

Confidential Videotaped Deposition of Dr. Tony Givargis
Conducted on January 24, 2017

1 (Pages 1 to 4)

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1 UNITED STATES INTERNATIONAL TRADE COMMISSION	1 A P P E A R A N C E S
2 WASHINGTON, D.C.	2 ON BEHALF OF COMPLAINANT IMMERSION
3 -----x	3 CORPORATION:
4 In the Matter of: :	4 IRELL & MANELLA LLP
5 CERTAIN MOBILE AND PORTABLE : Inv. No.	5 BY: MACLAIN WELLS, ESQUIRE
6 ELECTRONIC DEVICES INCORPORATING : 337-TA-1004	6 1800 Avenue of the Stars
7 HAPTICS (INCLUDING SMARTPHONES AND :	7 Suite 900
8 LAPTOPS) AND COMPONENTS THEREOF :	8 Los Angeles, California 90067-4276
9 and :	9 310-203-7565
10 CERTAIN MOBILE ELECTRONIC DEVICES : Inv. No	10
11 INCORPORATING HAPTICS (INCLUDING : 337-TA-990	11 ON BEHALF OF RESPONDENT APPLE INC. and AT&T:
12 SMARTPHONES AND SMARTWATCHES) AND :	12 DLA PIPER, LLP
13 COMPONENTS THEREOF :	13 BY: ROBERT C. WILLIAMS, ESQUIRE
14 -----x	14 401 B Street, Suite 1700
15	15 San Diego, California 92101-4297
16 CONFIDENTIAL BUSINESS INFORMATION	16 619.699.2820
17 SUBJECT TO PROTECTIVE ORDER	17
18 (Page 1 - 318)	18 DLA PIPER, LLP
19	19 BY: ASA WYNN-GRANT, ESQUIRE
20 VIDEOTAPED DEPOSITION OF DR. TONY GIVARGIS	20 2000 University Avenue
21 Palo Alto, California	21 East Palo Alto, California 94303
22 Tuesday, January 24, 2017, 9:08 a.m.	22 650.833.2166
23 Job No.: 132989	23
24	24
25	25
2	4
1 VIDEOTAPED DEPOSITION OF DR.	1 A P P E A R A N C E S (Continued)
2 TONY GIVARGIS, held at the offices of:	2
3	3 ON BEHALF OF THE U.S. INTERNATIONAL TRADE
4	4 COMMISSION, OFFICE OF UNFAIR IMPORT
5 DLA Piper LLP	5 INVESTIGATION:
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10	10
11 Reported by: Jenny L. Griffin, RMR, CSR, CRR, CCRR	11 ALSO PRESENT: JOSEPH MOURGOS, VIDEOGRAPHER
12	12
13	13
14	14
15 Pursuant to Notice of Deposition, before	15
16 Jenny L. Griffin, Registered Merit Reporter,	16
17 Certified Realtime Reporter, California Certified	17
18 Shorthand Reporter No. 3969.	18
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89 1 associated with the different numbers and the 2 different DTMF tones. 3 Q. So the command in this case -- in your 4 opinion -- disclosed in Nokia is the keys 5 associated with the different numbers and the 6 different DTMF tones? 7 MR. WILLIAMS: Objection. 8 Mischaracterizes the witness's testimony. 9 THE WITNESS: The command -- the command 10 is the activating of the softkeys -- for instance, 11 Key No. 1 or 2 or 3 -- and the DTMF tone that's 12 generated as a result of that. 13 BY MR. WELLS: 14 Q. What is a "command"? Let's start there. 15 What's your understanding of what a 16 "command" is? 17 A. Outside of the specific -- the specifics 18 of this patent, in general? 19 Q. In the context of this patent, what is a 20 "command"? 21 A. In the context of this patent, a "command" 22 is a function of the device. 23 Q. And can you give me some examples of 24 functions of the device that are commands? 25 A. Yes. In this specific example in the	91 1 correct? 2 MR. WILLIAMS: Vague. 3 THE WITNESS: The command is to execute 4 the function. 5 BY MR. WELLS: 6 Q. So what is the "command" itself, in your 7 opinion? Is it a piece of software? Is it a piece 8 of code? Is it the code that results from 9 something? 10 What is the "command," in your mind? 11 MR. WILLIAMS: Vague. 12 THE WITNESS: So these devices, you know, 13 they're highly integrated devices. They have a 14 large number of components, large volumes of code 15 that executes. 16 You kind of have to take the device and 17 its components sort of in its entirety to be able 18 to -- you know, I cannot point at the specific line 19 of code and say, "That is the command," but I can 20 describe what the command is, like I just did, in 21 this context. 22 BY MR. WELLS: 23 Q. So in the context of the '710 patent, you 24 can't point to a specific line of code that's 25 associated with a command?
90 1 Communicator, pressing one of the softkeys would -- 2 is an example of a command, issuing a command. And 3 the associated DTMF tone that gets generated is the 4 function itself. 5 Q. So the associated DTMF tone is the actual 6 function that's the command in that context; is 7 that right? 8 A. The command is doing both that function of 9 generating DTMF tone. 10 Q. So is the command the function, or is it 11 something -- or is it something else? 12 A. The command is not the function. The 13 command is associated with the function. 14 Q. How is the command associated with the 15 function? 16 A. Well, in this specific instance, if you're 17 specifically talking about DTMF, you have these 18 keys ranging in a grid, 1 through 9 plus 0 and a 19 couple others. 20 And associated with each one of those is a 21 function to generate the DTMF tone. And, 22 therefore, there is a command of invoking those 23 functions by pressing those buttons. 24 Q. So the command is used to invoke the 25 function associated with those tones; is that	92 1 A. The '710 patent does not disclose code. 2 Q. Okay. So what is a command in the context 3 of the '710 patent? I still don't know. 4 A. Are we not specifically talking about the 5 '710 patent? 6 Q. Yes. 7 What is your understanding, as one of 8 skill in the art, as to what a "command" is in the 9 context of the '710 patent? 10 A. So Immersion, for example, contends that 11 determining -- if the -- the command is 12 determining, basically, if a function is supported. 13 And in these accused products, it's pointing at the 14 Quick Action as being -- satisfying that 15 limitation. 16 Q. You said that's what Immersion thinks. 17 I'm asking you what you think. 18 What do you think a command is in the 19 context of the '710 patent? 20 A. I already answered that. I think a 21 command is a mechanism that's accomplished through 22 hardware and software in a highly integrated device 23 to invoke a function. 24 Q. And does that differ from your ordinary 25 understanding in the industry as to what a command

93 1 is, or is it the same? 2 A. The industry, in general, is -- it's very 3 common to overload terms. But in this specific 4 case, a command is typically understood to be 5 consistent with what I just described. 6 Q. And so do you think your characterization 7 of Immersion's interpretation of a command is 8 different from that? 9 MR. WILLIAMS: Vague. 10 THE WITNESS: I gave as an example that 11 Immersion points at the Quick Action menu as being 12 an example of a function associated with an app, 13 for instance. And the command, recognizing that, 14 is the process of pressing on that icon with 15 sufficient force to invoke that function. 16 BY MR. WELLS: 17 Q. And do you think that that interpretation 18 of command is inconsistent with the understanding 19 of command that you put forward with regard to the 20 '710 patent? 21 MR. WILLIAMS: Vague. 22 THE WITNESS: I'm just saying that's the 23 example Immersion gives. 24 BY MR. WELLS: 25 Q. I'm asking whether it's inconsistent with	95 1 BY MR. WELLS: 2 Q. Yes. 3 A. And we were specifically looking at 4 Limitation 1.g, which is "Recognize input and 5 determine a command associated with the user's 6 input." 7 Q. Yes. 8 A. The conversation we had about function was 9 that the functions are that the pressing of the key 10 and the DTMF tones that are generated when one of 11 those keys is pressed. That's what we were talking 12 about. 13 Q. Okay. Separate and apart from Nokia, in 14 the context -- let's start with just in your 15 understanding in the industry -- what is a 16 "function"? 17 MR. WILLIAMS: Vague. 18 THE WITNESS: So setting all of this 19 aside, the term "function" as a computer scientist 20 and engineer or somebody practicing in the field 21 would understand it -- is that the question? What 22 that is? 23 BY MR. WELLS: 24 Q. Yes. 25 A. That term too is -- has different meanings
94 1 the interpretation that you were provided. 2 A. That's consistent with the command 3 interpretation. 4 MR. WELLS: We have to change the tape. 5 THE VIDEOGRAPHER: This marks the end of 6 Disc No. 1. We are off the record at 11:22 a.m. 7 (Recess taken.) 8 THE VIDEOGRAPHER: We're back on the 9 record. The time is 11:34 a.m., and this marks the 10 beginning of Disc No. 2 in the deposition of 11 Dr. Tony Givargis. 12 BY MR. WELLS: 13 Q. So, Dr. Givargis, we're still talking 14 about Exhibit 6, the User Manual, Nokia, and your 15 report as it relates thereto on invalidity. 16 And you mentioned just before the break a 17 function, and I just want to make sure that we have 18 a clear understanding as to what you mean by that. 19 So in the context of a '710 patent, what 20 are you referring to when you refer to a 21 "function"? 22 MR. WILLIAMS: Vague. Object to the 23 extent it mischaracterizes the witness's testimony. 24 THE WITNESS: Yes. I think we were 25 talking about the Nokia phone combined with Martin.	96 1 in different contexts. If you are programming, the 2 term "function" usually refers to a region of code 3 that performs a task that is relatively 4 well-defined so you can give the function a name. 5 In other contexts, a "function" might 6 be -- in mathematics, for instance, "function" is 7 some transformations from some operation on some 8 operands, arguments. 9 In the context of a device, a "function" 10 might be some capability of the device that can be 11 invoked. 12 Q. And a command invokes that capability in 13 the context of a device; is that correct? 14 A. Yes. 15 Q. So in the context of the Nokia device, 16 what is the command that you're relying on? 17 A. The determining -- the command here is the 18 pressing of a softkey button. 19 Q. And what is the function? 20 A. It depends on the button. 21 Q. Okay. And in your report, what are the 22 functions that you call out? 23 A. So I would just read this quotation from 24 the User Manual: 25 "Each key stroke will generate a DTMF

141 1 Q. And I understand this is your contention 2 regarding what Immersion contends. 3 What's your understanding of what 4 "emulating a command" is? 5 A. Right. I disagree with Immersion's 6 contentions because I think it's too broad and 7 vague. 8 Immersion's contentions, in essence, say 9 that as long as the user can somehow associate a 10 certain Pop or some haptic effect as being -- that 11 the Quick Action menu was displayed -- that's 12 sufficient for emulation. But there are other 13 instances where that same haptic effect can be 14 generated. And so that association doesn't always 15 hold. It may hold many times. 16 So, in my view -- and I earlier gave the 17 wheelchair example. "Emulate" requires a more -- a 18 more specific output, one that resembles some 19 aspect of the functionality that's involved. 20 In the case of DTMF, we make that 21 association by saying that in DTMF, you have 22 different tones that are generated for different 23 buttons. And if you can tie the haptic response to 24 match those different tones, that would be an 25 example of emulate.	143 1 THE WITNESS: Right. The haptic output 2 has to specifically emulate or specifically mimic a 3 pattern that's sort of -- is an attribute of the 4 function being executed, whether it is the turning 5 of a wheelchair left and right and the actuator is 6 kind of starting at center and moving to left or 7 right or the generation of a DTMF tone and having a 8 haptic effect that's closely tied in frequency to 9 the DTMF tones. 10 And I believe Martin has another example 11 of it as well. 12 BY MR. WELLS: 13 Q. So just going back now -- I'm going to try 14 to clean it up and use your language. 15 Your understanding is that emulating a 16 command requires that the haptic effect 17 specifically mimic a pattern attributable to the 18 function being executed; is that right? 19 MR. WILLIAMS: I'm going to object to the 20 extent the question mischaracterizes the witness's 21 testimony. 22 THE WITNESS: So maybe if I give a short 23 answer, that would be sufficient. 24 To "emulate" means to behave similar or in 25 some fashion similar to the function that's being
142 1 Likewise, I gave the wheelchair example 2 where "emulate" would, again, convey information to 3 the user that the right turn is different from a 4 left turn. 5 So that's my understanding of the word 6 "emulate." 7 Q. So when you -- when we're talking -- I 8 just want to clean this up now. 9 When we're talking about emulating a 10 command, it's your understanding that that requires 11 that the haptic effect resembles some aspect of the 12 functionality that's associated with it? 13 A. I believe that "emulate" requires some 14 association, right, with that function. Some 15 aspect of the function needs to be encoded or 16 emulated in the haptic effect. 17 Q. Okay. So I'm going to try to clean that 18 up again because I think I got it right, but I just 19 want to make sure. 20 You understand emulating the command to be 21 that it requires that some aspect of the haptic 22 effect resembles some aspect of the functionality 23 that's associated with the command? 24 MR. WILLIAMS: Objection. 25 Mischaracterizes the witness's testimony.	144 1 emulated. 2 BY MR. WELLS: 3 Q. So now I'm going to try to use that 4 word -- those words. 5 It's your understanding that "emulate a 6 command" means that the haptic effect behaves 7 similar or in some fashion similar to the function 8 that's being emulated? 9 MS. MURRAY: Objection. Asked and 10 answered. 11 MR. WILLIAMS: I'll say -- I'll object to 12 the extent it mischaracterizes the witness's 13 testimony. 14 THE WITNESS: I'll give the same answer. 15 To "emulate" in this context means to produce a 16 haptic effect that resembles some attributes of the 17 function being executed. 18 BY MR. WELLS: 19 Q. And does Martin disclose that? 20 A. In 106: 21 "Martin discloses another embodiment in 22 which 'the number of occurrences of a 23 distinct vibrotactile sensation, such as a 24 Pop, corresponds to the index number of the 25 menu option within a list of options.'"

145 1 So, once again, this is an example that if 2 you're staring at a list, there's a set of 3 options -- Option 1, Option 2, Option 3 -- and that 4 generating a number of occurrences of -- in this 5 case, a Pop -- can -- can satisfy or can emulate a 6 selection of one of those menu objects. 7 "Menu items" would have been more 8 accurate. 9 Q. And it's your opinion that that discloses 10 the limitation of emulating a command? 11 A. It is, in my sort of interpretation, 12 understanding of the word "emulate" as a person of 13 ordinary skill in the art would have understood the 14 '710 patent is teaching. 15 Q. In 106, you say that -- that in such an 16 embodiment, that "emulates the command under 17 Immersion's apparent interpretation." 18 But I just want to be clear. It's also 19 your opinion that that interpretation or that 20 disclosure satisfies the limitation of "emulate" 21 under your understanding of that term? 22 A. Yes. 23 Q. And turning to Claim 12, does Martin 24 disclose having a haptic effect configured to 25 provide information with the status of the	147 1 A. Sure. 2 I think a specific example I use is in 112 3 on page 37, 3rd line. It says: 4 "In such a system, if the user input 5 is recognized (i.e., Input 7)" -- so I'm 6 specifically here pointing to input No. 7 7 as being the function associated with 8 Row 7 -- "and a command is determined" -- 9 which in this case would be Function 1 -- 10 "Sensation 20 would be generated if the 11 user has authorization and Sensation 23 12 would be generated if the user does not 13 have authorization." 14 So this is an example where the command is 15 determined, a function is looked up in the table, 16 it's invoked and executed, but for -- in this 17 specific instance for reasons of authorization, the 18 function fails. And therefore, Sensation 23, which 19 is "Function Failure," is fetched from the table 20 and produced. 21 Q. So you're saying that -- I think you used 22 the example of "Input 7"? And that corresponds to 23 Sensation 20: If I'm drawing my line across here 24 correctly. 25 Is that correct?
146 1 operation? 2 A. Yes. I believe it does. 3 Q. Okay. And I understand from your report, 4 that's under Immersion's contention -- your 5 characterization of Immersion's contentions. 6 Under your understanding of providing 7 information with a status of the operation, does 8 Martin disclose that limitation? 9 A. Same answer. Yes. If you look at -- it 10 does. 11 If you look at 111, this is where I 12 describe how Martin renders this limitation obvious 13 under the plain meaning, which is my understanding 14 of -- or how I would read status. 15 Q. And what is the "operation" in your 16 example? 17 A. I'm sorry. The word "operation"? 18 Can you be more specific? 19 Q. Do you have an understanding of what the 20 term "operation" means within the context of 21 Claim 12 of the '710 patent? 22 A. I believe "operation" here means the 23 function. 24 Q. Okay. And what is the function in your 25 example that you're citing from Martin?	148 1 A. Correct. Yes. 2 Q. And it's your opinion that Sensation 20 is 3 output when Function 1 is complete; is that 4 correct? 5 A. Sensation 20 would -- is the sensation 6 that would be output when Function 1 is completed 7 successfully. 8 Q. And all of the sensations listed in that 9 chart are only output when the functions are 10 completed; is that correct? 11 MR. WILLIAMS: Objection. Vague. 12 THE WITNESS: That is not correct. 13 BY MR. WELLS: 14 Q. Okay. Which functions are only -- which 15 functions are not output when the function is 16 complete? 17 MR. WILLIAMS: Vague. 18 THE WITNESS: If you look at Figure 9, 19 there are two table entries where there is no 20 function. And those are examples of sensations 21 that have nothing to do with functions or pressure 22 or location. They're strictly for the purpose of 23 accommodating -- providing an "Ambiguous" feedback 24 as well as providing a "Function Failure" feedback. 25 ///

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	317	ACKNOWLEDGEMENT OF DEPONENT I, TONY GIVARGIS, do hereby acknowledge that I have read and examined the foregoing testimony, and the same is a true, correct and complete transcription of the testimony given by me and any corrections appear on the attached errata sheet signed by me. _____ (DATE) (SIGNATURE)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	318	CERTIFICATE I, Jenny L. Griffin, Certified Shorthand Reporter licensed in the State of California, License No. 3969, do hereby certify that the foregoing transcript is a true and correct record of the testimony given. I further certify that said testimony was taken by me stenographically and thereafter reduced to typewriting under my direction; that reading and signing was not requested; and that I am neither counsel for, related to, nor employed by any of the parties to this case and have no interest, financial or otherwise, in its outcome. In witness whereof, I have hereunto set my hand this 2nd day of February, 2017. _____ JENNY L. GRIFFIN CSR 3969, RMR, CRR, CCRR, CRC Immersion Ex 2004-6 Apple v Immersion IPR2017-01368