

**EXHIBIT 13**  
**FILED UNDER SEAL**

1 IN THE UNITED STATES DISTRICT COURT

2 NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION

3  
4 APPLE, INC., a California Corporation

5 vs. CN:11-CV-01846-LHK

6 SAMSUNG ELECTRONICS COMPANY,

7 LTD, a Korean business entity; SAMSUNG

8 ELECTRONICS AMERICA, INC., a New

9 York Corporation; SAMSUNG

10 TELECOMMUNICATIONS AMERICA, LLC,

11 a Delaware Limited Liability Company.

12 \_\_\_\_\_/

13  
14  
15 The videorecorded deposition of RAVIN

16 BALAKRISHNAN, PH.D., was held on Friday, April 20,

17 2012, commencing at 9:07 A.M., at the Law Offices of

18 Quinn Emanuel, 1299 Pennsylvania Avenue, N.W., Suite

19 825, Washington, D.C., before Ronda J. Thomas, a

20 Notary Public.

21  
22  
23 REPORTED BY:

24 Ronda J. Thomas, RPR, CLR

25 JOB NO. 48807

1 Morrison and Foerster on behalf of the plaintiff, 09:08  
2 Apple. 09:08  
3 MR. AHN: Matthew Ahn of Morrison and 09:08  
4 Forester on behalf of Apple. 09:08  
5 MR. BUSEY: And, also, I'm representing the 09:08  
6 witness. 09:08  
7 THE VIDEOGRAPHER: Will the court reporter 09:08  
8 please swear the witness. 09:08  
9 Whereupon, 09:08  
10 RAVIN BALAKRISHNAN, PH.D., 09:08  
11 called as a witness, having been first duly sworn to tell 09:08  
12 the truth, the whole truth, and nothing but the truth, was 09:08  
13 examined and testified as follows: 09:08  
14 EXAMINATION BY MR. JOHNSON: 09:08  
15 Q Good morning, Dr. Balakrishnan. 09:08  
16 A Good morning. 09:09  
17 Q How many times have you been deposed now? 09:09  
18 A I don't have a precise count. I would say 09:09  
19 somewhere between half a dozen and ten. 09:09  
20 (Brief pause.) 09:09  
21 Q Sorry about that. 09:09  
22 Is the bulk of your consulting work now for 09:09  
23 Apple? 09:09  
24 MR. BUSEY: Objection just to form. 09:09  
25 A The current litigation consulting I'm doing 09:09

1 also accused of infringing the '381, right? 10:38

2 A Yes, it is. Or I've accused a Galaxy S4G. 10:38

3 Whether it's the exact same one I don't know. 10:38

4 Q Take a look at the ThinkFree Office 10:38

5 application and tell me if it infringes the '381 10:38

6 patent? 10:38

7 A Sure. 10:38

8 MR. BUSEY: Can counsel represent what 10:39

9 version of the Galaxy S4G this is? 10:39

10 MR. JOHNSON: 2.3.3. 10:39

11 A So I've just tried the ThinkFree Office 10:39

12 with two different PDF files and I cannot get it to do 10:39

13 the same functionality that I saw on the Galaxy S4G 10:39

14 with the ThinkFree Office in counsel's office. 10:40

15 Q So Exhibit 4, the ThinkFree Office 10:40

16 application in Exhibit 4 doesn't infringe the '381 10:40

17 patent, right? 10:40

18 A ThinkFree Office that I'm using right now 10:40

19 on Exhibit 4, this particular version does not seem to 10:40

20 infringe. 10:40

21 Q Is it your understanding that some of the 10:40

22 versions of ThinkFree Office infringe and some don't? 10:40

23 A ThinkFree Office versions that I tested on 10:40

24 the phones I list in paragraph 37 of my report do 10:40

25 infringe as I've indicated. 10:41

1           Given what I've seen today with this           10:41  
2    version of ThinkFree Office on the Exhibit 4 and the    10:41  
3    one I just examined on the earlier exhibit, which I    10:41  
4    believe was Exhibit 3, those two do not appear to    10:41  
5    infringe.   10:41

6           So as a result at least these two versions    10:41  
7    of ThinkFree Office do not.                            10:41

8           Q        The question I have is:  When you looked at   10:41  
9    the phones and products that were at Apple's counsel's   10:41  
10   office, did you see any phones that had the ThinkFree   10:41  
11   Office application that did not infringe?            10:41

12          A        I do not recall seeing any ThinkFree Office   10:41  
13   applications that I tried that did not infringe the    10:42  
14   381.   10:42

15          Q        Do you recall seeing any phones at Apple's   10:42  
16   counsel's office or tablets where the Browser           10:42  
17   application did not infringe?                        10:42

18          A        I believe so, yes.                     10:42

19          Q        Can you tell me which ones those were?    10:42

20          A        I don't have that on top of my head but I   10:42  
21   might have it in the report.  Give me one minute.    10:42

22                   (Witness reading.)                     10:42

23          A        So in my report in paragraph 261 as one    10:43  
24   example the Gem, G-E-M, phone did not appear to do the   10:43  
25   '381's feature in the Browser and you get a hard stop   10:43

1     instead of the snap back.  And the other alternative     10:43  
2     that I've seen is what's referred to as the blue glow     10:43  
3     effect, which I talk about a little about it in     10:43  
4     paragraph 262.     10:44

5                 I don't list in this the devices that have     10:44  
6     that.  My job here was to deal with the infringement     10:44  
7     but I definitely have seen devices that do the blue     10:44  
8     glow instead of the snap back.     10:44

9                 Q             So the devices that exhibit the hard stop     10:44  
10     do not infringe the '381 patent?     10:44

11                MR. BUSEY:  Objection to the extent it's     10:44  
12     ambiguous.  It calls for a legal conclusion.  Go ahead.     10:44

13                A             So device running the Browser application,     10:44  
14     and in the Browser application if it does the hard stop     10:44  
15     or not the snap back or rubber-banding, then the     10:44  
16     Browser application on that device would not infringe.     10:44

17                There may be other applications, like the     10:44  
18     Contacts, that may not have a hard stop and might     10:44  
19     infringe.     10:44

20                Q             What do you mean by hard stop?     10:44

21                A             By hard stop, I mean when you hit the edge     10:44  
22     of the -- well, let's take it back to the claim.     10:44

23                For example claim element F here, which     10:45  
24     says once you've reached the edge of the document,     10:45  
25     displaying an area beyond the edge of the document,     10:45

1 where it does not do that, and it does not do the 10:45

2 snapback functionality in elements G and H. 10:45

3 And a simple example of that is what I just 10:45

4 saw in the ThinkFree Office on Exhibit 4. 10:45

5 Q And the blue glow does not infringe 10:45

6 the '381 patent either? 10:45

7 A If it is only the blue glow and not the 10:45

8 blue glow in addition to the snapback that's in '381, 10:45

9 then a device or an application, having just the blue 10:45

10 glow and not doing the '381 snapback functionality, 10:45

11 would not infringe. 10:45

12 Q Were there any other characteristics of the 10:45

13 Browser on products that you reviewed, besides the hard 10:46

14 stop and blue glow that you believe don't infringe? 10:46

15 MR. BUSEY: Objection. Ambiguous. 10:46

16 A I believe I've seen a Browser that had a 10:46

17 yellow glow, but effectively it's the same 10:46

18 functionality as the blue glow but a different color. 10:46

19 And that, that would be the same as blue glow from a 10:46

20 functionality point of view. 10:46

21 Q Any others? 10:46

22 MR. BUSEY: Same objection. 10:46

23 A That's all I can recall right now. 10:46

24 Q Did you review any products that had a 10:46

25 Contacts application that did not infringe? 10:46

1           A           You said Contacts application?           10:46

2           Q           Yes.           10:46

3           A           I believe I have seen Contacts applications           10:47

4           on some Samsung phones that had a blue or a yellow glow           10:47

5           functionality instead of the snapback functionality of           10:47

6           the '381, and that would not infringe.           10:47

7           Q           Did you see any Contacts applications on           10:47

8           Samsung phones that exhibited a hard stop?           10:47

9           A           Honestly, I don't recall offhand. I might           10:47

10          have.           10:47

11          Q           Okay. Do you remember seeing any Samsung           10:47

12          products that have a Gallery application that do not           10:47

13          infringe the '381 patent?           10:47

14                   MR. BUSEY: Objection again to being           10:48

15          ambiguous. Go ahead.           10:48

16          A           I might have. I don't recall exactly           10:48

17          whether I have or not because many of these, there are           10:48

18          so many of these phones that I've tried. And I don't           10:48

19          have a list of the ones that don't do the '381.           10:48

20          Q           You weren't interested in the ones that           10:48

21          don't infringe, right?           10:48

22          A           I was not making, keeping track of it.           10:48

23          Q           There are some phones that have a Gallery           10:48

24          application that exhibit a blue glow, right?           10:48

25          A           That might be true. I, I just don't have a           10:48



1 precise recollection of that. 10:48

2 Q Do you know which ones? 10:48

3 A I just said I don't have a precise 10:48

4 recollection. 10:48

5 Q Do you have any -- do you have an imprecise 10:48

6 recollection? 10:48

7 A No, unfortunately. 10:48

8 Q Are there Samsung products that have a 10:49

9 Gallery application that exhibit a hard stop? 10:49

10 A I have to give the same answer. I might 10:49

11 have seen them but I don't recall offhand. 10:49

12 Q Are you aware of any Samsung products in 10:49

13 the Gallery application that exhibit a hold still 10:49

14 phenomenon? 10:49

15 MR. BUSEY: Objection -- 10:49

16 Q Sorry -- where the photo doesn't snap in 10:49

17 either direction, it just, if you move it, it stays 10:49

18 put? 10:49

19 MR. BUSEY: Objection. Ambiguous and 10:49

20 confusing. 10:49

21 A When you move it and it stays put? So you 10:49

22 move it off the edge and it stays put, is that what 10:49

23 you're saying? 10:49

24 Q Right. 10:49

25 A I have seen some Samsung products with a 10:49

1 MR. BUSEY: Let me see that, please. 01:59

2 A Okay. 01:59

3 Q Are we looking at one electronic document 01:59

4 there, two electronic documents, more than that? 01:59

5 A I'm looking at at least two electronic 01:59

6 documents, yes. 01:59

7 Q And what are the two electronic documents? 01:59

8 A Well, the first one is this list of stocks. 01:59

9 The second one is this list of looks, like news 02:00

10 headlines at the bottom. 02:00

11 Q And where is the edge of the documents? 02:00

12 A In each case? 02:00

13 Q Yeah. 02:00

14 A The, in the one on the top, the edge is on 02:00

15 the top of the list and the bottom of the list and the 02:00

16 sides of the list. 02:00

17 And the same with the bottom, the news, 02:00

18 news feed. It's at the top of the list of the news 02:00

19 feeds and bottom of the list of the news feeds -- news 02:00

20 feed. 02:00

21 Q What does elastically attached mean as it's 02:01

22 used in claim 16? 02:02

23 (Witness reading.) 02:02

24 A In the context of the claims, it means the, 02:02

25 when moving from, the document from one, one direction 02:02

1 to the other direction so the area beyond the edge 02:02  
2 disappears, that movement gives the appearance of it 02:02  
3 being attached with an elastic band, for example, the 02:03  
4 analogies to the physical world. So it doesn't 02:03  
5 instantly snap back, like instantly you see a elastic 02:03  
6 movement or an animation. 02:03

7 Q Do the bounce features that you reviewed in 02:03  
8 the Samsung products elastically snap back, or do they 02:03  
9 instantly snap back? 02:03

10 MR. BUSEY: Objection. Ambiguous. Calls 02:03  
11 for a legal conclusion. 02:03

12 A They all elastically snap back. 02:03

13 I'm sorry, the, just to clarify that, the 02:03  
14 Gallery and Contacts and Browser accused products 02:03  
15 elastically snap back. 02:03

16 Q Your analysis with respect to claims 19 and 02:04  
17 20 are, is based upon your analysis of claim 1, right? 02:04

18 MR. BUSEY: Objection to the extent it 02:04  
19 mischaracterizes the witness' prior testimony. 02:04

20 (Witness reading.) 02:04

21 A The analysis of the functionality is based, 02:05  
22 it's in part based on the analysis I did in claim 1 02:05  
23 but, of course, claim 19 talks about things like memory 02:05  
24 and programs and instructions, and that is the 02:05  
25 additional analysis presented in my report. 02:05

1 Q Okay. Well, claim 19, for example, 02:05  
2 paragraph 191, you say: 02:05  
3 Because these devices perform the elements 02:05  
4 described in claims 1 and 19, they must have 02:05  
5 instructions for performing those methods and a storage 02:05  
6 medium for those instructions as recited in those 02:05  
7 claims. 02:05  
8 Have you confirmed that the accused devices 02:05  
9 actually have those instructions? 02:05  
10 A Yes, because I looked at the source code on 02:06  
11 the machines in Quinn's offices in Redwood Shores. 02:06  
12 Q So why does your report say they must have 02:06  
13 as opposed to they do, in fact, have? 02:06  
14 Is there a distinction there in your mind 02:06  
15 or no? 02:06  
16 A They do have and they must have, because 02:06  
17 without, without having it, they wouldn't be able to do 02:06  
18 this functionality. 02:06  
19 Q Okay. Now, with respect to section Y of 02:06  
20 your report, you talk about the difficulty of design 02:06  
21 around? 02:06  
22 A I'm sorry, what paragraph is that? 02:06  
23 Q 261. 02:06  
24 A Yes. 02:07  
25 Q Can you list for me, what are the 02:07

1 non-infringement alternatives to a '381 patent? 02:07

2 A That I've seen in the Samsung devices? 02:07

3 Q Yes. 02:07

4 A Okay. So the first one that we have 02:07

5 already talked about is what has been referred to as a 02:07

6 hard stop. And that's discussed in paragraph 261 of my 02:07

7 report. 02:07

8 If there's a hard stop, and there isn't, 02:07

9 the bounceback or snapback effect that's found in the 02:07

10 claims of the '381. 02:07

11 Similarly, if it uses the blue glow effect 02:07

12 which we have discussed and I talk about in the 262, 02:07

13 sorry, paragraph 262, again, assuming the blue glow is 02:07

14 there and the functionality that is infringing the 02:07

15 claims, which is the snapback functionality is no 02:07

16 longer there, then that would not be infringing. 02:08

17 And as I said, I think, earlier this 02:08

18 morning, I've seen a yellow glow as well, which would 02:08

19 be effectively the same -- 02:08

20 Q Have you seen -- 02:08

21 A -- the same as the blue glow. 02:08

22 Q Have you seen any other non-infringing 02:08

23 alternatives? 02:08

24 MR. BUSEY: I'm going to object as 02:08

25 ambiguous. Go ahead. 02:08

1 so -- 03:06

2 Q Okay. Was a DiamondTouch device with a 03:06

3 tabletop cloth application ever sold to anyone? 03:06

4 A I do not know. 03:06

5 Q Was a DiamondTouch device with the 03:06

6 Tablecloth application ever used in public? 03:06

7 A I don't know. 03:06

8 Q I think you said you weren't sure whether 03:07

9 the DiamondTouch device that was in the lobby of MERL 03:07

10 had Tablecloth on it, right? 03:07

11 A That's right, at that timeframe. 03:07

12 Q Are you aware of any other timeframe in 03:07

13 which the DiamondTouch device in the MERL lobby had 03:07

14 Tablecloth on it? 03:07

15 A I'm not aware of it having it. It might 03:07

16 have. But I do not recall ever seeing Tablecloth on 03:07

17 the device in the lobby. 03:07

18 Q Did you work with Mr. Forlines? 03:07

19 A Yes. 03:07

20 Q What did you work on together? 03:07

21 A We worked on a variety of different 03:07

22 research projects involving user interfaces over the 03:07

23 years. 03:08

24 Q Can you be any more specific? 03:08

25 A Well, I can start from my CV because I've 03:08

1 published some papers with him. I'll make it more 03:08  
2 concrete. 03:08

3 And I'm assuming you mean -- are you saying 03:08  
4 during that timeframe or in general? 03:08

5 Q In general. 03:08

6 A So one project I worked on was on a user 03:08  
7 interface for zooming and pointing using a handheld, 03:08  
8 interactive handheld projector. That was one piece of 03:09  
9 research. 03:09

10 Another piece of research was on gesture 03:09  
11 registration on a direct-touch surface. 03:09

12 Another piece of research was a study, 03:09  
13 experimental evaluation of how it displays position and 03:09  
14 the orientation of the user's control space with 03:09  
15 effective user performance and preference. 03:09

16 Another study was on what we call hybrid 03:09  
17 pointing, a way to switch between absolute and relative 03:09  
18 pointing between, with direct input devices. 03:09

19 Another one was a study, an experimental 03:10  
20 study on the effects of size, group size, the number of 03:10  
21 people in a group, and the display configuration on the 03:10  
22 visual search tasks. 03:10

23 There was another study on the perception 03:10  
24 of elementary graphical elements and tabletop 03:10  
25 environments. 03:10

1                   Another study on direct touch versus mouse      03:10  
2   input for tabletop displays.                                   03:10

3                   And yet another study on evaluation of                   03:10  
4   tactile feedback compared to direct versus indirect        03:10  
5   stylus input in pointing and crossing selection tasks.      03:10

6           Q           How about Mr. Bogue? Did you work with           03:10  
7   Mr. Bogue?    03:10

8           A           I did not work with Mr. Bogue on any           03:10  
9   research projects per se.                                       03:11

10          Q           And how about Mr. Wigdoor? Did you work on      03:11  
11   anything in particular with Mr. Wigdoor while at           03:11  
12   consulting for Mitsubishi Electric Research Labs?          03:11

13          A           Yes.    03:11

14          Q           Can you tell me what you worked on?           03:11

15          A           Sure.    03:11  
16                   Some of that overlaps the list I just read.    03:11  
17   Mr. Forlines was the co-author on some of that work as    03:11  
18   well. Let me just go through this again.                    03:11  
19                   So this is with Mr. Wigdoor at MERL?           03:11

20          Q           Right.    03:11

21          A           So there was a research, piece of research      03:11  
22   done -- yeah, I think this was done at MERL. I'm not      03:11  
23   100 percent sure whether some of it was done at the        03:12  
24   University as well. It's work in 2005 investigating        03:12  
25   the effect of orientation on the readability of text in    03:12



1 tabletop displays. 03:12

2 That study I mentioned earlier on display 03:12

3 position and control space orientation and user 03:12

4 performance and preference. 03:12

5 A piece of research called under the table 03:12

6 interaction. 03:12

7 Another piece of research which looked at 03:12

8 the effects of group size and display configuration -- 03:12

9 THE COURT REPORTER: Of what size? 03:12

10 THE WITNESS: Excuse me -- group size and 03:12

11 display configuration on visual search. 03:12

12 A Another study, which I believe I mentioned 03:13

13 earlier, perception of elementary graphical elements in 03:13

14 tabletop and multisurface environments. 03:13

15 The study on direct touch versus mouse 03:13

16 input for tabletop displays. 03:13

17 I think that's pretty much it for MERL. 03:13

18 Q You've reviewed Mr. Van Dam's report, 03:13

19 right? 03:13

20 MR. BUSEY: Objection. Ambiguous. 03:13

21 A The report in this case, '381? Yes. 03:13

22 Q Yeah. 03:13

23 And is it your opinion that the prior art 03:13

24 references for the '381 patent have to be manipulated 03:13

25 in just the right way to profuse the allegedly 03:13