

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
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4 APPLE INC. And GOOGLE LLC,)
5)CASE NO.:
6)
7 Petitioner,)IPR2023-003431;
8)
9 v.)IPR2023-003442
10)
11 SPACETIME3D, INC.,)
12)
13 Patent Owner.)
14)

15 DEPOSITION OF HENRY FUCHS, PH.D.
16 VOLUME I
17 REMOTELY IN LOS ANGELES, CALIFORNIA
18 MONDAY, OCTOBER 16, 2023
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24 REPORTED BY: NATALIE PARVIZI-AZAD, CSR, RPR, RSR
CSR NO. 14125
25 JOB NO.: 6120716

1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 BEFORE THE PATENT TRIAL AND APPEAL BOARD 3 _____ 4 APPLE INC. AND GOOGLE LLC,)CASE NO.: 5 Petitioner,)IPR2023-003431; 6 v.)IPR2023-003442 7 SPACETIME3D, INC.,) 8 Patent Owner.) 9 _____ 10 11 12 13 14 DEPOSITION OF HENRY FUCHS, PH.D., VOLUME I 15 TAKEN ON BEHALF OF THE PATENT OWNER 16 REMOTELY VIA ZOOM VIDEOCONFERENCING, IN 17 LOS ANGELES, CALIFORNIA, BEGINNING AT 18 10:14 A.M. AND ENDING AT 1:27 P.M., ON 19 MONDAY, OCTOBER 16, 2023, BEFORE 20 NATALIE PARVIZI-AZAD, CERTIFIED SHORTHAND 21 REPORTER NUMBER 14125. 22 23 24 25	1 I N D E X 2 3 WITNESS PAGE 4 HENRY FUCHS, PH.D. 5 EXAMINATION BY MR. CORDREY 5 6 7 E X H I B I T S 8 EXHIBIT NO. DESCRIPTION PAGE 9 EXHIBIT 1006 HANGGIE REFERENCE, US 15 2005\0088447 10 11 EXHIBIT 1007 ANTHONY REFERENCE 51 12 EXHIBIT 1003 DECLARATION OF HENRY 54 FUCHS, PH.D. 13 14 15 16 17 18 19 20 21 22 23 24 25
Page 2	Page 4
1 A P P E A R A N C E S 2 3 FOR THE PETITIONER, APPLE INC. AND GOOGLE LLC: 4 FISH & RICHARDSON BY: USMAN KHAN, ESQ. 5 BY: ANDREW PATRICK, ESQ. 1000 MAINE AVENUE SW. 6 WASHINGTON, D.C. 20024 (202) 626-6383 7 KHAN@FR.COM 8 9 FOR THE PATENT OWNER, SPACETIME3D, INC.: 10 JEFFER MANGELS BUTLER & MITCHELL, LLP BY: GREGORY S. CORDREY, ESQ. 3 PARK PLAZA 11 SUITE 1100 IRVINE, CALIFORNIA 92614 12 (949) 623-7236 GCORDREY@JMBM.COM 13 14 15 16 17 18 19 20 21 22 23 24 25	1 REMOTELY IN LOS ANGELES, CALIFORNIA 2 MONDAY, OCTOBER 16, 2023, 10:14 A.M. 3 4 THE CERTIFIED STENOGRAPHER: Please raise 5 your right hand to be sworn. 6 7 HENRY FUCHS, Ph.D., 8 having declared under penalty of perjury to tell 9 the truth, was examined and testified as follows: 10 11 EXAMINATION 12 BY MR. CORDREY: 13 Q. Good afternoon, Dr. Fuchs. I forget; do 14 you go by Dr. Fuchs or Professor Fuchs or Henry or 15 Mr. Fuchs or... 16 A. If -- I'll call you Mr. Cordrey? 17 Q. Yes, Mr. Cordrey would be fine. 18 And I'm sorry. Is it -- 19 A. Professor will be fine. 20 Q. Okay. 21 A. I go by doctor also; whatever you're more 22 comfortable with. 23 Q. Okay. Professor Fuchs, have you taken 24 any medication that would affect your ability to 25 testify truthfully and fully today?
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2 (Pages 2 - 5)

1 A. No, I have not. 2 Q. Okay. We had your deposition in a 3 related IPR a few weeks ago. 4 Do you recall that? 5 A. Yes. 6 Q. So the rules that we're going to use 7 today are going to be the same rules that we used 8 a few weeks ago with your deposition, and I'll 9 just briefly touch on a couple of them just so 10 we're on same page, okay? 11 So firstly, if you do need a break, just 12 let me know, and we'll go off the record. Again, 13 the only caveat that I would ask is, if we're in 14 the middle of a question, that we finish up that 15 question or line of questioning and then we'll 16 take the break. 17 Is that all right? 18 A. Yes. 19 Q. Okay. Another quick reminder: I know 20 you probably know this, but we're not videotaping 21 it, so I do need audible yeses or noes. We can't 22 pick up the head shakes. I can see them but they 23 won't show up on the transcript. 24 Is that all right? 25 A. Yes. Page 6	1 past week, and, as I recall, several sessions the 2 week before. 3 Q. When you say "several sessions," how many 4 is that? Is that two, three, four? What is that? 5 A. I think three maybe each week. 6 That's the best of my recollection. 7 Q. Approximately how long were each of those 8 sessions? 9 A. An hour or two. 10 Q. So roughly spent about, say, six to nine 11 hours preparing for your deposition. 12 Does that sound right? 13 A. I would guess six to nine hours meeting 14 with counsel, and in addition to that, I read the 15 various documents. 16 Q. Thank you for that clarification; 17 that's -- you anticipated -- that's the way I was 18 asking. 19 The prior art that you reviewed. What 20 prior art was that? 21 A. Mostly the prior art that I referred to 22 in my declarations. 23 Q. All right. So I'll refer to them by the 24 inventor's first name and see if this -- if this 25 identifies them for you. Page 8
1 Q. Okay. And then, as you probably know, at 2 the end of this deposition, we'll have a 3 transcript prepared. You'll have the ability to 4 make corrections to that transcript. But you 5 understand that I will be able to comment to the 6 trial board on any comments -- any changes you may 7 make to that transcript? Do you understand that? 8 A. I understand that. 9 Q. Okay. Do you have any questions for me 10 before we begin with the deposition? 11 A. I cannot think of any questions right 12 now. 13 Q. If you think of any during the course of 14 the deposition, you know, by all means feel free 15 to ask me, and I'll do my best to clarify my 16 questions to the extent they need clarification. 17 Let's start out with first question here, 18 which is: What did you do to prepare for this 19 deposition? 20 A. I looked at and read the two declarations 21 that I think you're going to ask me about, the one 22 on the '654 patent and the '868 patent. I studied 23 some of the prior art. And I met with counsel. 24 Q. How long did you meet with counsel? 25 A. I had several sessions with counsel this Page 7	1 I think one is referring to an Anthony. 2 Is that one of them? 3 A. Yes. 4 Q. And for the record, that's US patent 5 publication 2005\0091596; is that right? 6 A. Just a minute. Let me look. I'm 7 grateful for Mr. Khan sending me printouts of a 8 number of these, and so I got to read them on 9 paper. And I hope it's okay I have them here. I 10 just put them into some folders I had around the 11 house. 12 Q. I don't have an objection to you using 13 hard copies if that helps you in reviewing the 14 prior art as we ask questions. I would -- if 15 these copies are marked up or annotated, though, I 16 would ask that we get provided a copy of those if 17 you're going to use those today. 18 A. I did not mark them at all. 19 Q. Okay. 20 A. I very was careful not to mark them. 21 Q. Okay. 22 A. In fact, I don't -- I'm happy to send hem 23 to you. 24 Q. As long as you represent to me on the 25 record that they're not annotated or highlighted Page 9

1 or marked up in any way, they're just clean 2 copies, I don't have an objection to you using 3 those. 4 A. As far as I know, these are clean copies 5 without any marks or annotations. 6 Q. That's fine. 7 So one of the prior art references I 8 believe we were referring to here was the Anthony 9 patent publication and that was the one that was 10 US 2005/0091596. 11 A. That's what I read here. 12 Q. Okay. And another prior art reference 13 is -- I don't know how you pronounce it -- 14 Hanggie, H-A-N-G-G-I-E. And that's US patent 15 publication number 2 -- US 2005\0088447. 16 A. That's what I have here. 17 Q. Okay. And that was another reference 18 that you reviewed in anticipation of your 19 deposition today? 20 A. Yes. 21 Q. The third prior art reference is -- we'll 22 call "Matthews," which is another US patent 23 publication, number US 2006/0107229. 24 Do you have that? 25 A. That's correct. Page 10	1 A. It might be the same. If you give me a 2 minute, I could look for it. I could look at my 3 declarations. 4 Would you like me to do that? 5 Q. No. I don't think that's necessary. I 6 think I was able to check and confirm that that is 7 the case. 8 A. Okay. 9 Q. Were there any other pieces of prior art 10 that you have reviewed in connection with your 11 deposition today? 12 A. There were several that I briefly looked 13 at. Let's see. 14 I briefly looked at patent inventor 15 Satpute, S-A-T-P-U-T-E. It has Apple 1011 on it. 16 I briefly looked at Blumberg, 17 B-L-U-M-B-E-R-G. It has Apple number 1012. 18 I think I briefly looked at Baker, 19 B-A-K-E-R, Apple 1013, but only very briefly. 20 There may have been others that I looked 21 at online. I don't remember them specifically. 22 Oh, and I remember I looked at a number 23 of other things online, but I didn't keep track of 24 that. 25 Q. When you say you looked at "other things Page 12
1 Q. And was that another prior art reference 2 that you reviewed today in connection with your 3 preparation for this deposition? 4 A. Yes. 5 Q. Were there any other pieces of prior art 6 that you reviewed in preparation for your 7 deposition today? 8 A. I reviewed parts of several others. 9 Q. Okay. Can you give me -- identify those 10 for me. 11 A. Yes. Give me a minute here. 12 I reviewed parts of Robertson. That's 13 patent US 6414677. I reviewed parts of Apple 14 Document 1010, which is a dictionary of electrical 15 and computer engineering. 16 Q. Let me stop you there for a second. 17 The Apple 1010 sounds like an exhibit 18 number on the document -- what? 19 A. That's what I -- 20 Q. Yeah. What -- what IPR does that relate 21 to in which case? 22 A. Um -- 23 Q. Or maybe -- it turns out it looks like it 24 might be the same exhibit in both IPRs -- both 25 IPRs that we're talking about today. Page 11	1 online," what kinds of things? 2 A. I think I looked at online versions of 3 some of the same references. I remember looking 4 at Google patent to look up some things. I don't 5 remember anything else offhand. 6 Q. That's fine. If you recall, as you sit 7 here today -- later on, some of those things, if 8 you could let us know, I would appreciate that. 9 Let me -- just so the record is clear, 10 let's see if we get another standing on certain 11 terms, shorthands that we might be using today you 12 if -- and is it okay if I use the term "IPR" to 13 refer to an inter partes review proceeding? 14 A. Yes, I think that's fine. 15 Q. You've -- as I recall from your prior 16 testimony, you've testified -- I think you even 17 said maybe in a dozen IPRs in the past; is that 18 right? 19 A. I think what I said is maybe half a 20 dozen. 21 Q. Okay. 22 A. It's up to a dozen. 23 Q. Fair enough. Your recollection is 24 that -- sitting here today is that you've been 25 involved with about half a dozen IPRs; is that Page 13

1 right? 2 A. I think so. 3 Q. And that excludes the three related to 4 this matter involving Apple and the patent owner, 5 SPACETIME3D? 6 A. I have not counted but I think so. 7 Q. We also will be referring today to 8 graphical user interfaces. 9 Is it okay if I refer to those as "GUI," 10 G-U-I? 11 A. Yes. 12 Q. And by the way, if you have a different 13 way that you'd like me to refer to those things, 14 I'm happy to consider that. I understand that -- 15 I think it's common nomenclature to refer to it as 16 a GUI, graphical user interface. 17 We're also going to be talking about US 18 patent number 9304654. 19 Is that all right with you if I refer to 20 it as the '654, or '654 patent? 21 A. Yes. 22 Q. We also will be referring to US patent 23 number 9696868. 24 It's okay with you if I refer to that as 25 the '868, or the '868 patent? Page 14	1 is the Hanggie reference, US 2005\0088447. 2 Do you have that, Dr. Fuchs? 3 A. I have the paper copy in front of me. 4 Can I also look at the digital copy. 5 Q. Sure. It should be -- I published it, so 6 it should be available to you. 7 THE CERTIFIED STENOGRAPHER: Doctor, you 8 may just have to refresh the exhibit share page. 9 THE WITNESS: Okay. I see it come up in 10 a browser window. 11 Can I download this copy, Mr. Cordrey. 12 MR. CORDREY: That's fine by me. 13 THE WITNESS: Ms. Natalie, can you help 14 me with that. 15 THE CERTIFIED STENOGRAPHER: Do you mind 16 if I go off the record for just a minute, just so 17 I'm not talking and typing? 18 MR. CORDREY: That's fine. 19 (Discussion held off the record.) 20 MR. CORDREY: Yes. I'm here, Professor 21 Fuchs. 22 THE WITNESS: I'll deal with the 23 interface the way it is. 24 BY MR. CORDREY: 25 Q. Okay. Well, I understand you have a hard Page 16
1 A. Yes. 2 Q. And for the record, this deposition 3 relates to IPR numbers -- there's two of them: 4 IPR number 2023-00343 and IPR 2023-00344. 5 Do you see that? 6 A. Where would I see those numbers, sir? 7 Q. Sure. If you have your deposition -- I'm 8 sorry -- your declaration in front of you. 9 A. I have my '654 declaration in front of 10 me. 11 Q. Oh, actually, strike that. It's not on 12 it. 13 Well, I will represent for the record, 14 and Apple's counsel can confirm, that the IPR 15 related to the '654 patent is IPR number IPR 16 2023-00343, and the IPR related to the '868 patent 17 is IPR 2023-00344. 18 MR. CORDREY: Mr. Khan, you're okay with 19 that? 20 MR. KHAN: Yes. 21 (Exhibit 1006 marked.) 22 BY MR. CORDREY: 23 Q. Okay. Great. 24 With that, let me turn to Exhibit 1006 25 which I've published. And again, for the record, Page 15	1 copy of the prior art reference. Okay. So I 2 think we'll go -- we'll go with that with the 3 assumption that you'll have that to refer to as I 4 refer to the portions of it. 5 This first reference -- and this is, 6 again, US patent publication 2005\0088447 to 7 inventors Hanggie, et al., and Professor Fuchs. 8 I'll refer to this as "Hanggie," if 9 that's fine with you. 10 A. That's fine with me. 11 Q. In connection with your declaration in 12 the -- in both the '343 and '344 IPRs, you used 13 Hanggie in combination with other prior art 14 references to express your opinion that the 15 challenge claims of the '654 and the '898 patents 16 were obvious. 17 Is that accurate? 18 MR. KHAN: Objection. Form. 19 A. Can you repeat the question, please. 20 Q. Can the court reporter read back the 21 question. 22 (Record read.) 23 MR. CORDREY: I'm sorry. Let me correct 24 that real quickly. That should be the '868 25 patent. Page 17

1 A. I stated that the '868 patent and the 2 '654 patent claims were obvious in view of the 3 references in various combinations. 4 Q. Those combinations that you referred to 5 involved the prior art Hanggie reference; is that 6 right? 7 A. The combinations involve Anthony and 8 Hanggie and Hanggie and Anthony and the 9 combination of those two ways with Matthews and 10 with Robertson. 11 Q. And it was your opinion that the 12 combination of those references rendered obvious 13 certain claims of the '654 patent and the '868 14 patent; is that right? 15 A. What I concluded was that the claims in 16 the '868 patent were obvious in view of the 17 references and the various combinations I 18 expressed in these declarations. 19 Q. And one of those references is the 20 Hanggie patent; is that right? 21 A. That's correct. 22 Q. And you also rendered an opinion in your 23 declaration in the '343 IPR that the Hanggie 24 reference in combination with other prior art 25 rendered certain claims of the '654 patent Page 18	1 argument, I think that's outside the scope of the 2 declaration. 3 Q. How did you come to identify the grounds 4 of invalidity in the '654 patent IPR that are in 5 your declaration? 6 MR. KHAN: I just caution, Dr. Fuchs, 7 please don't disclose any confidential 8 information, but feel free to answer the question 9 otherwise. 10 A. Can you repeat the question, please. 11 MR. CORDREY: Can the court reporter 12 repeat the question for me, please. 13 (Record read.) 14 A. Can you clarify that question, please. 15 Are you asking me how I came to these grounds or 16 what the process was? 17 I'm not sure I understand the question, 18 sir. 19 Q. The former, which is: How did you come 20 to identify these grounds that you assert in your 21 declaration? 22 A. As best as I recall sitting here today, I 23 read the patent. I thought about some prior art 24 that I was familiar with. I met with the 25 attorneys. I gave them my opinions of the various Page 20
1 obvious; correct? 2 A. That's correct. 3 Q. In the '654 IPR, which is the '343 IPR, 4 didn't you use the Hanggie reference as an 5 anticipatory reference to the challenged claims? 6 MR. KHAN: Objection. Scope. 7 A. Can I ask for a clarification, 8 Mr. Cordrey. The numbers of the IPRs are not 9 familiar to me because I didn't use those numbers. 10 Could I ask you to use the patents, the 11 patent numbers, like '654 and '868. 12 Q. No problem. I'm happy to do that. 13 A. So if you could rephrase that number to 14 make sure that I understood the reference 15 correctly, I would be grateful. 16 Q. Sure. 17 My question is: In the IPR involving the 18 '654 patent, why didn't you use the Hanggie 19 reference as an anticipatory reference? 20 MR. KHAN: Objection. Scope. 21 A. In my '654 declaration, I use the 22 combination of Anthony and Hanggie, Hanggie and 23 Anthony, and the combination of that with Matthews 24 because that was the conclusion that I came to. 25 As to why I didn't make another kind of Page 19	1 grounds on which I thought the '654 patent was 2 obvious. 3 I'm not an attorney, so I hope I'm 4 answering your question -- I hope I'm answering 5 your question appropriate to what you're seeking. 6 Q. In reviewing the prior art and 7 formulating the grounds upon which you articulated 8 that the claims of the '654 patent were 9 purportedly invalid, did you consider using the 10 Hanggie reference as an anticipatory reference? 11 MR. KHAN: Objection. Asked and 12 answered. 13 A. Sitting here today, I cannot remember all 14 the different possibilities that I considered. 15 This was a long time ago. This was -- the 16 conclusion that I came to was the combinations 17 that I put down in my declaration. I don't 18 remember if I considered the possibility that you 19 bring up. 20 Q. Has your understanding of a -- when I use 21 the term "an anticipatory reference," what is your 22 understanding of that term? 23 MR. KHAN: Objection. Scope. 24 A. Wow. I'm not an attorney, and so I don't 25 deal these terms very frequently, but I think that Page 21

1 an anticipatory reference is one that anticipates 2 the -- all the claims in the way that they are set 3 forth in the challenged patent. 4 Q. In connection with your opinions in the 5 '654 patent IPR, did you consider the Hanggie 6 reference an anticipatory reference? 7 MR. KHAN: Objection. Asked and 8 answered. 9 A. As I mentioned, this was a long time ago, 10 and I don't remember all the things that I 11 considered when I first started. 12 Q. In connection with your opinion in the 13 '654 patent IPR, did you conclude that the Hanggie 14 reference did not disclose all of the features in 15 the challenge claims? 16 A. Mr. Cordrey, should I wait until you're 17 back on camera? 18 Q. No. I'm here. I'm just waiting for you. 19 A. Oh, okay. 20 As I said, there were many things I 21 considered. This was like a year ago or more and 22 I don't remember all the various possibilities 23 that I considered. What I put down in my '654 24 declaration is my conclusions. I didn't put down 25 all the various things that I considered Page 22	1 Q. Why didn't you address the anticipatory 2 invalidity argument with respect to the Hanggie 3 reference in your declaration? 4 MR. KHAN: Objection. Scope. Objection. 5 Ambiguous. 6 A. I wrote my conclusions on obviousness. I 7 did not address anticipation. 8 Q. Why not? 9 A. There were a lot of things that I did not 10 address in my declaration. I was asked to opine 11 on the validity of the '654 patent. And I studied 12 the '654 patent and I studied the prior art and I 13 came to this conclusion and I wrote my 14 declaration. That is lot of things that I could 15 have considered. And I considered many of the 16 things. 17 But what you have before you is what I 18 concluded was in my declaration. There are a lot 19 of things that I didn't include in the declaration 20 because they were out of scope. 21 Q. When you say they're "out of scope," what 22 do you mean? 23 A. There are many things that I studied and 24 many things that I considered. And what I mean by 25 "out of scope" is out of scope of the declaration Page 24
1 beforehand. 2 Q. In connection with the conclusions that 3 you put down in your declaration in the '654 4 patent IPR, is it accurate to say that you did not 5 conclude that the Hanggie reference disclosed all 6 of the features in the challenge claims? 7 MR. KHAN: Objection. Form. Objection. 8 Asked and answered. 9 A. As I said, I considered lot of 10 possibilities and I don't remember all of them 11 because this was a very long time ago. I put down 12 what my conclusions were in my '654 declaration. 13 Q. My question was directed to what your 14 conclusions are in your '654 declaration and not 15 what you considered when you forming the opinions 16 that became embodied in your declaration. 17 So sitting here today, the conclusions 18 set forth in your '654 patent IPR declaration; did 19 you conclude that the Hanggie reference did not 20 disclose all of the claim features of the 21 challenged patent claims? 22 A. I don't think one can draw that 23 conclusion from reading my declaration. I did not 24 address that question in my declaration. 25 I address the obviousness argument. Page 23	1 that I wrote here for '654. 2 Q. In writing your declaration for the '654 3 patent IPR, why wouldn't you have included 4 anticipatory invalidity arguments on the Hanggie 5 reference? 6 MR. KHAN: Objection. Asked and 7 answered. Objection. Speculation. 8 A. I explained there are many things that I 9 considered, and I don't remember all the reasons 10 why I decided to include some things and not other 11 things. This was what I included and I wrote the 12 declaration. 13 I'm sorry if I don't remember all the 14 things that I -- all the other things I left out 15 that I could have maybe put in. 16 Q. Sitting here today, is it your testimony 17 that you don't recall why you didn't include the 18 Hanggie reference as an anticipatory reference in 19 your declaration for the '654 IPR? 20 MR. KHAN: Objection. Misstates 21 testimony. 22 A. As I sit here today, I do not recall -- I 23 do not recall all my considerations for Hanggie 24 and -- and anticipation arguments. I'm sorry. I 25 just don't recall many of these details because Page 25

1 they were a long time ago. 2 What I can tell you is what I came up 3 with was this declaration and the obviousness 4 argument and the conclusion that I think that the 5 claims of '654 are obvious in light of the prior 6 art combinations that I've explained in my '654 7 declaration. 8 Q. In connection with your declaration in 9 the '868 patent IPR, why didn't you include the 10 Hanggie reference as an anticipatory reference? 11 A. When I formulated the '868 declaration 12 was also a long time ago and I don't remember all 13 the things that I had considered. And what I 14 would tell you is: What I concluded is what I 15 wrote down in my '868 declaration. 16 Q. When were you -- when was it you were 17 considering the grounds that you were going to 18 include in your declaration for the '868 IPR -- 19 '868 patent IPR? 20 A. This must have been over a year ago 21 because I'm looking here and seeing my signature 22 on it as 2022 December 13th and I was working on 23 this for a long time. I would guess months. So 24 it must have been over a year ago that I 25 considered these. Page 26	1 A. Hanggie's disclosure involves much, much 2 more than just a 3D GUI. It goes into great 3 detail, for example, about 2D and 2D interfaces 4 and it goes into great detail about many other 5 items in addition to a 3D desktop window manager. 6 Q. Let me ask it this way then. 7 The discussion in Hanggie of a 3D GUI 8 interface. Hanggie discloses that that's 9 generated by the 3D compositing desktop window 10 manager; is that accurate? 11 MR. KHAN: Objection. Form. 12 A. There are many possibilities within 13 Hanggie. Among them, the 3D GUI, but there are 14 many other things; for example, he describes how 15 just the 2D legacy desktop window manager can be 16 supported in 2D mode, among many other things. 17 Q. Focusing on the 3D GUI described in 18 Hanggie, is it accurate to say that Hanggie 19 describes that that's generated by the 3D 20 compositing desktop window manager? 21 MR. KHAN: Objection. Form. 22 A. I disagree with that statement. 23 The compositing desktop window manager is 24 one of a multiplicity of modules within Hanggie 25 that are involved in the 3D graphics user Page 28
1 Q. Would it have been sometime in fall of 2 2022? 3 A. I don't remember precisely but that would 4 be my guess, sitting here today. 5 Q. Is that also true for the work that you 6 did in connection with the '654 patent IPR? 7 A. Again, I don't remember the precise dates 8 but I think it would be in the fall of 2022. 9 Q. Is it your understanding that the Hanggie 10 reference describes a 3D compositing desktop 11 window manager for presenting content in 3D space? 12 MR. KHAN: Objection. Form. 13 A. The Hanggie reference teaches many, many 14 items. A compositing desktop window manager is 15 one of many. 16 Q. The compositing desktop window manager. 17 Can I refer to that as the "CDWM" in our 18 discussions. 19 A. I would prefer to use the full name, if 20 that's okay with you, sir. 21 Q. That's fine. 22 Hanggie's disclosure of the 3D 23 compositing desktop window manager was in 24 connection with a 3D GUI; is that right? 25 MR. KHAN: Objection. Form. Page 27	1 interface. 2 Q. Can you point me to a disclosure in 3 Hanggie where another module is responsible for 4 the 3D GUI interface of Hanggie? 5 A. Yes. If you turn to page 32 of my '868 6 declaration, I show there Hanggie's Figure 1(b), 7 and you will see there that the compositing 8 desktop window manager is 190 and there are many 9 other modules that are involved in generating the 10 3D GUI that will show up on the display divorce. 11 Q. Which module are you referring to? 12 A. Module 190 called "compositing desktop 13 window manager." 14 Q. You stated there were other modules that 15 were responsible for generating the 3D GUI 16 interface in reference to Figure 1. 17 What other modules were you referring to? 18 A. 194: The universal compositing engine. 19 195: The 3D graphics interface. 20 196: The video driver. 21 192: The legacy graphics user interface. 22 191: The application software. 23 193: The theme manager. 24 There may be other ones that are not 25 illustrated in this figure. Page 29

1 Q. Professor Fuchs, let me refer you to 2 Figure 3(g) in Hanggie. 3 Do you have that in front of you? 4 A. Just a minute, please. 5 MR. KHAN: By the way, Counsel, if we 6 could -- we're hitting the one-hour mark. Can we 7 take a break sometime soon. 8 MR. CORDREY: Yeah, that's fine. In 9 fact, why don't we just -- we'll take a break 10 right now and come back in, say, five or so 11 minutes. 12 MR. KHAN: Great. 13 (Recess.) 14 BY MR. CORDREY: 15 Q. Professor Fuchs, let me turn your 16 attention to figure 3 of the Hanggie reference. 17 Do you have that in front of you? 18 A. One minute, please. I'm just getting it. 19 I have that in front of me. 20 Q. You relied on figure 3 in connection with 21 your reliance on Hanggie in the '654 patent and 22 the '868 patent IPRs; correct? 23 A. I use many aspects of Hanggie in both 24 declarations. One of many was figure 3. 25 Q. What do you understand figure 3 to show? Page 30	1 Q. What did you understand it to mean in the 2 context of Hanggie's disclosure? 3 A. I understood it to mean a variety of 4 things, like restore, and I think a POSITA at that 5 time would understand that restore could mean a 6 variety of things, depending on the design 7 decisions and the implementations and the context. 8 Q. And in the context of the Hanggie 9 reference, what did you understand it to mean? 10 MR. KHAN: Objection. Asked and 11 answered. 12 A. As I said, I think a person of ordinary 13 skill in the art at the time of Hanggie would have 14 understood "restore" to mean a variety of 15 different restorations, depending on design 16 decisions and context. 17 Q. What do you mean by a "variety" of 18 "restorations"? 19 A. They might include, for example, the 20 state of the window being restored to the state 21 that it was just before the current state or it 22 could be restoring to a state that was some 23 standard state. It could be a variety of things. 24 And I think Hanggie would -- that's what 25 I think he intended to mean: A variety of things Page 32
1 A. Figure 3 illustrates an application 2 window, according to an illustrative aspect of 3 this invention. 4 Q. And focusing on figure 3, what do you 5 understand numerals 305 to disclose? 6 A. Mr. Cordrey, can I use a bookmark here. 7 I wanted to look up one thing. 8 Q. Sure. 9 A. Thank you. I'm just using these 10 bookmarks. 11 I understand 305 to be buttons that could 12 be used for various items in the graphics user 13 interface, like restore, maximize, minimize, close 14 window, et cetera. 15 Q. When you refer to the control buttons, 16 305, being used to restore the window and 17 that's -- is that window 30 -- what is it -- 18 that's the -- 301 to restore the window? What is 19 it you mean? 20 A. "Restore" can mean different things in 21 different implementations of graphics user 22 interface. It's a common mechanism to return to 23 the prior state, but what exactly that is is a 24 design decision made by the designer of the 25 graphics user interface. Page 31	1 with restore. 2 Q. Aside from the two examples you just 3 gave, can you think of any other understanding of 4 how one skilled in the art would have interpreted 5 Hanggie's reference to restoring. 6 A. Depends how much time you would give me 7 to think about. There are a variety of things 8 that one could consider in terms of restorations. 9 I wouldn't want to give an exhaustive list right 10 now, but for the illustrations that Hanggie was 11 giving and for the illustrations that I used in 12 the declarations, I think they mean a wide variety 13 of restorations. 14 Q. Sitting here today, aside from the two 15 examples you gave, can you think of any others 16 offhand that you considered in your opinion with 17 regard to Hanggie. 18 MR. KHAN: Objection. Asked and 19 answered. 20 A. Well, those two are certainly the most 21 obvious ones, and perhaps I will recall some more 22 if you ask me a particular context. 23 Q. What did you understand Hanggie's 24 reference to control buttons being used to 25 maximize the window? Page 33

1 A. Give me a second, please. One second, 2 please. 3 Q. No problem. 4 A. Pardon me. 5 My understanding of the maximize button 6 in Hanggie is that a POSITA would understand that 7 he means that if somebody -- if the user clicked 8 on the maximize button, then that window would 9 move to fill the substantial part of the display 10 screen. It may be the entire screen or a large 11 part of it. That detail is a design decision for 12 the person who is designing that interface. 13 Q. In connection with your use of figure 3 14 of Hanggie in the '654 and the '868 patent IPRs, 15 what did you understand Hanggie's reference to 16 "minimizing the window" to mean? 17 A. I understood "minimize window" to be the 18 common use of that; to make the window be of some 19 tiny size when the user presses that button. 20 Again, the specifics of what the size and 21 shape and location of "minimize" is something that 22 is dependant on the implementation and the 23 designer and sometimes even the settings that the 24 user has set. 25 Q. What did you understand the use of Page 34	1 there's no evidence of the window again. There 2 may only be some evidence in a dropdown menu to 3 undo or something like that. 4 But the distinctions between the two 5 depend a lot on the context and user interface 6 design and settings. 7 Q. In the same paragraph of Hanggie, 58, he 8 also refers to, in addition to those four 9 functions, for the control buttons, 505, et 10 cetera. 11 What did you understand that to refer to? 12 A. Can you clarify that, please. 13 Q. Sure. 14 A. You mean et cetera, the E-T-C-period? 15 Q. Let me clarify that question for you. 16 Hanggie states, "Using the control 17 buttons 305 (e.g., use to restore, maximize, 18 minimize, close the windows, et cetera)?" 19 What understanding did you have of what 20 Hanggie was referring to when he referred to "et 21 cetera"? 22 In other words, were there other 23 functions that you understood Hanggie to be 24 referring to as somebody interpreting this as 25 somebody of ordinary skill in the art? Page 36
1 Hanggie's reference to "closing the window" meant? 2 A. I understand Hanggie's reference to 3 "close a window" to be the common use of close a 4 window which typically would involve the -- the 5 window shrinking in size, finally disappearing, 6 and the resulting screen updating as appropriate. 7 Again, how that's appropriate is a matter 8 of the context of what the situation was of that 9 interface and what the design decisions were and 10 what settings the user may have set. 11 MR. CORDREY: Can I have the court 12 reporter read back that response to make sure I 13 caught it all. 14 (Record read.) 15 Q. What is your understanding of the 16 distinction between minimizing the window and 17 closing the window? 18 A. The distinction between minimizing and 19 closing a window is -- depends on a lot of 20 factors, such as context and the design of the 21 interface and the situation that the interface and 22 the screen is at that time, but very often, one 23 distinction is that the minimize a window, there's 24 some substantial evidence of a window somewhere on 25 the screen, and closing a window, sometimes Page 35	1 MR. KHAN: Objection. Calls for 2 speculation. 3 A. A tremendous number of functions that 4 could be initiated with a button 305. I think a 5 person of ordinary skill in the art would realize 6 that there's a plethora of functions that could be 7 tied to one or more of those buttons. 8 Q. Can you give me some examples of what 9 those functions would be. 10 A. Rearrangement of that window; for 11 example, rearrangement of that window respect to 12 other windows; change in the intensity; change in 13 the context; change in the application; change 14 maybe globally. Any number of things, even -- 15 even the battery controls that Hanggie talks about 16 could be initiated that way. 17 So for example, Hanggie talks extensively 18 about power control being automatic or manual. 19 I'm reading here on paragraph 92. He says, for 20 example, "When a portable device is disconnected 21 from AC power and switches to battery power, the 22 operating system main force legacy drawing mode." 23 He says before that that there may be 24 user controls for this, so one could imagine a 25 button being used for user control to say I now Page 37

1 want to put this application in legacy mode or 2 power. 3 There's lots and lots of different 4 controls that could be initiated with a button -- 5 one of the 305 buttons. 6 Q. Looking at figure 3, Hanggie shows three 7 305 control buttons. 8 Do you see that? 9 A. Yes. 10 Q. From the perspective of somebody skilled 11 in the art, how would you have interpreted the 12 fact that he disclosed three buttons with the 13 various functions that the control buttons could 14 serve? 15 In other words, is it your understanding 16 that one button would be used to minimize, another 17 would be used to minimize, a third would be used 18 to restore, a fourth button would be used to do 19 some of these other buttons you referred to? Is 20 that how you interpreted these control buttons in 21 figure 3 in Hanggie? 22 A. It's certainly possible to have each one 23 of the buttons assigned to a single function, but 24 a person of ordinary skill in the art would 25 understand that such a one-to-one mapping is just Page 38	1 full -- that window to cover the full screen 2 without any -- without any menu bars. 3 So that's just one of the many examples 4 in which the same button has two different 5 functions depending on the context. 6 Q. Thank you for that response. 7 Referring to the feature 309 in the 8 application window of figure 3 in Hanggie, what 9 did you understand the function of that feature to 10 be? 11 A. What I see in Hanggie paragraph 308 is he 12 says, "309 are scroll bars." It just says, 13 "Indicative icon 307. Scroll bars 309. Menu bars 14 311." 15 Q. And from the perspective of somebody 16 skilled in the art, is it accurate that the scroll 17 bar takes on its ordinary use, which is you simply 18 grab your mouse or some input device and use that 19 feature to scroll up or down, scroll text up or 20 down or whatever is in the context window up or 21 down by use of that scroll bar? Or I should say 22 not only up or down but also, I guess, 23 side-to-side, since 309 shows both a vertical and 24 a horizontal bar? 25 A. A scroll bar going up and down or left Page 40
1 one of many possibilities. 2 There could be, for example, more 3 flexible arrangement in which, depending on the 4 context, the function that is initiated by a 5 button may change. 6 Q. How would you envision that the function 7 of the button would change? 8 (Reporter clarification.) 9 Q. How would you envision that the function 10 of the button would change? 11 MR. KHAN: Objection. Scope. 12 A. The function of the button can change in 13 many different ways. Again, there's much art in 14 this over many decades. 15 I'll give you one example that's a common 16 one. For example, maximize. Say the maximize 17 button in -- if the window is not already 18 maximized in some graphics user interfaces, and 19 the user clicks on that, the window enlarges to 20 fill most of the screen but not the entire screen. 21 It's not fullscreen. 22 There's still perhaps a menu bar on top 23 or something -- control bar on the bottom, but if 24 the -- that same button is clicked again, the 25 interpretation is different. Now it changes that Page 39	1 and right is certainly one of many uses of scroll 2 bars, but there's certainly numerous others of 3 scroll bars; for example, zooming in and out or 4 rotating or rocking or rotating or moving an 5 object within the window. 6 So there are many different uses of 7 scroll bars, again, depending on the particular 8 situation and the application and the context, and 9 the design decisions. This is just -- you know, 10 he says, "This is just an illustrative aspect." 11 There are many, many different possibilities here. 12 Q. So if I understand your -- your 13 explanation, a user could use these scroll bars to 14 scroll the context in the content window 315 15 either up and down or left and right or perhaps 16 other ways by using the scroll bars? 17 A. The scroll bars could be used in many 18 different ways, depending on the context and the 19 application, and there might be more scroll bars 20 or there might be fewer or there might be none. 21 This is just one of many illustrative aspects. 22 You don't need to have a scroll bar in a window 23 like this. 24 Q. One -- just so I understand, you're 25 saying that one -- one use may be that you could Page 41

1 simply use the scroll bar as it's used kind of in 2 the ordinary context which is used to scroll the 3 text in the window up and down or left and right; 4 is that right? 5 MR. KHAN: Objection. Form. 6 A. Scroll bars can be used to move the -- 7 the window around a document up and down or left 8 and right. They could also be used in other 9 applications; for example, in more 3D applications 10 to rotate the screen or rotate the object, or in 11 some applications, they may disappear entirely, 12 depending on the situation. 13 There are many points in which one 14 doesn't see a scroll bar or one sees one of them 15 or sees them only part of the time. These scroll 16 bars here and the entire figure 3 is just a -- one 17 illustration of many, many possibilities that 18 Hanggie teaches. 19 Q. A second ago you said that scroll bars 20 could be used to move the windows up or down or 21 left and right. 22 Did you mean the application window or 23 did you mean that the content, like referring to 24 figure 3, box 315? Were you referring to box 315 25 that you could move it up and down or left an Page 42	1 in the art? 2 A. In a Word application, object area 315 3 would be some part of a document or some abstract 4 reputation of a document, but of course, a Word 5 application is one of many, many possibilities for 6 this. And as I've mentioned before, one could -- 7 a person skilled in the art would understand that 8 many other applications would have other kinds of 9 controls; for example, graphics applications in 10 which the content would move over some two- or 11 three-dimensional graphical space. 12 Q. If it were -- if the application were 13 Word -- were a Word, then scrolling now, is it 14 accurate to say that you would be scrolling the 15 text up or down or left and right using the scroll 16 bar 309? Would that be an example? 17 MR. KHAN: Objection. Calls for 18 speculation. 19 A. In a Word application, scroll bars often 20 are used to move around a document or some 21 representation of the document either up and down 22 or left and right. 23 Q. The -- like for instance, the text within 24 the document or -- is that right? 25 A. In a Word document, scroll bars are often Page 44
1 right or did you actually mean the application 2 window itself or both? 3 A. I'm sorry. Can you clarify what you mean 4 by "moving the application window itself." 5 MR. CORDREY: Can the court reporter read 6 back Professor Fuchs' response before my question. 7 (Record read.) 8 Q. So maybe it's easier if I ask some 9 preliminary questions before asking that question 10 again. 11 What do you understand 315 to 12 represent -- numeral 315 to represent in figure 3 13 of Hanggie? 14 A. Hanggie says in paragraph 58, "A primary 15 context object area 315 may be derived from the 16 redirection buffer obtained from the legacy window 17 and the graphics user interface subsystem or be 18 created and attached to the standard base content 19 and rendered by composition or where only 20 application." 21 Q. Yeah. Following up on that. So if this 22 were a Word application that had been opened, then 23 what would be in window 315 -- 24 MR. KHAN: Objection. Speculation. 25 Q. -- from a perspective of somebody skilled Page 43	1 used to move around a document or some 2 representation of the document. But again, 3 figure 3 is one of many, many applications of 4 windows and there could be many, many applications 5 than just Word. 6 MR. CORDREY: My apologies. Can we take 7 a quick five-minute break. 8 THE WITNESS: Sure. 9 MR. CORDREY: Okay. We can go off the 10 record. 11 (Recess.) 12 BY MR. CORDREY: 13 Q. We're looking at figure 3 of the Hanggie 14 reference, Exhibit 1006. 15 So, Professor Fuchs, we were talking 16 about the window 315, and I understand that can be 17 used for a number of applications: Word, Excel, 18 et cetera. But I think you had used, as an 19 example, Word as an application, and I just want 20 to get clear that Windows 315 -- is it accurate 21 that you understand that if you're using a Word 22 document, for example, you can manipulate the text 23 or the content in that Word document in Window 315 24 using, you know, like, your typical inputs, like a 25 mouse or a keyboard; is that right? Page 45

1 MR. KHAN: Objection. Speculation -- I'm 2 sorry. Objection. Form. 3 Q. Yeah. And if it helps speed things 4 along, Professor Fuchs, if you look at your 5 declaration in the '868 IPR -- or patent IPR -- at 6 page 77. This is paragraph 114. This is where I 7 was referring to when I said you used the Word as 8 an example as one of the applications that might 9 be used in the application window shown in 10 figure 3. 11 A. I'm reading that paragraph, and the 12 reference to Word here is in maximize window, as 13 known in the art using an interactive key on a 14 keyboard when interacting with Microsoft Word 15 application window. 16 I don't see the reference to the scroll 17 bars that you are asking about, sir. 18 Q. Okay. Actually, I -- I had moved on from 19 the scroll bars. 20 My question was with respect to the 21 window in the figure 3 application window -- so 22 window 315. I was using your example. 23 If you have a Word document, say, as the 24 application, then you would be able to modify the 25 content of the Word document shown in window 315 Page 46	1 time. A lot depends on the context. 2 Q. The example you gave in paragraph 14, if 3 I understand your opinion here, is that if you had 4 a Word document as the application, though, you 5 could modify the content in window 315 using any 6 standard input devices like a mouse or a keyboard; 7 is that accurate? 8 MR. KHAN: Objection. Form. 9 A. In paragraph 114, I was addressing the 10 claim limitation 1D-3 of '868 and that situation 11 that was answering the question of what would 12 happen in a Hanggie-Anthony combination in the 13 situation 1D-3 where it says, "receiving at least 14 one interaction by said user with said one of said 15 first, second, and third objects within said 2D 16 space." 17 What happens in other circumstances also 18 depends on the context and depends on what the 19 designer has decided. So for example, Hanggie 20 mentions in a number of places how power 21 consideration, especially for battery-operated 22 devices, might change the way something functions 23 in order to save power. 24 Q. Looking at -- I'm sorry? 25 A. I'm sorry. I was just finishing. That Page 48
1 using your standard keyboard or whatever other 2 inputs -- a mouse, inputs? 3 Specifically, I'm referencing your 4 statement in paragraph 114, where you said, "as is 5 known in the art in response to a user entering a 6 key on a keyboard when interacting with Microsoft 7 Word application window, application-specific 8 data, such as text content in the window, is 9 modified to reflect the input key." 10 Do you see that? 11 A. I see that. 12 Q. Okay. So is it accurate that using the 13 window -- I'm sorry -- using Word as the example, 14 for example, you could modify the content in 15 window 315 of figure 3 using, you know, your 16 typical input devices; is that right? 17 MR. KHAN: Objection. Form. 18 A. The modification of the content area 315 19 depends on the designer of the application and the 20 designer of the GUI and designer of the entire 21 system. That may be -- the modification might be 22 the same in, for instance, 3D or it might be 23 somewhat different. That all depends, I think, on 24 the designer of the operating system, designer of 25 the GUI, and the mode that the system is in at the Page 47	1 was just one example of context. 2 Q. Looking at paragraph 114. And then, if 3 you look at the next page, 115, the limitation is 4 actually -- that 114 describes are, "receiving at 5 least one interaction by said user, with set one 6 of said first, second, and third objects within 7 said 2D space, and in 1D-4, "modifying said one of 8 said first, second, and third application-specific 9 data in response to said at least one 10 interaction." 11 Do you see that? 12 A. Yes, I see that. 13 Q. Yeah. And paragraph 115, you refer back 14 to essentially paragraph 114, so -- 15 Do you see that? 16 A. Yes. 17 Q. Okay. So paragraph 114 is actually 18 describing what I just recited; right? The 19 limitations. It's receiving an interaction and 20 modifying the interaction -- modifying one of said 21 first, second, or third application-specific data 22 in response to the interaction; correct? 23 MR. KHAN: Objection. Form. 24 A. What I'm describing here in paragraph 114 25 is how the combination of Hanggie and Anthony Page 49

1 would have behaved in this situation. You asked 2 me, sir, not that -- you asked me figure 3, which 3 is Hanggie only. 4 Q. Yeah. Actually, Professor Fuchs, the 5 portion I'm focusing on -- I appreciate what 6 you're saying. But if you look at paragraph 114, 7 you actually state, "Hanggie discloses receiving 8 text input from a user." And then, you cite to 9 Hanggie. 10 Do you see that? And then, you talk 11 about, "as is known in the arts, in response to a 12 user entering a key on a keyboard when interacting 13 with a Microsoft Word application, 14 application-specific data, such as the text 15 content in the window, is modified to reflect the 16 input key." 17 Is this not your understanding of how the 18 content in window 315 of Hanggie can be interacted 19 with? 20 A. As I said, the interaction and the mode 21 of the interaction depends on the context. And in 22 this context that I described there, that's what 23 would happen. 24 As I said, there are other contexts that 25 I think Hanggie discloses in which there may be Page 50	1 I'm looking at the front page of the 2 Anthony 1007 reference. 3 Q. In connection with your opinion in the 4 '654 patent IPR, why didn't you use Anthony as an 5 anticipatory reference? 6 MR. KHAN: Objection. Relevance. 7 Objection. Scope. 8 A. In the preparation of my '654 9 declaration, I considered many prior art 10 references. I don't remember exactly whether or 11 not considered any one of them to be anticipatory. 12 Q. Sitting here today, do you have any 13 recollection as to why you didn't include Anthony 14 as an anticipatory reference in the '654 IPR -- 15 '654 patent IPR? 16 MR. KHAN: Objection. Asked and 17 answered. 18 A. As I said, I considered many prior art 19 references, and I don't remember whether I 20 considered any one of them as anticipatory. 21 Q. And sitting here today, you don't have 22 any recollection of why you didn't consider 23 Anthony as an anticipatory reference? 24 MR. KHAN: Objection. Asked and 25 answered. Page 52
1 different kinds of interaction; for example, there 2 might be, you know, certain different kinds of 3 interaction when it's in 2D mode versus 3D mode or 4 whether it's battery-powered or not 5 battery-powered. 6 That's what I meant. 7 Q. Okay. Understood. 8 And the context here in the example you 9 gave was Microsoft Word was the application; 10 right? 11 A. As I said in 114, for example, if the 12 maximize window was a Microsoft Word application 13 window. 14 Q. Okay. Thank you. 15 Let me ask you to look now at 16 Exhibit 1007, the Anthony reference. And I'll -- 17 give me a second and I'll publish this for the -- 18 the others on the call. 19 (Exhibit 1007 marked.) 20 BY MR. CORDREY: 21 Q. Oh, shoot. Sorry. I published it 22 electronically. I understood you have a hard copy 23 with you. Feel free to refer to that if it's 24 easier for you to reference. 25 A. Thank you. Page 51	1 A. As I said, I considered many prior art 2 references, but I don't remember whether I 3 considered any of them or which ones I considered 4 to be anticipatory. 5 Q. You -- do you recall why you didn't 6 consider Anthony anticipatory in the '686 patent 7 IPR? 8 MR. KHAN: Objection. Asked and 9 answered. 10 A. My apologies. For the record, that was 11 the '868 patent IPR. Not '686. 12 MR. KHAN: Okay. Sorry. 13 A. In my preparation of both of these 14 declarations, I considered many prior art 15 references, but as I sit here today, I cannot 16 remember which I considered for either of them to 17 be anticipatory. I just don't remember. 18 Q. Referring to the front page of Anthony, 19 looking at the abstract. 20 The first sentence of the abstract 21 states, "a 3-dimensional 3D view of a data 22 collection based how an attribute is disclosed." 23 Do you see that? 24 A. I see those words. 25 Q. Is it your understanding that Anthony Page 53

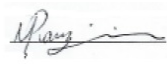
1 discloses a 3D GUI? 2 A. Anthony discloses multiple things. A 3D 3 user interface is one of multiple things that he 4 discloses. 5 Q. The 3D GUI interface of Anthony, as shown 6 in figure 4, is what you relied on in your 7 declarations; is that right? 8 A. I use multiple aspects of what Anthony 9 teaches in my declarations, both for the '654 and 10 the '868 declarations. 11 Q. And that included figure 4; correct? 12 A. I included figure 4 and a number of other 13 figures in any declarations. 14 Q. Let me -- hold on one second. Let me -- 15 give me a second here. 16 I'm going to introduce your declaration 17 in the '654 patent. I have two questions for you 18 on that. 19 A. Okay. That was 1003; right? 20 Q. Yep. And I understand you have a hard 21 copy in front. So if you prefer that, that's 22 fine. But I didn't publish exhibit 1003 in the 23 '343 IPR, relating to the '654 patent. 24 (Exhibit 1003 marked.) 25 /// Page 54	1 Who prepared the declaration? 2 A. Let's see. First, counsel sent me the 3 patent, and I read the patents and I had some 4 ideas about prior art. 5 Then, I met with counsel and I gave them 6 my opinions about the patent and the claims and 7 some of the prior art. 8 And then, we met several more times as we 9 collected prior art. 10 And then, I suggested what I wanted to 11 have in the declaration, and counsel prepared a 12 first draft. 13 And then, I edited that, and we met a 14 number of times more, and there were a number of 15 more drafts that I edited until I felt comfortable 16 signing -- signing off on it to the final copy. 17 Q. Were there any portions of the 18 declaration that you did not draft or did not have 19 any input or contribution to? 20 (Reporter clarification.) 21 A. There's some noise that -- not from here. 22 I think the house is empty. 23 There was a short section -- on terms -- 24 in legal terms that we discussed, and they drafted 25 those. I believe they drafted those. And there Page 56
1 BY MR. CORDREY: 2 Q. Let me know when you're ready and you 3 have it in front of you. 4 A. I have a copy here. 5 Q. Okay. Again, this is a clean copy of 6 your declaration? 7 A. Yes, as far as I know, it's -- it's 8 totally clean. 9 Q. Okay. This declaration. Does it 10 accurately reflect your opinions in this IPR? 11 A. Yes. 12 Q. Are there any aspects of this declaration 13 that you need to correct? 14 A. There were a couple of typos that I came 15 across when I was reviewing this. I don't 16 remember where they were. I don't think that they 17 were anything substantial. If I remember them, 18 I'll point them out to you. 19 Q. That's fine. Thank you. 20 Aside from the typos, though, there's no 21 substantive changes or corrections that you need 22 to make? 23 A. As far as I know, there's no substantive 24 changes that I need to make. 25 Q. Thank you. Page 55	1 was a section on claim construction terms that I 2 think they just showed me. 3 Where was this? One second, please. 4 Yeah. I think claim construction came 5 from counsel, and I think I put that in there. I 6 said I was informed by counsel. This is section 8 7 on claim construction. 8 MR. KHAN: I'm sorry. Where are you 9 reading from? 10 A. I'm reading from my '654 declaration, 11 section 8, titled, "Claim Construction," 12 paragraph 45 on page 22. I had no input on that. 13 Q. Pardon me? 14 A. I had no input on that. I think they 15 just sent that to me, and they said, as I say 16 here, "I was informed by counsel that in pending 17 district court proceeding" -- so that was totally 18 theirs. I mean that was totally from them. 19 Q. In terms of the other sections that you 20 didn't draft or have contributions to, take a look 21 at page 10, starting at paragraph 23. 22 Does it -- those sections you were 23 referring to earlier that have legal terms. Was 24 that referring to paragraphs 23 through 30 or some 25 other paragraphs? Page 57

1 A. I think in these sections, as I read them 2 over now, I did have some input. They -- I think 3 the process was that we discussed this and I think 4 that we may have iterated on the specific words, 5 because it was -- I think these are my words in 6 the end that I -- that I understood this 7 correctly. 8 Q. Okay. So just so I understand, looking 9 at the section that's captioned "Legal Standards," 10 that's what you're referring to; correct? 11 A. Yes. 12 Q. Okay. And it's your testimony that you 13 may have had some conversations perhaps with 14 counsel to obtain this understanding but that 15 these are your words in the declaration regarding 16 your understanding of the legal standards? 17 A. These are my understanding of the legal 18 standards. 19 Q. In the last deposition regarding the '048 20 patent, you had testified that your normal hourly 21 rate was \$1,000 an hour for that IPR. 22 Do you recall that? 23 A. Yes. 24 Q. Okay. Is that the same hourly rate that 25 you charged in connection with these two IPRs? Page 58	1 A. Yes. 2 Q. Is this a complete list of the 3 information under this section that you considered 4 in connection with preparing your declaration in 5 the '654 patent IPR? 6 A. I think these are the documents. In 7 addition to these documents, I remember looking 8 around on the web, looking at things online, but I 9 don't -- I didn't keep a list of the items there, 10 so I didn't include all of my searches. 11 Q. Earlier today, you testified that when 12 you did look online for documents that you thought 13 at least some of them were the online versions of 14 the prior art that we're discussing today. Is 15 that -- is that what you're referring to here? 16 A. Yes, but I also looked early on at online 17 versions of other documents in my search for what 18 might be relevant prior art. These are the ones 19 that I included here; are the ones that I referred 20 to in this declaration. 21 Q. These is a -- these documents that are 22 identified under section 5, though, this is a 23 complete and accurate list of the information you 24 considered in connection with preparing your 25 declaration in the '654 patent IPR; is that right? Page 60
1 A. Yes. 2 Q. Okay. Beginning with the '654 patent 3 IPR, approximately how many hours did you bill the 4 petitioner for your work on the '654 patent IPR 5 declaration? Or let's just say '654 patent IPR. 6 MR. KHAN: Objection. Relevance. 7 A. My recollection is that I was working on 8 the '654 declaration and the '868 declaration 9 concurrently. And there would be a few hours each 10 maybe of -- you know, each week. But this went on 11 for several months. So hard -- I'd have to think 12 about total; how many there was. A week of work. 13 Maybe quite not that much. 14 I don't really have a good idea about 15 this but I know it went on for several months. 16 Q. Let me direct your attention to 17 paragraph 34. Let me know when you're there, 18 please. 19 A. Paragraph 34 on page 15? 20 Q. Correct. 21 A. Okay. 22 Q. Yeah, 15. It goes on to page 16 as well. 23 A. Yes. 24 Q. Okay. So this -- this section is under 25 "Materials Considered"? Page 59	1 MR. KHAN: Objection. Objection. 2 Misstates testimony. Objection. Form. 3 MR. CORDREY: Sorry. Let me rephrase 4 that. 5 Q. Notwithstanding the documents that you 6 looked at online, the documents that you identify 7 under "Materials Considered" is otherwise a 8 complete and accurate list of the materials you 9 considered in connection with your declaration in 10 the '654 patent IPR -- 11 MR. KHAN: Objection. Ambiguous. 12 Q. -- is that correct? 13 A. I certainly considered all and studied 14 and analyzed all of these, and I looked online. I 15 may have also looked at paper copies of documents. 16 But this was over a year ago, so I didn't keep a 17 list of all the documents that I considered. I 18 think there are documents, papers maybe, 19 proceedings. I think I looked at a couple of 20 textbooks. 21 So these are the things that I looked at, 22 but I did not keep a comprehensive list of that. 23 Q. These other things that you looked at. 24 Did they -- did you consider them in forming your 25 opinions in this declaration? Page 61

1 A. The ones I list here are the ones that I 2 thought were most relevant to the task of 3 analyzing the '654 patents. I would say that 4 anything that I study, anything that I find 5 informs me. So I wouldn't say that only these 6 inform me. You know, everything that I studied 7 informs me. 8 MR. CORDREY: In light of that testimony, 9 Counsel, we're going to want a supplemental list 10 of the documents that Professor Fuchs considered 11 in forming -- and that informed his opinion in 12 this declaration. 13 MR. KHAN: You're welcome to approach the 14 board if you'd like additional discovery. I think 15 there's a means for that. Perhaps doing it at a 16 deposition is not the best way. 17 MR. CORDREY: I'm just trying to get your 18 position on that. 19 Are you going to oppose our request for a 20 complete list of what Dr. Fuchs is testifying he 21 considered and informed his opinions in this 22 declaration? 23 MR. KHAN: Yeah. I think if you can 24 write that out, and we can consider your request 25 when it's written out. As you plan to send it to Page 62	1 related to the '654 patent claim terms or the '868 2 patent claim terms; correct? 3 A. Sitting here today, I don't remember 4 getting district court proceedings of the claim 5 terms. 6 All I remember is what I've cited here on 7 paragraph 45 saying that I was informed by counsel 8 that in pending court proceedings, a construction 9 of two terms has been agreed upon by the patent 10 owner and petitioner. 11 Q. And if it refreshes your recollection, I 12 believe you testified in the deposition related to 13 the '048 patent IPR that you had not considered 14 the Court's claim construction order. 15 Does that refresh your recollection about 16 whether you considered it here? 17 MR. KHAN: Counsel, can you repeat your 18 question. It was not clear. 19 MR. CORDREY: Can the court reporter read 20 that back. 21 (Record read.) 22 A. I heard that. Thank you. 23 I'm thinking about the best answer to 24 that question. 25 And that is: I don't recall reading the Page 64
1 the board, we'll consider that, and we'll provide 2 you our objection or lack thereof. 3 BY MR. CORDREY: 4 Q. Professor Fuchs, one of the items that 5 you have listed is Apple's opening claim 6 construction brief. 7 Do you see that? 8 A. I see that. 9 Q. So is it accurate that you read and 10 considered Apple's claim construction brief in 11 connection with preparing your opinions in this 12 declaration? 13 A. Can you repeat that, please. 14 MR. CORDREY: If the court reporter could 15 just read that back. 16 (Record read.) 17 A. As I say here in paragraph 34 of '654, 18 "In addition, I analyzed the following publication 19 and materials," and the first of that list is 20 Apple 1005, Apple opening claim construction 21 brief. 22 So I analyzed that publication with that 23 document. 24 Q. Your list does not include any orders 25 from the Court regarding claim construction Page 63	1 text of -- or the document of district court 2 order, or I may have forgotten. But what I say 3 here is -- that I thought came from the district 4 court is: This paragraph 45 of the '654 5 declaration. I was informed by counsel that in 6 pending district court proceedings, the 7 construction of two terms has been agreed upon by 8 the patent owner and petitioner. And these two 9 terms, of course, I considered. 10 Q. Paragraph 45 is your understanding of any 11 of the claim constructions related to these 12 patents, the '654 and the '868; is that right? 13 MR. KHAN: Objection. Misstates 14 testimony. Objection. Form. 15 A. My understanding is that in the pending 16 court proceedings, these were the only two terms 17 that were construed and agreed upon by the patent 18 owner and the petitioner. 19 Q. Let me direct your attention to 20 paragraph 34. There, you state that you 21 considered the '654 patent and its prosecution 22 history, exhibit Apple 1002. 23 Do you see that? 24 A. Yes. 25 Q. Did you consider the prosecution history Page 65

1 of patent 735018? 2 MR. KHAN: Objection. Relevance. 3 MR. CORDREY: And for the record, the 4 '018 patent is a parent application to the '654 5 patent. 6 A. I looked at and studied the prosecution 7 history of the '654 patent. I don't recall 8 separately reading the parent patent of '654 that 9 you're referring to, although I'm not certain of 10 that. 11 Q. Do you recall reviewing the prosecution 12 history of the '048 patent in connection with 13 preparing your declaration in the '654 patent IPR? 14 MR. KHAN: Objection. Relevance. 15 A. I would have to go back to my notes on 16 the '048 declaration for that. 17 MR. CORDREY: I'm sorry. Can you read 18 back that response. 19 (Record read.) 20 A. Let me clarify that. 21 What I meant: I have to go back to my 22 declaration for the '048. 23 Q. Did you consider any of the prior art 24 cited in either the '018 patent file history or 25 the '048 patent file history in connection with Page 66	1 the prior patents I looked at or studied. This 2 was some time ago. 3 Q. I'm sorry. I didn't catch all of that. 4 Can I get the court reporter to read that 5 back. 6 (Record read.) 7 Q. Let me publish real quickly -- give me a 8 second -- your declaration in the '868 patent IPR. 9 Okay. It should be published now. 10 And I understand, Professor Fuchs, you 11 have a clean hard copy in front of you? 12 A. Yes, I have a clean hard copy of the '868 13 declaration. 14 Q. Okay. Again, if you could -- well, let 15 me just start with the first question. 16 Is this a compete and accurate report of 17 your opinions regarding the '868 patent IPR? 18 A. The '868 declaration is complete and 19 accurate except for a couple of typos that I 20 found, the location of which I can't recall right 21 now. 22 Q. To your knowledge, are there any 23 connections you need to make to the substantive 24 aspects of your opinions here? 25 A. There's nothing substantive. There are, Page 68
1 your declaration in the '654 patent IPR? 2 A. I may have looked at some of those 3 online. I don't remember precisely which ones. 4 Q. In doing so, did you form any opinions 5 regarding any comparison of the prior art cited in 6 these parent applications with the prior art 7 that's the subject of your opinion in the '654 8 patent IPR? 9 A. I regret that I don't remember. This was 10 some time ago. 11 Q. If you had formed any such opinions, 12 would you have included them in your declaration? 13 MR. KHAN: Objection. Speculation. 14 A. I include in my '654 declaration those 15 prior art references that I felt were relevant to 16 my conclusions. There were things that I read 17 that didn't seem relevant to me, and so I did not 18 include. 19 Q. In connection with the -- your 20 declaration in the '868 patent IPR, did you 21 consider the prosecution file history of the '081 22 patent? 23 A. I studied the prosecution history of '868 24 or the application that led to the '868 patent. I 25 don't remember the -- I don't remember which of Page 67	1 I think, a couple of words here and there that 2 need to be switched. 3 Q. Anything you can direct me to 4 specifically? 5 A. I'm sorry. This was a couple of days 6 ago, and I might be able to look it up, but 7 it's -- I think it'll be obvious. It's, like, 8 when we get there, you'll see. It's, like, I'm 9 copying a phrase of, like, one of the claims and I 10 copy it incorrectly or I flipped one of the words 11 or something like that. If we get to it, I will 12 point it out. I don't think it's anything 13 substantive. I think any ordinary person reading 14 it would realize it was the wrong word or was a 15 reverse word. 16 Q. That's fine. If you happen to remember 17 where, if you can let me know, that would be 18 great. 19 If you look at section 5 on page 15. 20 Again, this is the section entitled "Materials 21 Considered." 22 A. I'm on page 15. 23 Q. Is this a complete and accurate list of 24 the materials you considered in connection with 25 forming your opinions in this declaration? Page 69

1 A. These all the relevant publications. As 2 I mentioned, I looked online. I may have looked 3 early on at documents, but those didn't seem to be 4 relevant to this declaration. 5 Q. Okay. Professor Fuchs, if you could turn 6 your attention to pages 38 and 39 of your 7 declaration. 8 Do you have that in front of you? 9 A. Yes. This is '868 declaration page 38, 10 39? 11 Q. Correct. In paragraph 63, you state, "I 12 provide an example of the combination of Anthony 13 and Hanggie's teachings in the combination figure 14 shown below. The focal group windows in Anthony's 15 figure 4 are replaced by the window in Hanggie's 16 figure 3." 17 Do you see that? 18 A. Yes, I see that. 19 Q. Okay. And then, if you look over the 20 page 39, at the top of the page, there's an 21 illustration. It's captioned, "Self-Generated 22 Figure Based on the Combination of Anthony's 23 Figure 4 and Hanggie's Figure 3." 24 A. I see that. 25 Q. Okay. So this is the -- this is Page 70	1 (Record read.) 2 Q. I'll add to that: Is that correct? 3 MR. KHAN: Objection. Form. Objection. 4 Misstates testimony. 5 A. Just a minute. I want to look up 6 something. 7 Give me one more minute. I wanted to 8 look up -- give you my best answer. 9 In a combination, Anthony-Hanggie's 10 system, which I refer to as "HAC," the control 11 button 305 could well be used -- would have been 12 used by a POSITA to do some form of maximize or 13 minimize or delete, and I talk about that in a 14 number of different places. 15 Q. Okay. 16 MR. CORDREY: That's all we have for 17 today on these two IPRs, so I'll turn it over to 18 you, Counsel. 19 MR. KHAN: Thank you. 20 Give us maybe -- just give me like two 21 minutes. 22 MR. CORDREY: Sure. 23 MR. KHAN: Thank you. We could go off 24 the record for now. Thanks. 25 MR. CORDREY: That's fine. Page 72
1 self-generated figure that you're referring to 2 when you talk about the combination of Anthony and 3 Hanggie; correct? 4 A. I refer to this figure in a number of 5 places, yes. 6 Q. Well, focusing on page 39, you annotate 7 the figure on page 39. You have -- you see where 8 you've annotated control buttons? And it looks 9 like you've drawn square around the three 10 buttons -- three square buttons in the upper 11 right-hand corner of the front window. 12 A. I see that. 13 Q. Okay. And these are the control buttons 14 that we were discussing earlier today with regard 15 to Hanggie? 16 A. Yes, these are the control buttons. 17 Q. Okay. So the combination here. I could 18 use these -- in accordance with your testimony 19 earlier, with these control buttons, I could 20 maximize, minimize, close the application window? 21 MR. KHAN: Sorry. Is there a question 22 there? 23 Q. Yeah. I believe I framed it in the form 24 of a question, if the court reporter wants to read 25 it back. Page 71	1 (Recess.) 2 MR. KHAN: We have no further questions. 3 MR. CORDREY: Okay. Then, I think we can 4 conclude the deposition. 5 Doctor -- or, Professor Fuchs, thank you 6 for your time again. Appreciate it. 7 (Deposition concluded at 1:27 P.M.) 8 -oOo- 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 Page 73

1 ERRATA SHEET FOR THE DEPOSITION OF: 2 3 CASE NAME: APPLE INC. AND GOOGLE LLC V SPACETIME3D, INC. 4 5 CASE NUMBER: IPR2023-003431; IPR2023-003442 6 7 DEPO DATE: MONDAY, OCTOBER 16, 2023 8 9 DEPONENT: HENRY FUCHS, PH.D. 10 11 CORRECTIONS 12 PG. LN. NOW READS SHOULD READ REASONS 13 14 15 16 17 18 19 20 21 22 23 24 25 SIGNATURE _____ DATE _____ Page 74	1 CERTIFIED STENOGRAPHER'S CERTIFICATE 2 STATE OF CALIFORNIA)) SS. 3 COUNTY OF LOS ANGELES) 4 5 I, NATALIE PARVIZI-AZAD, HERBY CERTIFY: 6 I AM A DULY QUALIFIED CERTIFIED SHORTHAND 7 REPORTER IN THE STATE OF CALIFORNIA, HOLDER OF 8 CERTIFICATE NUMBER CSR 14125 ISSUED BY THE COURT 9 REPORTERS BOARD OF CALIFORNIA AND WHICH IS IN FULL 10 FORCE AND EFFECT. (BUS. & PROF. § 8016) 11 I AM NOT FINANCIALLY INTERESTED IN THIS 12 ACTION AND NOT A RELATIVE OR EMPLOYEE OF ANY 13 ATTORNEY OF THE PARTIES, OR OF ANY OF THE PARTIES. 14 (CIV. PROC. § 2025.320(A)) 15 I AM AUTHORIZED TO ADMINISTER OATHS OR 16 AFFIRMATIONS PURSUANT TO CALIFORNIA CODE OF CIVIL 17 PROCEDURE, SECTION 2093 (B) AND PRIOR TO BEING 18 EXAMINED, THE DEPONENT WAS FIRST PLACED UNDER OATH 19 OR AFFIRMATION BY ME. (CIV. PROC. §§ 2025.320, 20 2025.540(A)) 21 I AM THE CERTIFIED OFFICER THAT 22 STENOGRAPHICALLY RECORDED THE TESTIMONY IN THE 23 FOREGOING PROCEEDING AND THE FOREGOING TRANSCRIPT 24 IS A TRUE RECORD OF THE TESTIMONY GIVEN. (CIV. 25 PROC. § 2025.540(A)) Page 76
1 STATE OF CALIFORNIA)) SS. 2 COUNTY OF LOS ANGELES) 3 4 5 I, HENRY FUCHS, PH.D., HEREBY CERTIFY UNDER 6 PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF 7 CALIFORNIA THAT THE FOREGOING IS TRUE AND CORRECT. 8 EXECUTED THIS ____ DAY OF _____, 9 2023, AT _____, CALIFORNIA. 10 11 12 13 14 _____ 15 HENRY FUCHS, PH.D. 16 17 18 19 20 21 22 23 24 25 Page 75	1 I HAVE NOT, AND SHALL NOT, OFFER OR PROVIDE 2 ANY SERVICES OR PRODUCTS TO ANY PARTY'S ATTORNEY 3 OR THIRD PARTY WHO IS FINANCING ALL OR PART OF THE 4 ACTION WITHOUT FIRST OFFERING SAME TO ALL PARTIES 5 OR THEIR ATTORNEYS ATTENDING THE PROCEEDING AND 6 MAKING SAME AVAILABLE AT THE SAME TIME TO ALL 7 PARTIES OR THEIR ATTORNEYS. (CIV. PROC § 8 2025.320(B)) 9 I SHALL NOT PROVIDE ANY SERVICE OR PRODUCT 10 CONSISTING OF THE CERTIFIED STENOGRAPHER'S 11 NOTATIONS OR COMMENTS REGARDING THE Demeanor OF 12 ANY WITNESS, ATTORNEY, OR PARTY PRESENT AT THE 13 PROCEEDING TO ANY PARTY OR ANY PARTY'S ATTORNEY OR 14 THIRD PARTY WHO IS FINANCING ALL OR PART OF THE 15 ACTION, NOR SHALL I COLLECT ANY PERSONAL 16 IDENTIFYING INFORMATION ABOUT THE WITNESS AS A 17 SERVICE OR PRODUCT TO BE PROVIDED TO ANY PARTY OR 18 THIRD PARTY WHO IS FINANCING ALL OR PART OF THE 19 ACTION. (CIV. PROC. § 2025.320(C)) 20 21 DATED: 10/18/23 22 23 24  25 NATALIE PARVIZI-AZAD, CSR NO.14125 Page 77

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