

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4
5 COMCAST CABLE COMMUNICATIONS, LLC,

6 Petitioner,

7 v.

8 ENTROPIC COMMUNICATIONS, LLC,

9 Patent Owner.

10
11 Patent No. 8,284,690

12 Inter Partes Review No.: IPR2024-00430

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16
17 DEPOSITION OF JAMES BERTONIS

18 VIA ZOOM

19 March 28, 2025

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23 Reported by: Dana Peabody, RDR, CRR, CSR No. 6332

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ENTROPIC EXHIBIT 2008

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Page 142 1 Deposition of James Bertonis, taken on behalf of the 2 Patent Owner, via Zoom, commencing at 8:58 a.m., on 3 March 28, 2025, before Dana Peabody, CSR No. 6332. 4 5 APPEARANCES: 6 7 For Petitioner: 8 BANNER & WITCOFF, LTD. 9 BY: CRAIG W. KRONENTHAL, ESQ. 10 1100 13th Street N.W., Suite 1200 11 Washington, D.C. 20005 12 202.824.3000 13 ckronenthal@bannerwitcoff.com 14 15 For Patent Owner: 16 K&L GATES LLP 17 BY: VINCENT J. GALLUZZO, ESQ. 18 300 South Tryon Street, Suite 1000 19 Charlotte, North Carolina 28202 20 704.331.7400 21 vincent.galluzzo@klgates.com, 22 23 24 25	Page 144 1 PROCEEDINGS 2 3 THE REPORTER: Good morning, everyone. My 4 name is Dana Peabody, California CSR Number 6332. 5 Mr. Bertonis, Will you please raise your 6 right hand? 7 8 JAMES BERTONIS, 9 having been duly sworn, or affirmed, was examined 10 and testified as follows: 11 12 EXAMINATION 13 BY MR. GALLUZZO: 14 Q. Good morning, Mr. Bertonis. 15 A. Good morning, sir. 16 Q. If you recall, my name is Vince Galluzzo. 17 I'm one of the attorneys representing Entropic in 18 this matter. I took your deposition in this matter 19 on your original declaration back in November. 20 A. Yes. 21 Q. We went over some ground rules back then. 22 Those same ground rules apply. 23 There's a few others because we're remote 24 here today as opposed to in person like we were in 25 November, so I'll just go over those very briefly
Page 143 1 INDEX 2 3 EXAMINATIONS 4 WITNESS PAGE 5 JAMES BERTONIS 6 MR. GALLUZZO 144 7 8 EXHIBITS 9 10 (No exhibits marked.) 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Page 145 1 with you. 2 The first ground rule that applies is I'm 3 going to do my very best to ask you clear questions. 4 Sometimes I might fail. If in your mind you don't 5 understand my question, can I trust that you will 6 ask for clarification? 7 A. I will. 8 Q. And if you answer my question without 9 asking for clarification, can I assume that you 10 understood and answered the question as you 11 understood it? 12 A. Yes. 13 Q. I'll try to take breaks once every hour. 14 I'm not sure how many we will need, but I like to 15 stick to that anyway. If you need a break sooner, 16 please take one. 17 A. I might ask for one only because I've been 18 drinking coffee, and that happens in the morning. 19 Q. That's entirely fine. My only stipulation 20 is that you'll just have to answer whatever question 21 is pending, if one is pending, before we go on a 22 break. 23 A. Okay, thank you. 24 Q. The other thing is since we are remote 25 here today, I can't see who or what is in the room

Page 146 1 with you, so I'll just ask, are you alone in the 2 room that you're in? 3 A. Yes, right now, I am alone. I do have 4 another person who works here may come in later on 5 in the day. 6 And the other thing, I just happened to 7 notice, there's an inspector for the company that 8 checks our fire sprinklers twice a year, and he's 9 roaming around the office complex doing inspections, 10 so I might have to answer him if he comes in to ask 11 permission to walk around our suite. 12 Q. That's fine. 13 A. Yeah, other than that, I'm alone. 14 Q. If that occurs, just ask to go off the 15 record, and we can do that. I'll just ask that you 16 keep your door closed and stay alone, to the extent 17 you can. If there is someone else in the room with 18 you, will you state so for the record? 19 A. Yes. So we don't have closed doors. This 20 is just open -- I mean, we do -- open partitions and 21 stuff, so if someone else enters the suite, I'll 22 just -- I'll make you aware. 23 Q. Thank you. 24 A. There's an alarm on the door that goes off 25 if someone comes in our main door, and it's a pretty	Page 148 1 have my home there in case they say, you know, our 2 gas line is leaking or something like that, so. 3 Q. That's entirely fine. If my wife calls, 4 we will be going off the record as well. So just 5 note if you need to go off the record, I'm happy to 6 do it. 7 A. Okay, thank you. 8 Q. Is there any reason you can't give full, 9 truthful, and accurate answers to my questions here 10 today? 11 A. No reason. 12 Q. Are you under the influence of medication 13 or anything else that might impair your ability to 14 answer questions today? 15 A. I am not. 16 Q. All right. Anything further that you need 17 from me or from Mr. Kronenthal before we get 18 started? 19 A. No. 20 Q. All right. Mr. Bertonis, I understand you 21 have some documents already prepared for you, both 22 in paper and electronic. I'd just like to clear up 23 for the record what those are. 24 My understanding is that you have copies 25 of your original declaration, which is Exhibit 1002,
Page 147 1 small office, so, you know, a thousand square feet 2 or something like that. So, okay. 3 Q. Yeah, the main goal is so that you are not 4 distracted, and your testimony is not influenced. 5 So as long as you can just note when someone else is 6 in the office suite with you, I'd appreciate that. 7 A. Sure. 8 Q. Other than the Zoom application and 9 perhaps Adobe to review documents that are exhibits 10 in this case, do you have any other applications 11 open on your computer? 12 A. I have my normal web pages open. It's 13 nothing related to the case, just, you know, news 14 sites and things like that. 15 Q. Can I ask you not to reference those web 16 pages during this deposition? 17 A. Yeah, absolutely, and I won't go there at 18 all, yes. 19 Q. And also, because we're remote, can I ask 20 you not to communicate with anybody else during our 21 question and answer, such as text message or 22 otherwise? 23 A. Okay, yeah, I have my phone on silent. 24 Only that I do have contractors working at my home. 25 In case there's an emergency, I wanted to at least	Page 149 1 your reply declaration, which is Exhibit 1036, both 2 in paper, and that you have all other exhibits with 3 a 1,000 or a 2,000 series number in this case 4 electronically. Is that accurate? 5 A. That's correct. 6 Q. Are any of those exhibits annotated or 7 marked up in any way other than how they originally 8 existed? 9 A. No, the two copies of -- printed of my 10 declarations are as received from the law firm. 11 There's no notes, nothing. There's a few highlights 12 that were part of the original document, but no 13 other pencil marks, notes, pads, or anything. 14 And the electronic documents are a clean 15 directory that I received a copy of days ago that I 16 haven't done anything except click on and open. 17 Q. Okay. During the course of this 18 deposition, like I told you last time, you're free 19 to refer to anything in that document set that you 20 want to refer to. The only thing I ask is if you do 21 refer to something, that you just tell me what 22 you're referring to because I can't look over the 23 table and see what it is. 24 A. Okay. 25 Q. I'll represent to you that the deposition

Page 150 1 that I took of you earlier in this case was in 2 November of 2024, specifically November 13th. 3 Do you know how much time you've spent on 4 this matter since November 13th of 2024? 5 A. I don't have that number. I can -- if you 6 want to ask me for an estimate, the issue is I'm 7 working, you probably know, on two different patent 8 cases, and so I have, you know, time on both of 9 them. You know, probably roughly 50-50, but I don't 10 have the exact number. 11 Q. What would you estimate is the amount of 12 time you spent on this case specifically? 13 A. Since my last deposition in November? 14 Q. Correct. 15 A. 30 or 40 hours. 16 Q. That includes time drafting your reply 17 declaration, Exhibit 1036? 18 A. That's correct. 19 Q. How much time specifically on drafting the 20 reply declaration did you spend? 21 A. Well, pretty much all the -- I don't want 22 to say all, but the majority of the work was 23 revolved around preparing that declaration, and so a 24 lot of it might be phone calls, discussions, you 25 know, just discussing things, but it -- pretty much	Page 152 1 you contributed were more or less in terms of the 2 total volume than what Banner Witcoff had 3 contributed? 4 A. Probably less. 5 Q. Why do you say that? 6 A. Just thinking about the procedure and how 7 I -- you know, what I wrote and what I received and 8 read, I would say that -- I would say that the 9 pieces that actually I wrote were less than the 10 pieces that other -- that other people wrote. 11 Q. Do you recall the topics of the pieces 12 that you wrote, what they were about? 13 A. I think it was just scattered throughout, 14 different pieces. Certainly parts about my 15 background would be more written by me, but -- boy, 16 I don't know how I could -- it would be difficult 17 for me to go through the declaration and say that 18 sentence was from me, and that sentence was from 19 attorneys, and it goes back and forth so many times, 20 it's hard for me to do that. 21 Q. Are there any pieces of the reply 22 declaration that you can say with certainty were 23 written by you? 24 A. Well, can I look through and see -- and 25 see if I can recognize some sentences?
Page 151 1 my work since my last -- since November has revolved 2 around preparing that, and then more recently, just 3 preparing for today. 4 Q. Who created the initial draft of your 5 reply declaration? 6 A. I would say the lawyers prepared the 7 initial draft. I -- well, let me say that there 8 were pieces that, you know, I wrote and submitted 9 different pieces, but, in general, it was created by 10 the lawyers at Banner Witcoff. 11 Q. What percentage would you say of the reply 12 declaration was created by Banner Witcoff? 13 A. Boy, I'm not sure how to apply the 14 calculation of that because ultimately, I had to 15 approve and be comfortable with everything, so I'm 16 not sure how I answer that question, right? I mean, 17 you know, because there's nothing in there that I 18 would -- I wouldn't have, you know, accepted or said 19 I agree with, so I don't know. It's hard for me 20 to -- when you're writing sentences and talking 21 about things, it's hard to -- it's hard for me to 22 parse that out. I don't know. 23 Q. You testified that Banner Witcoff created 24 the document, and you would have contributed pieces. 25 Can you give me any estimate of whether those pieces	Page 153 1 Q. Sure. I'll give you a couple minutes to 2 do that. If it's going to take longer than that, 3 then I'll withdraw the question. 4 A. Okay. Oh, just, you're asking for some 5 examples, so -- so just providing an example, 6 there's a discussion of OFDMA and DOCSIS and when 7 OFDMA was adopted into DOCSIS and kind of the 8 history going back and forth, and I wrote a lot of 9 that, I recognize is my writing. 10 For instance, Section 83 on page 78, 11 that's clearly my wording. That's just something 12 that jumps out at me that I remember writing, and I 13 can probably give further examples, but that one 14 just jumps right out at me. I can read it to you if 15 you want -- 16 Q. I'm looking at it right now. 17 A. Okay, yeah. 18 Q. Let's talk about OFDMA since you brought 19 it up. 20 Is OFDMA one-to-many or many-to-many? 21 A. I don't understand what you mean by that 22 question. 23 Q. Are you familiar with networking concepts? 24 A. Yes. 25 Q. Are you familiar with the phrase

Page 154 1 "one-to-many" in networking? 2 A. No. 3 Q. Are you familiar with the phrase 4 "many-to-many" in networking? 5 A. No, it's not a term I use. 6 Q. What does the MA in OFDMA mean? 7 A. Multiple access. 8 Q. Multiple access for what? 9 A. Users. 10 Q. Explain what you mean by that. 11 A. Users that would be transmitting 12 simultaneously in different frequency slots. 13 Q. To what? 14 A. To a base station. 15 Q. So that would be multiple users to a 16 single base station on the same channel? 17 A. Potentially. 18 Q. What else could it include? 19 A. Well, the concept is basically having 20 multiple users, so I'm -- I'm not sure what you mean 21 by what else can it include. 22 Q. Is the concept having multiple base 23 stations? 24 MR. KRONENTHAL: Objection. Form. 25 THE WITNESS: I don't see why not.	Page 156 1 A. Yeah, it's possible. There's nothing 2 technically that would make it not possible. 3 Q. Is there anything more you can say other 4 than it being possible? 5 A. No. 6 Q. Could OFDMA -- or withdrawn. 7 Is OFDMA applicable to a situation where 8 multiple base stations are communicating with 9 multiple subscribers? 10 A. It could be. 11 Q. Anything more you can say other than 12 "could be"? 13 A. No. 14 Q. Let's focus on WiMAX for a second. 15 I understand it's your testimony that 16 WiMAX can implement OFDMA. Is that right? 17 A. Yes. 18 Q. In WiMAX, can a subscriber have multiple 19 uplink channels with a single base station? 20 A. Can I refer to my declaration? 21 Q. Of course. 22 A. Okay. I found my section on WiMAX. 23 Can you please repeat the question again? 24 Sorry. 25 Q. Yeah. In WiMAX, can a subscriber or a
Page 155 1 BY MR. GALLUZZO: 2 Q. I understand you don't see why not, but is 3 that what the concept is used for? 4 MR. KRONENTHAL: Objection. Form. 5 THE WITNESS: Well, it could be. 6 BY MR. GALLUZZO: 7 Q. What do you mean, "it could be"? 8 A. You could have multiple base stations 9 transmitting in the same -- in the same slot. 10 Q. To a single -- single subscriber? 11 A. It's possible. 12 Q. And that's your testimony, that that's 13 what OFDMA encompasses? 14 A. No, I'm saying it's -- OFDMA is multiple 15 access, so it could be either side multiple access. 16 Q. What do you mean, "either side multiple 17 access"? 18 A. Well, it could be -- it could potentially 19 be base stations or it could be subscribers in that 20 terminology. 21 Q. Could it mean both at the same time? 22 A. You mean OFDMA being used by both -- in 23 other words, OFDMA being used in both directions at 24 the same time? 25 Q. Both upstream and downstream, yes.	Page 157 1 subscriber station, SS, have multiple uplink 2 channels within -- I'm sorry -- with a single base 3 station, or BS? 4 MR. KRONENTHAL: Objection. Form. 5 THE WITNESS: So I'm trying to figure out 6 what you're asking. You're asking can one 7 subscriber talk to one base station using multiple 8 frequencies or -- I'm trying to figure out what you 9 asked. 10 BY MR. GALLUZZO: 11 Q. I used the phrase "multiple uplink 12 channels." 13 MR. KRONENTHAL: Objection. Form. 14 THE WITNESS: So when you say "uplink 15 channels," are you talking about the slots, the 16 frequency slots that are assigned or -- or I'm not 17 sure what you mean by "channel." 18 BY MR. GALLUZZO: 19 Q. Yes, the frequency slots that are assigned 20 for upstream communications from the SS to the BS. 21 MR. KRONENTHAL: Objection. Form. 22 THE WITNESS: I can only quote from my 23 declaration where I say that a POSITA would have 24 understood that using OFDM, as well as other 25 multiple access schemes, to simultaneously transmit

Page 158 1 messages is obvious when you have multiple access 2 system designed for simultaneous access, which is a 3 situation in which WiMAX having multiple base 4 stations and multiple subscriber stations. 5 BY MR. GALLUZZO: 6 Q. Which half of your declaration are you 7 reading from? 8 A. Bottom of page 37. 9 Q. Other than quoting from your declaration, 10 are you able to answer my question? 11 A. Well, I prefer to go through my 12 declaration because that's where I address these 13 issues. 14 Q. I'm not sure if you addressed the question 15 I'm asking. 16 So let's back up. You're familiar with 17 the WiMAX standard, correct? 18 A. Yes. 19 Q. And you've testified about it extensively, 20 what you think it means and does. 21 A. Yes. 22 Q. So are you able to answer my question: In 23 WiMAX, can a subscriber station have multiple uplink 24 channels with a single base station? 25 A. Well, he can be assigned different	Page 160 1 multiple base stations, each transmitting a ranging 2 response to a single subscriber station using OFDMA? 3 A. Can you show me where that is in my 4 declaration? 5 Q. Do you know whether that's your opinion or 6 not? 7 A. Well, I'd have to -- I'd like to find that 8 section in my declaration where we discuss that. 9 Q. But you just don't remember whether you 10 have an opinion on that or not? 11 A. I'd like to see it to -- in order to 12 address it further. 13 Q. Okay. It's in paragraph 40. 14 To be clear, Mr. Bertonis, I'm just as 15 capable of reading as you are, and what I was hoping 16 we could do today is do more than just read your 17 declaration because I don't need to waste your time 18 or my time or Ms. Peabody's time if we're just going 19 to read your declaration. 20 So it's not a question, but I'm just 21 warning you that if all we're going to do is read 22 your declaration, I don't think we're going to have 23 much to do, and that's going to create problems. 24 My question is, is it your opinion that 25 WiMAX teaches multiple base stations each
Page 159 1 channels. Are you saying -- I'm not sure I 2 understand your question. Are you saying 3 simultaneously transmitting two channels, or in the 4 course of normal operation, he might go from channel 5 to channel? 6 And, by the way, when you say "channel," 7 are you referring to the assigned OFDMA slots? Is 8 that what you're referring to? 9 Q. How is the phrase "channel" used in WiMAX? 10 A. Well, I'd have to go to the WiMAX spec and 11 see because it may be used in multiple ways. 12 Q. But you don't know off the top of your 13 head, testifying as an expert about WiMAX, how WiMAX 14 defines "channels"? 15 A. Not without going to the WiMAX spec and 16 reviewing it. 17 Q. So you're not able to -- without looking 18 at the WiMAX spec or quoting from your declaration, 19 you're not able to answer my question, which I'll 20 ask one more time: Can a subscriber station have 21 multiple uplink channels with a single base station 22 in WiMAX? 23 A. I don't want to speculate without 24 referring to more detail as to the answer. 25 Q. Is it your opinion that WiMAX teaches	Page 161 1 transmitting a ranging response to a single 2 subscriber station using OFDMA? 3 A. I'm reviewing that section in my 4 declaration. 5 So the best I can answer is that multiple 6 base stations do independently transmit a ranging 7 response, and so at least once, two ranging 8 responses would be transmitted. 9 Q. And it's your belief that pages 50 to 51 10 and 199 to 213 of WiMAX support that opinion? 11 A. You're referring to where -- to 12 Exhibit 1013, pages 50 to 51, and -- if that's in my 13 declaration, the answer is yes, if that's -- 14 Q. The end of paragraph 40? 15 A. Yeah, if that's the correct exhibits, then 16 the answer is yes. 17 Q. And that's all you cite for that -- 18 A. Yes. 19 Q. -- out of WiMAX? 20 A. Yes. 21 Q. All right. Let's go to page 50 and 51 of 22 Exhibit 1013. 23 A. Okay. Give me a second here. 24 Okay. I have the -- I've lost looking at 25 you on the screen now because the WiMAX spec's

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Page 162 1 opened on my monitor. 2 You asked me to go to page 50. I'm 3 cursoring down to it. It goes pretty fast. Okay. 4 I have page 50. 5 Q. I'm -- 6 A. Oh, wait a second. There's -- I get two 7 different page numbers, so I have a page number that 8 shows up on my -- whatever is open, this Adobe, and 9 then I have a page that shows on the actual page 10 number of the document. I'm assuming you mean the 11 actual page number printed on the bottom of the 12 document? 13 Q. I don't know, Mr. Bertonis. It's your 14 declaration. Which page were you citing to? 15 A. I just want to make sure that it's 16 correct. Hold on here. 17 Yeah, I was citing to the actual page 18 written on the bottom of the document, not as it's 19 read out through Adobe. 20 Q. Okay. So you're at page 50 and 51, as you 21 cited in your declaration? 22 A. Yes. 23 Q. What in there supports that multiple base 24 stations can transmit a ranging response to a single 25 subscriber station?	Page 164 1 A. Okay. 2 Q. I'm more focused on whether simultaneous 3 or not, two base stations can even transmit to a 4 single subscriber station. 5 So I'm asking you, just to be very clear, 6 where in pages 50 to 51 is there support for that 7 proposition? 8 MR. KRONENTHAL: Objection. Form. 9 THE WITNESS: Basically what I read, that 10 a ranging response shall be transmitted by the base 11 station in response to a received ranging request. 12 BY MR. GALLUZZO: 13 Q. But nothing else in pages 50 to 51 14 supports your opinion? 15 A. Well, I think that supports it right there 16 because, at least once, two ranging responses could 17 be transmitted simultaneously. 18 Q. Is there anything else other than what 19 you've just quoted that you believe supports your 20 opinions in pages 50 to 51, as you've cited? 21 A. Let me look through again -- I put those 22 pages up here. 23 Well, page 51 supports it because it just 24 gives further details about the -- about the ranging 25 request and the ranging response, so, in general,
Page 163 1 A. Well, looking at the top of page 50, a -- 2 and probably -- it says "an." I think that should 3 have been "a." But I'm not here to correct. 4 "An ranging response shall be transmitted 5 by the base station in response to a received 6 ranging request. 7 "In addition, it may also be transmitted 8 asynchronously to send corrections based on 9 measurements that have been made on other received 10 data or max messages. 11 "As a result, the subscriber stations 12 shall be prepared to receive a ranging response at 13 any time." 14 So my point being, as I had in the 15 declaration, that a -- that two ranging responses 16 could be transmitted simultaneously at least once. 17 Q. So what you just read is what you believe 18 supports your opinion that WiMAX teaches multiple 19 base stations each transmitting a ranging response 20 to a single subscriber station? 21 A. What I'm saying is it's the support for 22 why two base stations could simultaneously transmit. 23 I guess that's -- I'm saying yes. 24 Q. I didn't ask about simultaneous. I think 25 that's a separate issue.	Page 165 1 those two pages support it. 2 Q. Which part of 51? 3 A. Well, the fact that it just talks about 4 the ranging request, the point being that it could 5 be two simultaneous ranging responses. 6 So, I mean, they're just giving technical 7 details of those -- of what's in those ranging 8 requests and ranging responses. 9 Q. You also cite pages 199 to 213. What in 10 pages 199 to 213 do you believe supports your 11 opinion -- and I'm limiting it to this one specific 12 aspect -- that multiple base stations can each 13 transmit a ranging response to a single subscriber 14 station? 15 MR. KRONENTHAL: Objection. Form. 16 THE WITNESS: Okay. Give me a second to 17 go to page 199 to 213. So 199 discusses ranging 18 6.3.10. And the subsequent pages go through -- give 19 more details on ranging. And so these are all 20 technical details of the -- of ranging and the 21 ranging responses. So, again, my point is that the 22 ranging responses could be transmitted 23 simultaneously at least once. 24 BY MR. GALLUZZO: 25 Q. Is there anything in these pages that says

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Page 166 1 anything about multiple base stations being 2 associated with a single subscriber station? 3 A. Well, I can look through. It may not, but 4 that doesn't change my -- my statement that the 5 ranging response could still be transmitted 6 simultaneously at least once. 7 Q. Are you able to answer my question? 8 A. Well, I can look through here, but 9 basically it's details on ranging, and the point is 10 that if you have two base stations that are 11 receiving the ranging request, they could transmit 12 two ranging responses. That's just -- I'm just 13 saying that's kind of -- one follows the other on 14 how the ranging process works. 15 Q. Mr. Bertonis, I'll ask one more time. Are 16 you able to answer my question? 17 A. I'm not sure how I can better answer it 18 than to say it's possible. 19 Someone did enter the door. Let me 20 just -- 21 MR. GALLUZZO: Can we go off the record 22 real quick? 23 THE REPORTER: Off the record. 24 (Recess.) 25 ///	Page 168 1 In OFDM, multiple nodes communicating are 2 always communicating in different time slots, 3 correct? 4 A. In OFDM? 5 Q. Correct. 6 A. Yes. 7 Q. I'd like to talk about Exhibit 1016, which 8 is the Zuckerman reference. 9 A. Okay. I have it. 10 Q. You're familiar with this reference, 11 correct? 12 A. Yes. 13 Q. Zuckerman is not limited to OFDMA, is it? 14 A. Can I have a second to look through? 15 Q. Of course. 16 A. Okay. I've had a chance to scan through 17 it, and I -- what was your question? Can you repeat 18 it again, please? 19 Q. Zuckerman is not limited to OFDMA, is it? 20 A. Well, it discusses OFDM and OFDMA. 21 Q. So, therefore, it also encompasses OFDM? 22 A. I would say it encompasses both in the 23 general discussion. 24 Q. You agree with me that for one to read and 25 understand and even implement Zuckerman, they
Page 167 1 BY MR. GALLUZZO: 2 Q. Mr. Bertonis, we were just interrupted. 3 Did you finish your answer to my previous question? 4 A. I believe so. 5 Q. Okay. Is OFDM something that is different 6 from OFDMA? 7 A. Yes. 8 Q. What are the biggest differences between 9 the two? 10 A. The A, which is the multiple access, or 11 MA, is in OFDMA and not in OFDM. 12 Q. Can you explain that in lay terms for me? 13 A. Well, the multiple access, you can have 14 multiple slots from multiple subscribers 15 simultaneous whereas in regular OFDM, it's more of a 16 TDMA type of modulation. Just simply -- just more 17 like a walkie-talkie, I guess that you'd say, where 18 multiple access, you can have multiple slots on 19 the -- on -- on one side or the other that are 20 assigned. 21 Q. So in OFDM, it's not possible for 22 simultaneous transmit. Is that right? 23 A. I would not -- I guess define what you 24 mean by simultaneously transmit. 25 Q. Well, in OFDM, any multiple -- withdrawn.	Page 169 1 wouldn't have to use OFDMA, they could use OFDM 2 instead? 3 A. Can you show me where I discuss that in my 4 declaration? 5 Q. I don't think this is in your declaration. 6 A. Then probably I would need more time to 7 study it because I'm prepared here to talk about my 8 declaration. 9 Q. Well, in preparing your declaration, you 10 have come to the opinion that Zuckerman, in part, 11 renders obvious the '690 patent claims, correct? 12 A. Yes. 13 Q. So I assume that means you took great care 14 in your review of the prior art references, 15 including Zuckerman? 16 A. Well, I'm not sure how to interpret "great 17 care," but I did review Zuckerman. And, again, if 18 you can show me where in my declaration this comes 19 up, I'd be glad to comment further. 20 Q. Did you review the entirety of Zuckerman 21 in coming to your opinions? 22 A. Well, I scanned through it. It's very -- 23 there's -- it's a very lengthy patent, but 24 obviously, I did study it. 25 Q. But you're not able to answer my question?

Page 170 1 A. Well, again, to help me answer your 2 question better, I'd ask you to refer me to where in 3 the declaration this comes up. 4 Q. That's kind of the problem. I think you 5 should have addressed it, but you didn't, so I'm 6 asking you now. 7 Are you able to answer my question? 8 A. Okay. I'm not here to discuss what's 9 outside of my declaration. 10 Q. So you're not here to discuss anything 11 about Zuckerman that's not explicitly written in 12 your declaration? 13 MR. KRONENTHAL: Objection. Form. 14 THE WITNESS: Yeah, by "explicitly," I -- 15 to the extent that I talk about Zuckerman in my 16 declaration, I can try and answer your question. 17 BY MR. GALLUZZO: 18 Q. So if there's something about Zuckerman 19 that you don't mention in your declaration, you're 20 not prepared to answer it today? 21 A. I would need more time to study it. 22 Q. Okay. Go to Exhibit 1010. This is DOCSIS 23 2.0. 24 A. Okay. 25 Q. In particular, I'd like you go to page	Page 172 1 received before or during that interval, correct? 2 A. Can I refer to where that is in my 3 declaration so I can get more context? 4 Q. I don't know if it's in your declaration, 5 or at least in my notes, I don't have that. 6 A. Well, again, if it's not in my 7 declaration, I need more time to study it. 8 Q. So you're not able to answer for me what 9 periodic ranging is any more than what you've 10 already said? 11 A. Not to the extent beyond what's in my 12 declaration. 13 Q. Okay. Are you familiar with the OSI 14 model? 15 A. Yes. 16 Q. What is it? 17 A. Network layers. 18 Q. What do you mean? 19 A. In networking, there's layers that are 20 assigned, so it's, I believe, seven layers, I think. 21 I don't have that in front of me. I'm not sure if 22 that's -- is that one of my exhibits? 23 Q. I don't know. I'll quickly look. I don't 24 think so. 25 A. Okay. If you're going to ask me about the
Page 171 1 261, per the numbers written on the bottom of the 2 document. 3 A. Okay. 4 Q. You'd agree with me that this section 5 relates to periodic ranging? 6 A. Well, 11.3 discusses periodic ranging 7 opportunity, so -- so it does involve periodic 8 ranging. 9 Q. And 11.3.1 is specific to periodic 10 ranging? 11 A. Yes. 12 Q. Periodic ranging is different than initial 13 ranging, right? 14 A. Yes. 15 Q. And it's different because periodic 16 ranging happens based on a time interval not in 17 response to when a UCD is received. Is that right? 18 MR. KRONENTHAL: Objection. Form. 19 THE WITNESS: Well, periodic ranging is 20 occurring at -- at intervals if -- so I think that's 21 what you're asking, is it different than initial 22 ranging? And the answer is it's different. 23 BY MR. GALLUZZO: 24 Q. And in periodic ranging, it occurs at 25 intervals regardless of what messages might be	Page 173 1 description of the layers, then I would need to have 2 something in front of me to help me go through the 3 layers. If it's not in one of my exhibits, I don't 4 know -- well, I'll let you ask what you were going 5 to ask. 6 Q. What is a layer in the OSI model? 7 A. I don't have a -- it is what it is. I 8 don't have a definition for you. 9 Q. Are you not able to give me any more 10 information about what a layer is other than by 11 calling it a layer? 12 A. I can go to a dictionary and try and give 13 you a better definition. It's one of those things 14 you kind of know from doing it. You don't think 15 about English definition. 16 Q. Try to describe it the best you can based 17 on what you know from doing it. 18 A. I just hate -- I don't want to -- I'm not 19 here to speculate and talk about layers where I may 20 not have expertise. 21 Q. I'm not asking you about any particular 22 layers, I'm asking you about what a layer is. 23 Imagine that the Board doesn't understand 24 what a layer is and I want them to understand. What 25 would you tell them?

Page 174 1 A. I'd tell them to read a primer on 2 networking layers in the OSI model. 3 Q. Mr. Bertonis, do you consider yourself an 4 expert in networking layers in the OSI model? 5 A. Only the physical and lower level layers. 6 I am not an expert in the upper layers. 7 Q. Which layers are in the lower level layers 8 that you're an expert in? 9 A. Physical layer. 10 Q. Any others? 11 A. That's primarily where my expertise is. I 12 have knowledge in others, but my expertise is 13 primarily at the physical layer. 14 Q. What is the physical layer? 15 A. The physical layer is the layer that the 16 data travels on, so I can give you examples. It 17 would be the radio waves, the coaxial cable, the 18 circuitry that connects those signals, the actual 19 signals that are traveling. That's the physical 20 layer. It's physically the signals. 21 Q. What is the LLC layer? 22 A. Again, I would like to refer to the OSI 23 model, but I believe that's link layer. But without 24 having that in front of me, I -- I don't want to 25 start guessing layer names without seeing the OSI	Page 176 1 Q. Is it your opinion that a person of skill 2 in the art would be an expert in those two layers as 3 applies to this case? 4 A. I'm not sure what you just asked me. Are 5 you asking if somebody skilled in the physical layer 6 and the link layer would confuse the layers? I'm -- 7 I guess I'm confused by your question. 8 Q. If you go to your original declaration, 9 Exhibit 1002, I'll represent to you that you've 10 testified on page 58 about what is your belief about 11 the level of ordinary skill in the art. 12 Specifically in paragraph 119, you give 13 your proposed definition of such a person. 14 Are you there? 15 A. I'm there. 16 Q. Would the person you propose confuse the 17 LLC layer with the PHY layer? 18 MR. GALLUZZO: Ms. Peabody, that's P-H-Y. 19 THE WITNESS: Okay. So I'm reading 119, 20 and can you repeat your question, please? 21 BY MR. GALLUZZO: 22 Q. This is the person or this is the level of 23 skill that you say a person of ordinary skill in the 24 art would have as you've used in your analysis in 25 this case, correct?
Page 175 1 model. 2 Q. Are you familiar with the LLC layer? 3 A. Not as much as the physical layer. 4 Q. You understand enough to know that it's a 5 different layer than the physical layer, though, 6 right? 7 A. Yes. 8 Q. And no person of skill in the art would 9 confuse the LLC layer with the physical layer? 10 A. If they understand layers, then they know 11 that's a different layer. 12 Q. And so they wouldn't confuse the two? 13 A. You're asking me to opine on somebody 14 confusing layers? I don't know how to answer that. 15 Q. I'm asking you to opine from the 16 perspective of a person of skill in the art, as you 17 say you've done in your declarations. 18 Are you able to do that? 19 A. As best as I can for you. 20 Q. And so are you able to answer my question 21 whether a person of skill in the art would be 22 confused between the logical link control layer, the 23 LLC layer, and the physical layer? 24 A. If they're an expert in those two layers, 25 then by definition, they wouldn't be confusing them.	Page 177 1 A. Yes. 2 Q. Would this hypothetical person confuse the 3 LLC layer with the PHY layer? 4 A. I would hope not, but you're asking me to 5 speculate. 6 Q. Why do you think that's asking you to 7 speculate? 8 A. You're asking me to speculate on how 9 confused another person would be on layers. I -- 10 Q. Do you believe it's speculation to ask you 11 to testify about what a person of skill in the art 12 would have known or understood? 13 A. Generally, no. 14 Q. So what makes this question different? 15 A. I don't know how better to -- I mean, 16 other than what I've written in describing skill, I 17 don't know how better to answer your question. I'm 18 sorry. 19 Q. Are you familiar with the terms "message" 20 and "signal"? 21 A. Yes. 22 Q. Are messages something different from 23 signals? 24 A. I think sometimes a person could be 25 referring to the same thing, and sometimes it could

Page 178 1 be something different. 2 Q. When they are referring to them as 3 different things, what makes the difference? 4 A. Well, signal could be abstract, you might 5 be looking at ones and zeros, where in many times 6 message might be the decoding of those ones and 7 zeros. But, again, I'm just speculating 8 hypothetically, and they're both fairly loose terms. 9 Q. I'm not asking you to speculate -- I'm 10 sorry. 11 A. They're both broad terms. 12 Q. I'm not asking you to speculate. To be 13 very clear, all of my questions today are meant to 14 ask you the answer as it would be understood from 15 the perspective of a person of skill in the art as 16 you've defined it. 17 Can we go forward with that baseline 18 understanding today? 19 A. Yes. 20 Q. And would the answer to any of your 21 previous questions change with that understanding 22 now? 23 A. No. 24 Q. Okay. So with that understanding, for 25 this question and going forward, how would a person	Page 180 1 have it in here. 2 Are you able to answer my question without 3 reference to your declaration what a continuous 4 signal is? 5 A. Well, again, it's a very broad term, so 6 it's hard to give you a strict definition. 7 Q. If you say it's a broad term, you must 8 have something in mind, so what is it you have in 9 mind? 10 A. "Continuous" would mean it continues, but, 11 again, that's fairly broad. 12 Q. All right. So I'll just try to ask it as 13 straightforward as possible. 14 Based on the understanding you apply to 15 this case, what did you understand the phrase 16 "continuous message" to mean? 17 A. Can you show me where in my declaration 18 I'm referring to it? And I can -- if I see that 19 context, I can give you a better definition. 20 Q. Are you able to answer my question without 21 referring to your declaration? 22 A. I'd prefer not to. 23 Q. Are you able to? 24 A. Not accurately. I'd be speculating. 25 Q. But you can't tell me one way or another
Page 179 1 of skill in the art understand a message and a 2 signal? Would they understand them to be the same 3 or different? 4 A. Again, I would say it could go either way. 5 Q. Would a person of ordinary skill in the 6 art understand a message to require additional 7 components to be more than just a signal? 8 A. Can you -- I'm sorry. Can you repeat that 9 question? 10 Q. Yes. So my understanding is that a 11 message has to have things like a payload and a 12 header. 13 Do you agree with that? 14 A. Those are sometimes included, but it 15 doesn't have to be. 16 Q. What are the minimum requirements to be a 17 message? 18 A. I think just information. 19 Q. Do you know what a continuous signal is? 20 A. A continuous signal? 21 Q. Yes. Do you know what that is? 22 A. Can you show me where in my declaration I 23 refer to "continuous signal"? And I can give you 24 more context. 25 Q. I'm guessing you do, but my notes don't	Page 181 1 whether continuous signal has an information field? 2 A. I would say it could or it could not. 3 Q. Based on what? 4 A. Based on it could or it could not. 5 Q. Any more detail that you can provide? 6 A. No. 7 Q. Are you familiar with the DOCSIS standard? 8 MR. GALLUZZO: It's D-O-C-S-I-S, all caps. 9 THE WITNESS: Yes. 10 BY MR. GALLUZZO: 11 Q. DOCSIS is not a wireless standard, is it? 12 A. It is a cable -- it's a standard design 13 for cable -- over a cable, generally coaxial cable. 14 Q. But we're talking physical cable, not 15 wireless? 16 A. That's what the standard was written for. 17 Q. Have you ever participated in any DOCSIS 18 standards committee meetings? 19 A. No, I have not. 20 Q. Let's go to Exhibit 1001, which is the 21 '690 patent. 22 A. Okay. 23 Q. If you go to the last two pages where the 24 claims are listed, there is a word that's used in a 25 number of the claims, and it's "specify" or

Page 182 1 "specifying." For example, in Claim 1, Element A, 2 the line second from the end says, "At least specify 3 content payload of the probe and a second node." 4 Do you see that? 5 A. Which -- I'm sorry. Which claim number? 6 Q. Claim Number 1. 7 A. Okay. 8 Q. Element A. 9 A. Yes. And I see that. 10 Q. The word "specify" or "specifying" is used 11 in a number of different claims. 12 Did you interpret the word "specify" or 13 "specifying" differently across the claims, or did 14 you interpret that phrase consistently across the 15 claims? 16 A. Well, can you refer me to where in my 17 declaration I discuss that? 18 Q. Are you able to answer my question without 19 referring to your declaration? 20 A. I'd prefer to refer to my declaration. 21 Q. Understanding you'd prefer to refer, are 22 you able to answer? 23 A. No. 24 Q. Mr. Bertonis, I'll find it for you, but 25 I've got to tell you, sir, I'm not going to waste my	Page 184 1 payload, and what I tried to do is show prior art 2 that meets both of the interpretations, so I don't 3 know if that's responsive to your question. 4 BY MR. GALLUZZO: 5 Q. I don't think it is. 6 Did you apply those terms consistently 7 across the claims in your analysis or differently 8 depending on the claim? 9 A. Well, again, I tried to show prior art 10 that would meet the different interpretations. 11 Q. And so it's your opinion that the prior 12 art and the interpretations would apply across the 13 claims in all the same way in regard to the 14 "specify" and the "specifying" words, correct? 15 MR. KRONENTHAL: Objection. Form. 16 THE WITNESS: Again, I've tried to show 17 prior art that will meet both interpretations, and I 18 don't know how else better to say it. 19 BY MR. GALLUZZO: 20 Q. Mr. Bertonis, you're answering a different 21 question than I'm asking, sir. 22 I'm just trying to get a baseline 23 understanding of whether you interpreted that phrase 24 differently in Claim 1 than, for example, you did in 25 Claim 9.
Page 183 1 time today just having you reread for me what your 2 declaration says. I could read that on my own. I'm 3 hoping you can help me understand what your opinions 4 are. 5 Are you able to do that? 6 A. Well, my opinion's in the declaration, and 7 if -- so I'm not sure how else I can answer your 8 question without referring to it so I have the 9 context. 10 Q. In page 12 of your reply declaration, 11 Exhibit 1036, you refer to a claim phrase, "at least 12 specify content payload of the probe." 13 A. Okay. I have that. 14 Q. My question for you is, did you apply the 15 terms "specify" or "specifying" consistently across 16 all of the claims or differently depending on the 17 claim? 18 A. I'm sorry. Can you repeat your question 19 now that I've had a chance to review page 12? 20 MR. GALLUZZO: Ms. Peabody, would you mind 21 reading it back? 22 THE REPORTER: Certainly. 23 (The requested portion was read back.) 24 THE WITNESS: Well, I understand that 25 there's some dispute on specifying the content	Page 185 1 Do you have any recollection of 2 interpreting that term differently among the claims? 3 MR. KRONENTHAL: Objection. Form. 4 THE WITNESS: Again, I tried to show prior 5 art that would meet the different interpretations. 6 BY MR. GALLUZZO: 7 Q. Okay. So what did you understand 8 "specify" to mean then in your analysis? 9 A. And I looked at it both ways. 10 Q. Okay. So what did you understand it to 11 mean? 12 A. Well, I understood that there's an 13 argument that it literally has to be something -- 14 the best way I can explain it is let's say the 15 number 6, and it shows up exactly as the number 6 or 16 that it's just loosely more of a form. And I tried 17 to show prior art that would meet the strict 18 interpretation and the, let's say, less strict 19 interpretation of whether it has the same identical 20 value. 21 Q. Let's just assume for a moment that you're 22 entirely wrong about what the interpretations are, 23 and your counsel told you the wrong thing; that 24 that's not what my client is saying is the 25 interpretation. Let's just assume that that's the

Page 186 1 case. 2 Do you have an opinion about what that 3 term means separate and apart from what Entropic 4 contends it means? 5 A. Again, I was showing prior art that would 6 show both interpretations, so I'm not sure I 7 understand your question. I'm -- whether it needs 8 the same identical value or not. I've shown prior 9 art that meets both interpretations. 10 Q. I'm going to state this as clearly as I 11 can, and if your answer is that you don't have such 12 an opinion, I'd appreciate you giving it to me 13 straight like that, and if you do have an opinion, 14 I'd appreciate you pointing it out to me where it is 15 in your declaration. 16 So here's my question: Did you provide an 17 analysis of what a person of skill in the art would 18 understand the term "specify" or "specifying" to 19 mean in the claims of the '690 patent? 20 A. Again, I tried to show prior art on either 21 a strict interpretation or a more general 22 interpretation, so -- 23 Q. Mr. Bertonis, I'm sorry, but at some 24 point, you're going to have to answer my questions. 25 So I'll give you one more chance.	Page 188 1 again. 2 Let's say, as is true, I didn't talk to 3 you before today's deposition about what you were 4 going to wear. And you and I both independently 5 decided to wear blue shirts. Have I specified that 6 you wear a blue shirt to today's deposition? 7 A. No. 8 Q. Let's say Mr. Kronenthal called both of us 9 yesterday and said hey, guys, it's blue shirt day. 10 Let's wear blue shirts to the deposition. And we 11 both do. You'd agree with me that Mr. Kronenthal 12 specified to you to wear your blue shirt, correct? 13 A. You're asking me questions that are beyond 14 the scope of my declaration, so I'm not sure -- you 15 know, I'm not here to speculate or -- 16 Q. Are you unable to answer my question? 17 A. Well, I'm here to ask -- to answer 18 questions that you ask regarding the declaration I 19 submitted, not to talk about shirts or colors. 20 Q. Is it your testimony that the 21 interpretation of the word "specify" is outside the 22 scope of your declaration? 23 A. No, I'm basically saying that I know it's 24 been a point of dispute, and my work has been to 25 show prior art that can basically cover the
Page 187 1 Did you or did you not provide an opinion 2 about how a person of skill in the art would 3 understand the word "specify" or "specifying" in the 4 context of the '690 patent claims? 5 A. Well, again, I tried to show prior art to 6 meet the different interpretations of specifying the 7 content payload of the probe. 8 MR. GALLUZZO: Mr. Kronenthal, if you want 9 to take a break and assist here, I'd appreciate 10 this. Otherwise, I think the Board is going to be 11 seeing the full extent of this question and answer. 12 MR. KRONENTHAL: I mean, I have no 13 comment. It's fine. He's answering the question to 14 the best that he can. 15 MR. GALLUZZO: You're brave. Okay. 16 BY MR. GALLUZZO: 17 Q. Mr. Bertonis, let's say I decided to wear 18 a blue shirt to the deposition today, and you did 19 too, it appears. 20 Did I specify to you that you should wear 21 your blue shirt if I didn't say anything to you 22 before the deposition? 23 A. You're asking me to comment on a shirt I 24 wore? That's not in my deposition. 25 Q. I'm giving you a hypothetical. I'll try	Page 189 1 different interpretations. 2 Q. That's just not my question at all. 3 So are you able to answer my hypothetical? 4 A. Can you repeat the question again? 5 Q. Yeah. This is a hypothetical. 6 Yesterday before this deposition 7 Mr. Kronenthal called up the two of us separately. 8 He said Vince, you wear a blue shirt, and separately 9 to you, he said Mr. Bertonis, you wear a blue shirt. 10 Today we showed up wearing blue shirts. Would you 11 agree with me that Mr. Kronenthal specified to you 12 and to me that we should wear blue shirts? 13 A. I guess, how does this relate to my 14 declaration and to discussing the content payload of 15 the probe? I guess I don't see -- I'm not here to 16 answer hypothetical questions. 17 Q. Respectfully, I don't care whether you 18 think it's relevant or not. That's for the Board 19 and for me to decide. 20 Are you able to answer my question? 21 A. No. 22 Q. Why aren't you able to answer my question? 23 A. Because it's not -- it's not specifically 24 related to my declaration. 25 Q. So you're refusing to answer?

Page 190 1 A. Basically, yes. 2 Q. Are you also going to refuse to answer 3 questions about the word "assess" as it's used in 4 the claims? 5 A. Can you show me where -- can you point -- 6 Q. Withdrawn. 7 Are you able to -- are you going to -- 8 withdrawn. 9 Are you going to refuse to answer 10 questions about the meaning of the word "assess" as 11 you've used it in your declaration? 12 A. Again, can you refer me to it in my 13 declaration? And I can be -- I can answer your 14 question. 15 Q. Yeah, I think you used the word "assess" 16 like a hundred times in your declaration, so -- 17 paragraph 19 is an example. 18 A. Okay. 19 Q. But my question is not limited to 20 paragraph 19. 21 My question is as to all of your uses of 22 "assess" in the way you understand the meaning of 23 that term, are you able to answer questions about 24 that? 25 A. If you ask me a specific question on a	Page 192 1 determine the nature, ability, or quality of 2 something," end quote? 3 A. It could be that, yes. 4 Q. Could it be anything else? 5 A. Again, "assess" is a fairly broad term, so 6 I -- you're asking me to give a definition of 7 "assess"? 8 Q. Other than the meanings that you've 9 already talked about in relation to paragraph 19 or 10 the definition I just quoted for you, can you tell 11 me any other meanings that you gave for the word in 12 your declaration? 13 A. Technical diagnosis. 14 Q. Anything else? 15 A. Well, I think it's a fairly broad term, so 16 I think my definition was fairly broad. 17 Q. Sitting here today, are there any other 18 meanings that you can remember that you gave to that 19 word other than the ones we've already discussed? 20 A. Technical diagnosis, so that could include 21 a number of parameters. 22 Q. Any other than that? 23 A. Well, I think "a number of technical 24 parameters" is fairly broad, so that would be a 25 broad definition.
Page 191 1 specific paragraph in my declaration, I'll try to 2 the best of my ability to answer your question. 3 Q. Are you familiar with the word "assess"? 4 A. Yes. 5 Q. And when you use that word in your 6 declaration, what did you intend it to mean? 7 A. Again, can you point me to the specific 8 instance, and I'll try and answer your question. 9 Q. Did you use it to mean different things 10 throughout your declaration? 11 A. Again, can you point me to a section, and 12 I'll try and answer your question. 13 Q. Mr. Bertonis, what did you mean to mean in 14 paragraph 19? 15 A. Well, 19 talks about ranging request, and 16 it's a request to assess and/or diagnose the 17 channel. So I would say it's similar to diagnose. 18 Q. So what -- withdrawn. 19 What did you mean the word "assess" to 20 convey in paragraph 19? What's that word mean? 21 A. I'm just paraphrasing. Perform a 22 technical analysis or, again, I use the word 23 "diagnose." So I'd say similar to "diagnose." 24 Q. Do you disagree with the following 25 definition for "assess"? Quote, "To evaluate or	Page 193 1 Q. Are you testifying that "assess" can mean 2 the phrase "number of technical parameters"? Is 3 that what you're saying? 4 A. I'm not limiting it to that. I'm saying 5 again that it's -- it's looking at technical 6 parameters. 7 Q. So just looking at technical parameters is 8 assessing? 9 A. That's one way to look at it. 10 Q. Anything else? 11 A. There could be other -- there could -- in 12 other words, if I read down to my paragraph 20, I 13 discuss network maintenance, assistance with 14 networking admission, so those would be other things 15 that might be part of the assessment process. 16 Q. It's your testimony that assistance with 17 networking admission is the same thing as 18 assessment? 19 A. No, not the same thing, but part of the 20 assessment could be used in that general realm of 21 networking maintenance. It could be part of it, I 22 guess, is what I'm saying. 23 Q. But it's not the same thing as assessment? 24 A. Well, again, "assessing" is a fairly broad 25 term.

Page 194 1 Q. Can you give me any other uses that you 2 might have used in your declaration other than what 3 you've already provided? 4 A. Is the channel usable? Are there changes 5 we have to make to the channel? That's all part of 6 a technical assessment? Do we need to make 7 adjustments? 8 Q. Anything else? 9 A. Could there -- could there be 10 interference? Could there be other users on the 11 channel? So those are all part of assessment, which 12 I also call -- I also use the word "diagnose." 13 Q. Anything else? 14 A. Well, again, it's a broad term, so I'm 15 sure there are other things. Nothing comes to mind 16 that -- you know, nothing pops into my mind, but 17 it's a fairly broad term. 18 Q. So I'm going to be asking a number of 19 questions today about the word "probe." Whenever I 20 use the word "probe," I want you to understand that 21 I'm referring to that term as it's used in the 22 claims of the '690 patent. 23 A. Okay. Can I take a quick bathroom break? 24 Q. Well, did you answer my question, that you 25 understand that to be my meaning?	Page 196 1 MR. KRONENTHAL: Objection. Form. 2 THE WITNESS: Well, what I'm saying is 3 that the -- there's a lot of interpretation of what 4 the word "probe" means, and you're trying to limit 5 me to something that it's not clear what definition 6 you're trying to limit me to. So I'm a little 7 confused. 8 BY MR. GALLUZZO: 9 Q. Are you unable to determine the scope of 10 the word "probe" as it's used in the '690 patent 11 claims with reasonable certainty? 12 A. Well, again, the way I interpret "probe" 13 is by examples. It's a fairly broad term, so -- 14 Q. So are you able to provide and understand 15 the boundaries of the claim term with reasonable 16 certainty? 17 A. I do my best. 18 MR. KRONENTHAL: Vince, can we -- 19 BY MR. GALLUZZO: 20 Q. Is that a yes or a no? 21 A. Can you repeat the question? 22 Q. Let's -- I know you have to go to the 23 restroom. Let's take a break. 24 (Recess.) 25 ///
Page 195 1 A. Okay. Can you repeat that real quick? 2 Q. Yes. Sorry. I'll give you a break. We 3 just need to answer the question. 4 A. Yeah, okay, sure. 5 Q. Every time today I say the word "probe," I 6 want you to understand that to mean probe as it's 7 used in the claims of the '690 patent. Do you 8 understand that? 9 A. When you use the word "probe," you want me 10 to understand it to be the meaning that's in the 11 '690 patent? 12 Q. For the word "probe" as opposed to any 13 other type of probes. 14 A. Okay. That's -- that's a very broad 15 statement because how "probe" is used in the '690 16 patent is, you know, sometimes ambiguous, so that's 17 hard for me to say yes because I can look at the 18 '690 and see slightly different meanings of the word 19 "probe." 20 Q. In the claims? 21 A. Well, we could look at the claims, but I 22 believe so. 23 Q. So it's your testimony that the word 24 "probe" in the '690 patent claims has different 25 meanings?	Page 197 1 BY MR. GALLUZZO: 2 Q. Before we went off the record, 3 Mr. Bertonis, we were talking about my request of 4 the way you understand certain words I'm going to 5 use today, but then we ended up somewhere different, 6 so let's just start there. 7 So here's my first question back: Are you 8 able to understand the scope of the word "probe" as 9 it's used in the '690 patent with reasonable 10 certainty and specifically as it's used in the '690 11 patent claims? 12 MR. KRONENTHAL: Objection. Form. 13 THE WITNESS: Yeah, I don't even know -- I 14 have plain and ordinary understanding of the term 15 "probe," and I don't know how else you want me to -- 16 you're asking me to interpret "probe" in a certain 17 limited way? Is that what you're asking me or -- 18 I'm not sure. 19 BY MR. GALLUZZO: 20 Q. I'd like you to try to pay close attention 21 to what I'm saying. 22 Are you having any difficulty 23 understanding what the scope of the phrase -- or the 24 word "probe" is as it's used in the '690 patent 25 claims?

15 (Pages 194 - 197)

Page 198 1 MR. KRONENTHAL: Objection. Form. 2 THE WITNESS: Well, I give it a plain and 3 ordinary meaning. 4 BY MR. GALLUZZO: 5 Q. So you have no difficulty understanding 6 what that means? 7 A. Again, I give the term "probe" a plain and 8 ordinary meaning. 9 Q. That wasn't quite my question. 10 Are you having any difficulty in 11 understood what that plain and ordinary meaning is? 12 A. I know there's a lot of discussion on 13 different meanings of the word "probe," and all I 14 can say is I give it a plain and ordinary meaning. 15 Q. Okay. So what I'm going to ask you now, 16 so that I don't have to say it every time, is just 17 to understand when I say "probe," what I mean is 18 probe as that term is used in the claims of the '690 19 patent. I just don't want to have to say "as that 20 term is used" every single time. 21 Is that okay with you? 22 A. Can you give me your definition of how you 23 mean the term "probe" to be used in the claims of 24 the '690 because you're asking me to adopt your 25 definition.	Page 200 1 look and see are there other aspects of ranging that 2 aren't probes. I'd have to go back and review the 3 spec, but generally, ranging -- and I assume you're 4 referring to either DOCSIS or WiMAX? 5 Q. Well, those are the two that you 6 interpreted. 7 A. Yeah. 8 Q. So we can keep it with that. 9 Are all ranging messages in DOCSIS and 10 WiMAX probes? 11 A. I don't know that for a fact. I know -- I 12 do refer to ranging as probing. That's pretty 13 basic. But if you're asking me, I'd have to go 14 review the spec to see what could -- aspects of 15 ranging aren't probe. I suspect there are some 16 areas that are not probes. 17 Q. What areas do you suspect are not probes? 18 A. I'd have to go back and look at the -- are 19 you -- can you ask me specifically either WiMAX or 20 DOCSIS, and I'll look at the pertinent spec? 21 Q. Well, you said you suspect there are some 22 areas. I'm just wondering what you had in mind. 23 A. I'd have to go back and look at the 24 details of "ranging." 25 Q. Can all ranging messages be used as a
Page 199 1 Q. That's literally not what I said, 2 Mr. Bertonis. Okay. I'll say it every time. 3 Is a message that negotiates communication 4 parameters between two nodes a probe, as that term 5 is used in the claims of the '690 patent? 6 A. Can I look at the claim? 7 Q. Of course. 8 A. And which claim were you looking at? 9 Q. All of them. 10 A. Okay. So I'm looking at the claims. I 11 see the word "probe," and your question again was -- 12 because honestly, I am confused. So your question 13 is? 14 Q. Is a message that negotiates communication 15 parameters between two nodes a probe, as that term 16 is used in the claims of the '690 patent? 17 A. I would say yes. 18 Q. Do you agree with the following statement: 19 Probes are used for determining what the 20 communication channel between two nodes is like? 21 A. That could be one use of a probe. 22 Q. But not the only, in your opinion? 23 A. Not the only use of a probe, correct. 24 Q. Are all ranging messages probes? 25 A. Well, ranging is a probe. I'd have to go	Page 201 1 probe? 2 A. Again, I'd have to go back and look at 3 "ranging." I know it's fairly extensive. 4 Q. Your opinions in this case are that 5 specific messages related to ranging invalidate the 6 claims, not that the entire ranging process does, 7 correct? 8 A. Can you repeat the question? Sorry. 9 MR. GALLUZZO: Ms. Peabody, would you mind 10 reading it back? 11 (The requested portion was read back.) 12 THE WITNESS: Could you refer me to where 13 in my declaration specifically I say that, and I can 14 give you a better answer. 15 BY MR. GALLUZZO: 16 Q. Are you unable to answer the basic 17 boundaries of your opinions without looking at your 18 declaration? 19 A. I'd like to look at the declaration. 20 Q. I understand you'd like to. Are you 21 unable to? 22 A. If you want an accurate answer, I need to 23 look at the pertinent data in my declaration. 24 Q. So can you give me an answer without 25 looking at your declaration, and then we'll go look?

Page 202 1 MR. KRONENTHAL: Objection. Form. 2 THE WITNESS: Could the reporter repeat 3 the question again. 4 BY MR. GALLUZZO: 5 Q. No, that's not how it works. 6 I'll ask a different question. 7 A. Okay. 8 Q. Are you able to tell me what the scope of 9 your opinions are on ranging for WiMAX and DOCSIS? 10 A. It's -- basically it's in my declaration. 11 Q. And are you able to tell me for WiMAX 12 specifically whether you are opining that specific 13 messages invalidate or whether the entire ranging 14 process invalidates? 15 A. I believe what I said was that ranging, 16 which I described was prior art, so I can go through 17 and recite from my declaration those where I talk in 18 detail about ranging. 19 Q. Would your answer be the same in relation 20 to DOCSIS 2.0? 21 A. I believe the ranging is very similar in 22 DOCSIS and WiMAX. A little different on the 23 direction, but similar. 24 Q. And your opinions about the scope of 25 your -- I'm sorry. Withdrawn.	Page 204 1 A. I think in the context of the patent, the 2 probes are physical layer probes, so. 3 Q. What do you mean? 4 A. I mean that a probe in how we're using the 5 term is a physical layer probe. 6 Q. Are you saying that probe as it's used in 7 the patent always means physical layer probe? 8 A. I would say yes. 9 Q. If you look two sentences from the bottom 10 of that page, it starts, "All of the signals." 11 A. Yes. 12 Q. It says, "All of the signals/messages I 13 rely on are probes that relate to the physical 14 layer." 15 Do you see that? 16 A. Yes. 17 Q. What do you mean by "relate to the 18 physical layer"? 19 A. They travel on the physical layer. 20 Q. Could you go to paragraph 55 of your 21 declaration, please? 22 A. Yes, I'm there. 23 Q. The second sentence says, "In doing so, I 24 gave the term 'physical layer probe' its plain and 25 ordinary meaning."
Page 203 1 The testimony today about the scope of 2 your opinions would be the same for DOCSIS as they 3 are for WiMAX whether or not you're opining about 4 specific messages or about entire processes of 5 ranging? 6 MR. KRONENTHAL: Objection. Form. 7 THE WITNESS: Well, they're very similar. 8 I'm not sure how better to answer the question. 9 BY MR. GALLUZZO: 10 Q. Let's go to paragraph 14 of your 11 declaration, Exhibit 1036. 12 A. Sorry. Did you say paragraph 14 or page 13 14? 14 Q. Paragraph 14, please. 15 A. Okay. 16 Q. Are you there? 17 A. Yes. 18 Q. The first sentence says, "I understand 19 that patent owner argues that the physical layer 20 probe must mean something more than probe." 21 Do you see that? 22 A. Yes. 23 Q. Do you disagree with that statement that 24 physical layer probe must mean something more than 25 probe?	Page 205 1 Do you see that? 2 A. Yes. 3 Q. Did you apply that same plain and ordinary 4 meaning in your declaration, Exhibit 1036, as you 5 did in your earlier declaration, Exhibit 1002? 6 A. Yes. 7 Q. All right. I'd like you to turn back to 8 the '690 patent. That's Exhibit 1001. 9 A. Okay. 10 Q. And we're going to look at Claim 1. 11 A. Okay. 12 Q. Specifically we're going to look at the 13 first step, the receiving step. 14 Do you see that? 15 A. Yes. 16 Q. Are you familiar with that step? 17 A. You're saying where it says, "Receiving in 18 a first node a probe request specifying a first 19 plurality of parameters associated with the 20 generation and transmission of a probe"? 21 Q. And it continues. You don't have to read 22 it all, but yes, that one. 23 A. Okay. 24 Q. Are you familiar with that step? 25 A. Yes.

Page 206 1 Q. Are you able to answer questions about it? 2 A. I'll try. 3 Q. All right. I'm going to give you a 4 hypothetical. In this hypothetical, a message is 5 sent from a first node to a second node. The 6 message tells the second node to change to 7 Transmission Scheme Number 2. 8 Does that hypothetical meet the receiving 9 step of Claim 1? 10 A. Okay. Can you repeat the question? 11 Q. I'm going to give you a hypothetical. In 12 this hypothetical, a message is sent from a first 13 node to a second node. The message tells the second 14 node to change to Transmission Scheme Number 2. 15 Does that meet the receiving step of Claim 16 Number 1? 17 A. It could. 18 Q. How so? 19 A. So you're saying that it says to make a 20 change? 21 Q. Yeah, the message says change to 22 Transmission Scheme Number 2. 23 A. Okay. But as I read Claim 1A, it doesn't 24 talk about a change. 25 Q. So are you saying that wouldn't meet Claim	Page 208 1 Q. Let me maybe give you a little more 2 detail. 3 So same hypothetical. We've got a message 4 going from one node to another that says change to 5 Transmission Scheme Number 2. 6 Now the second node, the one that received 7 that message, sends a message back to the first node 8 in response, and the message says okay. 9 Would that hypothetical meet Step 1A of 10 Claim 1? 11 MR. KRONENTHAL: Objection. Form. 12 THE WITNESS: I would say it could or it 13 could not. 14 BY MR. GALLUZZO: 15 Q. Depending on what? 16 A. Depending on how you read the claim. 17 Q. How about how you read the claim; would it 18 meet it or not? 19 A. I would say it could go either way. 20 Q. So you're not sure based even on how you 21 read the claim? 22 A. Yes. 23 Q. All right. Same hypothetical. Actually 24 I'll just restart. It's going to be very similar, 25 though, but put that one out of your head. I'll
Page 207 1 1A? 2 A. I guess I'd say it may or may not. 3 Q. Depending on what? 4 A. Can you repeat the question again? 5 Q. I think the exact question was depending 6 on what because you said it may or may not meet the 7 claim. 8 MR. KRONENTHAL: Objection. Form. 9 BY MR. GALLUZZO: 10 Q. Did you understand my question, 11 Mr. Bertonis, or do you need me to reask it? 12 A. Well, can you reask the first question, 13 the base question? 14 Q. The hypothetical? 15 A. Yes. 16 Q. The hypothetical is that one node sends a 17 message to another node, and the message says change 18 to Transmission Scheme Number 2. 19 A. Okay. So that's describing a plurality of 20 parameters. 21 Q. Is it also specifying content payload of 22 the probe? 23 A. Well, if those parameters are in the 24 probe, then that's the content -- those are content 25 parameters of the probe.	Page 209 1 give you a new one. 2 A message is sent from first node to 3 second node. The message tells the second node to 4 change to Transmission Scheme Number 2. 5 The second node sends a message back to 6 the first node in response, and the response message 7 says I have changed to Transmission Scheme Number 2. 8 Does that meet Claim 1A of the '690 9 patent? 10 MR. KRONENTHAL: Objection. Form. 11 THE WITNESS: Again, it could or it could 12 not. 13 BY MR. GALLUZZO: 14 Q. Based on what? 15 A. Based on how you interpret the claim. 16 Q. How about how you interpret the claim? 17 A. Well, can you refer me to my declaration 18 where I discuss that claim? 19 Q. I think you discuss it in a number of 20 different places because you have, I think, four 21 different invalidity grounds on that. 22 A. Okay. Can you show me one of them? 23 Q. I mean, I would hope you'd be familiar 24 enough with your declaration to find out, but I 25 guess you could look at page 13, page 38, page 54,

Page 210 1 page 60, page 72, page 41. There's a lot in there. 2 A. Well, again, I'm here to give testimony on 3 my declaration, and you're asking me to speculate on 4 patent claim language, so I would need more time to 5 prepare and answer your question because you're 6 asking me to speculate on claim language, and what I 7 was prepared to do today was to testify on my 8 declaration. 9 Q. Were you prepared to testify on your 10 understanding of the meaning of the claim terms? 11 A. To the extent they're in my declaration, 12 yes. 13 Q. So are you unable to answer my question 14 about how to apply my hypothetical to Claim 1A as 15 I've stated it and based on your understanding of 16 the scope of the claim terms? 17 A. Because it's a hypothetical, yes. 18 Q. So you're refusing to answer any more 19 hypotheticals? 20 A. Unless you can point me to where in my 21 declaration that I'm discussing that, yes. 22 Q. So there's a number of Entropic patents 23 you refer to, Exhibits 1046, 1047, and 1048 at the 24 very least. 25 Where did you get those?	Page 212 1 A. Yeah, I believe that's discussing probes. 2 Q. That's what you say, at least. 3 So my question for you is, were you 4 directed to any particular portion of these 5 documents, these Entropic patents, by counsel as 6 relevant to your opinions? 7 MR. KRONENTHAL: Objection. You can 8 answer the question to the extent he's not revealing 9 any details of communications that we had with the 10 expert. 11 MR. GALLUZZO: I'm sorry. If he's relying 12 on something you told him, that's waived. So we can 13 step through this, but that's not accurate. 14 BY MR. GALLUZZO: 15 Q. Mr. Bertonis, yes or no; did counsel 16 direct you to any particular portions of the 17 documents that we've been calling Entropic patents 18 to review for your opinions in this case? 19 A. Well, I'm not sure -- I'm not a lawyer, so 20 I'm not sure how I'm answering this question, but 21 those -- 22 Q. I just asked a yes or no, to be very 23 clear. We can step through it. 24 Yes or no; did they tell you what to look 25 at?
Page 211 1 A. They were provided to me by counsel. 2 Q. Did you do any of your own research? 3 A. Are you asking did I uncover those 4 patents? 5 Q. I'm asking whether you did any of your own 6 research in this case. 7 A. Oh, yes. 8 Q. Did you do any of your own research 9 regarding Entropic patents? 10 A. I think, in general, I did patent 11 searches, but I don't believe I specifically looked 12 for anything from Entropic. 13 Q. Did counsel direct you to any particular 14 portion of these Entropic patents to refer to as 15 relevant to your opinions? 16 A. Can you refer to me in my declaration 17 where I discuss those patents, and I can answer 18 because there's a number of patents there, and -- 19 Q. I can give you one spot. How about that? 20 A. Okay. 21 Q. Page 17. 22 A. Okay. 23 Q. So here you cite to Exhibits 1046, 1047, 24 and 1048 about two-thirds of the way down the page. 25 Do you see that?	Page 213 1 A. They told me why I should look at these 2 patents because they concern probes. 3 Q. Did they tell you what portions to look 4 at? 5 A. Anything to do with probes. 6 Q. I'm sorry. Did they tell you a column and 7 line number to look at specifically? This is yes or 8 no. 9 A. You know, I don't recall being told a 10 column and line number. I know in my declaration, 11 I'm obviously referring to some definitions of 12 probes and discussion of probes. If you're asking 13 did they tell me go to this specific line and look 14 at it -- 15 Q. Mr. Bertonis, I think we've lost your 16 connection. 17 MR. KRONENTHAL: Why don't we go off the 18 record. 19 MR. GALLUZZO: Yes. 20 (Discussion off the record.) 21 BY MR. GALLUZZO: 22 Q. Mr. Bertonis, I think we just lost 23 connection for technical difficulties. I'll reask 24 my question to be clear. 25 Yes or no; did counsel point to any

Page 214 1 specific portions of the Entropic patents that you 2 should look at or otherwise tell you to look at 3 specific portions of those documents? 4 A. To look at the portions concerning probes. 5 Q. Did anything that counsel tell you inform 6 your opinions that are in your declaration, 7 Exhibit 1036; yes or no? 8 A. I'm sorry. You're asking about 9 Exhibit 1036? 10 Q. Yeah, that's your reply declaration. 11 A. Okay. Sorry. I got confused on the 12 numbers. 13 Basically it was background for definition 14 of probes. 15 Q. Is there anything that counsel told you 16 that you relied on in forming your opinions related 17 to the Entropic patents? 18 MR. KRONENTHAL: Objection. Form. 19 THE WITNESS: It was provided for me to 20 look at to show examples of probing and -- as you 21 know, my definition of probing is by showing 22 examples, so that was provided me with more 23 examples. 24 BY MR. GALLUZZO: 25 Q. Did you read the references, the patents,	Page 216 1 message is the probe request of the claims, and the 2 ranging response message is the probe of the claims. 3 Do I have it right so far? 4 A. Yes. 5 Q. What is the communication channel over 6 which the ranging request and the ranging response 7 messages travel? 8 A. Well, let me call up my declaration where 9 I discuss WiMAX. 10 Okay. Can you repeat the question now 11 that I found generally the WiMAX section? 12 MR. GALLUZZO: Ms. Peabody, would you 13 repeat the question? 14 THE REPORTER: Sure. 15 (The requested portion was read back.) 16 THE WITNESS: Well, it would be the 17 channel you're on in WiMAX, so I'm not sure what -- 18 you're on a WiMAX channel, so -- 19 BY MR. GALLUZZO: 20 Q. That's a wireless channel? 21 A. Yes. 22 Q. How does the ranging response message 23 characterize that wireless channel? 24 A. Are you asking about the ranging request 25 or the ranging response? I'm sorry.
Page 215 1 the Entropic patents, in their entirety? 2 A. I scanned through to primarily look at 3 where it concerned probing. 4 Q. I'll reask my question. Did you read the 5 documents in their entirety? 6 A. I scanned through them in their entirety. 7 Q. So you didn't read them in their entirety? 8 A. I guess what's the definition of 9 "entirety"? How fast -- I read them relatively 10 fast. 11 Q. Did you consider portions of the documents 12 that are inconsistent with the opinions you're 13 giving here? 14 A. That's a loaded question. I didn't find 15 anything that alarmed me, if that's what you're 16 asking. I'm not sure. 17 Q. On your quick scan? 18 A. Yeah, nothing that alarmed me. 19 Q. Let's talk about WiMAX. That's 20 Exhibit 1013, if you're looking for it. 21 A. Okay. Do you want me to call it up? 22 Q. Sure. 23 A. Okay. 24 Q. So as far as I understand it, your 25 opinions on WiMAX are that the ranging request	Page 217 1 Q. The ranging response. 2 A. Well, because it includes parameters about 3 the channel. 4 Q. It's your opinion that including 5 parameters about the channel characterizes the 6 channel? 7 A. Yes. 8 Q. How does the ranging response message 9 assess the wireless communication channel? 10 A. Well, again, looking at my deposition, I 11 talk about that, and it -- in paragraph 23, I talk 12 about the -- if the uplink messages are received 13 within acceptable limits by the base station. 14 Q. Your testimony is that the ranging status 15 equal success means that the uplink messages are 16 within acceptable limits? That's your testimony? 17 A. Yes. 18 Q. Okay. And that's what your testimony is 19 of the assessment of the communication channel? 20 A. Yes. 21 Q. You referred to paragraph 23. Let's go 22 back to paragraph 20. The second sentence says, "To 23 be clear, my opinion is not that all signals are 24 probes." 25 Do you see that?

Page 218 1 A. Yes. 2 Q. Can you name a signal that is not a probe? 3 A. Yeah, the signal we're talking on right 4 now. 5 Q. What do you mean? 6 A. We're communicating right now on a signal, 7 my voice, your voice. That signal is not a probe. 8 I mean, you asked for an example. 9 Q. How do you know it's not a probe? 10 A. Because it's not -- we're communicating 11 information, we're not probe -- we're not -- I hate 12 to use the word, but we're not probing for, you 13 know -- we're not querying, we're communicating. 14 Q. In your opinion, does communicating 15 information make something not a probe? 16 A. It doesn't -- it doesn't necessarily make 17 it not a probe, but because probes are still 18 communicating, but I would say most messages are not 19 probes. 20 I don't know if that's being responsive to 21 your question. 22 Q. No, I think it is, and I think we're 23 hitting on something here. 24 So it's your testimony that the signal 25 between us over this Zoom call is not a probe	Page 220 1 THE WITNESS: That's a funny -- can you -- 2 I'm sorry. Can you repeat that question about the 3 identical information? 4 BY MR. GALLUZZO: 5 Q. Is it your testimony that the packets 6 being sent over the internet between your computer 7 and mine are still not a probe even if those packets 8 contain at least some identical parameters? 9 MR. KRONENTHAL: Objection. Form. 10 THE WITNESS: I would say that's correct 11 because it's not in and of itself doing probing. 12 BY MR. GALLUZZO: 13 Q. What do you mean by "it's not doing 14 probing"? What would "doing probing" mean? 15 A. For instance, if something in Zoom was 16 saying Vince, are you there? Are you there? Or it 17 was saying what's the error rate? You know, 18 assessing the channel or looking at other -- I mean, 19 there's -- it would -- you know, it would be 20 querying. And in the case of the Zoom call, it's 21 just sending data bits for the message back and 22 forth, our digitized voice and images. 23 Q. Go to paragraph 24. 24 A. Okay. 25 Q. At the bottom of the page 20, there's a
Page 219 1 because the packets that are being sent on the 2 internet between us are only conveying information. 3 Is that accurate? 4 A. They're conveying information. There 5 may -- for all I know, Zoom may use probing to 6 maintain signal quality. There could still be 7 probing going on. That might have been the message 8 that I got across my screen about my communications 9 link. There might have been probing going on. But 10 us talking -- yes, I would agree that us talking 11 back and forth is a message, that is not a probe. 12 Q. Is that true even if the packets carrying 13 the information of us talking back and forth 14 identify a connection identifier? 15 MR. KRONENTHAL: Objection. Form. 16 THE WITNESS: Yeah, I don't think the 17 connection identifier would matter one way or the 18 other in and of itself. 19 BY MR. GALLUZZO: 20 Q. Is your testimony about the packets 21 between us on the internet the same even if the 22 packet that my computer sends to yours and the 23 packet that your computer sends to mine have 24 identical information? 25 MR. KRONENTHAL: Objection. Form.	Page 221 1 sentence that starts, "A POSITA," P-O-S-I-T-A. 2 Do you see that? 3 A. Yes. 4 Q. "A POSITA would have understood that 5 signal delay is a timing-related parameter and that 6 attenuation is a power-related parameter." 7 Do you see that? 8 A. Yes. 9 Q. Do you agree with me that signal delay and 10 attenuation are not parameters that are part of the 11 ranging request, right? 12 A. Well, the WiMAX ranging acquires timing 13 and power, so what -- can you repeat your question? 14 Q. Would you agree with me that signal delay 15 and attenuation are not parameters that are in the 16 ranging request message? 17 A. Well, attenuation relates to power, and 18 delay relates to timing, so they would be physical 19 layer probes. I -- 20 Q. I think you might have misunderstood my 21 question. 22 A. Okay. 23 Q. I'll try again. 24 Is it true that signal delay is not a 25 parameter that is in the ranging request message?

21 (Pages 218 - 221)

Page 222 1 A. You're asking about the ranging request, 2 not the ranging response. Is that correct? 3 Q. For now, yes. 4 A. Oh, the ranging requests is requesting 5 power and profile changes, but you're asking does it 6 have changes in it? 7 Q. My question was, you agree that signal 8 delay and attenuation are not part of the ranging 9 request message? Do you agree or not agree with it? 10 A. They're part of the ranging process. 11 Q. I asked if they're part of the ranging 12 request message. Are they or are they not? 13 A. Well, it's a request to access the 14 channel, and those changes are made further in the 15 ranging process, so -- I mean, the actual power of 16 what's being transmitted is obviously part of what 17 gets transmitted because you're receiving that 18 power. 19 Q. Do you agree with me that that's not in 20 the message -- I'm sorry -- ranging request message? 21 A. Well, the message is being sent at a 22 certain power level and a certain network timing, so 23 that's inherent in the message. 24 Q. Other than that, is it further in the 25 message?	Page 224 1 THE WITNESS: Well, it's being used to 2 acquire the correct timing and power, and that's 3 related to that -- that's related to delay and 4 attenuation. 5 BY MR. GALLUZZO: 6 Q. I'll ask one more time. 7 Do you agree or disagree that signal delay 8 and attenuation are not part of the ranging response 9 message? 10 A. Well, they're only in the message in the 11 sense that the message is using is being sent back 12 at those power and timing adjustments. 13 Q. But that's it? 14 A. Well, they're being determined in the 15 ranging process. You're asking, I think, are they 16 included -- spelled out in a field, I think? Is 17 that your question? 18 Q. Do you understand my question? I'll have 19 to ask it again if not. 20 A. Okay. Ask it again. 21 Q. Do you agree or do you disagree that 22 signal delay and attenuation are not part of the 23 ranging response message? 24 A. It's making the adjustments, but it's not 25 in the message as spelled out.
Page 223 1 A. Not in the request as a separate field. 2 Q. Would you also agree with me that signal 3 delay and attenuation are not part of the ranging 4 response message? 5 A. I would disagree because the ranging 6 response is used to adjust timing and power. 7 Q. That wasn't my question. 8 My question was, you would agree that 9 signal delay and attenuation are not part of the 10 ranging response message? Do you agree with that or 11 do you not agree with that? 12 A. Well, can I refer to Exhibit 1013, page 13 199, and 202, the WiMAX spec? 14 Q. Are you asking me if you can look at it? 15 A. Yeah, I'm going to look at it. 16 Q. Oh, yeah, that's fine, if you need to look 17 at it to answer the question. 18 A. So because the ranging is deciding whether 19 the uplink is within acceptable timing and power, 20 then it is adjusting timing and power, and timing is 21 related to signal delay, and attenuation is related 22 to power. 23 Q. So is the answer to my question no, you 24 disagree, or is it yes, I agree? 25 MR. KRONENTHAL: Objection. Form.	Page 225 1 Q. What's making the adjustments? 2 A. The ranging process. 3 Q. So it's your opinion that the ranging 4 process is what invalidates the claims? Is that 5 what you're saying? 6 A. Yes. 7 Q. Let's turn to paragraph 38 of your 8 declaration. Are you there? 9 A. Yeah. 10 Are we going to go back to WiMAX, or I can 11 pull back the video screen? 12 Q. Oh, I don't know. I'm going to ask you 13 about your declaration first. 14 A. Okay. I'm back on -- I'm back where I can 15 see everybody on the video. 16 Q. There's a sentence in the middle of 17 paragraph 38 that starts, "Under this 18 interpretation." 19 Do you see that? 20 A. Let me read 38. 21 Q. Just read it to yourself, please. 22 A. Okay. It's a long paragraph. 23 Q. I'm just asking you about a specific 24 sentence. 25 A. Okay. Before you ask for that specific

Page 226 1 sentence, can I take a quick bathroom break? 2 Q. Sure. 3 A. Okay. Thank you. 4 (Recess.) 5 BY MR. GALLUZZO: 6 Q. Mr. Bertonis, before we went on break, we 7 were talking about paragraph 38, and there's a 8 specific sentence I'd like for you to focus on. 9 It's the one halfway down page 32 starting, "Under 10 this interpretation." 11 Do you see that? 12 A. Yes. 13 Q. At the end of the sentence, it refers to, 14 "The basic CID equal to some 16 bit value." 15 Do you see that? 16 A. Yes. 17 Q. That could be literally any 16 bit value, 18 correct? 19 A. I suppose so. It's the 16 bit value of 20 the CID. 21 Q. But it could be any 16 bit value? 22 A. I'd have to refer to WiMAX if there's a 23 structure into how they -- I don't think it's a 24 random value, if that's what you're asking. 25 Q. Well, let me maybe ask it this way: You	Page 228 1 Q. Would you agree with me that the ranging 2 request does not specify what value the basic CID 3 has to be, it just says give me a value? 4 A. Well, it gives a value. 5 Q. Is that the end of your answer? 6 A. You're asking -- it -- I refer to the 7 WiMAX table that shows this. 8 Q. Just state for the record which page 9 you're looking at. 10 A. Well, I'm going to 802.16, and I'm going 11 to go down to page 175, 176, and 177. So I see 12 where in Table 115 CID starts at 0, and then I see 13 where it's -- we start using a basic CID, so your 14 question is -- can you repeat your question? 15 Q. Yes. 16 You agree with me that the ranging request 17 message when it has set CID to a default value such 18 as 0, that it -- actually, withdrawn. 19 You would agree with me that the ranging 20 request message doesn't specify anything about what 21 the basic CID value could be? 22 MR. KRONENTHAL: Objection. Form. 23 THE WITNESS: Well, it doesn't list 24 examples, so it's -- but it's some number, it's some 25 value.
Page 227 1 agree that the ranging request doesn't specify what 2 value the CID could be, right? 3 A. Oh, it has some value, it has a number, a 4 bit value. 5 Q. Is that the extent of your response? 6 A. Sorry to do this. Can you repeat the 7 question, and then I'll try to be more responsive? 8 Q. You would agree with me that the ranging 9 request doesn't specify the value of what the CID 10 could be in terms of the 16 bit value? Do you agree 11 with that? 12 A. Well, it has the -- it has the value -- it 13 is the CID, so the CID has a value. 14 Q. So if you read your sentence, that's not 15 accurate. It says, "When a CID in an initial 16 ranging request is set to a default value, e.g., 0, 17 which would have caused the BS to generate the 18 ranging response with TLV information having the 19 basic CID equal to some 16 bit value." 20 So my question is, such as in the 21 situation you describe where the initial ranging 22 request has its CID set to 0, would you agree with 23 me that the ranging request does not tell the base 24 station, the BS, what value the basic CID should be? 25 A. So, sorry, can you repeat the question?	Page 229 1 BY MR. GALLUZZO: 2 Q. Is there anything about the ranging 3 request that specifies anything about what that 4 value could be? 5 MR. KRONENTHAL: Objection. Form. 6 THE WITNESS: Well, only that it's a 7 value. 8 BY MR. GALLUZZO: 9 Q. Let's go to paragraph 63 of your 10 declaration. 11 A. Okay. 12 Q. Here, just summarizing your opinion, I 13 think you're saying that the UCD message in DOCSIS 14 2.0 can be a request for a ranging request message. 15 Is that what you're saying? 16 A. Well, what I'm saying is the UCD message 17 causes the ranging request. 18 Q. How does it do that? 19 A. Because the UCD message includes a ranging 20 required parameter that causes ranging to be 21 initiated. 22 Q. But it only causes ranging to be initiated 23 upon initial ranging, correct? 24 A. I'd have to check and see if it's only 25 during initial ranging.

Page 230 1 Q. Sure, you can check, but it's right on 2 page 55 of your declaration. 3 A. Okay. Okay. So what's your question? 4 Q. My question is, do you agree with me that 5 the UCD's ranging required parameter only requests 6 ranging for initial ranging? 7 A. Well, the UCD doesn't always trigger 8 ranging, but that's irrelevant. 9 Q. Mr. Bertonis, I feel like you're trying to 10 answer a completely different question than the one 11 I asked. 12 Do you not understand my question? 13 A. Well, repeat it. 14 Q. Do you agree that the UCD message only 15 triggers a ranging request message upon initial 16 ranging? 17 A. While looking at the table, it's when 18 parameters 1 or 2, and that's unicast initial 19 ranging and broadcast initial ranging. 20 Q. And both are initial ranging, correct? 21 A. Yes, that's correct. 22 Q. There's no possibility of the UCD 23 specifying the ranging required during periodic 24 ranging? 25 A. Well, I don't see it there.	Page 232 1 between page 58 and 59. 2 Q. There's a reference to a pending till 3 complete parameter. 4 A. Yes. 5 Q. That parameter is an indication of the 6 amount of time the modem needs to finish 7 implementing past ranging parameters provided to it, 8 correct? 9 A. I believe that's correct. 10 Q. It also refers only to equalization, not 11 any other parameters. Is that right? 12 A. Let me -- well, I do see reference to 13 where I'm referring to "timing, power, and frequency 14 have been applied prior to transmitting this 15 request." 16 Q. I see that's what it says in your 17 declaration, but is that really what it says in 18 DOCSIS? 19 A. Well, can I refer to that exhibit and 20 where it talks about the ranging response 21 attributes? 22 Q. Yeah, I'll even focus you there. 23 Exhibit 1010, page 147. 24 A. Okay. I'm at page 147 and -- 25 Q. Do you agree with me after reading the
Page 231 1 Q. And if you saw it elsewhere in WiMAX, it 2 would probably be in your declaration, right? 3 A. Are we talking about WiMAX or DOCSIS? 4 Q. I'm sorry. If it was in DOCSIS 2.0, it 5 would probably be in your declaration, right? 6 A. Yeah, I don't want to say it doesn't 7 because I don't know for sure that it doesn't, but 8 clearly, it's -- it's triggered on 1 or 2, which is 9 initial ranging. 10 Q. And if it's somewhere in DOCSIS, it's not 11 part of your opinions because it's not in your 12 declaration, right? 13 A. It's not in my declaration. I'm not going 14 to say that it might not be somewhere in DOCSIS, but 15 it's not in my declaration. 16 Q. And so it's not part of your opinions in 17 this case? 18 A. One way or the other, correct. 19 Q. All right. Let's look at paragraph 68. 20 I'm going to focus on the top portion of the 21 paragraph that bleeds over to page 59. 22 Let me know when you're there. 23 A. Okay. I'm -- did you say 58 or 68? 24 Q. It's paragraph 68, top of page 59. 25 A. Okay. I'm at section 68, and I'm flipping	Page 233 1 discussion of pending till complete that it only 2 applies to equalization, not any other parameters? 3 A. Well, it says, "Only equalization can be 4 deferred." It doesn't say what you just said. 5 Q. You read that as something different? 6 A. Well, "All previous ranging response 7 attributes have been applied prior to transmitting 8 this request. Note that only equalization can be 9 deferred." 10 So that applies that there's other 11 parameters. 12 Q. I'm sorry. Let's walk through it together 13 because I think you're reading something very 14 different than I am. 15 "Pending till complete." It says, "If 0, 16 then all previous ranging response attributes have 17 been applied prior to transmitting this request." 18 Do you agree with that? 19 A. Yes. 20 Q. And that means that there are no 21 attributes that still need to be applied at the time 22 of sending the request, correct? 23 A. Yes. 24 Q. Then it goes on. "If nonzero, then this 25 is the time estimated to be needed to complete

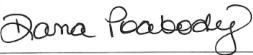
Page 234 1 assimilation of ranging parameters." 2 Is that right? 3 A. Yes. 4 Q. So meaning, if the request is sent with 5 something in pending till complete, let's say 20, 6 that means that the sender of the message still has 7 not yet assimilated all of the ranging parameters, 8 correct? 9 A. Well, it's implying there's other 10 parameters because it's saying only equalization can 11 be deferred. 12 Q. That's not my question. I'd like you to 13 try to answer my questions and not try to argue with 14 me about what you think the theory of the case is. 15 My question is, the statement starting "if 16 nonzero," that means that if the request is sent 17 with a nonzero value, that means that the sender of 18 the request has not yet completed assimilation of 19 ranging parameters. Is that correct? 20 A. Well, it's saying there's more time 21 required. 22 Q. More time required to complete 23 assimilation, correct? 24 A. Yes. 25 Q. And then it says, "Note that only	Page 236 1 believe that's the only interpretation, but do you 2 believe that is an accurate interpretation of that 3 sentence? 4 A. Well, I can see that you can read it that 5 way, you can read it that way. Again, I'd say it's 6 a little bit unclear. 7 Q. Is there anything you can point me to that 8 would make that reading an incorrect reading? 9 A. Not at this time. 10 Q. Toward the bottom of the same page, toward 11 the bottom of your declaration, page 59, there's a 12 reference to "a downstream channel ID." 13 Do you see that? 14 A. Yes. 15 Q. ID stands for identification or 16 identifier? 17 A. Yes. 18 Q. So downstream channel ID is a channel 19 number? 20 A. Yes. 21 Q. It's a channel number that was chosen by 22 the CMTS at start-up? 23 A. Yes. 24 Q. Let's go to paragraph 71. Are you there 25 with me?
Page 235 1 equalization can be deferred." 2 Do you see that? 3 A. Yes. 4 Q. So that means that the only time when 5 pending till complete can be more than zero is if 6 there was more time needed to assimilate 7 equalization parameters, correct? 8 A. Well, it doesn't say that. 9 Q. How do you read, "Note that only 10 equalization can be deferred" then? 11 A. Yeah, I suppose it's a bit ambiguous. 12 Q. Ambiguous or not, how do you read it? 13 A. Yeah, I guess I'm not sure. It could 14 be -- it's -- it's a little unclear. 15 Q. If it's unclear to you, then do you have 16 any basis to dispute my reading of it that -- excuse 17 me -- that this means that only equalization can be 18 still in process at the time a ranging request 19 message is sent? All other parameters need to have 20 already have been implemented? 21 MR. KRONENTHAL: Objection. Form. 22 THE WITNESS: That's one interpretation, 23 but, as I said, it's a little unclear. 24 BY MR. GALLUZZO: 25 Q. I understand that that -- you might not	Page 237 1 A. Yes. 2 Q. There is a sentence two from the bottom. 3 It starts, "They essentially argue." 4 Do you see that? 5 A. Yes. 6 Q. It says, "They essentially argue that the 7 test request is only a message that is sent by a 8 human operator." 9 Do you see that? 10 A. Yes. 11 Q. Do you agree that the test request is a 12 message that is only sent by a human operator? 13 A. So can you repeat your question? I think 14 it's regarding who's sending the test request. 15 Q. Do you agree that the test request is only 16 a message that is sent by a human operator? 17 A. No. 18 Q. What do you base your disagreement on? 19 A. Well, it doesn't say it's sent by a human 20 operator. 21 Q. What doesn't? 22 A. The test request. 23 Q. Where? 24 A. Well, you're asking me where something's 25 not said? You're asking about how a test request

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Page 238 1 happens, correct? 2 Q. Have you read DOCSIS 2.0? 3 A. Yes. 4 Q. So let's turn to page 184 of DOCSIS 2.0. 5 A. Okay. 6 Q. There's a Section 8.3.27, "Test Request." 7 Do you see that? 8 A. I do. 9 Q. It says, "The test request message with 10 mode not equal to 0 must not be sent by the CMTS 11 except in response to an explicit command from the 12 operator." 13 Do you see that? 14 A. Yes. 15 Q. What is "the operator" referred to there? 16 A. Well, again, it's not clear if that's a 17 human or if that's a computer that's operating the 18 CMTS. 19 Q. You are an expert in DOCSIS? 20 A. Yes. 21 Q. And you have read DOCSIS 2.0 numerous 22 times? You understand its contents? 23 A. Yes. 24 Q. You've analyzed it in response to 25 counsel's request for you to analyze it, and you've	Page 240 1 A. Well, again, I would say we had different 2 CMTSs we configured our equipment with, and in every 3 case, it was a rack-mount computer. I'm not saying 4 a person didn't touch it, you know, go in there and 5 program something, turn it on, whatever, but the 6 operator was our -- essentially our rack-mount 7 computer. 8 Q. Is there anything you can point me to in 9 DOCSIS 2.0 that says the reference to "the operator" 10 here in Section 8.3.27 is referring to a computer 11 and not a human? 12 A. No, I'm just relying on my experience 13 having worked with CMTSs. 14 Q. Do you state anything about that 15 experience in your declaration here? 16 A. Well, I think I mentioned my DOCSIS 17 experience. I don't know if I specifically say what 18 I just said to you, but I do talk about my 19 background working with DOCSIS and developing 20 products that use DOCSIS. 21 Q. My question might have been poorly 22 phrased, so I'll ask it again. 23 Where in your declaration do you state 24 that this reference to "the operator" refers to a 25 computer and not a human?
Page 239 1 determined that at least, in part, it invalidates 2 some of the claims of the '690 patent, correct? 3 A. Yes. 4 Q. You've also relied extensively on the test 5 request message, correct? 6 A. Well, it's one of the areas in DOCSIS I 7 relied on, correct. 8 Q. Yeah, you've relied on multiple places, 9 one of them is the test request, and you've relied 10 on it extensively, right? 11 A. That's correct. 12 Q. And so you're telling me you don't know 13 what "the operator" refers to? 14 A. Well, I can only give you example. I work 15 with DOCSIS CMTSs because we use them in the product 16 my company was developing, and we didn't have a 17 human operator, we had a rack-mount computer, and 18 that computer was our operator, and it was 19 programmed to do things. 20 Q. Have you reviewed the rest of DOCSIS 2.0 21 to see how it uses the word "operator" and whether 22 it might refer to a human or a computer? 23 A. Yeah, if you show me the -- I can comment 24 on it if you show me one of those areas. 25 Q. Oh, it is throughout. There are --	Page 241 1 A. Well, I'd have to look. 2 Q. Please do. 3 A. I'm assuming you've looked, and -- 4 offhand, I can't see where I explicitly say that, 5 so, you know, I don't have a software that can do a 6 find and search, but, again, I'm just speaking from 7 my experience. 8 Q. Do you agree that the test procedure that 9 you rely on has to be done before normal operation? 10 A. No. 11 Q. What do you rely on for that? 12 A. I rely on it appears to be a test 13 procedure for testing the communications channel. 14 Q. Did you actually read DOCSIS, or are we 15 just assuming what it says? 16 A. No, I read DOCSIS, and I read the section 17 on test procedure fairly extensively. 18 Q. What's a sync message, S-Y-N-C? 19 A. Generally speaking, or are you referring 20 to something specific in my declaration? 21 Q. What's a sync message in DOCSIS 2.0? 22 A. Can you refer me to where it's used in 23 DOCSIS 2.0? 24 Q. Sure. As part of the test request 25 discussion on page 185.

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Page 242 1 A. Okay. I'm on page 185. Okay. 2 Q. What's a sync message? 3 A. Appears to be a message sent by the CMTS 4 to the cable modem. 5 Q. You agree with me that this says, "In 6 normal operation, the CM must ignore any test 7 request message it receives subsequent to receiving 8 the first sync message"? 9 A. Yes, I see that. 10 Q. How soon after registration -- withdrawn. 11 At what time after a CM turns on and 12 attempts to connect to the CMTS does the CM receive 13 a sync message during normal DOCSIS 2.0 operation? 14 A. Well, it's -- it's not specified here what 15 that time is. 16 Q. It's not specified on page 185, but do you 17 know? 18 A. I don't know what that time is. 19 Q. So how do you disagree then with 20 Mr. Holobinko, who does know what that message is, 21 who says that a test request and the test procedure 22 cannot happen during normal operation and must 23 happen before? 24 A. I guess that's his reading of -- 25 interpretation of the sync message.	Page 244 1 Q. Basically what I'm going to want to 2 understand after you've read this paragraph is what 3 your proposed obviousness combination is. So what 4 are you starting with? What are you doing to it? 5 What are you adding? What are you combining? I 6 will ask specific questions, but I want you to keep 7 that in mind as you're reading paragraph 83. So 8 please do that, and read that to yourself, and let 9 me know when you're finished. 10 A. Okay. I think I've got it read. 11 Q. Okay. So I understand that your 12 invalidity theory here is that you start with DOCSIS 13 2.0. 14 Do I have it right so far? 15 A. Yes. 16 Q. Okay. Is the first change that you're 17 proposing be made to change the frequency range or 18 to add OFDMA or to do something else? 19 A. You're asking me about combining DOCSIS 20 2.0 with OFDMA? Is that your question? 21 Q. Is that what you're proposing? 22 A. Well, I'm not sure if I'm -- I'm not sure 23 I'm proposing. I'm writing a declaration. I guess 24 I'm confused with your question. 25 Q. Well, let's maybe back up then.
Page 243 1 Q. But you didn't review that in coming to 2 your opinions in this case? 3 A. Well, remember, it says that it's -- I 4 mean, it -- it's -- yeah, I'd only be speculating as 5 to what that time is. The point is, you can still 6 send the test message. 7 Q. So you say. 8 Let's turn to paragraph 83 of your 9 declaration. And I'm going to ask you to read the 10 whole thing, but I want you to focus on a question 11 of mine before you start reading. 12 A. Okay. I hate to do this to you. Can I 13 take like a two-minute bathroom break? It doesn't 14 even have to be five. 15 Q. Let's take five. 16 A. All right, thank you. 17 (Recess.) 18 BY MR. GALLUZZO: 19 Q. Mr. Bertonis, before we went on break, we 20 were going to look at paragraph 83 of your 21 declaration. I'm going to give you a chance to read 22 it, but before I do, I'd like to ask you the 23 question that I'm going to get to so that you can 24 focus on answering that. Does that sound okay? 25 A. Yes, sure.	Page 245 1 So this discussion comes in a section 2 about DOCSIS 2.0 in view of Zuckerman and DOCSIS 2.0 3 in view of ISO8802-2 and Zuckerman as to Dependent 4 Claims 10, 11, 18, and 19. 5 Do you agree with me there? 6 A. Yeah. Can I call up the patent to look at 7 those claims? 8 Q. Sure. 9 A. So generally, you're asking about the 10 claims related to OFDMA, correct? 11 Q. Yeah, and I'm just trying to understand 12 what it is you're proposing here that a person of 13 ordinary skill in the art would do. I understand 14 that you're starting with DOCSIS 2.0. 15 What would they do next? 16 A. In order to implement OFDMA? 17 Q. In order to do what you're opining in 18 paragraph 83. 19 A. I think one of the things I'm saying is 20 that -- that we move -- that the upstream of DOCSIS 21 increased in frequency to take advantage of OFDMA. 22 Q. That was after the critical data. I'm 23 sorry. After the priority date of the '690 patent? 24 A. Well, yes, the DOCSIS 3.0, which 25 implemented OFDM, is after -- is after the date, but

Page 246 1 I believe I also state that OFDMA was well known and 2 basically moved to higher frequency, so it could use 3 OFDMA. So I guess -- I'm sorry -- I'm not trying to 4 be evasive, but are you asking why they went to 5 higher frequencies, or are you asking why DOCSIS 6 implemented OFDMA or -- I'm not sure what your 7 question was. 8 Q. I'm asking in your analysis attempting to 9 invalidate those dependent claims of the '690 10 patent, are you saying that the motivation of the 11 person of skill in the art would be first to go to 12 higher frequencies or first to try to implement 13 OFDMA? 14 A. Well, to implement OFDMA because the 15 higher frequencies just make it work better, but 16 it's not a -- it's not a limiting factor. 17 Q. Okay. So as I can understand your opinion 18 in paragraph 83, you say start -- a person of skill 19 in the art would start with DOCSIS 2.0, they would 20 implement OFDMA, and then to make OFDMA work better, 21 they would use higher frequencies. Is that correct? 22 A. I think that's exactly what I'm saying. 23 Q. Okay. 24 MR. GALLUZZO: I have no further 25 questions, Mr. Bertonis.	Page 248 1 2 CERTIFICATE 3 I, Dana Peabody, a California Certified 4 Shorthand Reporter, do hereby certify: 5 That prior to being examined, the witness in 6 the foregoing proceedings was by me duly sworn to 7 testify to the truth, the whole truth, and nothing but 8 the truth; 9 That said proceedings were taken before me at 10 the time and place therein set forth and were taken 11 down by me in shorthand and thereafter transcribed into 12 typewriting under my direction and supervision; 13 I further certify that I am neither counsel 14 for, nor related to, any party to said proceedings, nor 15 in any way interested in the outcome thereof. 16 17 In witness whereof, I have hereunto 18 subscribed my name at Yuma, Arizona, this 4th day of 19 April, 2025. 20 21  22 Dana Peabody 23 CSR No. 6332 24 25
Page 247 1 THE WITNESS: I was going to ask for a 2 lunch break. 3 MR. KRONENTHAL: Hold on, Jim. 4 Petitioner has no further questions 5 either. We reserve the right for the witness to 6 review and sign. 7 MR. GALLUZZO: Let's go off the record. 8 (At 12:54 p.m., the deposition was 9 concluded.) 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Page 249 1 Veritext Legal Solutions 2 1100 Superior Ave 3 Suite 1820 4 Cleveland, Ohio 44114 5 Phone: 216-523-1313 6 7 April 9, 2025 8 9 To: Mr. Kronenthal 10 11 Case Name: Comcast Cable Communications, LLC v. Entropic 12 Communications, LLC 13 Veritext Reference Number: 7235576 14 Witness: James G. Bertonis , Vol 2 Deposition Date: 3/28/2025 15 16 Dear Sir/Madam: 17 18 Enclosed please find a deposition transcript. Please have the witness 19 review the transcript and note any changes or corrections on the 20 included errata sheet, indicating the page, line number, change, and 21 the reason for the change. Have the witness' signature notarized and 22 forward the completed page(s) back to us at the Production address 23 shown 24 above, or email to production-midwest@veritext.com. 25 If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived. Sincerely, Production Department NO NOTARY REQUIRED IN CA

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Page 250 1 DEPOSITION REVIEW 2 CERTIFICATION OF WITNESS 3 ASSIGNMENT REFERENCE NO: 7235576 CASE NAME: Comcast Cable Communications, LLC v. Entropic Communications, LLC DATE OF DEPOSITION: 3/28/2025 WITNESS' NAME: James G. Bertonis , Vol 2 In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me. I have made no changes to the testimony as transcribed by the court reporter. 8 _____ 9 Date James G. Bertonis , Vol 2 10 Sworn to and subscribed before me, a Notary Public in and for the State and County, 11 the referenced witness did personally appear and acknowledge that: 12 They have read the transcript; 13 They signed the foregoing Sworn Statement; and 14 Their execution of this Statement is of their free act and deed. 15 I have affixed my name and official seal 16 this _____ day of _____, 20____. 17 _____ 18 Notary Public 19 _____ 20 Commission Expiration Date 21 22 23 24 25	Page 252 1 ERRATA SHEET 2 VERITEXT LEGAL SOLUTIONS MIDWEST 3 ASSIGNMENT NO: 7235576 4 PAGE/LINE(S) / CHANGE /REASON 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ 9 _____ 10 _____ 11 _____ 12 _____ 13 _____ 14 _____ 15 _____ 16 _____ 17 _____ 18 _____ 19 _____ 20 _____ 20 Date James G. Bertonis , Vol 2 21 SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ 22 DAY OF _____, 20____. 23 _____ 24 Notary Public 25 _____ 25 Commission Expiration Date
Page 251 1 DEPOSITION REVIEW 2 CERTIFICATION OF WITNESS 3 ASSIGNMENT REFERENCE NO: 7235576 CASE NAME: Comcast Cable Communications, LLC v. Entropic Communications, LLC DATE OF DEPOSITION: 3/28/2025 WITNESS' NAME: James G. Bertonis , Vol 2 In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me. I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s). I request that these changes be entered as part of the record of my testimony. 10 I have executed the Errata Sheet, as well 11 as this Certificate, and request and authorize that both be appended to the transcript of my 12 testimony and be incorporated therein. 13 _____ 14 Date James G. Bertonis , Vol 2 15 Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that: 17 They have read the transcript; 18 They have listed all of their corrections in the appended Errata Sheet; 19 They signed the foregoing Sworn Statement; and 20 Their execution of this Statement is of their free act and deed. 21 I have affixed my name and official seal 22 this _____ day of _____, 20____. 23 _____ 24 Notary Public 25 _____ 25 Commission Expiration Date	

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Illinois Code of Civil Procedure

Article II, Part E

Rule 207, Signing and Filing Depositions

Signing and Filing Depositions

(a) Submission to Deponent; Changes; Signing.

Unless signature is waived by the deponent, the officer shall instruct the deponent that if the testimony is transcribed the deponent will be afforded an opportunity to examine the deposition at the office of the officer or reporter, or elsewhere, by reasonable arrangement at the deponent's expense, and that corrections based on errors in reporting or transcription which the deponent desires to make will be entered upon the deposition with a statement by the deponent that the reporter erred in reporting or transcribing the answer or answers involved. The deponent may not otherwise change either the form or substance of his or her answers. The deponent shall provide the officer with an electronic or physical address to which notice is to be sent when the transcript is available for examination and signing. When the deposition is fully transcribed, the officer shall deliver to the deponent, at the address supplied,

notice that it is available and may be examined at a stated place at stated times, or pursuant to arrangement. After the deponent has examined the deposition, the officer shall enter upon it any changes the deponent desires to make, with the reasons the deponent gives for making them. If the deponent does not appear at the place specified in the notice within 28 days after the mailing of the notice, or within the same 28 days make other arrangements for examination of the deposition, or after examining the deposition refuses to sign it, or after it has been made available to the deponent by arrangement it remains unsigned for 28 days, the officer's certificate shall state the reason for the omission of the signature, including any reason given by the deponent for a refusal to sign. The deposition may then be used as fully as though signed, unless on a motion to suppress under Rule 211(d) the court holds that the reasons given by the deponent for a refusal to sign require rejection of the deposition in whole or in part.

(b) Certification, Filing, and Notice of Filing.

(1) If the testimony is transcribed, the officer

shall certify within the deposition transcript that the deponent was duly sworn by the officer and that the deposition is a true record of the testimony given by the deponent. A deposition so certified requires no further proof of authenticity

(2) Deposition transcripts shall not be filed with the clerk of the court as a matter of course. The party filing a deposition shall promptly serve notice thereof on the other parties and shall file the transcript and any exhibits in the form and manner specified by local rule.

DISCLAIMER: THE FOREGOING CIVIL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE STATE RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

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