
4 in a swipe gesture, that that vector data,
5 which includes position, direction and speed of
6 contact will be used to animate those blades of
7 grass.

8 MS. HUANG: I promised you an hour
9 before, that we'd go an hour and take a
10 break. Is now a good time for a break for
11 you?

12 THE WITNESS: Yes.

13 (Thereupon, a brief recess was taken.)

14 BY MS. HUANG:

15 Q. Dr. Mahon, according to Hackborn,
16 what's displayed on the device shown in
17 Figure 1 if you tap on the grass?

18 A. Hackborn discloses that user contact
19 with the grass causes the grass to bend or
20 sway.

21 Q. Does the display on the device in
22 Hackborn look the same if you tap versus if you

1 swipe on the same spot?

2 A. The Hackborn discloses that the grass
3 will be animated based upon the determination
4 that the user has contacted the grass, so if
5 the user touches the grass, it will bend or
6 sway. If the user swipes the grass, it will
7 bend or sway based upon that contact.

8 Q. Does the bend or sway look the same
9 for a tap input versus a swipe input?

10 A. For a given blade of grass, that's
11 being both in the first instance tapped and
12 that same blade of grass is part of the swipe?

13 Q. Yes.

14 A. Hackborn doesn't make a comparison
15 between how the grass is animated between a tap
16 or swipe. It does say that it's based upon
17 contact from the user. So a user from a POSITA
18 would expect that the blade of grass would bend
19 or sway based upon the contact.

20 And as we've been talking about, the
21 Hackborn also discloses that a vector of data
22 representing the user's contact in a swipe

1 would be used to animate the grass. And in
2 that separate instance, it's going to animate
3 the grass based upon that information of the
4 user contacting the grass during that swipe
5 which would cause the grass to be animated in a
6 realistic manner consistent with that swipe.

7 Q. Let's talk about tap for a while,
8 though. What vector data would represent the
9 tap motion on a grass?

10 A. Well, if you were taking the input
11 data from the user, a POSITA would understand
12 that if the user is tapping it will have a
13 position which would be consistent with the
14 vector, one of the elements in the vector data,
15 and it would not have a direction because it's
16 a tap, and it would not have a speed associated
17 with it if it's just a tap.

18 So, you could if -- and I think
19 Hackborn actually contemplates -- or doesn't
20 exclude, at least, pressure being used. So
21 depending upon how you're implementing that,
22 that could be something that's part of that --

1 that information.

2 But with respect to your question,
3 how does a tap vector data look versus a swipe
4 vector data? It's the number elements in
5 the -- and how many for -- in this case,
6 triplet elements are in that vector data. A
7 swipe would have a series of triplets as the
8 user's swiping to contain that vector data, and
9 a tap would, consistent with the understanding
10 of a POSITA, would have a single three element
11 vector piece of information which would tell
12 the device what the position, where the tap
13 was.

14 Q. So if I understand that correctly,
15 for a tap user input, the vector data would
16 only have a magnitude value for the position
17 and would have no magnitude for direction and
18 speed of contact?

19 MR. STARK: Objection, form.

20 THE WITNESS: Well, what I'm saying
21 is that a -- it doesn't -- Hackborn
22 doesn't specifically address this. What

1 I'm saying from a perspective of a POSITA
2 is that you could use vector data to
3 represent a tap or swipe, and that that
4 position data in that vector for a tap
5 could be -- would be used to determine the
6 position and determine what part of that
7 grass is to bend or sway is what I'm
8 saying.

9 BY MS. HUANG:

10 Q. Would Hackborn be able to ascertain
11 any direction vector data as a result of a tap?

12 A. I'm sorry, did you say vector data
13 or --

14 Q. I said direction vector data. Let me
15 reword it.

16 Would Hackborn be able to ascertain
17 any vector data that includes a -- a magnitude
18 of a direction as a result of a tap?

19 A. Again, Hackborn doesn't specifically
20 discuss this, but from a perspective of POSITA,
21 you could have the position, direction and
22 speed of that contact being registered based

1 upon that touch. And that could be used to
2 determine what -- in that case what blade of
3 grass that's being touched and, therefore, what
4 can be -- what will be animated based upon that
5 touch determination.

6 Q. Would Hackborn be able to ascertain
7 any vector data that includes a speed of the
8 contact as a result of the tap?

9 A. I would have the same answer.

10 Q. You earlier alluded to pressure being
11 used. Does Hackborn teach the use of pressure
12 on its device?

13 A. I don't see that Hackborn discloses
14 pressure, and I don't recall specifically any
15 part of Hackborn discussing pressure. So I
16 can't find an area in Hackborn specifically
17 discussing pressure.

18 Q. What's displayed on Hackborn's device
19 if I tap lightly on the grass?

20 A. Again, consistent with the
21 disclosures in Hackborn, if the user is
22 determined to touch the grass, the way the

1 grass will bend or sway in response to that
2 contact.

3 Q. What's displayed on Hackborn's device
4 if I push down firmly?

5 A. I'm not sure what you mean by that.

6 Q. So again, we will take this example
7 outside again. So if I'm outside sitting on my
8 lawn and I see a blade of grass and I just
9 touch it real lightly and then another scenario
10 I push it really hard and fast, will the grass
11 react the same way in those two scenarios?

12 MR. STARK: Objection, form.

13 THE WITNESS: Hackborn doesn't
14 specifically discuss that. Your scenario
15 in terms of an actual person being outside
16 and touching grass separate but in terms
17 of the perspective of a POSITA analyzing
18 Hackborn whose goal is to animate the
19 grass in a realistic manner with -- again,
20 in an esthetically pleasing way to mimic
21 real-world context, if a user is touching
22 the grass, the user would expect that

1 grass to bend or sway.

2 If the user is creating a swipe in a
3 vertical direction, Hackborn doesn't
4 discuss that. But certainly, whatever
5 blades of grass, if you're generating a
6 swipe in a vertical direction for the
7 display, according to disclosures in
8 Hackborn, a user would expect whatever
9 blades of grass it's touching to bend or
10 sway.

11 BY MS. HUANG:

12 Q. Is there any tap gesture on the grass
13 wallpaper that would result in the same display
14 of grass movement as any swipe gesture?

15 MR. STARK: Objection, form.

16 THE WITNESS: Yeah, that's a
17 hypothetical. Certainly if you give me a
18 context and give me some time to analyze
19 it I could tell you how a POSITA would
20 understand it from the perspective of
21 Hackborn.

22 Again, if a blade of grass is

1 determined to be in contact with the user,
2 that blade of grass would be -- bend or
3 sway per the disclosures in Hackborn.

4 BY MS. HUANG:

5 Q. Sitting here right now, can you think
6 of any side-to-side swipe motion that would
7 result in the same display of grass movement as
8 a tap movement on that same grass?

9 MR. STARK: Objection, form.

10 THE WITNESS: There are various
11 scenarios that come into play with that
12 context. Again, I'm not going to just sit
13 here on the fly and make analyses that
14 weren't part of either the assertion by
15 Apple or the declaration by Cockburn.

16 And you can tie it -- if you have a
17 discussion to tie it to in my declaration,
18 I'd be happy to talk about it.

19 BY MS. HUANG:

20 Q. According to Hackborn, does a swipe
21 motion result in a side-to-side movement of the
22 grass on the display?

1 A. I'm not sure what you mean by
2 side-to-side movement.

3 Q. If you're looking at Figure 1 of
4 Hackborn, and we see the grass 105 on the
5 background, if I swipe on the screen from the
6 left side of the screen to the right side of
7 the screen over the grass, does that swipe
8 motion result in a movement of the grass that
9 also goes from left to right?

10 MR. STARK: Objection, form.

11 THE WITNESS: Again, consistent with
12 the disclosures in Hackborn, if it's
13 determined that the user is making contact
14 with the grass, they would expect that
15 grass to bend or sway based on that
16 contact.

17 If you're swiping from left to right,
18 you would expect that grass to respond
19 accordingly based upon that touch
20 determination as the user is swiping that
21 finger across the display.

22

1 BY MS. HUANG:

2 Q. So in the example of swiping from
3 left to right, would you expect the grass also
4 to move from left to right?

5 MR. STARK: Objection, form.

6 THE WITNESS: Again, I've said many
7 times that consistent with the disclosures
8 in Hackborn, the user would expect, and
9 Hackborn discloses, that that blade of
10 grass or the blades that are being
11 determined to have been touched will bend
12 or sway in response to that contact.

13 BY MS. HUANG:

14 Q. Have you touched grass before,
15 Dr. Mahon?

16 A. Yes. I am alive and I am human.

17 Q. So if you went outside and touched --
18 ran your hand across the top of grass, would
19 you understand how grass moves as a result of
20 you're moving your hand across the grass?

21 MR. STARK: Objection, form.

22 THE WITNESS: Again, I certainly have

1 real life experience with touching grass.
2 And with respect to disclosures, as I've
3 articulated and as my analysis is
4 presented in my declaration, are
5 consistent with both the technical
6 understanding from a POSITA as well as my
7 real life experiences of how my
8 experiences are related to the disclosures
9 in Hackborn of realistic animation to
10 provide a esthetically pleasing experience
11 to the user.

12 BY MS. HUANG:

13 Q. So based upon Hackborn's description,
14 if you wanted to see the grass bend or sway to
15 the right, how would you interact with
16 Hackborn's device?

17 MR. STARK: Objection, form.

18 THE WITNESS: Again, I've said it
19 many times. I don't know how else better
20 to describe it. If you have something
21 specific to my analysis that you are
22 asking about and how that analysis plays

1 into these questions, I'd be happy to
2 determine it. But I've answered this many
3 times.

4 BY MS. HUANG:

5 Q. I'm trying to get an understanding of
6 how you believe that Hackborn works. And how
7 Hackborn is displaying the movement of the
8 grass responsive to a user input. So I'm just
9 merely presenting scenarios, and even specific
10 ones that are described in Hackborn, to get an
11 understanding of what your understanding of how
12 Hackborn works.

13 So with that in mind, do you know how
14 to make -- based on Hackborn's teaching, would
15 you know how to touch or provide user inputs on
16 Hackborn's device in order to make the grass
17 appear a certain way?

18 MR. STARK: Objection, form.

19 THE WITNESS: Again, all I can say is
20 what's disclosed in Hackborn and what I
21 discuss in my declaration with respect to
22 the user's interaction with the device and

1 Hackborn's disclosures, as well as
2 responding to the assertions in the
3 declaration as well as the petition, I
4 think I've made it clear how my analysis
5 responds to that and with respect to the
6 disclosures in Hackborn, and I'm going to
7 rely on that analysis as in my --
8 presented in my declaration.

9 BY MS. HUANG:

10 Q. Would a POSITA reading Hackborn
11 understand how to interact with a device shown
12 in Figure 1 to make the grass sway from side to
13 side?

14 MR. STARK: Objection, form.

15 THE WITNESS: Again, the disclosures
16 in Hackborn are consistent with the user
17 touching the grass, and it discloses that
18 the grass will bend or sway in response to
19 that contact. It does not provide
20 additional details on how that grass is
21 going to bend or sway other than it's with
22 respect to the expectations of being

1 realistic in response to the user to
2 provide a pleasing experience.

3 BY MS. HUANG:

4 Q. So is it your position that a POSITA
5 reading Hackborn would not understand how to
6 make the grass sway from side to side?

7 A. It's my perspective, my analysis is
8 that a user would understand the disclosures in
9 Hackborn, that if the user's determined to
10 touch -- determined that they have touched the
11 grass, that the grass will bend or sway in
12 response to that contact.

13 Q. Is there a tap motion on the Hackborn
14 device that can cause the grass to sway from
15 side to side? And by side to side I mean left
16 to right relative to Figure 1.

17 MR. STARK: Objection, form.

18 THE WITNESS: Hackborn doesn't
19 discuss, again, the specific elements of
20 or limitations or characteristics of how
21 that grass is going to bend or sway. It
22 says it will bend or sway in response to

1 determined contact -- touch. And that
2 would be clear to a POSITA.

3 BY MS. HUANG:

4 Q. Does Hackborn teach the use of
5 different types of gestures?

6 MR. STARK: Objection, form.

7 THE WITNESS: Hackborn discloses and
8 discusses certainly taps and swipes, you
9 know, in the specification.

10 BY MS. HUANG:

11 Q. Are you familiar with taps and
12 swipes?

13 A. Yes.

14 Q. Do the gestures, we'll say taps and
15 swipes, in Hackborn result in the Hackborn
16 device performing different resulting actions?

17 A. Hackborn makes clear that a
18 determination of the gesture, in this case that
19 the gesture is contacting the blades of grass,
20 that the blades of grass will bend or sway in
21 response to that contact.

22 Q. I guess I'm asking a little bit more,

1 generally. So let's say users interacting with
2 one of the icons 108. Does Hackborn teach that
3 the Hackborn device will perform a different
4 action depending on whether the gesture is a
5 tap or swipe?

6 A. I don't recall this analysis in my
7 declaration with respect to my response. If
8 you can direct me to my declaration, I'd be
9 happy to talk about it.

10 Certainly Hackborn discloses a user
11 interacting with the device and certainly a tap
12 in certain cases would be consistent with the
13 disclosures in Hackborn for launching
14 applications, for example. And then
15 specifically multiple taps for changing a mode.
16 But I'm not sure how this relates to my
17 specific analysis in my declaration.

18 Q. What's your understanding of a
19 gesture?

20 MR. STARK: Objection, form.

21 THE WITNESS: Well, again, with
22 respect to the assertions made in the

1 petition and in Dr. Cockburn's
2 declaration, I have responded to that in
3 my declaration and we can go look at my
4 analysis in response to that, if you'd
5 like to discuss my gesture analysis and
6 specific analyses.

7 BY MS. HUANG:

8 Q. Sure. Let's go to paragraph 33 of
9 your declaration. Exhibit 2005.

10 A. 33, yes.

11 Q. Yup. And do you see the heading you
12 have? It says "A. Gesture-Related Magnitude
13 and Threshold."

14 A. Yes, I do.

15 Q. What is gesture-related magnitude?

16 A. It would be a determination of the
17 magnitude based upon the gesture being made.

18 Q. What is the gesture being made?

19 A. Well, here we're discussing or I'm
20 discussing the first contact which has a
21 magnitude, and I specifically say, for example,
22 swipe length or contact pressure. So in that

1 case, those are two examples, where a magnitude
2 can be determined based upon that gesture.

3 Q. Is a first contact a gesture?

4 MR. STARK: Objection to form.
5 Scope.

6 THE WITNESS: In the claim language
7 with respect to that element, specifically
8 while displaying the first user interface
9 on the display detecting a first input by
10 a first contact on the touch sensitive
11 surface at a location, et cetera,
12 certainly within that context I make -- I
13 perform my analysis consistent with a
14 plain -- with the plain and ordinary
15 meaning.

16 And in the paragraph that you're
17 citing to, I am citing to the first
18 contact language of that claim element and
19 that specifically would be understood by a
20 person of ordinary skill in the art with
21 respect to the disclosures within that
22 claim.

1 BY MS. HUANG:

2 Q. I don't know if I fully understand
3 whether that answered my question, so I might
4 ask it a little bit differently.

5 What is the relationship between a
6 first contact and a gesture?

7 MR. STARK: Objection, form. Scope.

8 THE WITNESS: I didn't make any
9 specific analysis with respect to
10 differentiating gestures. I am speaking
11 here specifically to a gesture related
12 magnitude and threshold. Gesture
13 certainly encompass a -- as I mentioned
14 here, a swipe or a contact pressure. And
15 I think it's clear what I'm saying here
16 with respect to what the gesture is being
17 -- what gesture, the use of gesture is
18 being referred to here.

19 The first contact is part of the
20 claim element language but needs to be
21 satisfied in the prior art. And we can go
22 to my analysis with respect to the

1 assertions in the petition and
2 Dr. Cockburn's declaration to discuss how
3 that plays out, if you would like, but
4 you'd have to point me to where I'm making
5 a distinction between the definition or
6 the understanding of gesture and first
7 contact. I don't recall doing that.

8 BY MS. HUANG:

9 Q. Is tap a type of gesture?

10 A. A tap would be a gesture, yes.

11 Q. Is swipe a gesture?

12 A. Yes.

13 Q. Is double tap a gesture?

14 MR. STARK: Objection, form.

15 THE WITNESS: Depends upon context.

16 A double tap could be two gestures
17 independently analyzed, but certainly it's
18 user interaction with the device, and a
19 single tap could be a gesture. And if
20 you're stringing taps together, that could
21 become a specific gesture.

22

1 BY MS. HUANG:

2 Q. How does a device know whether it's a
3 single tap or a double tap?

4 MR. STARK: Objection, form. Scope.

5 THE WITNESS: Yeah, that's all
6 dependent upon the disclosures of the
7 invention or the patents or in the use
8 case of the device, determining, for
9 example, what happens based upon the
10 rapidity or the sequence of taps, for
11 example.

12 So again, I don't -- other than
13 pointing to the fact that Hackborn
14 discloses multiple taps for changing mode,
15 I don't recall discussing multiple taps as
16 a distinction outside of that.

17 BY MS. HUANG:

18 Q. So you mentioned that Hackborn
19 teaches detecting multiple taps for changing
20 mode. How does Hackborn know whether multiple
21 taps are intended to change a mode or whether
22 the user was actually inputting single taps

1 separated from one another?

2 A. That's -- again, it's a general
3 question. It depends upon implementation.
4 It's clear what Hackborn is disclosing, that
5 multiple taps could be used to change the mode
6 of the device. And that's all that Hackborn
7 discloses.

8 Q. Hackborn provides swipe as an example
9 of a gesture that has a grass bending effect;
10 is that right?

11 A. Hackborn discloses that a swipe is an
12 example that when it's determined to make
13 contact with the grass, the grass will bend or
14 sway, yes.

15 Q. Does Hackborn provide any other
16 explicit examples of gestures that cause the
17 blades of grass to move?

18 A. Hackborn does not limit the gestures
19 that would be determined to say that the user
20 is making contact with the grass, so I don't
21 recall any others specifically but it doesn't
22 limit it.

1 Q. Can you take a look at Hackborn at
2 paragraph 28. And it's long. So let me know
3 when you're there and I'll direct you.

4 A. Twenty-eight, yes.

5 Q. So about, I don't know, two-fifths of
6 the way down, there's a sentence that starts
7 with examples.

8 Do you see that?

9 A. "Examples of predetermined"?

10 Q. Yup. So it says, "Examples of
11 predetermined user inputs that may be received
12 by the device to cause the live wallpaper to
13 become responsive to user input can include
14 agitating or shaking the device selecting an
15 icon button."

16 Do you see that?

17 A. Yes.

18 Q. Did I read that right?

19 A. Yes.

20 Q. Does Hackborn say how it knows
21 whether a user input comprises agitating or
22 shaking the device?

1 MR. STARK: Objection, form.

2 THE WITNESS: I don't recall Hackborn
3 discussing agitating or shaking any other
4 place other than paragraph 28.

5 BY MS. HUANG:

6 Q. A little further down in
7 paragraph 28, as one of the examples of
8 predetermined inputs, Hackborn says, "Tapping
9 on the display screen a predetermined numbers
10 of times within a predetermined time period."

11 Do you see that?

12 A. Yes.

13 Q. Does Hackborn say how it knows
14 whether a user input comprises tapping on the
15 display screen a predetermined number of times
16 within a predetermined time period?

17 A. So does Hackborn know what Hackborn
18 says, is that what you're asking?

19 Q. I can clarify it.

20 Does Hackborn know -- strike that.

21 Does the Hackborn reference teach how
22 the Hackborn device knows whether a user input

1 comprises tapping on the display screen a
2 predetermined number of times within a
3 predetermined time period?

4 A. Well, to a POSITA it's clear that
5 they're saying that there's multiple taps
6 within a given time period to make that
7 determination. It doesn't go beyond that
8 teaching, as far as I know.

9 Q. Let's talk about the grass animation.
10 What's your understanding of how Hackborn's
11 animation of grass works?

12 MR. STARK: Objection, form.

13 THE WITNESS: As I've said,
14 Hackborn's teaching is that the grass will
15 bend or sway in response to the
16 determination that a user has touched the
17 grass. And it's designed to be in a
18 realistic way and responsive to that.

19 BY MS. HUANG:

20 Q. I guess more generally, like how does
21 animation work? Is it -- like I think back to
22 flip books when I was a kid, which I know isn't

1 necessarily how Disney makes its movies
2 anymore, but how does the animation -- how is
3 it generated and how does it appear to a user?

4 MR. STARK: Objection, form.

5 THE WITNESS: Again, I didn't do an
6 analysis specifically associated with
7 Hackborn's animation. I certainly
8 responded to the assertions in the
9 declaration and the petition with respect
10 to aspects of the grasping animated, but I
11 didn't go beyond that and perform an
12 additional analysis.

13 BY MS. HUANG:

14 Q. Do you have an understanding of how
15 Hackborn's animation appears to the user that
16 the grass was indeed contacted by the user's
17 input?

18 MR. STARK: Objection, form.

19 THE WITNESS: Well, as I've
20 articulated many times, is that the
21 disclosures in Hackborn are towards the
22 user seeing the grass bending or swaying

1 in response -- responsive to contact being
2 determined from the user with the grass,
3 and certainly that is clear in Hackborn.

4 I didn't perform an additional
5 analysis of -- and Hackborn doesn't
6 disclose specifically much beyond the
7 bending or swaying response with response
8 to the contact.

9 BY MS. HUANG:

10 Q. Would a POSITA understand how the
11 animation is generated in Hackborn after
12 reading Hackborn?

13 MR. STARK: Objection, form.

14 THE WITNESS: I can't perform an
15 analysis of how a POSITA would implement
16 the animation in Hackborn. And that's
17 beyond the scope of what I was asked to do
18 and I haven't performed that analysis.

19 BY MS. HUANG:

20 Q. Do you know how animation is
21 typically generated?

22 MR. STARK: Objection, form. Scope.

1 THE WITNESS: Yeah. Again, that's
2 outside the scope of my declaration. If
3 you want to point to me in my declaration
4 where I'm discussing how animation is
5 generated, I'd be happy to discuss that,
6 but I didn't perform that analysis.

7 BY MS. HUANG:

8 Q. I guess I'm just wondering if you
9 have an understanding of how animation is
10 generated.

11 MR. STARK: Objection, form. Scope.

12 THE WITNESS: Again, it's beyond my
13 declaration. I'm happy to talk about
14 anything in my analysis and my declaration
15 if you would like.

16 BY MS. HUANG:

17 Q. So do you have an understanding about
18 how the live wallpaper in Hackborn that
19 animates, how that live wallpaper works?

20 MR. STARK: Objection, form.

21 THE WITNESS: Well, as I've
22 articulated many times, and in my

1 declaration, is that Hackborn discloses
2 that the live wallpaper, in this case the
3 grass, bends or sways in determination
4 that a user has made contact with the
5 grass.

6 BY MS. HUANG:

7 Q. Is that wallpaper like a specific
8 type of file?

9 A. Wallpaper, as disclosed in Hackborn,
10 is consistent with a POSITA's understanding of
11 wallpaper can be generated in many ways. I
12 didn't perform an analysis on how the
13 mechanisms and how many ways you can perform
14 wallpaper generation. But a POSITA would
15 understand that you can generate wallpaper in
16 various ways.

17 Q. Can you give me some examples of like
18 file types that wallpapers are saved as?

19 MR. STARK: Objection, form.

20 THE WITNESS: Yeah, I didn't perform
21 that analysis. Certainly there are many
22 mechanisms to do that. I haven't thought

1 about that again recently to make a
2 comprehensive answer and/or perform the
3 analysis. It's outside of my analysis in
4 my declaration. Unless you can point to
5 me something in my declaration to discuss
6 that.

7 BY MS. HUANG:

8 Q. Would it be stored as type of file,
9 generally?

10 MR. STARK: Objection, form.

11 THE WITNESS: Again, I didn't perform
12 that analysis. A POSITA would understand
13 that there's multiple ways to do it. I
14 didn't go beyond that determination. I
15 didn't present a discussion in my
16 declaration. And again, unless you can
17 point to that within my declaration.

18 BY MS. HUANG:

19 Q. You have a lot of experience with
20 computer networking and communications and
21 stuff. Is live wallpaper something that a
22 POSITA would understand that a user could, for

1 example, download from the internet?

2 MR. STARK: Objection, form.

3 THE WITNESS: Again, there's many
4 ways to perform various functions within
5 any computer or user interface element. I
6 didn't perform that analysis for my
7 declaration. I didn't do that, present a
8 discussion in my declaration with respect
9 to that, and I'm not going to do it on the
10 fly.

11 BY MS. HUANG:

12 Q. Does Hackborn explain where its live
13 wallpaper comes from?

14 A. I'm not sure I understand the scope
15 or the context of that question.

16 Q. I guess, does Hackborn explain how
17 one obtains live wallpaper?

18 A. Well, Hackborn throughout discusses
19 wallpaper and specifically in various
20 paragraphs discusses, such as an example would
21 be in paragraph 8, that there's various
22 limitations generating the graphical wallpaper,

1 representation may include displaying a visual
2 image that covers substantially entire --
3 entirety of a display on a computing device and
4 there's various references throughout.

5 I'm not sure if that meets the
6 context of what you're saying, because it's
7 still unclear to me, but certainly it's
8 referencing graphical generation of the
9 wallpaper.

10 Q. I was looking at Figure 8 of -- I'm
11 sorry, looking at paragraph 8 of Hackborn.
12 Near the bottom you see there's a sentence that
13 starts with "the image representing"?

14 A. I'm looking for it.

15 Q. It's like seven or eight lines from
16 the bottom.

17 A. Okay. I see the sentence beginning,
18 "The image representing real-time data
19 downloaded from the remote web server may
20 include information from a social networking
21 site, map or other weather information."

22 Q. Yup. And then the next sentence

1 says, "The method may also include receiving a
2 user selection of an object on the second layer
3 and opening a graphical object in a third layer
4 that is visually in front of the second layer,
5 and then executes in a third process that
6 differs from the first process and the second
7 process."

8 A. Yes, I see that.

9 Q. Is Hackborn talking -- what is
10 Hackborn talking about in those two sentences?

11 MR. STARK: Objection, form.

12 THE WITNESS: Well, in paragraph 8
13 Hackborn is disclosing broad discussion of
14 basically the various implementations as
15 it says for generating graphical
16 representations, including radial displays
17 and grabbing real-time imagery, et cetera,
18 et cetera.

19 And in those last three sentences,
20 it's specifically just discussing in
21 generalities that a -- the method may also
22 include receiving user selection on one

1 layer and opening the -- a graphical
2 object on another layer, a third layer,
3 that's in front of the first -- that first
4 layer, which they're saying second layer
5 here in the paragraph description, and
6 that executes in a third process that
7 differs from the first process or second
8 process.

9 So it's just a general discussion of
10 saying that you can interact with multiple
11 layers.

12 BY MS. HUANG:

13 Q. I'm going to upload another exhibit
14 here. Let me know when you get that, please.

15 A. Just showed up. Let me download it.
16 Taking its time. About halfway there.

17 Q. This is when I should ask you the
18 Wi-Fi questions.

19 A. Thought it was stalled for a second
20 but it's continuing.

21 Q. Oh, dear.

22 A. Almost home.

1 All right. I have it downloaded and
2 I now have it opened.

3 Q. Do you recognize the reference that I
4 just sent you?

5 A. Yes.

6 Q. What is that reference?

7 A. I'll refer to it as Townsend.

8 (Thereupon, Exhibit 1006 was marked for
9 identification.)

10 Q. Let's see. It's U.S. Patent
11 Publication 2010/0103118. Does that look right
12 to you?

13 A. Yes.

14 Q. And like you said, if we refer to it
15 as Townsend you'll know what I'm talking about?

16 A. Yes.

17 MS. HUANG: And for the record, this
18 is also Exhibit 1006 in this proceeding.

19 BY MS. HUANG:

20 Q. Did you read the entirety of
21 Townsend?

22 A. Yes.

1 Q. Did you review the figures in
2 Townsend as well?

3 A. I did. With respect to my analysis.

4 Q. And did you also review the claims?

5 A. I did read through the claims.

6 Q. Did you understand everything that
7 you read and saw in Townsend?

8 A. Yes, I believe I did.

9 Q. Was there anything in Townsend that
10 was unclear to you when you reviewed it?

11 MR. STARK: Objection, form.

12 THE WITNESS: Again, I was reading
13 Townsend with respect to my analysis in
14 responding to the assertions. I don't
15 recall anything based on my analysis that
16 comes to mind that was unclear from the
17 perspective of POSITA and the plain and
18 ordinary meaning.

19 BY MS. HUANG:

20 Q. Do you know what 2D affine
21 transformation is?

22 A. Affine.

1 Q. Yeah. I'm sure I'm pronouncing it
2 wrong. Is it affine?

3 A. Yes.

4 Q. And it's man?

5 A. Yes.

6 Q. So 2D affine transformation. Can you
7 tell me what that is?

8 MR. STARK: Objection, form.

9 THE WITNESS: So again, I didn't
10 perform an analysis on this. Certainly an
11 affine transformation is a mathematical
12 technique for transforming data from one
13 dimension to another for various purposes.
14 But I didn't perform an analysis on the
15 affine transforms for my declaration. And
16 I recall Dr. Cockburn making an assertion
17 with respect to affine transforms.

18 BY MS. HUANG:

19 Q. Do you know what sheer mapping is?

20 MR. STARK: Objection, form.

21 THE WITNESS: Again, same answer.

22 Certainly sheer and in terms of mapping

1 and processes associated with, you know,
2 sheer disclosures are specific techniques
3 that are used, but I did not perform an
4 analysis in my declaration.

5 I don't recall Dr. Cockburn making,
6 unless you can point me to it, an
7 assertion with respect to the specific
8 sheer techniques that were used and how
9 that plays out with his assertions for
10 invalidity.

11 BY MS. HUANG:

12 Q. Are you familiar with sheer mapping,
13 though?

14 A. Well, certainly the term has been
15 used or I run into the term. I haven't
16 performed a sheer analysis myself for the
17 imaging implementations that I performed. But
18 again, it doesn't play into my declaration and
19 I would have to consider aspects of the sheer
20 implementation and how it plays out with
21 respect to any assertions in the case, so I'm
22 not going to do that on the fly.

1 Q. Is sheer mapping an example of 2D
2 affine transformation?

3 MR. STARK: Objection, form.

4 THE WITNESS: Again, that's outside
5 the scope of my declaration. And unless
6 you can point to some aspect of my
7 declaration where I have this discussion,
8 I'm going to leave it at that.

9 BY MS. HUANG:

10 Q. Can I direct your attention to
11 Claim 4 of Townsend.

12 A. Of Townsend?

13 Q. Yeah.

14 A. Claim 4.

15 Q. And are you there?

16 A. Uh-huh.

17 Q. Do you see where it says, "The method
18 of Claim 1 wherein receiving the inertia event
19 comprises receiving information describing a 2D
20 affine transformation of the application
21 object"?

22 A. Yes, I do.

1 Q. Did I read that right?

2 A. Yes.

3 Q. And then can you look at Claim 5
4 where it says, "The method of Claim 1 wherein
5 the manipulation described by the inertia event
6 includes at least one of a rotation
7 manipulation, a translation manipulation and a
8 scaling manipulation."

9 A. Yes, I see that.

10 Q. What is rotation manipulation?

11 MR. STARK: Objection, form.

12 THE WITNESS: Again, that's outside
13 of the scope of my declaration. I didn't
14 perform an analysis, and I don't recall
15 Dr. Cockburn or the petition presenting a
16 basis for invalidity based on rotation
17 manipulation. And I haven't performed
18 that analysis and I'm not going to do it here
19 on the fly.

20 BY MS. HUANG:

21 Q. Can we turn to your declaration at
22 paragraph 82.

1 A. Okay, I'm there.

2 Q. And looking at the last sentence of
3 your paragraph 82, you say, "Townsend's system
4 would not be relevant for animating the swaying
5 and bending of the anchored grass of Hackborn."

6 Did I read this correctly?

7 A. Let me see. Page 46, paragraph 82.
8 And you say the sentence begins with?

9 Q. I'm sorry, I should have waited until
10 you got there. So, yes, paragraph 82. The
11 last sentence of that paragraph, so actually
12 takes us to page 47.

13 A. 47.

14 Q. Yes. So I'll read it again. The
15 sentence reads, "Townsend's system would not be
16 relevant for animating the swaying and bending
17 of the anchored grass of Hackborn."

18 Did I read that right?

19 A. Yes.

20 Q. And then if we go to the next
21 paragraph, paragraph 83, the last sentence of
22 that paragraph reads, "A POSITA would

1 understand that Townsend's inertia system
2 operates on the motion of whole objects moving
3 across a screen, not a comprehensive physics
4 engine that simulates the real-world behavior
5 of any object under any condition."

6 Did I read that right?

7 A. Yes.

8 Q. Can we go back to Townsend?

9 A. Sure. Yes, okay.

10 Q. Let's look at Claim 5 again, which
11 again says, "Wherein, the manipulation
12 described by the inertia event includes at
13 least one of a rotation manipulation, a
14 translation manipulation and a scaling
15 manipulation."

16 Would a rotation manipulation include
17 something like a door on a hinge?

18 MR. STARK: Objection, form.

19 THE WITNESS: The general meaning of
20 that to a POSITA, a rotation manipulation
21 means you're rotating an object. And with
22 respect to that analysis that you -- that

1 we just looked at in my declaration,
2 that's consistent with my analysis of what
3 Townsend discloses.

4 BY MS. HUANG:

5 Q. Is a door on a hinge a rotating
6 object?

7 MR. STARK: Objection, form.

8 THE WITNESS: Again, with respect to
9 physics modeling of a door hinge, there's
10 certainly in your introductory physics
11 classes in performing force analyses on
12 various structures, certainly a door is
13 moving.

14 When you're talking about rotational
15 models, typically you're talking about an
16 object moving in free space and it has
17 rotational inertial forces. A door moving
18 on a hinge is a door moving on a hinge.
19 And if you want to model that on a physics
20 based model you're going to have to
21 provide a context and frame of reference,
22 et cetera.

1 BY MS. HUANG:

2 Q. Would you call the hands of a clock,
3 an analog clock, pivoting around the center
4 point of the clock a rotation motion of those
5 hands?

6 MR. STARK: Objection, form.

7 THE WITNESS: Not within the context
8 of what Townsend's disclosing with respect
9 to the interaction of the user with
10 Townsend's physics models. Certainly the
11 hands can be animated to move, but I
12 didn't perform that analysis. I didn't
13 see an assertion making the connection. I
14 would have to consider whatever points
15 were put forward with respect to making
16 the connection.

17 But to a POSITA that certainly
18 wouldn't be something you would consider
19 as a rotational. Certainly something's
20 rotating when you animate it, but in terms
21 of modeling it and being an inertial
22 model, I'd have to see the arguments to be

1 able to provide a response to that.

2 BY MS. HUANG:

3 Q. So if I had a door hanging on its
4 hinge and I slammed it shut, is it rotating
5 relative to the hinges?

6 MR. STARK: Objection, form.

7 THE WITNESS: Again, I haven't seen
8 any analysis making an argument for a door
9 on a hinge being disclosed in Townsend as
10 a -- some type of fixed system with a
11 rotational connection to it.

12 Anybody who understands physics is
13 going to understand that any time you fix
14 something within a frame of reference,
15 there are additional factors that have to
16 be taken into place to do the modeling of
17 the forces associated with that, anchor
18 points, et cetera, and I haven't seen that
19 argument presented anywhere.

20 BY MS. HUANG:

21 Q. Does a rotation manipulation, which
22 Townsend describes, involve a fixed point of

1 that object?

2 MR. STARK: Objection, form.

3 THE WITNESS: I haven't seen that
4 argument or assertion made or put forward.
5 Certainly I haven't seen that analysis or
6 anything in Townsend to make that
7 assertion.

8 BY MS. HUANG:

9 Q. You're saying in paragraph 83 of your
10 declaration, "A POSITA would understand a
11 Townsend's inertia system operates on the
12 motion of whole objects moving across a
13 screen." Is that right?

14 A. That's correct.

15 Q. And I believe you're criticizing
16 Hackborn in paragraph 84 as not being congruent
17 with Townsend because the grass remains
18 anchored, is that correct?

19 A. That's certainly one of the reasons,
20 yes.

21 Q. So you are providing an argument that
22 Townsend's teachings are limited to the motion

1 of whole objects, isn't that correct? Whole
2 objects moving across the screen.

3 A. Yes. Based on my understanding of
4 what's being asserted in the petition
5 declaration and my review of Townsend, that
6 Townsend is disclosing and is directed to whole
7 objects moving across the screen in its
8 disclosures.

9 Q. If an object is fixed at one point,
10 can't it still rotate about the anchor point?

11 A. In terms of the disclosures in
12 Townsend, as I say here, that Townsend's
13 inertia system defines object boundaries,
14 calculates deceleration of objects moving
15 across the screen due to simulated friction,
16 and handles object collisions, including the
17 elasticity of colliding objects.

18 In the disclosures in Townsend, I saw
19 no discussion of -- or presentation of fixed
20 objects and their interactions and the
21 additional and physics analysis and/or modeling
22 that has to take place to model a fixed object

1 being interacted with, with other objects, in
2 terms of boundary conditions or elasticity, et
3 cetera.

4 MR. STARK: Jenny, we've been going
5 for a little over an hour.

6 MS. HUANG: Sorry about that.

7 MR. STARK: Is now a good time for a
8 break?

9 MS. HUANG: Yeah. Let's take 10.
10 Apologies.

11 (Thereupon, a brief recess was taken.)

12 BY MS. HUANG:

13 Q. Dr. Mahon, can you look at
14 paragraph 22 of Townsend, please.

15 A. Twenty -- let me see.

16 Q. Sorry. I have you jumping all over
17 the place.

18 A. Let me make sure I'm in Townsend
19 here. I'm losing my -- track of my references.
20 Okay. So I'm in Townsend.

21 Q. Page 11 of the PDF.

22 A. Okay. 21. 22. Yes.

1 Q. About halfway down, there's a
2 sentence that starts, "The initialization and
3 information may also specify a pivot point of
4 the object."

5 Do you see that?

6 A. That's not the sentence. Okay. I
7 think I found it. Yes, I do see that.

8 Q. Why does the Townsend system need a
9 pivot point?

10 MR. STARK: Objection, form.

11 THE WITNESS: Consistent with the
12 disclosures in Townsend with respect to
13 objects, whole objects moving, and the
14 other disclosures, as I've analyzed and
15 stated in my declaration, operating whole
16 objects the pivot point would be the point
17 at which the object is, for example,
18 rotating about.

19 Which is consistent with both my
20 understanding of what Townsend's
21 disclosing as well as my analysis and my
22 declaration with respect to that.

1 BY MS. HUANG:

2 Q. If you go to the, I guess, sixth to
3 the bottom line of paragraph 22. Do you see
4 the sentence that starts with "For example"?

5 A. Yes.

6 Q. So it reads, "For example, if the
7 user rotated the object, then the application
8 may store the new orientation of the object to
9 use the next time the application displays the
10 object. As another example, if the object
11 continued to rotate after the user released it
12 based on calculations of the simulation
13 component 140, then the application may store
14 the new orientation of the object."

15 Did I read that correctly?

16 A. Yes.

17 Q. So is it fair to say here that
18 Townsend's discussing the rotation of an
19 object?

20 A. As I said, that is my understanding
21 that Townsend does discuss rotational whole
22 objects in its disclosure.

1 Q. And a pivot point is something that
2 may be used relative to that rotation?

3 A. With respect to the freely moving
4 object, yes.

5 Q. Do freely moving objects have pivot
6 points?

7 A. I'm sorry?

8 Q. Do freely moving objects have pivot
9 points?

10 A. Not necessarily.

11 Q. If something has a pivot point, can
12 it be a freely moving object?

13 MR. STARK: Objection, form.

14 THE WITNESS: Yeah, I'm not
15 understanding the context of the question.
16 It's very broad and kind of unrelated to
17 physics going on here, so I'm not sure
18 what you're asking.

19 BY MS. HUANG:

20 Q. I asked previously whether a pivot
21 point is something that may be used relative to
22 rotation of an object. And you responded,

1 "With respect to the freely moving object,
2 yes." So I'm trying to understand the
3 relationship between a freely moving object and
4 a pivot point. Can you explain that to me?

5 A. Well, Townsend is disclosing the
6 movement of objects across the screen and those
7 are whole objects. It doesn't disclose partial
8 objects or anything other than that. And can
9 those objects rotate in Townsend? Yes, those
10 objects can rotate in Townsend.

11 Q. Let's go back to Exhibit 1001, which
12 is the '755 patent.

13 A. 1001, '755. Yes.

14 Q. Give me a second to get there too.

15 Can you please turn to column 101,
16 which is on page 90 of the PDF. That's the
17 start of the claims.

18 A. Okay, I'm there.

19 Q. And then if you can look at Claim 1
20 starting at line 29. It reads, "In response to
21 detecting the first input by the first contact,
22 in accordance with the determination that the

1 first contact has a magnitude that is above a
2 threshold dynamically changing the appearance
3 of the background of the first user interface,"
4 dot, dot, dot.

5 Did I read that right?

6 A. Yes.

7 Q. Is it your understanding that Claim 1
8 requires a dynamic change in the appearance of
9 the background of the first user interface only
10 when the threshold is exceeded?

11 A. Well, it says in response to
12 detecting, that that input, that first contact
13 and determination that that first contact has a
14 magnitude that is above the threshold and then
15 talks about and discloses dynamically changing
16 the appearance based on that.

17 So that would be saying that that has
18 to be above that threshold.

19 Q. Do you read that as an if or an if
20 and only if situation to be mathematic --

21 MR. STARK: Objection, form.

22 Sorry.

1 THE WITNESS: So I'm pretty -- I'm
2 clear in my declaration, my opinion and
3 analysis on this with respect to the
4 assertions put forward and that that
5 disclosure is in response.

6 So it says in response to -- and I
7 guess if you have a question about some
8 way I worded that in my analysis -- I'm
9 not recalling where that distinction was
10 discussed or the differentiation is
11 discussed or why it -- why I did or didn't
12 discuss it, but it's certainly clear from
13 the plain and ordinary meaning that if the
14 magnitude is above the threshold that
15 dynamically changing the appearance is
16 based on that.

17 BY MS. HUANG:

18 Q. Claim 1 is directed to a device;
19 right?

20 A. Yes.

21 Q. If a device dynamically changed an
22 appearance of the background, under different

1 circumstances not involving that threshold,
2 would that device no longer practice Claim 1?

3 MR. STARK: Objection, form.

4 THE WITNESS: Well, that claim
5 element is saying that as part of Claim 1
6 that action is going to happen in response
7 to that threshold being met. I think
8 that's pretty clear. I'm not sure how
9 else to characterize that.

10 BY MS. HUANG:

11 Q. If we had a device that met each of
12 these limitations, and let's say you just agree
13 that everything in a hypothetical device met
14 each of these limitations but that device
15 further was responsive to a different
16 circumstance and the background would change in
17 appearance, under those circumstances, in
18 addition to the requirements of Claim 1, would
19 that device still practice Claim 1?

20 MR. STARK: Objection, form. Scope.

21 THE WITNESS: Yeah, I didn't perform
22 that analysis. I don't remember that

1 assertion being made in the declaration or
2 petition. Certainly if I could see that
3 analysis and assertion, I'd be happy to
4 respond, but that's definitely not
5 something I discussed or analyzed in my
6 declaration.

7 BY MS. HUANG:

8 Q. Does Claim 1 allow a dynamic change
9 in the appearance of the background under other
10 circumstances?

11 MR. STARK: Objection, form.

12 THE WITNESS: Again, that scope was
13 not asserted. I haven't seen that
14 analysis. I'd be happy to respond if
15 given time to look at the analysis and
16 provide my opinion based on that analysis.
17 Or assertion I should say. And I didn't
18 perform that analysis and didn't present
19 that in my declaration.

20 BY MS. HUANG:

21 Q. I know you're not a patent attorney,
22 or an attorney generally, but do you understand

1 the difference between an independent claim and
2 a dependent claim?

3 A. I believe I do, yes.

4 Q. So if a dependent claim added an
5 additional feature to Claim 1, so let's say we
6 had a dependent Claim 2 and it added an
7 additional feature, would a device that
8 practices the dependent claim also practice the
9 independent claim?

10 MR. STARK: Objection, form.

11 THE WITNESS: It would depend upon
12 the claim elements that are being
13 analyzed. I can't think of, off the top
14 of my head, a case -- again, in speaking
15 in generalities, where if you are
16 practicing a dependent claim, which is
17 dependent on an independent claim, where
18 it wouldn't be practicing what's in the
19 independent claim.

20 But I would have to look at the
21 specifics and analysis or assertions
22 associated with that to give you a

1 determination, but I can't think of
2 anything off the top of my head.

3 BY MS. HUANG:

4 Q. So Claim 1, for example, if you look
5 at line 20, talks about "Displaying --
6 displaying a first user interface on the
7 display wherein the first user interface
8 includes a background with an appearance and
9 one or more foreground objects."

10 Do you see that?

11 A. Yes.

12 Q. If you had a device that displayed
13 the background with an appearance and one or
14 more foreground objects and a widget, a
15 separate widget, would that still read on
16 Claim 1?

17 MR. STARK: Objection, form. Scope.

18 THE WITNESS: Yeah. Again, I don't
19 see how this relates to my analysis and my
20 declaration. Certainly you can posit all
21 kind of variations on Claim 1 and I can
22 try to perform analyses on the fly, but I

1 spent a lot of time developing my
2 declaration and responding to the
3 assertions of Apple and Dr. Cockburn and
4 I'm going to just rely on my declaration
5 for my opinions with respect to the
6 assertions and then my analysis thereof.

7 BY MS. HUANG:

8 Q. Would you look at Claim 2 of the
9 '755 patent in your analysis?

10 A. I see it.

11 Q. Did you analyze that as part of your
12 analysis?

13 A. So I provided analyses in my
14 declaration associated with -- let's see here.
15 Under different combinations certainly, yes.

16 Q. And you understand that Claim 2 adds
17 an additional feature that was not explicitly
18 recited in Claim 1, is that fair to say?

19 MR. STARK: Objection, form.

20 THE WITNESS: Let me see here. Well,
21 it's certainly -- it's dependent on
22 Claim 1 and it adds an additional

1 limitation associated with a threshold and
2 operating system of the device and the
3 respective operations associated with
4 that.

5 BY MS. HUANG:

6 Q. And is it your understanding that if
7 a device reads on Claim 2, which is dependent
8 on Claim 1, that it must necessarily also read
9 on Claim 1?

10 MR. STARK: Objection, form.

11 THE WITNESS: My understanding is
12 that if a device found to have practiced
13 what's in Claim 2, which is dependent on
14 Claim 1, in order for that determination
15 to be made it must be practicing what's in
16 Claim 1 also.

17 MS. HUANG: Can we take like
18 five minutes? I'm just about done. I
19 just want to go through my notes. Would
20 that be all right?

21 THE WITNESS: That's fine with me.
22 (Thereupon, a brief recess was taken.)

1 BY MS. HUANG:

2 Q. Dr. Mahon, can I turn your attention
3 to your deck at paragraph 106. That's page 58.
4 There's two figures on page 58.

5 A. 106 -- okay. Then runs over to
6 paragraph -- okay.

7 Q. Yeah. It's the figures that I'm
8 really wanting to just talk about.

9 A. Okay.

10 Q. On the figure on the right, do you
11 see any foreground objects?

12 A. I do not see any distinctive
13 characteristics to say that there's a
14 foreground object on a -- in the figure on the
15 right.

16 MS. HUANG: I have no further
17 questions. Thank you.

18 MR. STARK: No questions.

19 (Time Noted: 3:24 p.m.)

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