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Transcript of Michael Brogioli, Ph.D.

Date: July 24, 2026

Case: Samsung Electronics Co., Ltd., et al. -v- Maxell, Ltd. (PTAB)

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Email: transcripts@planetdepos.com

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Conducted on July 24, 2026

1 (1 to 4)

1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 ----- 3 BEFORE THE PATENT TRIAL AND APPEAL BOARD 4 ----- 5 SAMSUNG ELECTRONICS CO., LTD. and 6 SAMSUNG ELECTRONICS AMERICA, INC., 7 Petitioners 8 v. 9 MAXELL, LTD., 10 Patent Owner 11 Inter Partes Review No.: IPR2025-01309 12 U.S. Patent No. 7,577,417 13 ----- 14 ORAL, REALTIMED DEPOSITION OF 15 DR. MICHAEL BROGIOLI 16 JULY 24, 2026 17 TAKEN VIA ZOOM VIDEOCONFERENCE 18 ----- 19 JOB NO.: 640696 20 PAGES: 1 - 223 21 REPORTED STENOGRAPHICALLY BY: 22 ANNETTE PELTIER, CSR, CRR	1 A P P E A R A N C E S 2 3 ON BEHALF OF THE PETITIONERS: 4 CHRIS KATSANTONIS, ESQUIRE 5 DLA Piper LLP (Chicago) 6 444 West Lake Street 7 Suite 900 8 Chicago, IL 60606 9 312.368.4000 10 11 ALAN LIMBACH, ESQUIRE 12 DLA Piper LLP (Palo Alto) 13 3203 Hanover Street 14 Suite 100 15 Palo Alto, CA 94304-1123 16 650.833.2433 17 18 ON BEHALF OF THE PATENT OWNER: 19 SETH BRUNEEL, ESQUIRE 20 Mayer Brown LLP 21 1999 K Street NW 22 Washington, DC 20006-1101 23 202.263.3015 24 25 ALSO PRESENT: 26 Keiran Morrison, Zoom Tech 27 28 RECEIVING REALTIME: 29 Chris Katsantonis 30 Alan Limbach 31 Seth Bruneel
1 ORAL AND REALTIMED DEPOSITION OF 2 DR. MICHAEL BROGIOLI, produced as a witness 3 at the instance of the Petitioners, and duly 4 sworn, was taken in the above-styled and 5 numbered cause on July 24, 2026, from 9:05 6 a.m. to 3:03 p.m. Central time, before 7 Annette Peltier, CSR, Texas Certified 8 Realtime Reporter, in and for the State of 9 Texas, reported by machine shorthand pursuant 10 to the PTAB Rules of Civil Procedure and the 11 provisions stated on the record or attached 12 hereto. 13 14 15 16 17 18 19 20 21 22	1 Index 2 3 Page 4 Appearances..... 3 5 Examination by Mr. Katsantonis..... 4 6 Adjournment..... 221 7 Court Reporter's Certificate..... 222 8 Exhibits 9 Number Description Page 10 Exhibit 1 US Patent 7,577,417..... 8 11 Exhibit 2 Declaration of Michael 12 Brogioli, Ph.D..... 8 13 Exhibit 3 Dr. Brogioli CV..... 8 14 Exhibit 4 US Patent 5,303,171..... 27 15 Exhibit 5 Kitazawa Patent 16 Translation..... 97 17 Exhibit 6 US Patent 5,630,148..... 113 18 Exhibit 7 US Patent 6,223,293..... 124 19 Exhibit 8 Advanced Configuration 20 And Power Interface 21 Specification..... 210 22 * * * * *

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5 1 THE COURT REPORTER: Seth, do 2 you want a copy of today's deposition and, in 3 addition, the real-time? 4 MR. BRUNEEL: Yeah, I just 5 found the real-time, so yeah, we'll want a 6 copy, as well. 7 EXHIBIT TECH: Thank you to 8 everyone for attending this proceeding 9 remotely, which we anticipate will run 10 smoothly. 11 Please remember to speak slowly 12 and do your best not to talk over one 13 another. 14 Please be aware that we are 15 recording this proceeding for backup 16 purposes. 17 Any off-the-record discussions 18 should be had away from the computer. 19 Please remember to mute your 20 mic for those conversations. 21 Please have your video enabled 22 to help the reporter identify who is	7 1 the very astute observation that you're in 2 front of a computer today. 3 Do you have any applications open 4 other than the videoconferencing software? 5 A. I -- I brought with me 6 electronically my declaration and the patent, 7 so I have -- I guess it's preview on Mac open 8 with just those documents. 9 Q. And do you have any physical 10 documents with you today? 11 A. No. 12 Q. Okay. And where are you sitting 13 today? 14 A. I'm in a home office here in 15 Austin, Texas. 16 Q. All right. Fantastic. 17 So let's get in -- I'm going to 18 first share what is going to be marked as 19 Exhibit 1, and that is the '417 patent, and 20 I'm also -- I'm going to do about two more 21 exhibits here. Exhibit 2 is going to be your 22 declaration, and Exhibit 3 is going to be
6 1 speaking. If you are unable to connect with 2 video and are connecting via phone, please 3 identify yourself each time before speaking. 4 We will provide a 5 complimentary, unedited recording of this 6 deposition with the purchase of a transcript. 7 I apologize in advance for any 8 technical-related interruptions. 9 Thank you. 10 MICHAEL BROGIOLI, PH.D. 11 Having been first duly sworn, testified upon 12 his oath as follows: 13 EXAMINATION 14 BY MR. KATSANTONIS: 15 Q. Good morning, Dr. Brogioli. How 16 are you doing today? 17 A. Doing well. 18 Q. Okay. And is there any reason 19 why you will not be able to testify 20 truthfully today? 21 A. No, there's not. 22 Q. All right. And I'm going to make	8 1 your CV. 2 (Whereupon Exhibit Numbers 1, 3 2, and 3 were marked for 4 identification.) 5 (BY MR. KATSANTONIS) 6 Q. Can you just confirm when you 7 have those downloaded? And feel free to use 8 the local version of your declaration if you 9 would like. 10 A. Sure. Okay. I've got all three. 11 Q. Okay. Great. 12 So at the outset, are you aware 13 of any errors in your -- in your declaration 14 that you would like to fix? 15 A. I think there's a misstatement 16 maybe in paragraph 56 that said "Belt" and 17 should have said "at the time of the patent," 18 if you want me to go there for you. 19 Q. Yeah. Could you, please? 20 A. Sure. Yes, so the first sentence 21 says, "ACPI represents the knowledge of a 22 POSITA at the time of Belt," and I believe it

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9 1 should have said "at the time of the patent," 2 which I think is also what I stated in the 3 prior paragraph. 4 Q. Understood. And nothing else 5 is -- at least at this time; is that right? 6 A. That's correct. 7 Q. Okay. So I'd like to understand 8 a little bit more about your background. 9 Have you ever designed a cellular 10 phone before? 11 A. I've designed components that go 12 into them, work around modems and CPUs and 13 other aspects of the technology that goes 14 into them, including certain types of the 15 software, baseband software for 16 communications, control, things like that. 17 Q. Okay. And what specifically 18 about the processor did you help design? 19 A. I guess there's a few touchpoints 20 in my career. I was doing work the very 21 early 2000s on power management and 22 configurability in processors, and then my	11 1 correct? 2 A. Let me look at my CV for you. 3 It's been a while. 4 I guess on the front page I'm 5 referring to the -- what ended up being the 6 Master's of Science in 2003, so this work 7 sort of started in 2000 with math libraries, 8 we'll call it, that get used in cellular 9 communication but then turned into, by the 10 '01 to '03 time frame, configurability of low 11 power processors using aspects of the 12 workload that were running on them. 13 Q. Okay. And so what exactly? Can 14 you expand on the -- strike that. 15 Can you expand on what you mean 16 regarding "power management"? And I believe 17 you said the aspects of the workload running 18 on cellular phones? 19 A. Sure. So there were a lot of 20 workloads that I looked at, but the general 21 idea was you have a processor, you have a 22 memory system and applications running on it,
10 1 Ph.D. work involved processors and 2 peripherals for, then, I think, 3G, 3.5G, 3 cell phones, some of the accelerators and 4 things that go into them, and did work on 5 some DSP technology in industry mid 2000s 6 that was related to phones and cellular. 7 Same with my time at -- I think that was at 8 Texas Instruments, as well as some of my work 9 at Freescale Semiconductor. 10 Q. Okay. And the work that you had 11 designing the processors, with respect to 12 power management, I know you said early 13 2000s, but is there a more specific time 14 frame? 15 A. Yes. It was -- that work was my 16 master's work, master's thesis work, around 17 processor configurability for power -- 18 related to power consumption. 19 Q. Okay. And I'm taking a look at 20 your CV here; and feel free to pull that up 21 yourself, but I think that's around 2000, 22 2001 is when you were doing that; is that	12 1 and either through the runtime of the 2 application on the processor or by doing this 3 complex mathematical analysis on the 4 applications before they run on the processor 5 you're trying to make deductions about what 6 computing resources are needed at each, kind 7 of, time interval, and you can ramp those up 8 and down in the processor, turn things on or 9 off based on what you think the demands of 10 the application are. 11 Q. And was that work regarding power 12 management and -- and workloads, was that 13 specific to cellular phones, or did it apply 14 to other technologies, as well? 15 A. It applied to other technologies, 16 as well. 17 As I recall, I was looking at 18 some general purpose computing benchmarks in 19 addition to things that were media and -- and 20 telecom-related, if I remember right. 21 Q. Okay. And so to put a finer 22 point on it, did any of your work apply to

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13 1 laptop computers, for example? 2 A. I think in the sense that some of 3 the workloads that I benchmarked may have 4 been benchmarked by other parties in the 5 industry designing laptop processors, I don't 6 know. Some of the benchmarks were wide -- 7 widely used in the industry. 8 Q. Okay. And regarding these power 9 management aspects that you were working on 10 at that time, did you come up with that on 11 your own? Did you invent the power 12 management techniques that you were working 13 on? 14 A. The ones that I was working on, 15 to my knowledge I did, yes. 16 Q. Okay. So if I could have you 17 open up your declaration, please, if you 18 don't already have it open. 19 A. Okay. 20 Q. Okay. And if -- so at the first 21 page, Page 1, that's your signature; is that 22 right?	15 1 provided in the Patent Owner's response if 2 you didn't review it prior? 3 A. Understood. So this sounds 4 like -- and clarify -- clarifying my 5 recollection, I was probably given at least 6 the arguments that I think Patent Owner was 7 making in the response and expanded on those. 8 In some cases -- other matters 9 I've worked on, I should say -- it kind of 10 varies if I've seen a Patent Owner response 11 or when kind of thing. 12 Q. Okay. So is it fair to say that 13 the arguments or the opinions that you have 14 in your report were selected by counsel? 15 A. I would phrase it as the opinions 16 in my report would be ones that I was -- in 17 light of Dr. Baker's declaration and so 18 forth, ones that I was asked to offer 19 opinions on. 20 Q. Okay. And outside of the 21 opinions that you were asked to provide, did 22 you go outside of that and provide any
14 1 A. That's correct. 2 Q. Okay. And did you write your own 3 declaration? 4 A. I did, yes. 5 Q. Now, did you review the Patent 6 Owner response drafted or submitted in this 7 IPR before finalizing your declaration? 8 A. I don't remember. I believe I 9 have a copy of it and may have looked at it 10 after. I don't remember when in time I may 11 have seen a version of it. 12 Q. So if I could direct your 13 attention to paragraph 1 of your declaration, 14 and it's -- it's the first sentence, and at 15 the end -- or the first sentence in, you say 16 that you're providing "opinions that 17 correspond to, and expand upon, the arguments 18 in Patent Owner's Response"; is that correct? 19 A. That's correct, yes. 20 Q. Okay. So I guess what I'm trying 21 to get at is how -- how would you know what 22 opinions correspond to or expand upon what's	16 1 opinions -- strike that. 2 Did you provide any opinions that 3 were not -- that you were not asked to 4 analyze in this case? 5 A. I don't think so, or -- I don't 6 think so. I -- I generally recall there 7 being a discussion around certain things that 8 I would -- topics or opinions that Dr. Baker 9 had that I offered my opinions in response 10 to. 11 I don't recall having gone 12 through Dr. Baker's declaration and formed 13 opinions on other things that I then didn't 14 put in my declaration. 15 Not that I may not have opinions 16 on them in a certain manner, but those -- all 17 of my opinions today are in this declaration. 18 Q. Okay. And did you rely on any 19 written documents provided by counsel to form 20 your opinions? 21 A. No, not that I recall. 22 Q. Okay. And I just want to make

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17 1 sure I understood you correctly. You did 2 not -- in drafting your declaration, you did 3 not look at the entirety of Dr. Baker's 4 declaration; is that correct? 5 A. No. I read his entire 6 declaration, but I'm only responding to 7 certain arguments that he made in that 8 declaration. 9 Q. Understood. Okay. So I'd like 10 to turn to paragraph 18 of your declaration. 11 Let me know when you're there. 12 A. Okay. 13 Q. Okay. So it says that you are 14 "recognized as an expert in the field of 15 computer architecture"; is that correct? 16 A. That's part of the sentence, 17 that's correct. 18 Q. Okay. And would you say that you 19 are also an expert on cellular phone 20 architecture? 21 A. I would say aspects of it, that's 22 correct.	19 1 VI, for claim construction. 2 Q. And you did provide opinions 3 regarding claim construction; is that right? 4 A. That's correct, at least around 5 one term. 6 Q. Okay. And so what -- what 7 standard did you apply to provide that claim 8 construction opinion? 9 A. So I don't recall from memory the 10 exact language of the legal standard; but as 11 I described in this section, it would have 12 been reviewing the patent and specification 13 and the intrinsic record, particularly around 14 the term -- I believe it's a mobile terminal, 15 and then applying -- I think it's what a -- 16 if I talk about later in this section, but 17 what a person of skill in the art would 18 understand that term to mean as used in the 19 claims based on the way it's described at 20 length 40-something times within the 21 specification. 22 Q. Did you review any extrinsic
18 1 Q. Okay. And are those aspects the 2 same as we discussed earlier regarding power 3 management, workload, and the other aspects 4 of your thesis? 5 A. I would say they include that, as 6 well as other aspects of cellular phone or 7 mobile phone technology. 8 Q. Okay. And your declaration 9 includes a legal section; is that correct? 10 A. That's correct, a Legal Standards 11 section or legal definitions. 12 Q. Now, what legal standard did you 13 apply to reach your opinions regarding claim 14 construction? 15 A. Let me go back there for you. 16 I'm looking in the wrong place. One moment. 17 Okay. 18 My mouse is jumping around a bit 19 on me. I'm going to page 14 for us. 20 Q. Right. 21 A. Okay. It looks like I don't have 22 a breakout section under, I guess, heading	20 1 evidence in forming your opinion regarding 2 that mobile terminal claim? 3 A. I don't recall that I did. I 4 would have noted it if I did in the 5 declaration. I don't -- in going through 6 that process, I don't recall there being a 7 need to, given at what length the 8 specification described that term. 9 Q. Would you -- all right. Is that 10 a -- a general principle that -- you know, to 11 the extent that you relied on, on something 12 that supported your opinions, that you would 13 have included it or noted it in your 14 declaration? Is that fair? 15 A. That sounds right. I -- I would 16 have maybe a Materials Considered section 17 that would denote or list if there were some 18 IEEE reference or something like that that I 19 was also looking at. 20 Q. Now, I see here in your report, I 21 think paragraphs 33 to 34 -- it may go on a 22 little bit more -- I think you're talking

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21 1 about the motivation to combine and 2 obviousness, and you list the Graham factors, 3 is that correct, for obviousness analysis? 4 A. That looks correct, in at least 5 paragraph 33. 6 Q. Okay. And in paragraph 34, you 7 start talking about the motivation to 8 combine, and I'm interested to understand 9 what your methodology was and what standard 10 you applied to determine whether there was or 11 was not a motivation to combine references in 12 this case. 13 A. As I recall, at least to the 14 extent I talk about the motivation to combine 15 or lack thereof in response to Dr. Baker's 16 opinions, it was around the fact that he was 17 using hindsight, or my opinion was that he 18 was using hindsight and -- and going on a -- 19 an exercise of finding elements of different 20 limitations in the prior art, and those were 21 coming from references that taught against 22 each other. They didn't apply largely or	23 1 applicable to another field? 2 A. I think there are cases, if I 3 remember correctly, when that may be the 4 case, but I don't recall specifics around it. 5 Q. Okay. And do you understand that 6 under a motivation to combine analysis it's 7 not necessary to combine every single aspect 8 of each prior art reference that you're 9 looking at? 10 A. That's my general recollection. 11 Q. Okay. I want to shift gears 12 slightly. 13 So the '417 patent, I think, has 14 a -- let me pull this up -- on its face has a 15 date of -- a priority date of April 2002. Do 16 you agree with that? 17 A. One moment. It looks like the 18 foreign application priority date of 19 April 3rd, 2002. 20 Q. Okay. And so I'm going to talk 21 about some aspects that are known at the time 22 of -- at the time of the invention or at the
22 1 entirely to mobile phones, and also the 2 different references were trying to achieve 3 different things that conflicted each other. 4 Q. Have you ever heard of the term 5 "field of endeavor"? 6 A. I believe so, yes. 7 Q. Okay. And specifically in 8 context of the motivation to combine 9 analysis? 10 A. That's correct. I don't recall 11 if there's a specific legal definition to it, 12 but I -- I recall that. 13 Q. Okay. Do you understand that for 14 the motivation to combine analysis, when a 15 work is available in one field of endeavor, 16 design incentives and other market forces can 17 prompt variations of it either in the same 18 field or a different one? 19 A. I -- I don't recall the exact 20 definition of it from memory. 21 Q. Okay. But do you at least recall 22 that the teachings in one field can be	24 1 time of the '417 patent. And so you would 2 understand that that is referring to at least 3 this April 2002 date? 4 A. Okay. 5 Q. Okay. So focusing on laptops for 6 a minute, laptops at the time of the '417 7 patent were known to have, like, a clamshell 8 form factor in which the lid of the laptop 9 can be closed; is that fair? 10 A. That sounds correct, yes. 11 Q. Okay. And -- and that would be 12 almost a -- that would be a quintessential 13 form factor for laptops; wouldn't you agree? 14 A. I -- I don't have an opinion on 15 that. I would say that that particular form 16 factor was one that I recall being available 17 at the time. 18 Q. Have you ever seen a laptop that 19 didn't fold? 20 A. I'm not sure what, over the 21 years, people have called "laptops" versus 22 "netbooks" versus a bunch of other marketing

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25 1 terms, but I certainly recall the -- the 2 laptop plastic, kind of, clamshell form 3 factor. 4 Q. All right. And laptops that have 5 that clamshell form factor, they were known 6 to include some mechanism to detect whether 7 the lid was open or closed; is that correct? 8 A. I would say some of them did. I 9 don't know if there were others that operated 10 differently. 11 Q. And laptops also included 12 modems -- were known at the time of the '417 13 patent to include modems; is that fair? 14 A. Maybe you can clarify by what 15 you're referring to as "modem" here. 16 Q. What do you understand the term 17 "modem" to mean? 18 A. I would say examples would be 19 there are cellular modems or wi-fi modems or 20 Bluetooth modems. I don't know that at this 21 time frame -- I should say, I don't recall 22 when those types of things started to be	27 1 device you're -- you're purchasing. 2 Q. Okay. I'm going to share with 3 you another exhibit. It's going to be 4 Exhibit 4, which is the Belt prior art 5 reference, and feel free to open it up. 6 (Whereupon Exhibit Number 4 was 7 marked for identification.) 8 (BY MR. KATSANTONIS) 9 Q. But my question is, is the modem 10 in Belt a telephone modem? 11 A. One moment. It's changing where 12 it's downloading to. Okay. I've got Belt. 13 Well, I see Belt mentions the 14 modem, I guess, in the detailed description. 15 There's -- and I think I discuss in my 16 declaration the modem ring indicator, MDMRI; 17 and then it talks about call handling, call 18 suspended. 19 So I think that may be a form of 20 a telephone call-type modem. Yeah, column 5 21 looks like it's describing when it's 22 "actuated when an incoming telephone call
26 1 integrated into your consumer products 2 laptops versus a peripheral that you may have 3 to purchase to -- to integrate with it. 4 Q. Okay. And do you dispute that 5 Belt, which is a prior art reference in this 6 case, is a laptop that includes a modem for 7 receiving calls? 8 A. I generally recall Belt is a -- 9 discusses a laptop form factor, and there is 10 mention of calls. I'd have to go back to 11 Belt to see how he describes if that modem's 12 integrated to the device or something else, 13 but I do recall that being included in Belt. 14 Q. Okay. And with respect to 15 modems, would a "phone modem" or a "telephone 16 modem," would -- is that a known term? 17 A. I think that's fair, yes. 18 Q. And that would be one of the 19 modem -- an example of a modem that might be 20 included in a laptop at the time of the '417 21 patent? 22 A. It might be, depending on the	28 1 reaches the modem through a telephone jack." 2 Q. Okay. So if I could have you 3 pull up the '417 patent... and I'd like to 4 turn to the claims, and specifically claim 1. 5 A. Okay. 6 Q. Let me know when you're there. 7 A. I'm there. 8 Q. Okay. So claim 1 does not recite 9 a "display"; is that correct? 10 A. Let me just review quickly. 11 I don't see "display" mentioned 12 in claim 1. 13 Q. So there's -- there's no first 14 display, right? The, quote, "first display," 15 that's not a claim term, in claim 1, at 16 least? 17 A. Sure. I don't see that phrase 18 used in claim 1. 19 Q. And a, quote, "second display," 20 end quote, that's also not a claim term; is 21 that right, in claim 1? 22 A. I don't see -- I don't see that

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29 1 phrase used in claim 1. 2 Q. And those claim terms, a "first 3 display" and a "second display," those terms 4 aren't in any claim; isn't that correct? 5 A. Just give me a moment to review. 6 Q. Of course. 7 A. I don't see those -- the phrases 8 "first display" and "second display" listed 9 in these claims explicitly. 10 Q. And there's no claim that 11 explicitly requires that any display must be, 12 quote, "disposed at a position visible even 13 in the folded condition," end quote; isn't 14 that correct? 15 A. So I would answer that I haven't 16 performed claim construction on this term 17 that you're asking about or the first and 18 second display, but I don't see that phrase 19 listed or written verbatim in these claims. 20 Q. And if I'm looking at this 21 correctly, I think claim 6 is the only claim 22 that requires a display; is that fair?	31 1 in my declaration, correct. 2 Q. Okay. Now, switching gears to 3 your declaration, paragraph 20 -- I'm sorry, 4 37. 5 A. Okay. 6 Q. You do not dispute that Belt 7 discloses a mobile computer, right? 8 A. In the sense that Belt talks 9 about a laptop computer that I can pick up 10 and move around, that would be fair. 11 Q. And a POSITA would have 12 understood that the word "computer" could 13 also be referred to as a "terminal"; is that 14 right? 15 A. In terms of a different form 16 factor, it could be a -- some type of thin 17 client or terminal that -- generally 18 speaking, "computer" could be a thin client 19 or terminal that might sit on a desktop. 20 Q. What is your understanding of 21 what the term "terminal" means? 22 A. In -- in what context?
30 1 A. It does mention "further 2 comprising a display." 3 Q. And that's it; it's just that, 4 "The mobile terminal according to claim 1, 5 further comprises a display"; is that fair? 6 A. Let me take another few seconds 7 for you. 8 That -- that's right. I only see 9 the phrase "display" explicitly used in claim 10 6. 11 Q. Okay. Now I understand that, I 12 think, one of the main disputes you have is 13 regarding "mobile terminal," the claim term 14 "mobile terminal"; is that correct? 15 A. That's correct. 16 Q. Okay. And if my understanding is 17 correct, that it's your opinion that a 18 "mobile terminal" disclosed in the '417 19 patent does not encompass a laptop or a 20 notebook computer. Is that a fair 21 characterization? 22 A. That's a general characterization	32 1 Q. Generally -- in a general 2 context, in 2002, if someone referred to a 3 "terminal," what would you have understood 4 that to mean? 5 A. It has, I would say, different 6 meanings in different contexts. In the 7 mobile phone space, I mean, "mobile terminal" 8 is a phrase that's used for the -- the 9 end-user device. 10 Q. Would a "terminal" in a laptop 11 context also refer to an end-user device? 12 A. I don't recall laptops being 13 referred to as "mobile terminals." 14 Q. Did a lap -- would -- would a 15 laptop in 2002 ever be considered a terminal, 16 setting aside the word "mobile"? 17 A. I -- I don't offer an opinion on 18 that. I don't recall the universe of 19 literature out there as to how a laptop or 20 hardware components or software components of 21 it may be referred to. 22 Q. Well, you are offering opinion

33 1 that a laptop is not a mobile terminal; so, I 2 mean, wouldn't it be fair that you would have 3 to have an understanding of what is -- what a 4 laptop would be -- refer to at that time? 5 A. Correct. I mean, a laptop is 6 referred to as a "laptop" or a "laptop 7 computer," as a consumer -- I guess in 8 certain contexts, as a consumer computing 9 device. 10 Q. Okay. So is it your opinion that 11 in 2002 a POSITA would not -- would never 12 have referred to a laptop as a "terminal"? 13 A. In the context that that phrase 14 is used in the '417, that doesn't -- I don't 15 believe that's correct. 16 Q. In what context would a POSITA 17 have used -- would have referred to a laptop 18 computer as a "terminal"? 19 A. As a "terminal" alone, I don't 20 recall Dr. Baker offering opinions on that 21 that I -- that I addressed. 22 Q. Do you dispute that a laptop	35 1 of his opinions, yes, a mobile terminal. I 2 believe your question was around the word 3 "terminal." 4 Q. How does the term "mobile" impact 5 your understanding of what a -- what a 6 "terminal" may be? 7 A. That it's adding the qualifier 8 that it's something which is a terminal and 9 is mobile. 10 Q. And you're not disputing that a 11 laptop is something that is mobile, right? 12 A. In the physical context that I 13 can -- unlike a desktop computer at the time 14 that might be 20 pounds or something, with a 15 CRT that -- that's also heavy and physically 16 large, a "laptop" at the time is something I 17 could pick up and move around the office type 18 thing if needed or use on my lap, as it -- as 19 is in the name. 20 Q. And it's not limited to just 21 moving around the office. I mean, you can 22 bring a laptop anywhere, right?
34 1 could be referred to as a "terminal" in 2002? 2 A. I'm not aware of evidence in -- 3 or evidence in this matter or this -- this 4 IPR that has shown that. 5 Q. You understand that, as a POSITA, 6 you're presumed to have knowledge of all 7 relevant information at the time of the 8 patent; isn't that correct? 9 A. That's my understanding, correct. 10 Q. Did you do any investigation as 11 to whether a laptop could be considered a 12 "terminal" in -- at the time of the '417 13 patent? 14 A. Again, I don't recall Dr. Baker 15 offering an opinion around the term 16 "terminal" specifically as applied to a 17 laptop in 2002. My declaration is addressing 18 a subset of opinions that Dr. Baker offered. 19 Q. Well, you do understand that 20 Dr. Baker opines that a laptop is a mobile 21 terminal, right? 22 A. As I recall, that's -- that's one	36 1 A. That's true. 2 Q. And you -- you don't need to have 3 it in your lap; you can hold it in your 4 hands? 5 A. Right. I can walk down the 6 street with one or take it on vacation, as 7 we're probably all guilty of. 8 Q. Unfortunately. 9 And so I guess what I'm kind of 10 struggling to understand here is, you know, 11 I -- "mobile" is a modifier to the word 12 "terminal," but I don't think it really 13 impacts, based on what you just said, what a 14 terminal is at its core. 15 Is that -- would you agree with 16 that? 17 A. I would say that "mobile 18 terminal" has specific meaning in the context 19 of the '417. There are other uses of the 20 phrase "terminal" in computing or electrical 21 engineering or things like that. 22 Q. So in the context of the '417

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37 1 patent, what is a "terminal"? 2 A. It's the "mobile terminal," just 3 as described the 47 or so times it's used in 4 the specification. 5 Q. And can you put it in layman's 6 terms on how you would characterize what a 7 "terminal" is? 8 A. It's the device that's described 9 in the specification. Like in certain -- in 10 certain places it's described as being 11 foldable with the multiple displays and this 12 processor that has multiple clock rates 13 associated with it and behaviors associated 14 with how the -- the mobile terminal's being 15 used. 16 Q. Okay. And so the device -- 17 I believe that's what you said, the device 18 that's described in the specification. What 19 is the device in the '417 patent? 20 A. The -- it's largely referring to 21 this mobile terminal that's described in the 22 22 claims.	39 1 as an open position or a closed position. 2 First frequencies are described, 3 second frequencies are described, how those 4 are changed under certain use cases. So this 5 is the mobile terminal that's described in 6 the specification of the patent. 7 Q. Is it your position that the '417 8 patent defines what a "mobile terminal" is 9 and specifically that the patentee was acting 10 as a lexicographer when describing the 11 "mobile terminal"? 12 A. I don't see that the patent has a 13 section that's sort of key terms or 14 definitions, but the phrase "mobile terminal" 15 is used in the claims and is described at 16 length dozens of times throughout the 17 specification of the patent. 18 And also, I feel aligned with 19 what someone -- a person of skill, I should 20 say, would understand a "mobile terminal" to 21 be in this context. 22 Q. So the '417 patent does not
38 1 Q. Okay. I don't mean to be snarky 2 here, but, you know, it kind of seems like 3 you're giving me a circular definition of 4 that, a "mobile terminal" is what is 5 described in the '417 patent and that's what 6 a "mobile terminal" is. 7 So I'm just asking, you know, can 8 you explain to me what -- what exactly you 9 mean? What is a "mobile terminal"? 10 A. So the "mobile terminal" is 11 described in the claims. It's used -- let me 12 get the spec for you. 13 Different aspects described, such 14 as under the summary, "a mobile terminal 15 comprising clock control means capable of 16 changing the frequency of a clock signal 17 received from an oscillator under control by 18 a central processing unit," converting it to 19 different frequencies. 20 It goes on to describe in many 21 other places how the behavior of this device 22 operates, whether it's in what's referred to	40 1 explicitly define what a "mobile terminal" 2 is; is that correct? 3 A. No, that's not what I said. The 4 patent doesn't break out a key terms and 5 definitions section. It goes on -- it goes 6 on more extensively to use the phrase "mobile 7 terminal" multiple, multiple times, 8 describing various aspects of what this 9 "mobile terminal" is. 10 Q. Okay. So in the many, many times 11 that it talks about a "mobile terminal," how 12 does it describe what -- what that is, what 13 type of device? 14 A. I think that's just what we were 15 talking about. One -- one description is 16 that it's describing it as a -- in the 17 "Summary of the Invention," a mobile terminal 18 that has clock control means it's capable of 19 changing the frequency of the clock signal, 20 it has oscillators under control by a central 21 processing unit, it's converting that 22 operating frequency of the central processing

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41 1 unit to a different frequency. There's 2 various clock control means. 3 We -- it describes various 4 relationships of how, in this device, that 5 control occurs. It talks about higher 6 frequencies, and I think the phrase "low 7 frequency" is used, probably -- where am I -- 8 column 2 -- that are additional aspects of 9 how this mobile terminal operates. 10 There are -- are multiple 11 examples of things like address retrieval, 12 image decoding that are user-facing, 13 behaviors or user-facing aspects of the 14 mobile terminal that it's handling in the 15 context of a -- a human-facing user. Those 16 are just some examples. 17 Q. In the context of the '417 18 patent, could a mobile terminal have a 19 keyboard? 20 A. I don't see that it mentions 21 "keyboard," but it does mention having keys 22 or a plurality of keys.	43 1 a "laptop," for example, that Belt discloses. 2 And so is a reason why you opine 3 that Belt is not a mobile terminal -- is it 4 because -- that Belt comprises a keyboard? 5 A. I recall Belt mentions a 6 keyboard. It also talks about other things 7 associated with a laptop, like the processor 8 that it uses and the various behaviors that 9 describe what was considered a laptop 10 computer system at the time of the invention. 11 Q. And Belt discloses a laptop that 12 has a lid that can open and close, right? 13 A. As I recall, it does have this 14 lid closed, lid open functionality, that's 15 right. 16 Q. Okay. And you'd agree that the 17 '417 patent, an aspect -- a key aspect of the 18 mobile terminal that's described in the 19 patent is that it has a open and closed lid 20 feature? 21 A. It has an open and closed 22 condition, is the way it phrases it.
42 1 Q. So reading the '417 patent, would 2 you understand that a mobile terminal could 3 include a keyboard? 4 A. I don't see the phrase "keyboard" 5 used explicitly or being a phrase that was -- 6 I don't think it's in the claims or a term 7 that was construed. It looks like it's 8 describing at least having a key-press-type 9 user face or user input. 10 Q. Okay. So you offer an opinion 11 about what "mobile terminal" means, right? 12 A. I think that's roughly what we 13 were just discussing in the context of the 14 patent. 15 Q. And you also have an opinion that 16 Belt is not a mobile terminal, right? 17 A. In the -- yes, in the context of 18 the patent in my -- what I discuss in my 19 declaration. 20 Q. So I'm just trying to figure out, 21 you know, what falls in the -- what falls in 22 the definition of a "mobile terminal" versus	44 1 Q. And that open and closed 2 condition can relate to a clamshell form 3 factor, right? 4 A. I think in the context of the 5 patent, it's talking about simply just the 6 device being in what's called an open 7 condition and a closed condition. I don't 8 see that it uses phrases like "a lid" or "a 9 clamshell." 10 Q. But it does have a foldable 11 structure. The patent does describe, the 12 '417, "mobile terminal" as having a foldable 13 structure; isn't that right? 14 A. That -- it looks like in at least 15 in one embodiment -- let me kind of get a 16 specific place for you here. 17 In column 5, for example, in 18 Figure 4, it talks about, roughly line 28, 19 "Figure 4 is a block diagram showing the 20 internal configuration of the cellular phone 21 of a folded structure." 22 So here it talks about something

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45 1 that may be folded, at least in this 2 embodiment. That looks like that's the 3 fourth embodiment. 4 Q. Okay. And a "folded structure" 5 is the same as a "clamshell form factor"; is 6 that fair? 7 A. I haven't offered an opinion on 8 that. 9 Q. Are you disputing that a 10 clamshell form factor has a foldable -- is a 11 foldable structure? 12 A. As I recall at this time, it's a 13 device that's got a physical hinge there. 14 You can close the two. There are a lot of 15 ways that probably both of those conditions 16 are described in the various references, 17 though. 18 Q. So you can fold closed a laptop 19 computer? 20 A. In a physical sense, yes. I -- 21 at the time I could have a laptop where I 22 take that top piece and bend it down, and it	47 1 Q. Okay. So we have -- in paragraph 2 41 of your declaration, there is -- for 3 example, you talk about Belt as including a 4 hard disk drive, a floppy disk drive, a main 5 memory, and you say, "and numerous other 6 conventional personal computer peripherals"; 7 is that correct? 8 A. That's correct. 9 Q. Okay. And so my question is, of 10 these components, is it your position that 11 these would not be found in a mobile terminal 12 as described in the '417 patent? 13 A. That the -- you wouldn't be using 14 an Intel 386SL processor. You wouldn't have 15 a spinning hard disk drive. I'm not aware of 16 phones that had floppy -- or mobile terminals 17 that had floppy disk drives, the main memory 18 being what would have been -- at the time 19 been a -- a main RAM or DRAM style memory. 20 Those are things that are 21 associated with personal computers, 22 laptop-type computers, and the peripherals
46 1 joins or lays flat on top of the bottom 2 piece. 3 Q. Is there a way that a foldable 4 structure can be interpreted in a nonphysical 5 sense? 6 A. I think this embodiment 4 in the 7 patent, when it talks about "folded," is 8 talking about a folded structure. So it may 9 be that same physical -- physical use of the 10 term "folded." 11 Q. Is a reason why you opine that 12 Belt does not disclose a mobile terminal is 13 because Belt includes a video controller? 14 A. I don't recall saying that 15 specifically. I don't recall talking about 16 video controllers. Maybe you could point me 17 to where I do. 18 One moment. It looks like I talk 19 about video controllers, I guess, in my 20 paragraph 41 and 42, talking about aspects of 21 things that are included in what are 22 conventional laptop personal computers.	48 1 that are included in them. 2 Q. What about PC card slots? Would 3 PC card slots be something that would be 4 included in what is described as the "mobile 5 terminal" in the '417 patent? 6 A. I don't recall the patent talking 7 about that. 8 Q. So if a device -- if you're 9 looking at a device that had PC card slots, 10 would you consider that -- let me -- strike 11 that. 12 A POSITA reading the '417 patent, 13 would they understand -- would they have 14 understood that a mobile terminal could 15 include PC card slots? 16 A. I'd have to go back and look at 17 the full language of the patent for you. 18 That term "PC card slots" or "PCI" or 19 something like that, at the time of the 20 patent, sounds like something that would be 21 associated with a personal computer. 22 There were a lot of different

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49 1 form factors that might be considered PC card 2 slots, but that sounds like something, 3 sitting here right now, associated with a 4 personal computer. 5 Q. And because it's associated with 6 something that's a personal computer, it's 7 your -- would it be safe -- would it be fair 8 to say that you would not consider that to be 9 a mobile terminal? 10 A. I don't offer an opinion on PC 11 card slots in my declaration, that I recall. 12 Q. Okay. Based on your 13 understanding of what a mobile terminal is, 14 would you understand that to include a 15 printer, for example? 16 A. I don't -- that's not something I 17 talk about, either, in my declaration. 18 Printers at the time, I think, were generally 19 considered peripheral-type devices. 20 Q. So if a device had an integrated 21 printer, would you consider that a mobile 22 terminal?	51 1 Q. Is it your position that if it -- 2 what makes it a mobile terminal, as described 3 in the '417 patent, is that it practices each 4 limitation that's claimed in the '417 patent? 5 A. I would say if it's something 6 that -- an example would be a -- an example 7 of a mobile terminal, as described in the 8 patent -- one example might be something 9 meeting the claim limitations in independent 10 claim 1. 11 Q. So if you have a laptop computer, 12 that meets every single limitation of claim 13 1, would you consider that to be a mobile 14 terminal? 15 A. Yeah, I would say, more broadly, 16 if there's a device that meets all of the 17 limitations of claim 1, it sounds like 18 something that would practice the mobile 19 device of claim 1. 20 Q. Well, I'm not asking about 21 something more broadly, I'm asking 22 specifically, if a laptop computer practiced
50 1 A. I'd have to go look at what that 2 device was in the context of the language of 3 the '417 patent. 4 Q. If a device had an integrated 5 computer, what about that device would lead 6 you to the conclusion that it was or was not 7 a mobile terminal? 8 A. I think your question was an 9 integrated computer, and I'm not -- I'm not 10 sure what you meant by that. 11 Q. I'm sorry, integrated printer. 12 A. I guess I would have to look at 13 that -- the device you're describing here 14 that's -- as you describe, it has an 15 integrated printer, and look at the various 16 aspects of that device as to whether it fell 17 in line with the descriptions offered in the 18 '417. 19 Q. Let's assume for a minute we're 20 talking about a device that is portable, 21 mobile, right? You can take it with you. 22 A. Okay.	52 1 every limitation of claim 1, would you 2 consider that to be a mobile terminal? 3 A. I'll give you a similar answer: 4 If there's a device that practices all the 5 limitations of claim 1, that would be the 6 mobile terminal of claim 1. If this was a 7 physical device that someone was selling and 8 they marketed it or put the name "laptop" on 9 it, I guess that would be a marketing 10 decision. 11 Q. If you have a laptop computer 12 that practices each limitation of claim 1, 13 what about that laptop -- what feature of 14 that laptop would change your opinion as to 15 whether it is or is not a mobile terminal? 16 A. Whether or not it meets the 17 mobile terminal as described in the claims of 18 the patent. It sounds like you're describing 19 a hypothetical laptop, but I don't think 20 anyone -- or Dr. Baker has described in his 21 -- or offered opinions on it in his 22 declaration.

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53 1 Q. Well, I -- so as I understand it, 2 your claim construction position regarding a 3 mobile terminal is that a laptop cannot be -- 4 cannot be a mobile terminal; isn't that fair? 5 A. At least the -- the laptop in the 6 prior art references that Dr. Baker offered 7 isn't the mobile terminal that's being 8 described in the patents, as I understand it. 9 Q. Taking the claim language out of 10 play for a moment, if you look at the '417 11 patent as a POSITA, it says "mobile 12 terminal." Would a laptop fit what is 13 described as a "mobile terminal" in the '417 14 patent? 15 A. This sounds like a hypothetical, 16 taking the patent, removing the claims, and 17 then trying to map the specification to some 18 hypothetical device that's called a "laptop," 19 and -- quote/unquote. That's not an exercise 20 I performed. 21 The reference to "laptop" that I 22 talk about in my declaration is very specific	55 1 examples of the mobile terminal described in 2 the specification of the patent. 3 Q. And the specification is -- 4 describes a -- features of a mobile terminal 5 broader than what is claimed; isn't that 6 correct? 7 A. I would say that's my general 8 understanding. There may be other claimable 9 mobile terminals within the specification of 10 the patent. 11 Q. Can you give me examples of what 12 other types of mobile terminals that are 13 described within the specification of the 14 patent? 15 A. I haven't done that analysis. 16 Q. So I'm a bit confused by that 17 because you -- you clearly, in your 18 declaration, opine about what is and what is 19 not a mobile terminal. And so wouldn't you 20 have to have an understanding of the types of 21 mobile terminals that are described in the 22 specification if you're offering a
54 1 to prior art references that Dr. Baker 2 offered specific opinions on and my 3 disagreement with those opinions. 4 Q. Okay. So you -- well, I note 5 that we've been going close to an hour. 6 Would you like to take a short break? 7 A. Sure. 8 MR. KATSANTONIS: All right. 9 We can go off the record. 10 (Break taken from 10:09 a.m. 11 to, 10:20 a.m.) 12 (BY MR. KATSANTONIS) 13 Q. Welcome back, Dr. Brogioli. 14 So a moment ago we were talking 15 about your understanding of the term "mobile 16 terminal" in the context of the '417 patent. 17 And based on what your testimony was, I just 18 want to make sure I understand you correctly. 19 Is it your position that the 20 claims of the '417 patent define what a 21 "mobile terminal" is? 22 A. I'd say each of the claims give	56 1 construction for that term? 2 A. Right. I'm describing the 3 aspects of the mobile terminal as described 4 in the patent and the specification -- or the 5 claims and the specification, and then I'm 6 offering opinions in regard to certain 7 opinions Dr. Baker offered. 8 As to whether there may be 9 additional claimable mobile terminals within 10 the specification of the patent that could be 11 claimed in the future, my understanding is 12 something like a continuation. I haven't 13 done an analysis or offered additional claims 14 to submit to the USPTO, for example. 15 Q. Had the patentee of the '417 16 claimed a mobile terminal that is a laptop, 17 would you find that to be supported by the 18 specification? 19 A. I'd have to go back and look at 20 that. I guess if -- I think we touched upon 21 this before: If someone builds a device that 22 practices claim 1, for example, and call --

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57 1 calls it a laptop, if it's meeting the 2 limitations of the claims, it's meeting the 3 limitations of the claims. 4 Q. Aside from marketing-speak, you 5 know, terminology, how would you define a 6 "laptop"? 7 A. It's just as I described in my 8 declaration; various aspects of it, such as 9 hard disk drives, floppy drives, and so forth 10 that are aspects of what a POSITA would 11 understand to be a laptop versus what's 12 described as the mobile terminal of the 13 patent. 14 Q. So is it your position that the 15 components that are commonly understood to be 16 included in a laptop are not components that 17 can be included in the mobile terminal that's 18 described in the '417 patent? 19 A. I'm giving examples of 20 differences. There are probably examples of 21 similarities. They may both have a battery, 22 for example.	59 1 be construed in accordance with the intrinsic 2 record to mean a cellular phone, not a laptop 3 computer." 4 Do you see that? 5 A. I do. 6 Q. Okay. And is your interpretation 7 that a "mobile terminal" means a cellular 8 phone, is that the plain and ordinary meaning 9 of the term "mobile terminal"? 10 A. It sounds like, as we talked 11 about earlier, a POSITA would take the term 12 "mobile terminal" that may be used in other 13 contexts within various industries; but in 14 light of the specification and how it's 15 described, explicitly the specification talks 16 about cellular phones and various other 17 aspects of cellular phones in the mobile 18 terminal in the patent. 19 Q. I understand that it explicitly 20 references a cellular phone, but does it 21 explicitly define "mobile terminal" as a 22 cellular phone?
58 1 Q. Okay. So if -- hypothetically, 2 if a cell phone had a spinning hard disk, 3 would you say that makes it no longer a 4 mobile terminal? 5 A. Not necessarily. 6 Q. Okay. I'd like to direct your 7 attention to Section V of your report. I 8 believe it starts at the bottom of Page 11 is 9 where the header is. Paragraph 26, if that 10 helps. It's a start. 11 A. Okay. 12 Q. And this Section V is your claim 13 construction opinion with respect to the 14 mobile terminal; is that correct? 15 A. That looks correct. 16 Q. This section regarding claim 17 construction contains all your analyses and 18 opinions regarding your interpretation of 19 "mobile terminal"; is that correct? 20 A. That sounds to be correct, yes. 21 Q. Okay. So looking at paragraph 22 26, you say that a "mobile terminal" should	60 1 A. As I was answering earlier this 2 morning, I -- there isn't an index of 3 definitions that explicitly says, quote, 4 "mobile terminal" is, quote, "cellular 5 phone." 6 Q. Okay. And likewise, there is 7 nothing in the '417 patent that says, as used 8 herein, a mobile terminal is a cellular 9 phone? 10 A. I don't recall that. 11 Q. Okay. 12 A. I don't recall that quote from 13 memory in the specification one way or the 14 other. 15 Q. Okay. So in the context of the 16 '417, is your construction that the plain and 17 ordinary meaning -- strike that. 18 In the context of the '417 19 patent, is your construction that a mobile 20 terminal is a cellular phone, is that the 21 plain and ordinary meaning, yes or no? 22 A. I don't recall either party

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61 1 saying that "mobile terminal" was construed 2 to have plain and ordinary meaning. Maybe 3 you can refresh me if – if that was Samsung 4 or Dr. Baker's position. 5 I'm defining the mobile terminal 6 as being construed as a cellular phone based 7 on the language and repeated recitation in 8 the specification. 9 Q. You understand that claim terms 10 are afforded their plain and ordinary meaning 11 unless there is some reason not to do so, 12 right? 13 A. That's my general understanding, 14 yes. 15 Q. And one of those reasons could be 16 that there's a definition in the patent that 17 explicitly limits the meaning of a claim 18 term, right? 19 A. That's my general understanding; 20 someone can take a term and define it in 21 their own way to use it. 22 Q. And I think we established that	63 1 usually listed that way, or I say "plain and 2 ordinary meaning." 3 I forget from memory exactly what 4 Dr. Baker had said. I'm offering my opinion 5 that in the context – construing this term 6 in the context of the patent, it should mean 7 a cellular phone. 8 Q. Okay. So your construction of a 9 mobile terminal that means a cellular phone, 10 that is not the plain and ordinary meaning 11 for "mobile terminal"? 12 A. I don't offer a plain and 13 ordinary meaning. What I'm offering is what 14 the construction should be in the context of 15 the patent specification. 16 Q. Okay. I want to make sure that 17 we're not talking past each other here. 18 So I think we established a 19 moment ago that unless there's some legal 20 basis for limiting a claim term, a claim term 21 should be afforded its plain and ordinary 22 meaning.
62 1 the '417 patent does not define "mobile 2 terminal" in any way? 3 A. Right. There's not a definition 4 that says mobile terminal equals X; it's sort 5 of a one line key of terms. 6 Q. Okay. So unless I'm missing 7 something, I don't see anywhere in your 8 declaration or from what you just said right 9 now that "mobile terminal" is something 10 narrower than its plain and ordinary meaning; 11 is that correct? 12 A. What I'm saying is that "mobile 13 terminal," based on the specification, should 14 be construed to be a cellular phone, as it's 15 described at length in the specification. 16 Q. Okay. And so in the context of 17 the '417 patent, is it your position that the 18 plain and ordinary meaning of "mobile 19 terminal" is a cellular phone? 20 A. I don't recall – usually in a 21 claim construction, if I – I'm saying a term 22 has its plain and ordinary meaning, it's	64 1 And so what I'm asking you is 2 your construction for "mobile terminal," is 3 that the plain and ordinary meaning, which is 4 a cellular phone, or are you saying that 5 "mobile terminal" is not afforded its plain 6 and ordinary meaning and is specific to -- it 7 specifically means a cellular phone? 8 A. Can I – maybe I'm a bit 9 confused. Can I hear your question again? 10 Q. So how I -- how I understood your 11 claim construction opinion -- feel free to 12 correct me -- was that the mobile terminal in 13 the context of a -- of the '417 patent has 14 its plain and ordinary meaning and that plain 15 and ordinary meaning is a cellular phone. Is 16 that incorrect? 17 A. That -- this phrase, "mobile 18 terminal," when looking through the 19 specification, should be construed to mean 20 cell phone because the specification talks at 21 length about cell phone and aspects of cell 22 phones and doesn't refer to things like

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65 1 Dr. Baker had opined on, will be -- what 2 would be understood as a laptop at this point 3 in time or the time frame of the patent. 4 Q. Okay. So is your construction 5 that a mobile terminal is a cellular phone, 6 is that narrower than what a POSITA would 7 have understood the plain and ordinary 8 meaning of "mobile terminal" to be? 9 A. I would say devoid of the patent, 10 if I said to a POSITA the phrase "mobile 11 terminal," they might have different 12 understandings depending on different 13 contexts; but as I was saying earlier, when 14 looking at the phrase "mobile terminal" in 15 the context of the patent, it should be 16 construed to mean cell phone or cellular 17 phone. 18 Q. When looking at the phrase 19 "mobile terminal" in the context of the 20 patent, is the plain and ordinary meaning of 21 "mobile terminal" a cellular phone? 22 A. I would say when looking in the	67 1 the repeated mention of "cellular phone," as 2 well as other aspects of how the cellular 3 phone and technology are described in the 4 specification as a whole. 5 Q. So the phrase "plain and ordinary 6 meaning," that does not appear in your claim 7 construction opinions and analyses; is that 8 correct? 9 A. That's -- that sounds correct. I 10 believe the plain and ordinary meaning was 11 what Dr. Baker had offered as a construction. 12 Q. Okay. And so you're not offering 13 an opinion on what the plain and ordinary 14 meaning of "mobile terminal" is in the 15 context of the '417 patent; is that fair? 16 A. I guess I would -- I'm not quite 17 sure -- my understanding is there's plain and 18 ordinary meaning of a term, and then there's, 19 in this case, my offering what the 20 construction should be in the context of the 21 patent. 22 And so my answer is that the term
66 1 context of the patent, that the phrase 2 "mobile terminal" should be construed to be 3 cellular phone. I didn't say that "mobile 4 terminal" should be given its plain and 5 ordinary meaning. 6 Q. Okay. So are you saying that in 7 the context of the '417 patent, the plain and 8 ordinary meaning of a "mobile terminal" is 9 not limited to a cellular phone? 10 A. I don't recall saying the phrase, 11 mobile terminal is to be given its plain and 12 ordinary meaning. I'm saying that the phrase 13 "mobile terminal" should be construed to be 14 cellular phone in the context of the patent. 15 Q. Is your basis for limiting 16 "mobile terminal" to a cellular phone only 17 because the patent repeatedly refers to a 18 "cellular phone"? 19 A. I would say my construction -- or 20 sorry, my opinion that it -- the phrase 21 "mobile terminal should be construed to be 22 cellular phone" is taken in the context of	68 1 "mobile terminal" should be construed to be 2 cellular phone. 3 Q. And your construction is 4 something different than the plain and 5 ordinary meaning of "mobile terminal" iconics 6 of the '417 patent? 7 A. I would say it's a construction 8 that I offer that is different from a plain 9 and ordinary meaning. 10 Q. Did you come up with that 11 definition yourself? 12 A. Which -- I'm not supposed to ask 13 a question. I'm unclear on which definition 14 you're referring to. 15 Q. Your definition of "mobile 16 terminal," did you come up with that 17 yourself? 18 A. I'm offering that construction 19 based on reviewing the -- the patent and 20 specification in light of what a person of 21 skill would understand at the time of the 22 patent.

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69 1 Q. Okay. I'd like to understand a 2 little bit more of your methodology in 3 reaching that opinion. 4 Can you -- can you kind of walk 5 me through how you went about understanding 6 what "mobile terminal" meant in the context 7 of the '417 patent? 8 A. So I reviewed the patent, the 9 specification, and the claims and saw that 10 Dr. Baker had offered, in the context of this 11 patent, the -- his construction of "mobile 12 terminal." 13 And I went back and reviewed the 14 specification and came to -- in light of what 15 a person of skill would understand at this 16 time and offered that the term should be the 17 construction of cellular phone based on the 18 disclosure and the specification of the 19 patent. 20 Q. So I understand that you have 21 provided a declaration in support of Patent 22 Owner's response, but are you aware that	71 1 declaration. 2 Q. And I believe earlier you 3 testified that you had some conversation with 4 counsel about, I guess, the high level 5 contents of what was in the response prior to 6 you starting work on the -- your declaration; 7 is that right? 8 A. I would phrase it that the first 9 meeting was -- after having looked at 10 Dr. Baker's declaration, counsel asking me 11 not to -- you know, I don't -- don't 12 necessarily have to address everything in his 13 declaration. We're interested in a couple of 14 key -- a couple of the opinions that he's 15 offering and getting my thoughts on those, 16 and those are reflected in the declaration. 17 Q. And so was one of the things that 18 counsel was interested in getting your 19 opinion on regarding that a mobile terminal 20 is not a laptop? 21 A. I would say since I offer an 22 opinion on the construction of "mobile
70 1 Patent Owner had previously filed a 2 preliminary response to the petition? 3 A. I don't know if I -- I don't 4 remember if I was aware of that. I -- in 5 prior matters, I'm aware that that's 6 something the Patent Owner does. I don't 7 know if I've seen that or not. 8 Q. So you didn't help draft the 9 preliminary Patent Owner response, right? 10 A. Not that I remember, no. I 11 don't -- I guess, to add to that, I'm not 12 sure I would know when that would have been 13 anyhow. 14 Q. In preparation of drafting your 15 declaration, was the construction that a 16 mobile terminal is a cellular phone, was that 17 provided to you? 18 A. Not that I remember, no. I think 19 in preparing this declaration, I think I was 20 given the patent and Dr. Baker's declaration 21 and -- and probably -- excuse me, probably 22 the references that Dr. Baker had in his	72 1 terminal," they would have asked for my 2 thoughts and opinions regarding that phrase 3 or that term within the claims of the patent. 4 Q. Okay. So -- so when you started 5 forming your opinions regarding the meaning 6 of "mobile terminal," you reviewed the 7 specification and you reviewed the claims. 8 Did you review anything else? 9 A. I don't remember, and I don't 10 think I cite to any in my declaration, any 11 outside materials or what's called extrinsic 12 evidence. I believe I just looked at the -- 13 the patent itself. 14 Q. Did you look at the prosecution 15 history? 16 A. I looked at the prosecution 17 history in this matter. I don't remember 18 specifically one way or the other if I looked 19 at it in conjunction with thinking about this 20 term or not. 21 I -- I think I would have 22 mentioned that if I did. I think I looked at

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73 1 the patent itself. 2 Q. Okay. So let's look at paragraph 3 24 of your report -- or declaration, 4 apologies. 5 A. Okay. 6 Q. Okay. And you're discussing here 7 the prosecution history and how it confirms 8 the, you know, importance of "the 9 closed-condition frequency control to the 10 patentability of the claims"; is that 11 correct? You say, "the criticality of the 12 closed-condition frequency control"? 13 A. That's right. I'm pointing to 14 things that were in the prosecution history, 15 at least with regard to this -- what ended up 16 being the limitation [1d]. 17 Q. Okay. So this limitation [1d], 18 could that be practiced by a laptop computer? 19 A. I haven't offered an opinion as 20 to claim limitation [1d] itself, outside of 21 claim 1 as a whole, could or couldn't be 22 practiced by perhaps what Dr. -- Dr. Baker's	75 1 "laptops" -- I mean, the market was 2 absolutely on fire selling these things, and 3 again, what were known as "laptops" to 4 consumers and -- and so you need to ask a 5 more specific example. 6 I have only addressed the limited 7 subset of opinions that Dr. Baker has offered 8 regarding what is referred to in select prior 9 art references as a "laptop." 10 Q. Okay. So I'm going to disagree 11 that you don't have an opinion on whether a 12 laptop is categorically not the claimed 13 "mobile terminal" and -- because I'm 14 reading -- paragraph 26 of your declaration 15 says, "'mobile terminal' should be construed 16 in accordance with the intrinsic record to 17 mean a cellular phone," comma, quote, "not a 18 laptop computer." 19 So can you help square this for 20 me? What do you mean when you say "not a 21 laptop computer"? How is that different than 22 what you're calling a cellular phone?
74 1 prior art references talk about as a laptop 2 or some other device that may be called 3 "laptop." 4 Q. So is your position regarding 5 Dr. Baker's opinion regarding a laptop 6 limited to the laptops described in the Belt 7 and Foster references? 8 A. I certainly address the laptop of 9 Belt and Foster -- or what's called "the 10 laptop" in Belt and Foster and some of the 11 opinions of Dr. Baker's. I don't remember 12 the universe of ways that he may or may not 13 have talked about "laptop" in his 14 declaration. 15 Q. Okay. So is it your opinion 16 that, you know, categorically, in no way, 17 shape, or form a laptop can be considered a 18 claimed "mobile terminal"? 19 A. I don't have an opinion on that. 20 When you say a "laptop," that just seems to 21 be a nebulous term. We're talking about a 22 time frame where things that were called	76 1 A. So I'm talking about aspects of a 2 cellular phone versus a laptop in a couple of 3 paragraphs we talked about earlier and 4 characteristics of those. 5 My understanding of your question 6 was anything that may just be called a 7 laptop. If we want to talk about the laptop 8 that I'm talking about in my declaration, 9 I've listed key differences throughout the -- 10 the declaration as to aspects between the 11 mobile terminal of the patent and what would 12 have been known as a laptop. 13 Q. Okay. So can you please walk me 14 through what are those key differences 15 between what you describe as a laptop 16 computer and what is a cellular phone as 17 described in the '417 patent? 18 A. I'd have to go back to the 19 paragraph we -- or the paragraphs we were 20 discussing earlier, but aspects were 21 peripheral hard drives, the main memory 22 system, other types of components of what

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77 1 were then known as laptop -- laptop 2 computers, the -- the specific processor 3 that's referenced in the various prior art 4 references, or other processors that were 5 known to be used in laptops that just weren't 6 aspects of -- of cellular phones at the time. 7 Q. What do you mean by "peripheral 8 hard drives"? 9 A. Peripherals, like a hard drive, 10 like a spinning -- sorry. I think I said 11 "peripherals" or things like a spinning disk 12 hard drive, for example, are aspects of what 13 were known to be laptops at the time. 14 Q. You do not provide a definition 15 of "laptop"; is that fair? 16 A. I provide characterizations of 17 laptops. I don't provide, I think, a 18 quote/unquote "definition" of "laptop." I 19 don't believe Dr. Baker did that I would have 20 been responding to. 21 Q. Were teachings regarding 22 processors typically found in notebook	79 1 A. I would say a laptop computer 2 that -- or something called a "laptop" falls 3 within the scope of claim 1, and the patent 4 has certain aspects of how power is managed 5 to it that are not present in the laptops 6 pointed to by Dr. Baker. 7 Q. I just want to make sure -- you 8 did break up a little bit there, so I just 9 want to make sure I understood this 10 correctly. 11 A laptop computer, or what is 12 called a laptop computer that falls within 13 the scope of the claims, would not be 14 considered a mobile terminal? 15 A. I think I was saying if there was 16 a device called a laptop not falling within 17 the scope of the claims, that doesn't sound 18 like the mobile terminal that's described in 19 the patent. 20 I don't recall Dr. Baker offering 21 a definition of "laptop" that I would have 22 either agreed with or offered a different
78 1 computers applicable to cellular-phone-based 2 processors? 3 A. There may have been aspects of 4 processors for, I think you had said notebook 5 computers, that may or may not have been 6 applicable to what we were doing in the 7 mobile or the cell phone processor space at 8 that time. 9 Q. Are the power management 10 techniques disclosed in the '417 patent 11 applicable to laptop computers? 12 A. I haven't seen prior art in this 13 matter that encompass those power management 14 techniques. 15 Q. Well, that's not exactly what I'm 16 asking. I'm asking if the power management 17 techniques disclosed in the '417 patent are 18 applicable to laptop computers. 19 A. I haven't done that analysis. 20 Q. Sitting here now, can you define 21 laptop computer that is excluded from your 22 construction of a mobile terminal?	80 1 opinion on. 2 Q. So I guess what I'm just trying 3 to figure out is -- you know, I understand 4 your opinion that the claims the mobile 5 terminal is a cellular phone, not a laptop 6 computer, and I'm just trying to figure out 7 at what point do you start saying, you know, 8 a laptop or what is called a laptop does or 9 would meet the definition, your definition, 10 of a "mobile terminal"? 11 A. I haven't done that 12 line-in-the-sand analysis. That, to me, 13 sounds like something that would have fallen 14 on Dr. Baker's plate to the extent he's 15 pointing to prior art that call things a 16 laptop that he feels meet the limitations of 17 the claims, at least when combined. 18 Q. If the Board were to find that 19 "mobile terminal" should be afforded its 20 plain and ordinary meaning and encompasses 21 laptop computers, would that impact your 22 opinion regarding whether Belt's -- whether

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81 1 the prior art combinations discussed in 2 Dr. Baker's report invalidates the claims of 3 the '417 patent? 4 A. I don't believe so because the -- 5 as I talk about later in my declaration, the 6 combinations of references that Dr. Baker 7 points to still don't have or still don't 8 embody what's described in the claims. 9 Q. Okay. So the '417 patent claims 10 a mobile terminal, correct? 11 A. That's correct. 12 Q. And in the specification, you 13 make note of the fact that the specification 14 uses the term "cellular phone" repeatedly 15 throughout; is that right? 16 A. That's correct. 17 Q. Okay. And at no point does the 18 patent specifically say a mobile terminal is 19 a cellular phone, right? 20 A. In that verbatim language, I 21 don't believe it does. 22 Q. Okay. So just so we're on the	83 1 described in my declaration, of -- of 2 characteristics of the cellular phone and the 3 device described in the specification. 4 Q. Okay. Now, in understanding the 5 meaning of a term, would you agree that it's 6 important to analyze each instance in which 7 the claim term appears in the specification? 8 A. That sounds right. If I'm -- if 9 I'm looking at a specific term in the claims, 10 I'm going to see, you know, how that term's 11 used in the specification and consider the 12 specification as a whole. 13 Q. Okay. And I note in your report 14 that you say that there's about 46 times the 15 '417 patent discusses cellular phone; is that 16 correct? 17 A. I think it's 47, yes. 18 Q. Okay. And in each instance, the 19 '417 patent references "cellular phone" as an 20 embodiment; is that correct? 21 A. Some of the references to the 22 phrase "cellular phone" are in describing the
82 1 same page, there's no explicit definitional 2 language equating a mobile terminal to a 3 cellular phone in the '417 patent, right? 4 A. I don't see a sentence that 5 states "a mobile terminal is a cellular 6 phone," quote/unquote. 7 Q. And you're not providing an 8 opinion that the patentee acted as a 9 lexicographer and explicitly defined "mobile 10 terminal" as a cellular phone, right? 11 A. I would say that if I'm 12 understanding that question right, there's 13 no, quote/unquote, sentence that says, "a 14 mobile phone is a cellular phone," end quote. 15 Q. Okay. And so your basis for 16 saying that a mobile terminal should be 17 construed as a cellular phone is based 18 entirely on the fact that the specification 19 repeatedly refers to a "cellular phone"; is 20 that fair? 21 A. That the specification refers to 22 "cellular phone" and other aspects, as I	84 1 various embodiments. I think there might be 2 four embodiments in the patent. The phrase 3 may be used in other -- in other places. I 4 don't remember. 5 Q. Okay. And when discussing a 6 cellular phone, the patent is also not 7 referring to a mobile terminal. As said 8 differently, the term "mobile terminal" 9 doesn't appear near the words "cellular 10 phone" when discussing the embodiments in the 11 specification; is that correct? 12 A. Let me just do a quick look for 13 you. 14 Q. Feel free to do so. 15 A. So it looks like "mobile 16 terminal" is used in the title, top of column 17 1, okay, "Background of the Invention," and 18 then as a term in the claims, as we've been 19 discussing and the -- at length, use of the 20 phrase or reference to "cellular phone" 21 throughout the embodiments in the 22 specification.

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85 1 Q. Okay. And the background of the 2 invention that you mentioned, that's part of 3 the intrinsic record, right? 4 A. That's my understanding. 5 Q. And, in fact, you relied on at 6 least a portion of the background of the 7 invention in rendering your opinion that a 8 mobile terminal is a cellular phone; is that 9 right? 10 A. I think that sounds correct, yes. 11 Q. Okay. And that's column 1, lines 12 15 through 16? And I'm specifically 13 referring to paragraph 27 of your 14 declaration. 15 A. Thanks. That looks correct, yes. 16 I refer to the background section from the 17 patent, lines -- sorry, column 1, lines 15 to 18 16. 19 Q. Okay. Now, immediately below 20 that, there is the term "mobile terminal" in 21 the "Background of the Invention," column 1, 22 lines 17 through 20.	87 1 the side of an application program" running 2 in the device. 3 Q. Okay. And, in fact, it says that 4 Kitazawa discloses the "mobile terminal, for 5 switching the frequency of a clock signal 6 delivered from one side of an application 7 program," right? 8 A. That seems to be what it's 9 indicating. 10 Q. Okay. Did you review Kitazawa? 11 A. I don't remember specifically. 12 Q. Okay. And your declaration 13 doesn't discuss Kitazawa; isn't that right? 14 A. I don't recall discussing 15 Kitazawa specifically. 16 Q. Okay. And so Kitazawa providing 17 an example of what a disclosed mobile 18 terminal -- strike that. 19 Why did you not consider or 20 discuss Kitazawa when forming your opinion on 21 what the meaning of "mobile terminal" is? 22 A. I don't remember if I reviewed
86 1 A. I see that, yes. 2 Q. And -- 3 A. It looks like it's talking about 4 a mobile terminal in reference to what looks 5 like a Japanese reference. 6 Q. Okay. So I'll represent to you 7 that this Japanese reference, 73237/1999, the 8 inventor of that reference is called 9 Kitazawa; so, you know, I'll ask you some 10 questions. If I refer to "Kitazawa," will 11 you understand that I'm referring to this 12 Japanese patent at column 1, line 19? 13 A. Okay. 14 Q. Okay. So would you agree that 15 this portion of the specification, column 1, 16 lines 17 through 20, is stating that Kitazawa 17 provides an example of what the '417 patent 18 means by a "mobile terminal"? 19 A. It looks like this sentence is 20 saying Kitazawa is -- is an example of a 21 mobile terminal that can switch "the 22 frequency of a clock signal delivered from	88 1 Kitazawa or not. It -- I discuss the mobile 2 terminal in the context of the specification. 3 I don't recall that I went through or 4 explicitly cited to the few references cited 5 in the "Background of the Invention." 6 They may have aligned with 7 everything else that I discussed in the 8 context of the specification. I just don't 9 remember citing to them specifically. 10 Q. Okay. So I think, setting aside 11 the claims, there are three instances in 12 which "mobile terminal" is used in the 13 specification: The title, at the top of 14 column 1, and the disclosure that we were 15 just referencing at column 1, line 21 -- or 16 excuse me, 17 through 20; isn't that right? 17 A. For that -- for the phrase 18 verbatim, that looks correct. 19 Q. Okay. And what is claimed is a 20 mobile terminal, right? 21 A. That's correct. 22 Q. Okay. And so you -- you didn't

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89 1 look at the one instance in the specification 2 that tells a POSITA what a mobile terminal 3 is; isn't that right? 4 A. I disagree. I may have reviewed 5 the one or two references here in the 6 "Background of the Invention" section, and it 7 looks like those are giving examples, or at 8 least according to the language, of what is 9 referred to as a dot, dot, dot "mobile 10 terminal" or flavor of one. 11 The specification goes on at 12 length to further describe what this mobile 13 terminal comprises. I'd be happy to look at 14 Kitazawa or the next one down, I guess, at 15 line 21, as well, if you'd like to. 16 Q. Okay. So in forming your opinion 17 regarding your construction of a mobile 18 terminal, you did not consider the disclosure 19 of Kitazawa; is that fair? 20 A. No. I reviewed the specification 21 and -- and may have -- or probably looked at 22 these references, as well. I didn't go	91 1 specification, I would have mentioned that. 2 And also, I don't recall 3 Dr. Baker addressing the Kitazawa reference 4 in his construction either. 5 Q. Sitting here today -- sorry? 6 A. I was going to say, just -- I 7 don't recall him referencing it explicitly. 8 Q. And you certainly don't reference 9 or discuss Kitazawa in your declaration; 10 isn't that correct? 11 A. That sounds correct, yes. 12 Q. And, in fact, you don't cite 13 column 1, lines 17 through 20, in your 14 declaration in support of your claim 15 construction position; isn't that right? 16 A. I don't see that I cite that 17 section in my -- pardon me -- in my claim 18 construction section. 19 Q. Okay. Sitting here -- 20 A. 17 to 20, I think you said, 21 that's correct. 22 Q. Okay. And sitting here today, do
90 1 piece-by-piece, characterizing every 2 reference cited in the patent. 3 You know, I note on the first 4 page, as is customary, there are a number of 5 other references listed. I didn't go through 6 each and every one of those to see language 7 that was used or not used. 8 Again, I characterized and offer 9 my construction of "mobile terminal" based on 10 the specification. 11 Q. Okay. And part of the 12 specification is this reference to Kitazawa 13 and what it discloses as a mobile terminal; 14 isn't that fair? 15 A. That sounds correct. 16 Q. Okay. And -- but you did not 17 look at the contents of Kitazawa in rendering 18 your opinion regarding the mobile terminal? 19 A. I said I don't recall if I looked 20 at the contents of Kitazawa or not. I would 21 think if it deviated from my construction and 22 understanding of what was in the	92 1 you know whether your construction is 2 consistent with what is disclosed as a mobile 3 terminal in Kitazawa? 4 A. I believe it would be. I just 5 don't recall Kitazawa from memory. 6 Q. Okay. If Kitazawa discloses 7 something other than a cellular phone, would 8 that impact your construction for -- your 9 construction that a mobile terminal is a 10 cellular phone and not a laptop computer? 11 A. So it -- if I'm -- let me back 12 up. That sounds like it may be somewhat of a 13 legal question as to whether this reference 14 cited in the background is to be taken into 15 consideration or not to be taken into 16 consideration around a claim construction. 17 But to the extent Kitazawa has an 18 elaborate -- or some form of description 19 around the mobile terminal, I don't recall 20 that deviating from my construction. I would 21 have to look at it again, if you have 22 specific questions.

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93 1 Q. Sitting here today, do you know 2 whether Kitazawa specifically discloses a 3 cellular phone? 4 A. I would have to go back and look 5 at the reference for you. 6 Q. If Kitazawa discloses something 7 other than a cellular phone, would you agree 8 that the specification does not consistently 9 and repeatedly disclose a mobile terminal as 10 a cellular phone? 11 A. No, not necessarily. Kitazawa 12 could mention any number of things in 13 different contexts that don't necessarily 14 impact my -- my construction of the term. 15 Q. Can you give me an example of -- 16 of how Kitazawa might be used that would not 17 impact your construction on a mobile terminal 18 as understood in light of the '417 patent? 19 A. I'd have to look at Kitazawa for 20 you. I mean, if it mentions some different 21 technology in -- in its disclosure, that -- 22 that wouldn't impact my construction of the	95 1 mobile terminal of the claims, but something, 2 again, in line with the description of mobile 3 terminal I offer in my construction, it 4 sounds like. 5 Q. Okay. So I think we can at least 6 agree that column 1, lines 17 through 20, is 7 at least informative to a POSITA of what a 8 mobile terminal might be; is that fair? 9 A. It sounds like what the inventors 10 described as a mobile terminal in general, 11 some flavor of that is disclosed in Kitazawa. 12 Q. Would you be comfortable 13 construing "mobile terminal" in a way that 14 excludes what is disclosed as the mobile 15 terminal in Kitazawa? 16 A. I don't remember what or what 17 is -- what is not in Kitazawa. I'm not 18 prepared to do that today. 19 Q. Well, I'm not asking you to 20 remember what is in Kitazawa. I'm just 21 trying to understand that if you construe 22 "mobile terminal" in a way that excludes what
94 1 term "mobile terminal." 2 Q. Here in the specification, the 3 patent -- the patentees are saying, 4 effectively, hey, look, here's Kitazawa, and 5 that disclosed an example of what we're 6 calling a mobile terminal; isn't that right? 7 A. They're saying there's -- there's 8 a mobile terminal here for doing a certain 9 thing when switching your frequency of clock 10 signals, and that -- that's discussed in 11 Kitazawa. 12 Q. But it's not limited to switching 13 clock frequencies. It's specifically saying 14 a mobile terminal is disclosed in Kitazawa; 15 isn't that right? 16 A. It sounds like they're saying 17 what the inventors consider a flavor of 18 mobile -- an example in the back- -- in the 19 background of what would be a mobile terminal 20 may be disclosed in this Kitazawa reference. 21 Q. Okay. 22 A. Not necessarily the -- not the	96 1 the '417 patent discloses as an example of 2 the mobile terminal, would that be 3 appropriate? 4 A. It sounds like if I offered a 5 construction that is not the -- what is 6 disclosed within the specification of the 7 patent or -- or any patent, that sounds not 8 in line with what the claim construction 9 process is. 10 Q. Okay. Let's take a five-minute 11 break here. 12 (Break taken from 11:15 a.m. to 13 11:23 a.m.) 14 (BY MR. KATSANTONIS) 15 Q. Okay. Welcome back, 16 Dr. Brogioli. 17 Did you speak with anyone about 18 your testimony today during the break? 19 A. No, not at all. 20 Q. Okay. So before the break, we 21 were talking about the Japanese reference to 22 Kitazawa that's disclosed, referenced in

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97 1 column 1 of the '417 patent. 2 Sitting here today, do you know 3 if the mobile terminal in Kitazawa is a 4 cellular phone? 5 A. I would have to go back and look 6 at the language used in Kitazawa. 7 Q. Do you ever recall confirming 8 whether it discloses a cellular phone? 9 A. I don't recall -- excuse me -- I 10 don't recall the language of the reference 11 from memory. 12 Q. Okay. So I'm going to drop in 13 the chat what is going to be Exhibit 5, which 14 is a machine-translated version of Kitazawa 15 that was provided by petitioners as 16 Exhibit 1024 in this IPR proceeding, and let 17 me know when you have it open. 18 A. I've got it open. 19 (Whereupon Exhibit Number 5 was 20 marked for identification.) 21 (BY MR. KATSANTONIS) 22 Q. Okay. If you don't mind just	99 1 A. I would say the cellular phones 2 described with the characteristics within the 3 specification are -- I haven't performed an 4 exercise of other things that may be referred 5 to as a "cellular phone" in the prior art 6 that may deviate from that description. 7 Q. Okay. So I guess what I'm trying 8 to get at is, looking at your definition that 9 a mobile terminal is a cellular phone, not a 10 laptop computer, in light of what you just 11 said, is that definition 100 percent 12 accurate? 13 A. I would say I offered a 14 construction of the term "mobile terminal" as 15 being a cellular phone within this -- as 16 talked about in the specification of the 17 patent. 18 Q. Okay. And again, though, the 19 '417 patent doesn't define what a cellular 20 phone is, right? Provides examples of 21 components that might be in a cellular phone; 22 is that fair?
98 1 scrolling through this document, and if you 2 could let me know whether, prior to today, 3 you recall reviewing this document. 4 A. Yeah, so same as my answer, I 5 guess, before the break; I don't recall if I 6 reviewed this translation or something else 7 specifically or the details of Kitazawa 8 from -- from recollection. 9 Q. Had you reviewed it, would you 10 have included it in your declaration? 11 A. I probably would have put it in a 12 Materials Considered section or Materials 13 Reviewed. I'm going back to see that I've -- 14 I've got one of those at Page 4. It looks 15 like I -- give me one moment here. 16 It looks like it is not listed 17 explicitly in my Materials Considered 18 section. 19 Q. Okay. Setting that aside, 20 turning back to the '417 patent, is it your 21 position that all kinds of cellular phones 22 are mobile terminals?	100 1 A. It talks about a cellular phone 2 and various behavior and components that 3 comprise it and -- excuse me -- applications 4 that may be associated with it. 5 Q. Okay. And your construction is 6 simply that a mobile terminal is a cellular 7 phone, not a laptop computer, and you did not 8 further qualify that it's a cellular phone as 9 described in the '417 patent, right? 10 A. Going back to my claim 11 construction section for you here. 12 Well, I talk about the use of the 13 term "cellular phone" within the 14 specification. I talk about features that 15 are associated with cellular phones at the 16 time that are not laptop features, things 17 that the patent talks about around clock 18 condition management and so forth that are -- 19 things like character conversion, address 20 retrieval that are cellular phone -- that are 21 in the context of a cellular phone versus 22 something that would be a laptop, and the

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101 1 various power management related to cellular 2 phones at the time -- at the relevant time 3 period. 4 Q. Okay. So is your definition of a 5 "mobile terminal" confined to what is in 6 paragraphs 26 through 30 of -- excuse me, 26 7 through 29 of your report? Is that a more 8 accurate representation of what you are 9 defining as a "mobile terminal"? 10 A. I would say 26 to 20 -- sorry, 11 probably 26 to 31 are encompassing my 12 discussion of the construction of the phrase 13 or the term "mobile terminal." 14 Q. Is your use of the word "cellular 15 phone" in your definition provided in 16 paragraph 26 of your declaration, is that at 17 all limited in any way by the disclosures of 18 "cell phone" in the '417 patent? 19 A. I would say it's the description 20 in the specification of what a person of 21 skill would understand. 22 Q. Okay. Would a person of ordinary	103 1 word to mean in 2002? 2 A. I would say that my definition or 3 my construction is what this person would 4 understand, a person of skill would 5 understand, reading the specification. Just 6 at a high level, it sounds like the inventors 7 were putting characteristics associated with 8 what is the cellular phone described in the 9 specification. 10 Are there other prior art 11 references out there that may describe a 12 cellular phone differently? Probably. I 13 haven't looked at those. 14 Q. The specification is used to 15 inform the meaning of claim terms; is that 16 right? 17 A. That's right. 18 Q. And it's not the other way 19 around; the claims don't inform the meaning 20 of what's described in the specification? 21 A. I would answer that my 22 understanding in the context of claim
102 1 skill in the art understand outside of the 2 context of the '417 patent that "cell phone" 3 is broader than what you understand it to be 4 in view of the '417 patent? 5 A. That sounds like something I 6 haven't addressed. I'm offering an opinion 7 on what a person of skill in the art would 8 understand these terms to mean in the context 9 of the patent. It sounds like Dr. Baker is 10 saying a "mobile terminal," in his mind, 11 means a laptop computer system or something 12 like that, as I talk about in paragraph 30, 13 which I disagree with. 14 Q. Well, I'm not asking what 15 Dr. Baker's opinions are. I'm asking what 16 your opinions are with respect to a cellular 17 phone. 18 And I'm just trying to get a 19 sense of -- is what you say when you're 20 referring to a cellular phone, is that 21 narrower than a POSITA would have 22 ordinarily -- ordinarily have understood that	104 1 construction is to understand the meaning of 2 terms in the claims, you're looking at the 3 specification. 4 Q. Would a POSITA have to review the 5 '417 patent to understand your definition of 6 the mobile phone that is a cellular phone in 7 your construction? 8 A. I would say they would read the 9 claims and see the phrase "mobile terminal" 10 and understand that to mean the cellular 11 phone described in the specification. 12 Q. Slightly different question. 13 Would a POSITA have to review the '417 patent 14 to understand your definition of what is a 15 cellular phone? 16 A. I would think they would be 17 familiar with the term "cellular phone," and 18 in reading the specification, understand the 19 description as offered in the specification. 20 Q. How would you describe the 21 cellular phone that a POSITA would have been 22 familiar with at that time?

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105 1 A. That there were things called 2 cellular phones in the market that they would 3 just generally be aware of, and in reading 4 the specification and the 47 times it 5 mentioned "cellular phone," understand what 6 the patent's talking about. 7 Q. And would any of the things 8 called "cellular phones" in the market at 9 that time not fall within your definition of 10 "cellular phone"? 11 A. There may have been products out 12 there that were called a cell phone that 13 were -- that deviated from what's disclosed 14 in the specification. I haven't performed 15 that market analysis. 16 Q. Okay. Let's take a look at the 17 claims again of the '417 patent, specific -- 18 oh, okay. We're going to look at all of 19 them. 20 Claim 1 does use the term 21 "specific processing," right? 22 A. Did you say "specific	107 1 language in claim 1, although the processing 2 described in the specification are things 3 like image processing, character recognition, 4 and things that are largely user-facing and 5 user-perceptible in terms of -- not something 6 that runs for a -- you know, a nanosecond or 7 something like that. 8 Q. To that end, though, you could 9 have a very, very small image, right? And 10 that would take significantly less time to 11 process than a larger image, right? 12 A. There are a lot of variables that 13 go with that, depending on how the image is 14 encoded or things like that. 15 Q. Same with the character 16 conversion; converting one character might 17 execute in a matter of milliseconds? 18 A. I don't see or recall the patent 19 talking about the compute time interval or 20 wall clock compute time interval for 21 processing one character at a given operating 22 frequency disclosed in the patent, but it's
106 1 processing"? 2 Q. Yes. 3 A. I see that, yes, column 7, line 4 7. 5 Q. Okay. And claim 1 does not limit 6 specific -- specific processing in any way; 7 is that correct? 8 A. I see that it just says "specific 9 processing"; it's executed on the mobile 10 terminal, but it's just called "specific 11 processing." 12 Q. Claim 1 doesn't require that 13 specific processing must occur for some 14 period of time, right? 15 A. One moment. I don't see that at 16 least a explicit language of the claim is 17 saying for a specific time period. 18 Q. Okay. So there's no temporal 19 limitation on how quickly or how long a 20 specific processing must occur in any of the 21 claims? 22 A. I would say I don't see that	108 1 possible that one character may take longer 2 than ten -- I'm sorry, one character may take 3 less compute time than ten characters or a 4 hundred characters; maybe, maybe not. 5 Q. And focusing on claim 1 for a 6 minute, claim 1 does not require that a 7 specific processing is a certain type of 8 processing; isn't that right? 9 A. It just says a "specific 10 processing," which I take to mean at least 11 examples talked about in the specification. 12 Q. And what's discussed in the 13 specification? Those are just examples, 14 right? There -- it's not defining "specific 15 processing" as specifically limiting to 16 what's described in the specification? 17 A. Give me one moment. I'm just 18 going back to -- and looking at that. 19 So it gives -- I guess I'm at the 20 bottom of column 2 -- it gives examples, as 21 you said, of image decoding, address 22 retrieval processing, application processing,

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109 1 such as kana-kanji conversion, so these are 2 all user-facing -- or I would call them 3 applications, it sounds like. 4 Q. And these -- 5 A. The process -- sorry -- top of 6 column 3, "These processing often have 7 effects on the response of the user." 8 Q. Okay. And these examples -- 9 strike that. 10 Claim 1 is not limited to those 11 examples of specific processing that you just 12 pointed to in columns 2 through column 3, 13 right? 14 A. It looks like it's saying that 15 those are examples. 16 Q. So claim 1 is not limited to 17 those examples; is that fair? 18 A. I think that sounds right. 19 Q. And relatedly, if we take a look 20 back at the claims, there's -- there's claim 21 3, which specifically identifies some of 22 those types -- examples of specific	111 1 A. It's saying on that third line, 2 "application processing such as kana-kanji 3 conversion processing used in entering 4 characters." 5 Q. Okay. And that's separately 6 identified from the image decoding or address 7 retrieval processing, right? 8 A. It is, and -- and I think it's 9 saying that the image decoding doesn't 10 necessarily have the user entering 11 characters. 12 Q. Laptops at the time of the '417 13 patent were capable of decoding images; is 14 that fair? 15 A. That's correct. 16 Q. Similarly, would you agree that 17 laptops at the time of the '417 patent had 18 character conversion processes? 19 A. I would think there were 20 applications that could do that for a laptop 21 in that if you had a set of characters, you 22 could convert them to something else.
110 1 processing; is that right? 2 A. That sounds right. It's saying 3 wherein the specific processing is either -- 4 it's an image decoding processing or a 5 character retrieval or a character 6 conversion. 7 Q. And you're familiar with the 8 doctrine of claim differentiation; is -- is 9 that correct? 10 A. That's correct. 11 Q. Okay. So based on claim 3, you 12 understand that claim 1 has to encompass 13 specific processing -- specific processes 14 that are broader than what is defined in 15 claim 3? 16 A. That's my understanding. 17 Q. Okay. And turning back to column 18 2, starting at line 65 -- sorry for having 19 you jump around. In these examples, only one 20 is referred to as an "application process"; 21 isn't that right? That's the kanji 22 conversion processing?	112 1 Q. Now, the concept of user-directed 2 clock manipulation, that wasn't something 3 specific to cellular phones at the time of 4 the '417 patent; is that right? 5 A. I would say that in terms of if 6 you had a processor in a system and it was 7 capable of having the clock modified, there 8 were ways that a user could go about that in 9 different manners. 10 Q. Norris provides an example of a 11 user-directed clock manipulation technique; 12 isn't that right? 13 A. One moment. I'm going back to my 14 declaration at 80 that "Norris discloses a 15 desk" -- second line down -- "Norris 16 discloses a desktop/laptop performance 17 manager that allows an application program to 18 select a performance state to 'maximize'" 19 processor performance -- I'm sorry -- 20 maximizing "performance during processor 21 intensive functions." 22 Q. And sitting here now, do you

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113 1 recall whether that is -- that may be 2 user-directed or the user can control how 3 those clocks are set in Norris? 4 A. I don't recall. I see that I'm 5 citing or pointing out in the context of 6 Norris that there's an application program to 7 select a performance state. 8 I -- if you're asking whether 9 Norris allows a user to directly control the 10 processor, I'd have to go back and look for 11 you. 12 Q. All right. Let's -- I'm going to 13 share Exhibit 6, which is going to be the 14 Norris reference. 15 (Whereupon Exhibit Number 6 was 16 marked for identification.) 17 (BY MR. KATSANTONIS) 18 Q. Let me know when you have it 19 open. 20 A. Okay. I've got it. 21 Q. Okay. So this is -- I'm just 22 looking at the face of the patent. It's a	115 1 Do you see that? 2 A. I do. 3 Q. Okay. Now, if I can -- here, 4 give me one second. Okay. It is column 5, 5 lines 31 through, I'm going to guess, 35. 6 Here Norris is talking about a 7 performance control panel that enables a user 8 of the computer system "to select from a set 9 of predetermined frequencies for the 10 processor clock"; is that correct? 11 A. It's -- he's saying that there's 12 this application program and the user can use 13 that to select from a -- I guess a high, 14 medium, and low performance state of the 15 processor. 16 Q. Okay. And that's the application 17 program that you're talking about in 18 paragraph 80 of your declaration? 19 A. That's correct. 20 Q. Okay. So Norris -- you would 21 agree that Norris discloses a -- Norris 22 disclosed an example of a user-directed clock
114 1 1997 patent, right? 2 A. That -- that's the date of the 3 patent, correct. 4 Q. Okay. And it's assigned, at 5 least at that time, to Intel Corporation? 6 A. That's correct. 7 Q. Okay. And if I could have you 8 scroll down to what is Page 8 of this exhibit 9 in column 1, specifically the "Field of the 10 Invention." 11 A. Okay. 12 Q. Now, "More particularly, this 13 invention relates to the dynamic management 14 of processor performance and power 15 consumption in a portable computer system." 16 Do you see that? 17 A. I do. 18 Q. And then below that, starting at 19 line, I think it's 16, it's talking about the 20 background and -- of the technology, and it 21 includes "portable computer systems such as 22 laptop computers."	116 1 manipulation technique, right? 2 A. I would say a user's manual 3 clock -- the ability for the user to manually 4 change the performance setting of the -- the 5 clock in the CPU. 6 Q. Okay. And again, this is -- 7 A. Or I should say, the user to be 8 able to adjust the performance state of the 9 processor. 10 Q. Okay. And again, this is in 11 context of laptop computers, for example, as 12 described by Norris -- in Norris? 13 A. Norris uses the phrase "laptop," 14 that's correct. 15 Q. Okay. And user-directed clock 16 manipulation, that's something you -- those 17 are your words in your declaration, paragraph 18 29. 19 And I just -- in answering my 20 question, I think that you referred -- you 21 qualified it as a user -- a manual user -- 22 I'm trying to find it.

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117 1 You said, "the ability for the 2 user to manually change the performance 3 setting of the clock in the CPU." 4 And my question is, is that 5 manual manipulation something different than 6 what you describe in paragraph 29 of your 7 declaration as a user-directed clock 8 manipulation? 9 A. So I think my answer with Norris 10 was the user being able to use that 11 application to set the performance state of 12 the processor. 13 Going back to my paragraph 29 -- 14 I'm just reviewing -- looks like I'm 15 referring to the patent, talking about 16 user-directed clock manipulation and that -- 17 I guess we can go back to the patent and see 18 what it says about that. 19 Q. Please do; and, you know, please 20 confirm for yourself. I'll -- from my 21 recollection, those words don't appear in the 22 '417 patent.	119 1 the user can go and change the operating 2 frequency of the CPU. 3 Q. Reading the '417 patent, would 4 you understand column 3 to be disclosing a 5 way for a user to adjust the clock frequency 6 other than through a button or through 7 software? 8 A. I'm reviewing column 3. 9 Reading this column now, it looks 10 like it's talking about scenarios where the 11 changing of the frequency of the CPU is 12 user-driven. 13 Q. And that might be done through a 14 user interface or a button, for example, 15 right? 16 A. Looks like it's talking about 17 buttons or a single push-button. The display 18 to the user seems to be in software. I think 19 it's primarily just talking about a 20 push-button mechanism, as I see, for the user 21 input, I should say. 22 Q. Okay.
118 1 A. I think what I'm referring to 2 there is at least what's described in column 3 3 of the patent at 3 to 6, where it says, for 4 that embodiment, "the user can change the 5 operating frequency of the CPU 100 by 6 changing the output of the frequency of the 7 clock oscillator 200 at will, with the use of 8 a clock manipulation unit 300 connected to 9 the CPU." 10 Q. Okay. And so do you dispute that 11 Norris' disclosure of a user being able to 12 manually adjust the clock frequencies on a 13 laptop computer -- is that different than 14 what this clock manipulation is discussed in 15 column 3 of the '417 patent? 16 A. I would say they -- they are at 17 least similar in that the patent's talking 18 about -- or Norris is talking about giving 19 the user a button in software to hit to set 20 that performance level. 21 And it looks like the patent's 22 talking about, at least in this embodiment,	120 1 MR. KATSANTONIS: Can we go off 2 the record for a moment? 3 (Break taken from 11:57 a.m. to 4 12:30 p.m.) 5 (BY MR. KATSANTONIS) 6 Q. Welcome back. 7 So do you have your report still 8 open? 9 A. I do. 10 Q. Sorry. I'm just coming off of 11 expert reports in another case. I had to 12 switch gears here. 13 A. I understand. 14 Q. So if I could direct your 15 attention to paragraph 40 of your 16 declaration. 17 A. Okay. 18 Q. And here we're talking about the 19 motivation to combine Belt and Foster, and 20 you -- it's your opinion, as I understand it, 21 that "A POSITA would not have been motivated 22 to combine the teachings of Belt" and Foster

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121 1 to arrive at the claimed invention of the 2 '417 patent, nor would such a combination 3 have rendered the claims of the '417 patent 4 obvious." 5 Did I read that correctly? 6 A. You did. 7 Q. Okay. I want to break that apart 8 for just a moment. 9 So when you say that a POSITA 10 would not have been motivated to combine the 11 teachings of Belt and Foster to arrive at the 12 claimed invention of the '417 patent, do you 13 mean that setting aside the dispute regarding 14 the mobile terminal, for example, that a 15 POSITA looking at Belt and Foster would not 16 have a reason to combine their teachings? 17 A. That sounds right. 18 Q. Okay. And in paragraph 40, at 19 the end, when you say, "The fundamental 20 differences between the systems, their power 21 management architectures, and their 22 respective approaches to managing device	123 1 Q. Okay. And you would agree that 2 Belt and Foster each disclose substantively 3 similar computer architectures, right? 4 A. I guess I would use the term 5 maybe system or platform architecture or 6 design, not computer architecture. 7 Q. Okay. Well, both discuss using 8 an Intel processor, correct? 9 A. They do. Actually, they -- I 10 think they both talk about -- I think they 11 both talk about Intel architecture. I forget 12 if Foster is also talking about that specific 13 Intel processor architecture. 14 Q. Okay. So I'm going to drop in 15 the chat what is going to be marked as 16 Exhibit 7, and this is Foster. 17 And I -- do you already have 18 Belt's? 19 A. You can -- you can send it again 20 if you want. It's probably -- 21 Q. Yeah, I just want to make sure -- 22 A. You already sent me Belt, that's
122 1 behavior upon lid closure," are you referring 2 to the fundamental differences between your 3 understanding of what the '417 patent 4 discloses as compared to Belt and Foster, or 5 is it specific to Belt -- Belt's as compared 6 to Foster? 7 A. One moment. 8 It looks like this last sentence 9 is talking about the combination of Belt and 10 Foster, and the -- as I talk about the 11 fundamental differences between them and 12 their power management. So I think I'm just 13 addressing -- regardless of the other issues, 14 just why you wouldn't combine these two 15 references. 16 Q. Okay. Now, in paragraph 41, 17 you do -- you do draw some comparisons 18 between Belt and Foster, right? 19 A. That's correct. 20 Q. Okay. They -- they both disclose 21 laptop computers; is that right? 22 A. That's right.	124 1 right. Got you. Got you. 2 Q. Okay. 3 (Whereupon Exhibit Number 7 was 4 marked for identification.) 5 A. I thought you were asking if I 6 had it locally here. 7 (BY MR. KATSANTONIS) 8 Q. Okay. So can you pull up Belt 9 and -- and Foster? 10 A. Okay. 11 Q. So looking at Belt first, column 12 1, lines 61 through 66, there's a discussion 13 of using an Intel 386SL processor. 14 Do you see that? 15 A. Belt column 1. 16 Q. Lines 61 through 66. 17 A. I don't -- oh, I think I see it 18 in column 2. That's fine. 19 Q. Yeah, sorry, column 2. Sorry 20 about that. 21 A. Okay. I see that. 22 Q. Okay. And then flipping over to

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1 Foster, there should be at -- if I got my 2 columns right this time, column 16, lines 35 3 through 36, there's also a discussion of 4 using an Intel 386SL to implement the 5 features of the invention disclosed in 6 Foster, right? 7 A. I see that mentioned as well, 8 that's right. 9 Q. Okay. And Belt and Foster each 10 disclose a PMI handler; is that correct? 11 A. From my recollection, yes, they 12 both talk about the power management 13 interrupt. 14 Q. And each discusses entering a 15 suspend mode, for example? 16 A. I see the PMI handler, and I see 17 that they both use in certain places the 18 language of suspend, suspend the mode. 19 Q. Okay. Are you aware that Belt 20 and Foster claim priority and incorporate by 21 reference the same patent -- parent patent 22 application?	125 127 1 what you're asking is paragraph 49 that -- 2 Foster teaches continuing operation at the 3 same clock speed when the lid is closed. 4 Q. Okay. So Belt and Foster use the 5 same processor, they have similar 6 architectures to some degree, they both use 7 suspend mode, they talk about similar aspects 8 of what happens to the processor when the lid 9 is closed. 10 And so where -- where do we get 11 to the point where you say, no, a POSITA 12 would not have looked at Foster and Belt and 13 had a reason to combine them? 14 A. Okay. So I talk about this 15 starting around 39 or paragraph 40 or so. 16 One aspect -- and this may be a little -- 17 this refers to the fact that Belt and Foster 18 are both talking about what they're referring 19 to as a laptop. 20 And then continuing past that -- 21 and I'll skip ahead. I'm just finding where 22 to point us to.
126 1 A. I don't know if I -- I don't 2 remember that one way or the other. That may 3 be the case. 4 Q. Would that at all impact your 5 opinion as to whether a POSITA would have 6 combined Belt and Foster? 7 A. No, it wouldn't. 8 Q. And we'll get into this a little 9 bit later, but Belt discloses, at least on 10 one example, that you can close the lid and 11 maintain system operations, right? 12 A. I think that is one embodiment 13 within Belt. 14 Q. Okay. And I'm trying to find it 15 in your report, but I believe in your 16 declaration that you also make note of the 17 fact that Norris -- Foster, rather, similarly 18 teaches that when you close the lid, it can 19 be in an operational mode. It does not 20 automatically have to enter suspend mode. 21 Do you recall that, as well? 22 A. That -- one example, I think, to	128 1 The -- in my paragraph 43, Belt 2 and Foster are talking about -- well, Belt, 3 for one, is talking about a different 4 management policy than what the -- the '417 5 patent talks about. 6 And in 46, I reference to Foster 7 in talking about how Foster's trying to do 8 things with the lid closed and that it 9 continues to run at whatever clock speed it 10 was previously set to when that lid is 11 closed. 12 So continuing on, if we skip to 13 50, I point out that ignoring some of these 14 other differences in arguments, the two 15 references, Belt and Foster, are talking 16 about an incompatible approach here, at least 17 as I recall what Dr. Baker is citing to, 18 where Belt says, We're going to completely 19 suspend the system, we're not executing 20 instructions on that until 386SL, where 21 Foster is teaching a different approach, 22 whereas, I -- in Foster, the machine issues a

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129 1 beep, the backlight deactivates, but the 2 processor keeps running. 3 And so these are just two 4 different approaches that one wouldn't 5 combine or -- it doesn't seem like it would 6 even -- I'm not sure how you would combine 7 them or how it would operate correctly. 8 Q. Okay. I want to break that apart 9 in a moment. 10 My first question to you is: I 11 believe earlier you testified to the fact 12 that you did not -- you reviewed Dr. Baker's 13 declaration, but you did not respond to every 14 single argument in his declaration; is that 15 correct? 16 A. That generally sounds right. 17 I don't remember the things that 18 might be in there that I didn't address, 19 but -- but that's my general recollection. 20 Q. And how did you decide what to 21 address and what not to address? 22 A. From memory, I think there were	131 1 valid invalidity theory, in my opinion. 2 Q. Okay. Okay. So I want to 3 walk -- go back to what we were talking about 4 a moment ago on the motivation to combine, 5 starting at paragraph -- I think you -- the 6 first main point was in paragraph 43, and I 7 believe you said that Belt and Foster are 8 talking about -- well, Belt, for one, is 9 talking about a different management policy 10 than what the '417 patent talks about. 11 Now, that, to me, sounds more 12 like a substantive merits-based argument 13 about whether Belt, in combination with 14 Foster, teaches a limitation and not so much 15 whether a POSITA would have been motivated to 16 combine Belt and Foster. 17 And so is -- my question to you 18 is, for your motivation to combine analysis, 19 is that -- is that depend -- does that depend 20 on the combination meeting the '417 patent 21 claims? 22 A. Can I ask you to ask again?
130 1 specific points that Dr. Baker had made that 2 counsel wanted me to look at. There may have 3 been others that they didn't mention for me 4 to look at. Specifically what those other 5 ones might have been, I don't recall. 6 Q. Is there anything in Dr. Baker's 7 report that you agreed with? 8 A. I -- I don't remember. I don't 9 recall saying in my declaration, oh, I agree 10 on this with Dr. Baker, probably -- probably 11 because I -- it wasn't something I was asked 12 to look at. I'd have to go back and see. It 13 wouldn't surprise me if there were things we 14 agreed on. 15 Q. If there was a substantive 16 invalidity theory in Dr. Baker's declaration 17 that you did not address, what would be the 18 reason for that? 19 A. I don't know. I don't recall -- 20 I don't remember being aware of something 21 that I thought was a -- I don't want to use 22 the word "substantive," but I would say a	132 1 There was a long -- that was a long question. 2 Q. Yes. So is it your opinion that, 3 for two references here, Belt and Foster, to 4 be combined, that there is only a motivation 5 to combine those references when they meet 6 every limitation of the patent claims? 7 A. I would answer that the other way 8 around, that I -- I offered the opinion that 9 there isn't a motivation to combine them, and 10 if one were to combine them, it -- it's 11 unclear or they don't show how they meet the 12 claim, or Dr. Baker doesn't show how they 13 would meet the claim limitations. 14 Q. Okay. So to say it a little bit 15 differently, you're not relying on the fact 16 that, in your opinion, Belt and Foster do not 17 teach the claim limitations as a reason for 18 why there is no motivation to combine; is 19 that correct? 20 A. That sounds like two different 21 points I address, that they -- the 22 combination would not meet the limitations,

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133 1 and there were also -- given the power 2 management approaches the two references 3 proposed, there wouldn't be a motivation to 4 combine them. 5 Q. Okay. Yeah, just by way of 6 example, in paragraph 43 you start talking 7 about, "The power management method disclosed 8 in Belt is fundamentally incompatible with 9 the dynamic clock frequency control taught 10 and claimed in the '417 patent." 11 So again, we're here in context 12 talking about the motivation to combine, and 13 that just seemed a little -- that seemed a 14 merit-based argument to me and not so much 15 relevant to the motivation to combine. 16 And I just wanted to understand 17 why this was here and if that was -- for what 18 purpose that was there, put there. 19 A. What I'm saying there is at the 20 onset, if we just look at Belt, Belt's 21 approach is just incompatible with the 22 approach that's disclosed in the patent, and	135 1 is directed to power management, right? 2 A. That's one aspect, yes. It's 3 looking to either manage power or provide 4 additional compute in response to certain 5 applications and user demands. 6 Q. Okay. And as I understand it, in 7 your -- as you say it, part of what the '417 8 teaches is -- let me find the correct 9 language here so I don't misquote you. 10 So I think it's at paragraph 21 11 now of your declaration. To vary "CPU clock 12 frequency to balance processing speed and 13 current consumption in response to user 14 inputs and specific processing needs." 15 Now if I could have you turn to 16 Exhibit 4, which is Belt. 17 A. Okay. 18 Q. And paragraph -- column 3 19 starting on line 5 through 14, here Belt is 20 talking about that its processor 11 is the 21 type of -- is the type of component that uses 22 "more power when running at a higher clock
134 1 I go into a discussion as to why that is the 2 case and then start talking about other 3 aspects of Belt's approach and then get into 4 why it would not make sense to combine Belt 5 with Foster, and then if one were to combine 6 them, that it -- it's not -- it doesn't seem 7 to be teaching the claims. 8 Q. Do you dispute that Belt's -- 9 that at least one aspect of Belt goes to 10 power management techniques? 11 A. I would say generally Belt's 12 talking about power management or power 13 conservation in various places. 14 Q. And the same for Foster. Foster 15 also is directed to power management? 16 A. That sounds right. The things 17 Foster's talking about are modifying the 18 processor's clock frequency, and that would 19 have some power conservation impacts, and I 20 think -- I think Foster uses the language of 21 power conservation or conserve power. 22 Q. And the '417 patent, similarly,	136 1 speed than when running at a lower clock 2 speed." 3 Do you see that? 4 A. One moment. Okay. I see that. 5 Q. And because that's how Belt's 6 processor is configured, Belt goes on to say 7 that it is -- "Therefore, clocks can be set 8 to a higher speed when rapid processing is 9 required." 10 And then it goes on to say that 11 the process is -- "when the processing speed 12 is not critical, a lower clock speed can be 13 used in order to reduce the amount of power 14 being drawn from the battery." 15 Do you see that? 16 A. I see that. 17 Q. Okay. So is this not the very 18 same thing that you say is what is addressed 19 by the '417 patent, varying CPU clock 20 frequency to balance processing speed and 21 power consumption? 22 A. The '417's talking about its way

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137 1 of performing power management for this 2 balance of CPU clock frequency versus -- or 3 in response to user inputs. 4 It looks like Belt -- yes, Belt 5 is talking about these processors are the 6 type where if I run it faster, it consumes 7 more power. If I run it at a lower rate, it 8 will consume less power. It seems like this 9 paragraph in Belt is talking about that just 10 as a concept, right, that if I'm increasing 11 clock speed and I have to increase voltage, 12 I'm increasing power consumption. Just 13 generally, a power -- when I -- the CPU in 14 your machine is at 25 megahertz or 15 75 megahertz, and the faster I run this 16 thing, the more voltage, the more current, 17 the more power I burn, the more that drains 18 the battery. 19 Q. In fact, Belt does say that you 20 can set the processor to a lower speed to 21 conserve battery power, right? 22 A. I lost my place. One second.	139 1 control register 32. 2 Q. Okay. Now, if I could have you 3 turn to Foster for a moment... 4 A. Okay. 5 Q. And directing your attention to 6 column 28, lines 13 through 18. 7 A. Okay. 8 Q. So starting where it says, "In a 9 situation where the user is operating on 10 battery power and is running a program which 11 does not require fast processing [sic] speed, 12 intentionally reducing the processor speed 13 will reduce power consumption and thus permit 14 the user to operate the system longer before 15 the battery requires recharging." 16 Do you see that? 17 A. Yes. 18 Q. Okay. So here we're talking 19 about -- about -- Foster talks about a user 20 operating the laptop computer and a program 21 specifically that doesn't require fast 22 processing speed and then intentionally
138 1 The clocks can be set to a higher 2 speed when rapid processing was required 3 despite that a larger amount of power is 4 drawn. 5 Q. Okay. And what we're talking 6 about here in Belt, right, this -- you can 7 increase the speed for rapid processing or 8 lower the speed to -- to preserve battery 9 life or to reduce power consumption, that's 10 all in the context of what Belt discloses at 11 the top of column 3 of using a control 12 register 32 to control the speed of the 13 processor, right? 14 A. Which is controlled by a speed 15 control register 32, that's right. 16 Q. Okay. So Belt teaches raising 17 and lowering the clock speed; is that fair? 18 A. It talks about aspects of running 19 at a higher clock speed versus running at a 20 lower clock speed, that's right. 21 Q. Okay. 22 A. And it mentions it's speed	140 1 lowering the clock frequency to conserve 2 battery power; is that right? 3 A. That looks like what this 4 sentence is referring to in this embodiment. 5 Q. Okay. And so that would be 6 reducing current consumption of the battery 7 in response to user inputs and specific 8 processing; wouldn't you agree? 9 A. Looks like if the machine's 10 running on battery and the program doesn't 11 require fast processing or processor speed, 12 reducing processor speed reduces power 13 consumption and then includes battery life. 14 And at the top of that paragraph, 15 at 11, seems it's saying, the processor 16 checks to see if the multi-key or hot key 17 combination was one which indicates that the 18 user wants the CPU to run at a slow clock 19 speed. 20 Q. Okay. And it's your opinion that 21 the disclosure in Belt regarding increasing 22 and lowering the clock speeds depending on

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141 1 processor demands and Foster's similar 2 teaching, you're saying that those are 3 completely incompatible with one another? 4 A. In terms of, as I recall, the 5 embodiments that Dr. Baker proposed in the 6 combination. 7 Q. And is that one specific 8 combination that Dr. Baker included in his 9 declaration, or is it every single -- from 10 your recollection, every single combination 11 that Dr. Baker outlined in his declaration? 12 A. The combination of it I addressed 13 in my declaration is, generally speaking, the 14 embodiment of Belt where the closing of the 15 lid suspends operation of the processor, with 16 the combination of Foster, where the closing 17 of the lid beeps, turns off the backlight 18 display, and the beep is letting the user 19 know that the machine's still -- it's not 20 suspended. The processor is still computing. 21 Q. Okay. And so based on your 22 understanding -- strike that.	143 1 talks about setting those frequencies during 2 user operation, right? 3 A. At least in the case of Foster, 4 it's talking about checking if the user hit a 5 button to go to the slow clock speed mode. 6 And in going back to the 7 paragraph for Belt, the paragraph you pointed 8 me to talks about looking at a -- we just 9 looked at it -- the speed control register 10 32. 11 Q. Setting aside that a user 12 initiates in Foster the changing of the clock 13 frequency, you would agree that at some point 14 you would have to go to the bios, for 15 example, and change that clock frequency in 16 the software, right? 17 A. It looks like Foster is talking 18 about going to various registers and the PMI 19 handler routine executing at a fast speed and 20 then clearing the FC flag. I don't see that 21 it explicitly mentions the bios in this 22 paragraph.
142 1 So what we discussed in column 3 2 of Belt and now in column 28 of Foster, did 3 you address those aspects of Dr. Baker's 4 declaration in your declaration? 5 A. I don't recall what Dr. Baker may 6 or may not have said about this passage of 7 Belt and this passage of Foster. 8 Q. Okay. Reading these passages of 9 Foster and Belt, do those change your 10 opinions on whether there's a motivation to 11 combine Belt and Foster? 12 A. No. These passages seem to just 13 be saying what -- the fact that if I run the 14 processor at a higher clock, it's going to 15 impact the battery one way, if I run it at a 16 lower clock, it's going to impact the battery 17 another way, and the lower clock may give me 18 longer battery life. 19 Q. Well, it doesn't just say that 20 running it higher is going to process things 21 faster or lowering a processor clock is going 22 to save battery. It directly and plainly	144 1 Q. But you don't dispute that for 2 Foster's implementation to work, that the 3 processor would have to receive some 4 instructions to lower its clock, right? 5 A. It looks like in Foster, if the 6 processor checks to see if that multi-key or 7 hot key combination was pressed or -- I 8 shouldn't say "pressed," but activated by a 9 user. 10 Q. Fair, but it's not as if the user 11 pressing the hot key is going to directly 12 influence the processor speed, right? It 13 would -- it would go through a software base 14 command; isn't that right? 15 A. I don't see that Foster says that 16 specifically or what kind of software that 17 may be. It looks like it talks about a PMI 18 handler, that maybe the PMI handler is 19 invoked and that routine runs the fast speed 20 and does this clearing of the FC as what 21 sounds like the means of going into the 22 slower clock speed after the PMI handler

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145 1 ends. 2 Q. Okay. So Belt checks the 3 register and raises or lowers the clock 4 speed, and Foster also checks the hot key and 5 raises and lowers the clock speed. Is 6 that -- is that correct? 7 A. Belt's got the register -- the 8 speed control register 32 that it's using, 9 and Foster has the multi-key from the user, 10 and then -- excuse me -- and then it looks 11 like it -- some steps may happen, but it 12 clears the FC flag. The processor actuates 13 at line 391 to beep the speaker, and then the 14 processor clears the flag to indicate a CPU 15 is to go into slow speed; and the PMI handler 16 is part of this routine. 17 Q. Sorry for interrupting you there. 18 Can I direct your attention to 19 column 19, lines 5 through 10 of Foster? 20 A. Got you. Okay. 21 Q. Foster here says, "A speed 22 control register can be set by software to	147 1 A. This is just talking -- this 2 passage, as we have been discussing, are just 3 talking about the fact that there's a 4 register, and that indicates a clock speed. 5 Q. And that register can be changed 6 to alter the frequency of the clocks, right? 7 A. It can be set to a value that 8 indicates what speed the CPU is going to run 9 at. 10 Q. Okay. And so is the reason why 11 you don't think this -- these disclosures 12 impact your motivation to combine analysis 13 because it's your understanding that 14 Dr. Baker does not identify these portions? 15 A. No. He could go ahead and talk 16 about these portions -- and maybe he does, I 17 don't remember. They don't impact my 18 analysis on the lack of motivation to 19 combine. This is just a mechanism that 20 there's a register that's telling the CPU 21 what -- what cycle to run at. That in and of 22 itself is a fairly simple concept. It goes
146 1 select one of a range of frequencies for the 2 CPU clock signal." 3 Do you see that? 4 A. I see that. 5 Q. Okay. So Belt and Foster both 6 teach using control registers to alter the 7 frequency of the processor's clocks, right? 8 A. That sounds right, yes, or I 9 would say to -- that's right. The register 10 is used to indicate the clock frequency at -- 11 at whatever point in time that register is -- 12 at the time that register holds a value. 13 Q. Okay. And so the -- this 14 similarity between Belt and Foster, does that 15 at all impact your opinion on whether there's 16 a motivation to combine Belt and Foster? 17 A. No, it doesn't. I would have 18 taken this into account when reviewing both 19 of the references. It doesn't impact the 20 opinions I offer around the proposed 21 combination that Dr. Baker offered. 22 Q. Why is that?	148 1 back a long ways. 2 They're -- the proposed 3 combination that Dr. Baker offers, they're 4 incompatible. They're two embodiments from 5 two references talking about two different 6 approaches to -- to -- to manage power that 7 are incompatible. 8 Q. Okay. But this concept of using 9 control registers to change the frequency and 10 influence battery consumption or processing 11 speed, those are compatible with one another 12 in Belt and Foster, right? 13 A. I would answer that that if Belt 14 and Foster in the two paragraphs you pointed 15 me to, or one paragraph in each, are both 16 talking about a 386SL, well, they're both a 17 386SL. 18 If they're both talking about 19 having a register that's used to indicate a 20 CPU clock speed, I haven't performed that 21 analysis as to whether or not they're 22 identical, but to the extent they were,

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149 1 they're just talking about having a register 2 that indicates the CPU speed. 3 Q. Well, I'm not asking whether 4 they're identical. I'm just saying that 5 these concepts -- this concept that we're 6 talking about that's in Belt and Foster, 7 those are compatible with one another; is 8 that fair? 9 A. I haven't performed that 10 analysis. They both seem to talk about a 11 processor and a register. 12 Q. In context of the same processor? 13 A. That may be the case. I know 14 that both references, as you pointed out a 15 moment ago, mention the Intel 386SL. Foster 16 is over 200 pages long, so it talks about a 17 lot of other things, too. 18 Q. Why would a POSITA not combine 19 the teaching of Foster as to how it changes 20 its speed control register with how Belt 21 changes its speed control register? 22 A. Because Dr. Baker's proposed	151 1 So, one, I think you acknowledged 2 a moment ago that Belt discloses -- or I'm 3 sorry, Foster uses -- implements a user hot 4 key and Belt doesn't, right? 5 A. At least in the paragraphs we 6 were talking about. 7 Q. Okay. So there is a difference 8 in scope between Belt and Foster, would 9 you -- you would agree, at least with respect 10 to that feature? 11 A. I guess I would answer that that 12 the paragraphs we were looking at, Foster 13 talks about a -- I think it's a hot key. The 14 paragraphs that I saw in Belt, I didn't see a 15 hot key mentioned. 16 Q. Okay. And so a POSITA looking at 17 Belt and Foster, would they be motivated to 18 combine the hot key functionality disclosed 19 in Foster in Belt, given that they are the 20 same CPUs, and they both use speed control 21 registers? 22 A. I don't know what scenario you're
150 1 combination is much broader than that. 2 Q. Well, again, I'm -- 3 A. Both references may have a CPU, 4 and a CPU -- what is the language that is 5 used? In -- at least in Belt, a speed 6 control register, but that's all these 7 passages are talking about. 8 Q. Yeah, and my -- my question is, 9 are you disputing that a POSITA would have -- 10 would not have had a motivation to combine 11 the aspects of the speed control in Foster 12 with the speed control register in Belt? 13 A. If you're -- if you're saying 14 that these two are equivalent, why would the 15 POSITA need to do anything? Sounds like in 16 your scenario I've got the speed control 17 register and the CPU in Foster, and if you 18 want to say there's the same speed control 19 register and CPU in Belt, I don't need 20 another reference. 21 Q. So I'm going to take that apart 22 for a minute.	152 1 talking about. I don't recall discussing a 2 hot key at any length in my declaration. 3 Q. Well -- 4 A. Sounds like you're describing 5 some scenario where a user wants a hot key. 6 We -- I need more information to understand 7 what parts of Belt, what parts of Foster, and 8 what's driving the hot key, the desire for a 9 hot key feature. 10 Q. So take a look at paragraph 52 of 11 your declaration. 12 And it's going to be number -- 13 what you have listed here, number 3 -- 14 A. Okay. 15 Q. -- where you say, "To arrive at 16 the claimed invention by combining Belt and 17 Foster, one would need to... import from 18 Foster the concept of variable clock speeds, 19 the fast/slow hot key feature." 20 So I think your declaration does 21 discuss implementing Foster's hot key in 22 Belt; so I'm asking you, given the

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1 similarities between the disclosures in Belt 2 and Foster, is it still your opinion that 3 there would be no motivation to combine that 4 aspect? 5 A. I haven't addressed the hot key 6 aspect in isolation, if that's what you're 7 asking. 8 That statement is made in the 9 context of paragraph 52 and what a person 10 of -- a person of skill would need to account 11 for in trying to combine Belt and Foster in 12 the manner that Dr. Baker describes. 13 Q. Okay. And so taking what you 14 have here as number 3 and importing Foster's 15 variable clock speed and a hot key feature 16 into Belt, right, you, at the end of this 17 paragraph, say, "Each of these steps requires 18 the kind of impermissible hindsight reasoning 19 that the law forbids and none is suggested by 20 the references themselves." 21 Do you see that? 22 A. I do.	153 155 1 A. My general understanding is it 2 doesn't need to teach, for example, a 3 verbatim software routine to do it, but we're 4 talking about trying to combine two 5 references that are teaching different 6 management approaches. 7 But even if someone were to try 8 and do this, there are at least six technical 9 points that I talk about here that this 10 person of skill in the art would need to 11 address, and these are all things that are 12 coming from hindsight from Dr. Baker trying 13 to take these references and perform a 14 combination to meet the limitations in the 15 claims. 16 And there are a number of 17 technical issues that he doesn't account for 18 or how the -- how the invention, how the 19 proposed combination would even work. 20 Q. As a POSITA yourself -- right, 21 you're holding yourself out to be a POSITA? 22 A. That's correct.
154 1 Q. Okay. So I'm trying to 2 understand how, if you have two references 3 talking about -- and at least with respect to 4 number 3 here and the hot key feature, you 5 have two references talking about the same 6 processor, the same mechanism in which the 7 processor's clock speeds can be changed 8 through speed control registers, what 9 impermissible hindsight is there that a 10 POSITA would not have looked at Foster and 11 Belt and combined the two with respect to the 12 hot key feature? 13 A. Because Dr. Baker hasn't 14 disclosed how they're supposed to do that. 15 One is a technical matter, and two, in light 16 of the modes of operation that Belt 17 discloses. 18 Q. So in your opinion, does the 19 motivation to combine require an explicit 20 teaching on how to implement on a -- on a 21 system or programmatic level how two 22 references would work together?	156 1 Q. Okay. As a POSITA -- or is it 2 your testimony today that you would be unable 3 to implement Foster's hot key feature in 4 Belt? 5 A. In which embodiment, though? 6 Q. What does it matter? 7 A. Well, if possible -- and I -- I 8 don't know that I've gotten into this, but 9 the hot key feature, just taken in isolation 10 out of Foster, may teach away from the 11 embodiments that are in Belt. For example, 12 if Belt says, I closed the lid and the CPU 13 goes into suspend, well, now, even if someone 14 knows how to integrate this hot button, that 15 violates the very embodiment of Belt. 16 Q. How does it violate the very 17 embodiment of Belt? Couldn't -- couldn't a 18 hot key issue an interrupt that's handled by 19 the Belt PMI handler? 20 A. I would say a person of skill 21 could implement a button that implements or 22 triggers a -- an interrupt routine.

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157 1 Q. And in fact -- 2 A. Again, we're taking just the 3 one -- you're talking about just this 4 button -- 5 Q. Okay. 6 A. -- versus all of the aspects of 7 Foster that one would need to try and -- they 8 would have to account for it to come to this 9 combination of Belt and Foster. 10 Q. So -- okay. You referenced 11 Belt's suspend mode. I want to switch gears. 12 How would -- how would your motivation to 13 combine analysis with respect to the hot key 14 feature differ in Belt's alternative 15 embodiment in which the processor is not set 16 in suspend mode? 17 A. I don't think that's a -- I 18 haven't gone through the exercise of 19 taking -- it sounds like another mode of 20 Belt -- and what the technical impact is of 21 cherry-picking just the -- I think we've been 22 calling it the hot button key of Foster and	159 1 talked about those embodiments of Belt. I 2 may make some mention of it in my 3 declaration, but at a high level I'd need to 4 go back to my declaration for you. 5 Q. So we just talked about Belt, and 6 it has -- we've been calling them two 7 embodiments, which is suspend mode and then 8 it can maintain system operation; is that 9 fair? 10 A. I think that sounds like both of 11 those are contemplated in Belt. Can you -- 12 Q. Yeah, so let's look at -- 13 A. -- look at my declaration? 14 Q. Well, I'm going to direct your 15 attention to Belt for a minute. So let's 16 look at column 6, lines 45 through 50, and I 17 will represent to you that I think it's -- 18 you cite that in paragraphs 33 and 34 in your 19 declaration. 20 A. And you said 33 and 34 of my 21 declaration? 22 Q. Yeah. No, I stand corrected.
158 1 incorporating that. And I don't recall 2 Dr. Baker offering an analysis of that that I 3 would have been rebutting. Maybe he did. 4 Q. And if he did, you didn't 5 include any -- you did not include a rebuttal 6 to that in your report, fair? 7 A. That sounds right. If he did 8 offer -- well, I'll put it another way. I 9 don't recall addressing that specific 10 scenario in my declaration. 11 Q. Is it your understanding that 12 Dr. Baker's analysis rests solely on Belt's 13 embodiment in which the processor is set in 14 suspend mode? 15 A. I don't recall all of the 16 scenarios that Dr. Baker discussed. 17 Q. Okay. Okay. And to the extent 18 Dr. Baker did discuss Belt's embodiment in 19 which the processor is not put in suspend 20 mode, you don't include in your declaration 21 any rebuttal to that, right? 22 A. I don't recall if Dr. Baker	160 1 44, yeah. It's the first citation. 2 A. Okay. 3 Q. And then you were wanting to look 4 at Belt at 6 -- 5 A. 6, 45 to 50? 6 Q. Yeah. Let me know when you're 7 there. 8 A. Okay. Yeah, got it. 9 Q. Okay. Oh, sorry, I was looking 10 at the '417 patent, and I was wondering 11 why... 12 A. I was looking at Foster, and 13 that's why I got lost, so... 14 Q. Okay. Let's try this again. 6 15 at 45. Okay. 16 So -- and we were talking about 17 two embodiments, but it's really three 18 embodiments, right? 19 "The user is allowed to configure 20 the system set-up information to specify that 21 a lid close is to (1) place the system in the 22 suspend mode."

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1 Do you see that? 2 A. I do. 3 Q. Okay. And alternatively, the 4 user can set up the system that when the lid 5 is closed, the backlight can be turned off 6 "without stopping the system from operating, 7 or produce an audible beep and turn off the 8 backlight without stopping the system" 9 operation. 10 Do you see that? 11 A. I do. 12 Q. Okay. Now, can -- I want to dig 13 into this a little bit more. 14 In paragraphs 40 -- in paragraph 15 44 of your declaration, you say, "This is a 16 binary, all-or-nothing approach where the 17 processor is either running at its normal 18 operational speed or it is completely 19 halted." 20 Do you see that? 21 A. I do. 22 Q. Okay. Now, "normal operational	161 1 these situations. The clock speed -- there 2 was -- strike that. 3 In these situations, there is 4 still a -- a clock speed applied to the 5 processor? 6 A. That the processor is still 7 running and receiving a clock, that's right. 8 Q. And as part of the system 9 operation, isn't it true that Belt and Foster 10 each disclose altering the clock frequency 11 through clock registers? 12 A. That in the passages we were 13 looking at five or ten minutes ago, they both 14 talk about a process -- I'm sorry, a register 15 that's used to indicate the processor speed. 16 Q. Okay. Is it your opinion that 17 Belt and Foster disclosed that it's -- that 18 their respective processors can only operate 19 at one speed? 20 A. It sounds like they're both 21 talking about having a speed that the 22 processor can operate at in that -- indicated
1 speed" doesn't appear anywhere in this 2 disclosure of Belt, right? 3 A. It is in the sense of -- at least 4 in -- it sounds like number 2 there at line 5 47, that in this scenario, the system is set 6 up so that when the lid closes, the -- the 7 backlight goes off and the system keeps 8 running. 9 Q. Okay. And so -- and the same is 10 true for the third option in which the system 11 keeps running, right? 12 A. That -- that's right. In that 13 scenario, you make the beep turn off the 14 backlight and the system keeps running. 15 Q. Okay. And in each of these 16 scenarios where the system keeps running, the 17 clock is still running too, right? 18 A. For the processor, that's 19 correct. 20 Q. Okay. And again, it just -- is 21 that -- this disclosure, Belt, just says that 22 the clock speed would still be running in	162 1 in that register. 2 Q. Okay. And that register can be 3 changed such that it changes the processor 4 speed, right? 5 A. Yeah. At some point in time it 6 sounds like you can have a value in there 7 that indicates the speed that the processor 8 runs at for that setting. 9 Q. And you would agree, when the lid 10 of a laptop is closed, as disclosed in Belt, 11 rapid processing would not be required, 12 right? 13 A. I haven't said anything to that 14 effect. 15 Q. Now, if the system's operational 16 in the second and third embodiments that we 17 discussed in Belt, isn't it true that 18 applications could still be running in the 19 background, for example? 20 A. That seems correct, yes, or in -- 21 you used the word "background," which -- I 22 would say applications would still be

165 1 running. 2 Q. Okay. 3 A. Could still be running. 4 Q. And so let's take an example. If 5 an application such as an e-mail application 6 is running and Belt's laptop lid is closed 7 but configured to remain operational upon lid 8 closure, that e-mail application could 9 process incoming mail, right? 10 A. Maybe I'll give another example. 11 Let's say I'm trying to do some large 12 mathematical computation that's going to take 13 two hours. If I close the lid and the rest 14 of the system is operating in that scenario, 15 that mathematical computation can keep 16 running. 17 Q. Okay. That's one example, but in 18 the example that I gave regarding an e-mail 19 application, the lid is closed, the 20 processor, while the lid is closed, could 21 then execute instructions to receive the 22 incoming mail; is that fair?	167 1 And with Belt's suspend mode 2 path, when a modem ring occurs, I talk about, 3 you know, when the lid is closed, what 4 happens in that scenario. 5 Q. Okay. And -- but this is not 6 talking about Belt's alternative mode in 7 which suspend mode is not entered, right? 8 A. That sounds right. This scenario 9 is talking about when Belt's processor or 10 system is suspended. 11 Q. Okay. And in the case where the 12 lid is closed and the system is set to 13 maintain system operations, the second and 14 third options that we discussed a moment ago 15 in Belt, you'd agree that the user is not 16 actively using the laptop at that moment, 17 right? 18 A. I would say that those two 19 scenarios sound like the user is not 20 interacting with real-time user -- sorry, 21 real-time interacting with a user interface 22 or something like that.
166 1 A. The e-mail application gives me 2 pause because that sounds to me like 3 something that needs to be accessing the 4 network, and I don't know that Belt in these 5 passages is talking about if -- you know, 6 ethernet, call it, or something like that, is 7 still running. I think we've typically been 8 talking about the processor itself. 9 Q. Okay. Well, let's use an example 10 that Belt does give, and that's the modem, 11 right? Even if the lid is closed and 12 processors -- and Belt's processor is still 13 operational, the processor would be able to 14 handle an incoming call through the modem, 15 right? 16 A. I think I've talked about that in 17 my declaration as to what Belt does or 18 doesn't do in response to actions from the 19 modem. I can try and go there for you. 20 Q. Yeah -- 21 A. So it looks like -- I'm going to 22 my paragraph 68.	168 1 Q. Okay. And that would be an 2 example of an instance in which rapid 3 processing may not be required? 4 A. Not necessarily, no. In my 5 example of doing the large-scale mathematical 6 computation, I'm going to want all of the 7 compute I can get, even though the lid's 8 closed. 9 Q. Okay. But that's just one 10 example. Another example is it could be in a 11 state in which rapid processing is not 12 required. Isn't that correct? 13 A. It could be. 14 THE WITNESS: I know it's not a 15 great place, but if you get to a restroom 16 break place, I could use one. 17 MR. KATSANTONIS: We can take a 18 break now. 19 (Break taken from 1:33 p.m. to 20 1:40 p.m.) 21 (BY MR. KATSANTONIS) 22 Q. So just to reorient us again, I

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169 1 want to talk about -- contrary to Belt's, 2 that discloses lowering the clock speed when 3 processing speed is not critical, and I'm -- 4 so that's one aspect, and the other aspect is 5 the discussion in column 6 that we just 6 talked about regarding the second and third 7 options for closing a lid where the system 8 operation has not stopped. 9 So my question is: Did you form 10 any opinion on whether a POSITA would have 11 applied the teachings in columns 3 of Belt to 12 the teachings in column 6 of Belt regarding 13 the second and third options for the lid 14 closing but not stopping the system 15 operation? 16 A. That sounds like a scenario that 17 Dr. Baker did not address, and so I don't 18 believe I -- I offered a response to that 19 particular scenario. 20 Q. And so if Dr. Baker had provided 21 and addressed that scenario, your -- your 22 declaration does not include a rebuttal to	171 1 Q. Okay. And so we're talking about 2 here -- the interrupt is related to power 3 management. It's not like a misnomer or 4 anything like that, right? 5 A. That's -- I mean, maybe I'm 6 over-thinking your question, but yes, it 7 refers to an interrupt that's used to -- to 8 do power management functionality. 9 Q. Okay. And if I understand your 10 declaration correctly -- and I'll point you 11 to paragraph 45 -- you don't dispute that the 12 PMI handler routine is a process that is 13 executed by the processor; is that correct? 14 A. I wouldn't call it a process in 15 the context of what an operating system or an 16 operating system kernel would -- would view 17 as a process, but it is a small handler 18 routine that gets executed based on events 19 that happen outside of the CPU. 20 Q. And that's -- that routine is 21 executed by the processor in Belt? 22 A. That -- that's correct, yes.
170 1 that. Would that be fair? 2 A. If he -- if that's a scenario 3 that he had offered an opinion on, I would 4 have reviewed it and then possibly responded 5 to it, depending on what he had said. I 6 think this sounds like something neither one 7 of us discussed. 8 Q. So sitting here today, you don't 9 have any opinion as to whether a POSITA would 10 apply the teachings of column 3 of Belt 11 regarding using a lower clock speed when 12 processing is not critical to the teachings 13 in column 6 of Belt regarding the options for 14 which closing the lid does not stop system 15 operation? 16 A. I think that sounds like 17 something that I've not addressed in my 18 declaration. 19 Q. Okay. I'd like to talk about the 20 PMI handler for a minute. "PMI" stands for 21 "power management interrupt," right? 22 A. That's correct.	172 1 Q. Okay. 2 A. In a different mode of operation, 3 outside of applications running. 4 Q. Okay. And you don't dispute that 5 when the PMI handler routine is invoked, the 6 clock speeds are increased to the fastest 7 clock speed so the interrupt routine executes 8 as quickly as possible; is that fair? 9 A. That's right. When that -- when 10 that routine kicks in, a CPU wants to handle 11 it as quickly as possible because things that 12 are interrupts are usually -- have varying 13 levels of urgency. 14 Q. Okay. And I believe you also 15 don't dispute that after the completion of 16 the interrupt handler, the clock speed is 17 restored to what it was prior to the PMI 18 handler being executed? 19 A. That's correct, as I cite in 20 paragraph 45. 21 Q. Okay. And the clock speed that 22 the processor is restored to, that would be

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1 lower than the fastest clock speed; is that 2 fair? 3 A. I would say that the -- the 4 processor -- after the completion of the PMI 5 handler, the processor goes back to whatever 6 the previous operating clock speed was. 7 Q. Okay. And that would be lower 8 than the fastest possible clock speed? 9 A. It -- I don't recall addressing 10 that. It may be that the processor's running 11 at the fastest speed, the PMI also runs at 12 the fastest speed, and then it goes back 13 to -- it keeps at the fastest speed. 14 In the case of Belt, if you're 15 default running your machine at some rate 16 lower than that in your initial settings, it 17 may return to that other rate. It would 18 return to -- to that other rate that would be 19 lower. 20 Q. Okay. So there are scenarios in 21 which after the -- strike that. 22 There are scenarios in which the	173 1 Q. If the system is still operating, 2 wouldn't it process interrupts? 3 A. Generally, yes, but you can 4 control -- you can do things like disable 5 interrupts or enable them or disable certain 6 particular interrupts, and I don't -- in this 7 lid closed scenario, I'm not sure what that 8 situation may be. 9 Q. Okay. But Belt does not teach 10 disabling interrupts, right? 11 A. I don't recall in this -- the 12 portions of Belt I talk about seeing that, 13 and I don't think Dr. Baker did mention it 14 either. 15 Q. Okay. So based on the disclosure 16 in Belt, the PMI handler routine could 17 execute regardless of whether the lid is open 18 or closed? 19 A. I think generally that sounds 20 right. 21 Q. Okay. Okay. Now, switching to 22 Foster for a moment, I think we pointed out 175
174 1 processor clock speed that the processor 2 returns to after increasing the processor 3 speed to the fastest possible speed can be 4 lower? 5 A. In the context of the processor 6 handling a power management interrupt. 7 Q. Okay. And regardless of whether 8 the lid is open or closed, the PMI handler 9 routine can still execute when an interrupt 10 occurs; isn't that right? 11 A. I don't think that's a scenario 12 I've addressed, based on how Belt is 13 configured. 14 Q. And what do you mean by "how Belt 15 is configured"? 16 A. I don't recall Dr. Baker and I 17 addressing the scenario of if the lid is open 18 or if the lid is closed or if there's some 19 condition where you don't -- you're precluded 20 from, like, disabling interrupts so the PMI 21 can't kick off if it's not a -- non-maskable 22 interrupt, I think it would be called.	176 1 earlier, Foster does disclose suspend mode, 2 right? 3 A. There is mention of what Foster 4 calls a suspend mode. 5 Q. And then Foster's suspend mode is 6 the same as Belt's in that the clock is 7 stopped; is that fair? 8 A. There -- there may be a 9 permutation in Foster that talks about where 10 the processor is stopped. I forget if that's 11 one that Foster calls suspend mode. 12 I think we were just looking at 13 it, but I lost my place. 14 Q. Okay. Well, I will endeavor to 15 find this in a minute. 16 So directing your attention now 17 to column 79 of Foster and line 61. Oh, 18 actually, I -- well, let me know when you're 19 there. 20 A. On 79 -- did you say 61? 21 Q. Yes. 22 A. Okay.

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177 1 Q. And separate from that column, 2 regarding Foster's suspend mode, do you have 3 any reason to dispute that Foster's suspend 4 mode would not work in Belt's system? 5 A. Sounds like Belt's -- if we're 6 calling the suspend mode the mode where 7 Belt's processor continues operation with the 8 lid closed, wouldn't -- you wouldn't combine 9 that with Belt's power management, where the 10 processor stops operation and stops receiving 11 a clock. 12 Q. I'm sorry, can you say that 13 one -- so let me ask it -- ask this a 14 different way. 15 I'm not asking about a 16 combination. I'm just asking, is there 17 any -- do you have any opinions or bases to 18 say that the suspend mode in Foster could not 19 be implemented in Belt's system? 20 A. I don't think I've done that 21 technical analysis in my declaration. 22 Q. Okay. And the suspend mode, for	179 1 A. I do. 2 Q. Okay. Now, Foster then goes on 3 to provide an example that in the idle mode, 4 the -- a 20 megahertz processor, for example, 5 can be slowed down to 5 megahertz; is that 6 correct? 7 A. I see that, yes. 8 Q. Okay. Would it be fair to say 9 that battery power consumption with the 10 processor running at 5 megahertz would be 11 significantly lower than at 20 megahertz? 12 A. I would say if the processor 13 itself is running at 20 megahertz and -- 14 sorry, if the processor itself is running at 15 5 megahertz versus 20, the processor itself 16 may be consuming less power. 17 Q. Okay. And with respect to the 18 processor itself, would it be fair to say 19 that the battery power consumption attributed 20 to the processor running at 5 megahertz would 21 only be marginally greater than if a 22 processor clock was off?
178 1 example, in Belt and Foster, those would be 2 software implementations, right? 3 A. I would say -- I don't think I've 4 addressed that explicitly, whether, for 5 example, in Belt, when the lid closes and the 6 processor stops executing instructions and 7 the clock stops, if there's, quote/unquote, 8 "software" involved in that or what type of 9 software or -- instead of saying what type of 10 software, interrupt handler, routine, 11 firmware operating system, bios application, 12 those kinds of things. 13 Q. Okay. So now, looking at Foster 14 and column 79, line 61 -- 15 A. Okay. 16 Q. -- Foster states that, "In 17 addition to the run, standby and suspend 18 modes, an idle mode can be provided which 19 draws more power than standby but less power 20 than run mode and which is transparent to the 21 user." 22 Do you see that?	180 1 A. Can I hear that one more time? 2 Q. Would it be fair to say that the 3 battery power consumption that is attributed 4 to the processor running at 5 megahertz would 5 only be marginally greater than if the 6 processor's clock was off? 7 A. I don't know what you mean by 8 "marginally greater"; but if the processor's 9 clock is off versus it running at 5 10 megahertz, the 5 megahertz would be drawing 11 -- presumably drawing more power. 12 Q. It would be more power, but it 13 would be a significantly low amount, right? 14 Said differently, like it's essentially off? 15 MR. BRUNEEL: Objection, form. 16 A. I don't have an opinion on that, 17 for a system here that we're talking about at 18 20 megahertz versus 5 megahertz, just 19 focusing on the processor itself. 20 (BY MR. KATSANTONIS) 21 Q. Would a processor running at 5 22 megahertz be considered to be in a low

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181 1 powered state? 2 A. Depends on the context. It looks 3 like here in Foster they're still running at 4 25 percent of the 20 megahertz. 5 Q. And so would you consider that to 6 be low power? 7 A. I don't see that Foster is 8 calling that low power. I would -- I would 9 give a similar answer as before, that the 10 processor itself, all other things being 11 equal, would be consuming less power at 5 12 megahertz than 20. 13 Q. Do you have any reason to dispute 14 that Foster's idle mode -- 15 (Reporter clarification.) 16 Q. Do you have any reason to dispute 17 that Foster's idle mode would work in Belt's 18 system? 19 A. I haven't analyzed Foster's idle 20 mode within the 200-plus pages of the 21 reference as to how that may or may not work 22 with Belt.	183 1 that combination or that embodiment? 2 A. I think those -- to the extent 3 Dr. Baker talks about those, I think those 4 are -- sound like things of -- opinions of 5 his that I'm not addressing in my 6 declaration, but if I am, you can point me 7 there. 8 Q. And what would be a reason why 9 you didn't address those if those were in 10 Dr. Baker's declaration? 11 A. I don't recall specifically. 12 Q. Okay. So Belt teaches the 13 suspend mode, right? 14 A. That's correct. 15 Q. Foster also teaches a suspend 16 mode, correct? 17 A. Foster has what -- as I recall, 18 Foster also calls the suspend mode that we 19 were talking about earlier, or spin mode -- 20 suspend modes. 21 Q. And Foster additionally discloses 22 and teaches what we just discussed a moment
182 1 Q. Now, regarding Belt, I see a 2 paragraph -- paragraph 64 of your 3 declaration. Let me know when you're there. 4 A. I'm there. 5 Q. So here you're talking about 6 Belt's -- Belt at its core teaches maximizing 7 "power savings by halting the processor 8 entirely when the lid is closed." 9 Do you see that? 10 A. Yes. 11 Q. Okay. But that's not entirely 12 true, is it, because we went over two 13 examples in which, when the lid is closed, 14 the system remains operational; is that 15 right? 16 A. Those, as I recall, were other 17 embodiments than what Dr. Baker was talking 18 about in the combination I'm addressing. 19 Q. Okay. So if Dr. Baker did 20 address the option -- the embodiments in 21 which the processor is not placed in suspend 22 mode, you don't have an opinion regarding	184 1 ago, that in addition to the suspend mode, 2 you can also have an idle mode, right? 3 A. In one of Foster's embodiments it 4 mentions an idle mode, correct. 5 Q. Okay. And in paragraph -- or 6 sorry, in column 80 of Foster, starting at 7 line 6, so Foster references this "reduced 8 power mode." 9 Do you see that? 10 A. Yes. 11 Q. And this is in context of the 12 disclosure from column 79 which refers to the 13 idle mode. 14 Do you see that? 15 A. Okay. That's -- I think it's -- 16 this reduced power mode, I believe, is 17 referring to that -- at least that prior 18 paragraph. 19 Q. Okay. And so this reduced power 20 mode, which is the idle mode, Foster goes on 21 to say that is, "much simpler than the 22 suspend or standby modes, it is possible to

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185 1 resume to run mode in a shorter time than 2 required for the other modes." 3 Do you see that? 4 A. I do. 5 Q. Okay. And then it says -- Foster 6 says, "The combination of rapid resume and no 7 perceptible difference to the user allows the 8 computer to shift to this mode very often 9 without any noticeable performance 10 degradation for the user." 11 Do you see that? 12 A. Yes. 13 Q. Okay. And when it says to "shift 14 to this mode," that's again referring to the 15 idle mode. You would agree with that? 16 A. That sounds right. 17 Q. Okay. Did you consider this 18 disclosure in forming your opinion on whether 19 a POSITA would have been motivated to take 20 this teaching in Foster and apply it and 21 substitute Foster's idle mode with Belt's 22 suspend mode?	187 1 its idle mode versus what Foster refers to as 2 Foster's suspend mode, and it's saying that 3 this particular idle mode is simpler than 4 Foster's suspend or standby, and so you can 5 get in and out of this mode more quickly. 6 Q. Okay. And getting in and out of 7 the idle mode quicker would improve the user 8 experience; that's what this portion of 9 Foster says, right? 10 A. That due to the rapid nature of 11 shifting between the idle mode to the runtime 12 mode, there's no perceptible difference to 13 the user is what it's stating, and you can 14 shift to the mode often without noticeable 15 performance degradation to the user. 16 Q. Okay. And wouldn't Belt benefit 17 from resuming more quickly if that is what 18 the user wanted? 19 A. I don't recall the aspects of 20 Belt that I discuss encompassing that. 21 Q. Okay. 22 A. Well -- sorry. I'll stop there.
186 1 A. I would have considered this 2 passage in reviewing Foster, but it doesn't 3 alter any of the opinions in my declaration. 4 Q. Do you dispute that this section 5 that we just discussed at column 80 provides 6 a reason for a POSITA to substitute Belt's 7 suspend mode with Foster's idle mode? 8 A. This passage seems to just be 9 talking about what seems to be a lightweight 10 idle mode that can be entered and exited 11 quicker than some of the other modes. 12 It doesn't change any of the 13 opinions I have regarding problems with 14 Dr. -- Dr. Baker's proposed combination of 15 Belt and Foster. 16 Q. Okay. This portion of Foster 17 explicitly contrasts suspend mode -- idle -- 18 the idle mode to the suspend mode and 19 provides examples of why idle mode is better, 20 right? 21 A. No. This passage talks about 22 some differences with what Foster's calling	188 1 Q. Well, Belt does disclose that a 2 user can set what happens upon lid closure, 3 right? So it does disclose -- contemplate 4 user preferences in operating Belt's system; 5 isn't that correct? 6 A. That's correct. I think there's 7 those three different flavors in Belt we 8 talked about. 9 Q. Okay. So isn't it fair to say 10 that Belt would benefit from resuming more 11 quickly if that is what the user wanted? 12 A. I don't remember Belt saying that 13 that's what the user wanted, and this passage 14 is saying the user's not going to notice it 15 anyhow, the passage in Foster. 16 Q. You're aware that a motivation to 17 combine doesn't have to be explicitly recited 18 in references; is that right? 19 A. That's my understanding. It 20 doesn't say explicitly go look for X to 21 combine this with. 22 Q. And the motivation to combine

189 1 analysis, you can find a motivation combined 2 in one reference that is not included in 3 another. Isn't that fair? 4 A. I guess if you're asking -- you 5 can read a reference and it sounds like there 6 is a desire for something else, as a POSITA 7 would read it. There may be other references 8 out there that don't include that, quote, 9 "something else," if that's what you're 10 asking. 11 Q. A POSITA reading Foster would 12 understand that there's a desire to implement 13 idle mode because it improves the user 14 experience, right? 15 A. That in this embodiment of 16 Foster, Foster's telling a POSITA, here's 17 this idle mode, and it has aspects that the 18 user's not going to notice a perceptible 19 difference if you use it. 20 Q. Yeah, and that is with respect to 21 the suspend mode, that it -- the idle mode is 22 not going to cause the user -- strike that.	191 1 less power than run mode and which is 2 transparent to the user." 3 So it is less power than run 4 mode, more power than the standby mode, 5 Foster. 6 Q. Okay, yes. And then we 7 established that as you span to column 80 8 starting at line 7, this reduced power mode 9 refers to the idle mode, correct? 10 A. That looks correct, yes. 11 Q. Okay. So as disclosed in Foster, 12 the idle mode is a reduced power mode. 13 A. Versus the run mode, but still 14 consuming more power than the standby modes. 15 Q. Okay. And a suspend mode is also 16 a reduced power mode? 17 A. That's -- one second. That 18 sounds correct, yes. 19 Q. Okay. Now, Belt does not require 20 that its system needs to achieve maximum 21 power -- let's -- let's see how you -- how 22 you phrase it in your declaration.
190 1 So isn't it fair to say that 2 Foster's discussion of the idle mode provides 3 a POSITA with a mode -- with a reason to 4 implement idle mode in Belt's system? 5 A. I disagree. I mean, it's -- 6 Foster's talking about this idle mode that 7 you can enter and exit quickly. Belt is 8 trying to conserve power. This passage in 9 Foster seems to be talking about yet another 10 mode Foster contemplates around no 11 imperceptible difference to the user. I 12 don't see it talking about power in the 13 passages we've been discussing. 14 Q. I strongly disagree. I think we 15 testified -- you testified a moment ago that 16 it's explicitly referred to as reduced power, 17 so... 18 A. I apologize. Let me revisit 19 this. Maybe I misspoke. I'm at the bottom 20 of 79, so -- it's at 62. 21 "An idle mode can be provided 22 which draws more power than standby mode but	192 1 Okay. So paragraph 64 of your 2 declaration, you say, "its core teaching is 3 to maximize power savings by halting the 4 processor entirely." 5 Do you see that? 6 A. I think the third line down, "and 7 its core teaching is to maximize power 8 savings by halting the processor entirely 9 when the lid is closed." 10 Q. Okay. And I'd like to direct 11 your attention to now the abstract of Belt 12 which you cite for that proposition. 13 A. Okay. 14 Q. Looking at the abstract, Belt 15 does not explicitly say that its main design 16 purpose or core purpose is to maximize power 17 savings; isn't that right? 18 A. I don't see that explicit phrase 19 used in the abstract. 20 Q. Okay. And isn't it fair to say 21 that nowhere in Belt does it say that that -- 22 that its goal is to achieve maximum power

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193 1 savings? 2 A. I don't know if Belt uses that 3 explicit phrase, but in a scenario of halting 4 operation of the processor when closing the 5 lid, that's going to be the state in which, 6 with the clock off, the processor is 7 consuming the least amount of power 8 possible -- the least amount of power that it 9 can. 10 Q. And as we established earlier, 11 that is just one embodiment. There are two 12 other embodiments in which the processors -- 13 the processor is not stopped, right? 14 A. There are other embodiments that 15 it is not stopped, correct. 16 Q. And so when the lid is closed and 17 the processor is not stopped, those are 18 examples where less than maximum power 19 consumption is not achieved -- is achieved? 20 A. In terms of the -- if the 21 processor is still being clocked and running 22 versus not being clocked and not running,	195 1 you're talking specifically about the suspend 2 mode embodiment, right? 3 A. That's correct, the lid closed, 4 suspend mode combination that Dr. Baker 5 addressed is what I'm addressing, it sounds 6 like, in my motivation to combine section -- 7 Q. Okay. And if Dr. Baker -- 8 A. -- or largely addressing. 9 Q. Okay. So your opinion on 10 Foster's idle mode is limited to just the 11 first embodiment where -- in Belt in which 12 the system is placed in suspend mode when the 13 lid is closed? 14 A. That sounds right. If there's 15 somewhere else in my declaration that I'm 16 talking about a different embodiment of Belt 17 in Dr. Baker's proposed combination, you'd 18 have to point me there. 19 Q. I'll note, I was looking for it, 20 I didn't find it. So to the extent Dr. Baker 21 did address an embodiment -- the second and 22 third embodiments of Belt in combination with
194 1 yes, in those scenarios the processor itself 2 would consume more power. 3 Q. And Foster's idle mode, which can 4 run, for example, at 5 megahertz, would be -- 5 would achieve a greater reduction in power 6 than does maintaining system operation at a 7 full 20 megahertz. Wouldn't you agree? 8 A. For the processor itself, that 9 would generally be correct; it would consume 10 less power at the 5 megahertz rate. 11 Q. So again, is there any reason you 12 have to dispute that a POSITA would have been 13 motivated to implement Foster's idle mode in 14 Belt's system? 15 A. I've -- I address this specific 16 embodiment of Belt that Dr. Baker addressed. 17 As to whether this other passage on Page 213 18 of Foster could or could not be incorporated 19 into other embodiments, I haven't performed 20 that analysis. 21 Q. Okay. And so when you say the 22 embodiment of Belt that Dr. Baker addressed,	196 1 Foster's idle mode, your declaration does not 2 address that; is that correct? 3 A. That sounds like something I 4 didn't address, that's correct. 5 Q. Okay. I want to change gears 6 slightly. If I could have you look at 7 paragraph 47 of your declaration... 8 A. Okay. 9 Q. Now, this is just one example and 10 I think you make a note of it elsewhere in 11 your report, but you say that the PMI handler 12 routine "has no relationship to the lid's 13 open or closed state." 14 Do you see that? 15 A. I don't see that in 47. 16 Q. So it's actually -- it bleeds 17 onto Page 21 at the top. You say, "This, 18 too, has no relationship to the lid's open or 19 closed state," and I take that as, in context 20 with the previous statement, you're referring 21 to the PMI handler routine? 22 A. That's correct, yes.

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197 1 Q. Okay. Just so I understand, is 2 it your opinion that the open condition, as 3 used in claim 1, means unfolded? 4 A. In reference to the Belt and the 5 Foster references, that's correct. 6 Q. So is your interpretation of 7 "open condition" in claim 1, regardless of 8 what Belt and Foster discloses, is it limited 9 to being only unfolded? 10 A. I haven't offered an opinion on 11 that. 12 Q. Okay. Similar question: Outside 13 of the prior art references, do you have an 14 opinion on what the meaning of "closed 15 condition" is? 16 A. Same answer. I haven't offered 17 an opinion on that. 18 Q. Okay. And staying at -- or my 19 apologies. Turning to paragraph 44 -- let me 20 know when you're there. 21 A. Okay. 22 Q. So this is the third line down.	199 1 mechanical switch or something that's a 2 routine that performs the task for putting 3 the CPU or the processor in the not running 4 instruction state for the lid being closed. 5 Q. Is concurrence enough? 6 A. I'm not sure. 7 MR. BRUNEEL: Object to form. 8 A. I'm not sure -- I'm not sure I 9 fully understand that question in light of 10 the word "concurrence." 11 (BY MR. KATSANTONIS) 12 Q. Does -- does the lid closed have 13 to cause the system to be placed in a lower 14 clock mode? 15 A. I'd have to go back to Belt 16 specifically to look at that; but as I 17 recall, Belt is just describing the scenario 18 of Belt's laptop lid being closed and having 19 the processor in the state of not executing 20 instructions. 21 Q. So I don't think that this is a 22 matter of what Belt disclosed, and I
198 1 It says, "Belt does not teach, suggest, or 2 contemplate adjusting the frequency of the 3 processor's clock signal in response to the 4 lid being closed while permitting the 5 processor to continue executing 6 instructions." 7 Do you see that? 8 A. Yes. 9 Q. When you say, quote, "in response 10 to," end quote, do you mean in direct 11 response to the lid closing? 12 A. I'm referring to the embodiment 13 in Belt where when the lid closes, the 14 processor goes into that stopped state as not 15 being clocked. 16 Q. I don't think that's exactly what 17 I was asking. 18 When you say "in response to," do 19 you interpret that to mean -- or did you use 20 that term to mean in direct response to? 21 A. I have it delineated there, it 22 looks like, whether that's something like a	200 1 apologize if I made this more confusing than 2 it has to be. I was more referring to 3 specifically what claim 1 requires and how 4 you're interpreting claim 1. 5 So claim 1 requires maybe -- what 6 is it, limitation C, controls the frequency 7 of the clock signal so as to become a second 8 frequency lower than the first frequency when 9 the mobile terminal is in the closed 10 condition. 11 And so my question is, are you 12 interpreting that limitation as requiring 13 that the closed condition needs to trigger -- 14 directly trigger the entering of the lower 15 clock frequency? 16 A. That's something outside the 17 scope of my declaration as to whether there 18 is some kind of causal relationship or not 19 there. 20 Q. So that doesn't seem to be the 21 case, to me at least, because you're 22 contrasting Belt, and you're saying that it's

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201 1 not in response to; and so I think at some 2 level you -- you were interpreting -- you 3 have an understanding of what this claim 4 means to you, this limitation, as it relates 5 to Belt. 6 A. Maybe I'm confused as to what 7 you're asking. I thought your initial 8 question was -- maybe we -- maybe you could 9 start over with the initial question. 10 Perhaps I'm misunderstanding you. 11 Q. So looking at paragraph 44 of 12 your declaration, the third line down, I 13 understand what you -- to be saying here is 14 that "Belt does not teach, suggest, or" 15 contemplating -- "or contemplate" lowering 16 the clock frequency of the processor in 17 response to the lid being closed. 18 And I -- I understand you are 19 discussing that in relation to what the '417 20 patent claims; is that fair? 21 A. It looks like these statements 22 are in the context of what the '417 patent is	203 1 Is that a fair characterization 2 of what your dispute is with respect to Belt 3 in this portion? 4 A. That -- in this embodiment, 5 Belt's either talking about the processor 6 running at normal operating speed or being 7 completely halted, and it's not teaching that 8 adjusting the frequency of the processor -- 9 adjusting the frequency such that it's 10 continuing to operate or execute instructions 11 in response to the lid being closed. 12 Q. If Belt teaches a lower clock 13 speed while the lid is closed but that 14 lowering of the clock speed is caused for 15 some reason independent of lid position, 16 would that still meet claim 1, in your 17 opinion? 18 A. I -- I don't believe I've 19 analyzed that situation. Belt talks about a 20 scenario where the lid's closed and the 21 processor keeps operating, as we talked about 22 earlier.
202 1 teaching, that's right. 2 Q. And specifically I understand 3 this to be discussing what the '417 patent 4 claims as controlling the clock frequency to 5 become the lower clock frequency when in the 6 closed condition. Is that -- is that a fair 7 characterization? 8 A. In terms of the last portion at, 9 I guess, the first line of column 7, that 10 it's in relation to controls, the clock 11 frequency of the clock signal, so as to 12 become a second frequency lower than the 13 first frequency when the mobile terminal is 14 in the closed condition. 15 Q. Okay. So if Belt were to have 16 taught -- strike that. 17 I understand from the remaining 18 portion of this paragraph that it's your 19 opinion that because Belt doesn't teach a 20 cause and effect -- that is, closing the lid 21 to Belt's laptop controls whether the 22 processor speed is lowered.	204 1 Q. And while operating, Belt does 2 teach that the processor clock can be 3 lowered, right? 4 A. There are various places in Belt 5 that talk about the register that indicates 6 the speed the CPU is running at. 7 Q. Okay. And one such example could 8 be that a change in clock frequency can be 9 brought about through the PMI handler 10 interrupt, right? 11 A. That Belt talks about when the 12 PI -- sorry, PMI handler runs, we're going to 13 run that -- or Belt's going to run that at 14 the fastest speed of the CPU. 15 Q. And then after that's done, 16 resumes the clock speed that was intact prior 17 to the PMI handler? 18 A. That's right. 19 Q. Okay. And I know -- I know you 20 dispute this, but assuming for the moment 21 that the Board finds that this PMI handler 22 interrupt can be the specific processing, is

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205 1 it your -- would it be your opinion that the 2 specific processing does not meet this 3 limitation because it is not triggered by the 4 lid closing? 5 A. I'd have to analyze that for you. 6 I haven't analyzed that in my declaration. 7 Q. Okay. So you don't have an 8 opinion one way or the other whether the 9 claim limitation that requires controlling 10 the clock frequency needs to be -- refers to 11 directly controlling the change in clock 12 frequency? 13 A. That sounds like something I -- I 14 haven't addressed with -- in terms of 15 directly or how directly those steps occur. 16 Q. Okay. I've lost track of time 17 here. 18 MR. KATSANTONIS: Let's go off 19 the record for a minute. 20 (Break taken from 2:31 p.m. to 21 2:39 p.m.) 22 (BY MR. KATSANTONIS)	207 1 mention ACPI. There were other similar 2 mechanisms prior to ACPI, such as APM, that 3 were used, but I don't recall them explicitly 4 mentioning ACPI. 5 Q. Okay. In your opinion, does the 6 teachings in the ACPI apply to cellular 7 phones? 8 A. I would say ACPI discusses a 9 number of things, but a processor extraction 10 layer and a hardware extraction layer and how 11 an operating system can modify or control 12 things like power, a person of skill would 13 understand if that specifically weren't 14 applicable to the processor in a -- in a cell 15 phone at the time of the patent, similar 16 software architectures and mechanisms could 17 be used. 18 Q. Okay. And so your opinion that a 19 POSITA would have understood that at the time 20 of the invention of the '417 patent the 21 de facto power management mechanism is the 22 ACPI, that's not -- your opinion isn't based
206 1 Q. All right. Dr. Brogioli, welcome 2 back. 3 So I would like you to turn to 4 paragraph 55 of your declaration. 5 A. Okay. 6 Q. And specifically towards the end, 7 you start discussing a de facto power 8 management mechanism referred to as the ACPI. 9 Do you see that? 10 A. Yes. 11 Q. Okay. Now, Belt doesn't 12 explicitly mention the ACPI; is that correct? 13 A. That's my recollection, yes. 14 Q. Okay. The same is also true for 15 Foster. Foster does not explicitly discuss 16 or reference the ACPI? 17 A. That's also my recollection. 18 Q. And likewise, neither Belt nor 19 Foster provides that its power management 20 mechanism is limited to what is disclosed in 21 the ACPI? 22 A. I don't -- they don't explicitly	208 1 on any disclosures in Belt or Foster? 2 A. I would say my opinion is based 3 on, at the time of the patent -- ACPI is 4 what's used for Intel processors at the time, 5 but Belt and Foster themselves, I don't 6 believe, explicitly mention ACPI. 7 Q. And although Belt and Foster 8 disclose using an Intel processor, neither 9 limits the scope of their disclosures to only 10 Intel processors; isn't that fair? 11 A. Let me go back and look for you. 12 So I note in Foster it mentions 13 in places one conventional and 14 commercially-available processor is the 15 386SX; and then I think in column 16, halfway 16 down, a processor "suitable for use in the 17 system 310, of figure 13 is an Intel 386SL." 18 Take a quick look at Belt for 19 you. Belt says in column 2, last paragraph, 20 "In the preferred embodiment, the main 21 processor is implemented with an Intel" SL. 22 Q. Okay. And so none of these

209 1 disclosures, though, say, for example, the 2 teachings herein are limited to an Intel 3 386SL processor, right? 4 A. I don't see that they're -- that 5 Belt or Foster are saying that. 6 Q. Okay. And now, in paragraph 56 7 of your declaration, you're talking about 8 here the ACPI, and I believe it's -- it's at 9 the end of this, and now we're looking at 10 Page 26 at the end of this paragraph. 11 And you say that a POSITA at the 12 time of the '417 patent -- oh, actually, I 13 apologize. I went to the wrong place. 14 The bottom of Page 25, "a POSITA 15 would" have understood "that all disclosures 16 in the prior art relating to variable clock 17 speed pertain to S0, the 'working' state." 18 Do you see that? 19 A. That's correct. 20 Q. Okay. And what are you referring 21 to when you say "all disclosures in the prior 22 art"? Is that Belt and Foster, or are you	211 1 Q. So I understand from your 2 declaration that the ACPI provides teachings 3 regarding variable clock speed; is that 4 correct? 5 A. It teaches aspects of that, as I 6 recall, that's right. 7 Q. Okay. And if I could direct your 8 attention to Exhibit 8, the ACPI standard, or 9 specification; and I used section numbers to 10 identify that, but that's not really helpful. 11 So on page -- where is it? So 12 what I'm -- what I guess my question is, when 13 you refer to "variable clock speeds," is that 14 in reference to the ACPI disclosure of 15 throttling? 16 A. Looks like here I'm talking about 17 the ACPI defining those different operating 18 states, like -- excuse me, a full execution 19 sleep or other parts of the system being 20 suspended, like RAM down to the S -- 21 something like S5, where you've got a full 22 off and you've got to boot the machine to
210 1 referring to something other than that? 2 A. In the prior art that I'm 3 addressing in my declaration, that that S and 4 zero state is going to be the working or 5 running state. 6 Q. Okay. And there's S0 -- is that 7 also essentially the same thing as C0? 8 A. Good question, because I've been 9 confusing these for decades. It may be -- 10 Q. Okay. 11 A. -- the C state for running state 12 of the processor. 13 Q. Okay. And I don't mean to hide 14 the ball on you. I'm going to drop in the 15 ACPI -- 16 A. Thanks. 17 Q. -- specification, which is going 18 to be marked as Exhibit 8. 19 (Whereupon Exhibit Number 8 was 20 marked for identification.) 21 A. All right. 22 (BY MR. KATSANTONIS)	212 1 come back -- come back to operation. 2 Q. Okay. If you can take a look at 3 Page 68 of Exhibit 8... 4 A. Okay. 5 Q. And under the header "4.7.2.6," 6 starting at the second line -- it's like the 7 third sentence in, "While in the C0 state." 8 Do you see that? 9 A. Yes. 10 Q. Okay. And so the ACPI 11 specification says, "While in the C0 12 state" -- which that's the working state; is 13 that correct? 14 A. This -- yes, the C0 state's where 15 the processor is executing instructions. 16 Q. Okay. And because the processor 17 is executing instructions, the processor 18 needs to have a clock frequency, right? It 19 needs to be operational? 20 A. Yes, it needs to have a clock 21 coming in or an in -- an active clock. 22 Q. And so again here, the ACPI says,

213 1 "The ACPI allows the performance of the 2 processor to be altered through a defined 3 'throttling' process." 4 Do you see that? 5 A. Yes. 6 Q. Okay. The CPU throttling, as 7 provided in the ACPI, that's also 8 colloquially referred to as "dynamic 9 frequency scaling"; is that correct? 10 A. There is something called dynamic 11 frequency and voltage scaling or sometimes 12 dynamic voltage and frequency scaling that I 13 think in some cases may map to what's in this 14 figure, but I don't see that -- where they 15 correlate with what's in this figure. I 16 don't see that this section is talking about 17 that technology specifically. 18 Q. Okay. But if you -- if you 19 scroll down to the next page, 69, there's a 20 diagram, and the ACPI provides -- the 21 throttling mechanism allows the clock to the 22 processor to change during operation; is that	215 1 S4. 2 A. That's correct. 3 Q. Do you see that? Okay. 4 Now, in Belt -- so do your 5 opinions regarding states S1 through S4, as 6 taught in the ACPI, are those opinions 7 limited to Belt's disclosure in which, when 8 the lid is closed, it's -- a suspend mode is 9 entered? 10 A. I would say those states 11 correspond to the CPU halted, i.e., not 12 executing instructions. So to the extent 13 Belt is talking about embodiments where the 14 CPU is not executing instructions, those 15 would be similar states. 16 Q. Okay. And so these -- these 17 states in which the processor's halted, they 18 would not be applicable to options 2 and 3 in 19 Belt in which the -- in which operations of 20 the processor and the system continue when 21 the lid is closed; is that correct? 22 A. That sounds right. In the -- in
214 1 correct? 2 A. Give me one second to confirm. 3 It looks like in that Figure 4-13 4 it's talking about, the upper big purple 5 oval, C0; and then you can have full speed or 6 throttling within that C0. 7 Q. And is an example of when a 8 processor might throttle the clock frequency 9 is when there's not a high computational 10 demand? 11 A. We'd have to go look at a 12 specific processor and implementation. 13 Q. Do you dispute that dynamic clock 14 frequency scaling was known prior to the '417 15 patent? 16 A. I would say the notion of 17 adjusting a processor's operating frequency 18 could be used for power management as a 19 general concept. 20 Q. And in paragraph 56 of your 21 declaration you talk about -- and I'm sorry 22 if I said 55, I meant 56 -- states S1 through	216 1 the scenarios of Belt where the -- Belt's 2 processor is still processing instructions, 3 those wouldn't be -- it sounds like those 4 wouldn't be the S1 through S5 here. 5 Q. Okay. And in that same vein, is 6 the ACPI's referencing to CPU throttling -- 7 that would be applicable to options 2 and 3 8 in Belt in which the system remains 9 operational. Would that be fair? 10 A. In ACPI land, those sound like 11 these are the states where the CPU is 12 operating at a frequency. 13 Q. Okay. So assuming the ACPI 14 applies to Belt's operational mode, it would 15 be able to throttle the CPU, is that correct, 16 or a POSITA would have understood that Belt's 17 processor could -- processor clock could be 18 throttled during operation? 19 A. I -- I don't believe Belt talks 20 about that functionality in terms of what it 21 discloses in terms of the fully running state 22 of the processor.

217 1 Q. Fair; but at the same time, Belt 2 doesn't disclose any of specifically S1 3 through S5 or the ACPI standard. So it seems 4 to me that it -- based on your opinion that a 5 POSITA would have understood that Belt's 6 system would have used the ACPI standard, do 7 you have any reason to dispute that Belt's 8 system could not use the CPU throttling 9 mechanism defined in the ACPI? 10 A. ACPI mentions the concept of CPU 11 throttling. I don't know that that 12 functionality was present in the time of 13 Belt, that particular functionality, or 14 disclosed in Belt. 15 Q. So then, what's your basis for 16 discussing the various power states defined 17 in the -- in which the CPU is halted in the 18 ACPI with Belt? 19 A. There are known states of full 20 execution or halt, various halt, sleeping 21 states, as I talk about in my paragraph 56; 22 and a person of skill would be aware at the	219 1 Q. Okay. And I'll -- I'll represent 2 that I downloaded this exhibit directly from 3 a filing that's -- of your declaration, and 4 so I just want to make sure that maybe I'm 5 not missing something here. 6 A. I think I noticed that in my 7 paragraph 56, at the last few lines, I 8 reference -- make a second reference to the 9 ACPI specification 2.0 from July of -- sorry, 10 2000, and that has those S0 to S5 states. It 11 looks like I referenced both the ACPI 12 revision 1 and revision 2. 13 Q. Okay. Just bear with me one 14 second. 15 To your knowledge, is there 16 significant changes between the two 17 revisions? 18 A. I don't think that I point it out 19 in my declaration, no. At least I don't 20 think I point it out in the context of my 21 declaration, I should say. 22 Q. Does -- to your recollection,
218 1 time of the patent of the ACPI. 2 Q. With that in mind, although a 3 POSITA would have been aware of the ACPI, are 4 you saying that they would not have 5 considered Belt to operate consistently with 6 what is disclosed in the ACPI? 7 A. I would say that the person -- 8 what I'm saying is the person of skill in the 9 art at the time of the patent would be aware 10 of these states, S0 through S5, and would 11 have that same understanding at the time of 12 Belt of -- of the -- either fully running or 13 in various S1 through S5 states. 14 I also note, I think it looks 15 like the version of the API spec that you 16 provided is not the same version that I cited 17 in my declaration. 18 Q. Paragraph 55 of your report 19 references ACPI revision 1.0 which has been 20 marked as Exhibit 2023 in the IPR 21 proceedings; is that correct? 22 A. That's correct.	220 1 does revision 1 identify these, what I'm 2 going to call S states, in a manner that's 3 different than what's described in revision 2 4 to the point where it would impact your 5 opinion? 6 A. Sitting here right now, I don't 7 think there is. 8 Q. And so why did you cite revision 9 2.0 instead of 1.0 at the end of this 10 paragraph 56 in your declaration? 11 A. I vaguely remember, in drafting 12 the declaration first, I may have had a copy 13 of 2.0 on hand, and then I think I said, oh, 14 that -- maybe cite to the -- the earlier one, 15 1.0. 16 I don't remember the details 17 specifically, but that -- something vaguely 18 comes to mind there, and I may have just 19 forgotten to change it. 20 Q. Okay. Sorry, I was just taking a 21 look at the second version. 22 I have no further questions.

Transcript of Michael Brogioli, Ph.D.
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56 (221 to 224)

221 1 MR. BRUNEEL: Nothing from me. 2 THE COURT REPORTER: Do you 3 both want a rough draft? 4 MR. KATSANTONIS: Yes, please. 5 MR. BRUNEEL: Please. 6 MR. KATSANTONIS: Could we 7 actually request an expedited version of 8 that, please? 9 (Discussion off the record 10 about timing.) 11 THE COURT REPORTER: Can I get 12 it to you on Wednesday? 13 MR. KATSANTONIS: That's fine. 14 MR. LIMBACH: Perfect. 15 (Deposition concluded.) 16 17 18 19 20 21 22	223 1 counsel at the deposition. 2 I further certify that the deposition 3 of Dr. Michael Brogioli occurred virtually on 4 July 24, 2026, commencing at 9:05 a.m. to 5 3:03 p.m. Central time. 6 I further certify that I am not related 7 to any of the parties to this action by blood 8 or marriage, I am not employed by or an 9 attorney to any of the parties to this 10 action, and that I am in no way interested, 11 financially or otherwise, in the outcome of 12 this matter. 13 IN WITNESS WHEREOF, I have hereunto set 14 my hand this 29th day of July, 2026. 15 16  17 Annette Peltier, Texas CSR 3253 18 Expiration Date: 10/31/27 19 Firm Registration No. 686 20 451 Hungerford Drive 21 Suite 400 22 Rockville, MD 20850 Phone: 888.433.3767 Fax: 888.503.3767
222 1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 3 4 BEFORE THE PATENT TRIAL AND APPEAL BOARD 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG ELECTRONICS AMERICA, INC., Petitioners v. MAXELL, LTD., Patent Owner Inter Partes Review No.: IPR2025-01309 U.S. Patent No. 7,577,417 Certificate of Shorthand Reporter I, Annette Peltier, CSR, Texas Certified Realtime Reporter in and for the State of Texas do hereby certify: That Dr. Michael Brogioli, the witness whose deposition is herein before set forth, was duly sworn before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness. I further certify that the adverse party, Patent Owner, was represented by	

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ability	215:6, 216:10,	130:17, 132:21,	116:6, 116:10,
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