

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
ADVANCED MICRO DEVICES, INC.
AND PENSANDO SYSTEMS, INC., Case No. IPR2025-00486
Petitioners, U.S. Patent 10,873,753
V.
CONCURRENT VENTURES, LLC AND
XTREAMEDGE, INC.,
Patent Owner.

ORAL AND VIDEOCONFERENCED DEPOSITION OF

DONALD ALPERT, PhD

DECEMBER 9, 2025

(Reported remotely.)

ORAL AND VIDEOCONFERENCED DEPOSITION OF
DONALD ALPERT, PhD, produced as a witness at the instance
of the Petitioners, taken in the above-styled and
-numbered cause on the 9th day of December, 2025, A.D.,
beginning at 11:01 a.m. CST to 5:22 p.m., before Kelly
Hassell, RPR, CLR, CSR, in and for the State of Texas,
located in Los Altos, California, in accordance with the
Federal Rules of Civil Procedure and the agreement
hereinafter set forth.

<div>2</div> <div>1 R E M O T E A P P E A R A N C E S</div> <div>2 FOR THE PETITIONERS:</div> <div>3 MR. MICHAEL MATULEWICZ-CROWLEY, ESQ.</div> <div>4 Reichman Jorgensen Lehman & Feldberg LLP</div> <div>5 400 Madison Avenue</div> <div>6 Suite 14D</div> <div>7 New York, New York 10017</div> <div>8 (212) 381-1965</div> <div>9 mmatulewicz-crowley@reichmanjorgensen.com</div> <div>10 -AND-</div> <div>11 MR. ZACH JACOBS, ESQ.</div> <div>12 Reichman Jorgensen Lehman & Feldberg LLP</div> <div>13 1909 K Street, NW</div> <div>14 Suite 800</div> <div>15 Washington, D.C. 20006</div> <div>16 (202) 894-7310</div> <div>17 zjacobs@reichmanjorgensen.com</div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>22</div> <div>13 FOR THE PATENT OWNER:</div> <div>14 MR. JEFFREY LIANG, ESQ.</div> <div>15 MR. MICHAEL ETNYRE, ESQ.</div> <div>16 MR. FRED CHUNG, ESQ.</div> <div>17 Sheppard Mullin</div> <div>18 1540 El Camino Real</div> <div>19 Suite 120</div> <div>20 Menlo Park, California 94025</div> <div>21 (650) 815-2600</div> <div>22 jliang@sheppardmullin.com</div> <div>23 fchung@sheppardmullin.com</div> <div>24 metnyre@sheppardmullin.com</div>	<div>4</div> <div>1 EXHIBITS</div> <div>2 EXHIBIT NO. DESCRIPTION PAGE</div> <div>3 Exhibit 1001 U.S. Patent Number 10,873,753 12</div> <div>4 Exhibit 1003 Declaration of Donald Alpert, PhD 15</div> <div>5 Exhibit 1004 Stroud patent 33</div> <div>6 Exhibit 1006 Cragon patent 93</div> <div>7 Exhibit 1007 Saulsbury patent 92</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div> <div>15</div> <div>16</div> <div>17</div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>22</div>
<div>3</div> <div>1 I N D E X</div> <div>2 Appearances..... Page 2</div> <div>3 Exhibit List..... Page 4</div> <div>4 Direct Examination by Mr. Matulewicz-Crowley... Page 6</div> <div>5 Cross-Examination by Mr. Liang..... Page 136</div> <div>6 Redirect Examination by Mr. Matulewicz-Crowley. Page 150</div> <div>7 Recross-Examination by Mr. Liang..... Page 156</div> <div>8 Reporter's Certificate..... Page 167</div> <div>9</div> <div>10 (REPORTER'S NOTE: Quotation marks are used for clarity</div> <div>11 and do not necessarily reflect a direct quote.)</div> <div>12</div> <div>13</div> <div>14</div> <div>15</div> <div>16</div> <div>17</div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>22</div>	<div>5</div> <div>1 P R O C E E D I N G S -</div> <div>2 THE COURT REPORTER: The time on the</div> <div>3 record is 11:01 a.m. Central time.</div> <div>4 If counsel could please state their</div> <div>5 appearances for the record.</div> <div>6 MR. MATULEWICZ-CROWLEY: Michael</div> <div>7 Matulewicz-Crowley, here with my colleague Zach Jacobs,</div> <div>8 from Reichman Jorgensen Lehman & Feldberg on behalf of</div> <div>9 Patent Owners.</div> <div>10 MR. LIANG: Jeffrey Liang, along with Fred</div> <div>11 Chung and Michael Etnyre, on behalf of -- with Sheppard</div> <div>12 Mullin on behalf of Petitioners.</div> <div>13 THE COURT REPORTER: I'm Kelly Hassell,</div> <div>14 Certified Shorthand Reporter, located in Dallas, Texas.</div> <div>15 The witness is located in Los Altos, California.</div> <div>16 (The witness was duly sworn.)</div> <div>17 THE COURT REPORTER: Thank you. You may</div> <div>18 proceed.</div> <div>19 DONALD ALPERT, PhD,</div> <div>20 having been first duly cautioned and sworn to testify the</div> <div>21 truth, the whole truth and nothing but the truth,</div> <div>22 testified on his oath as follows:</div>

<p style="text-align: right;">6</p> <p>1 DIRECT EXAMINATION</p> <p>2 BY MR. MATULEWICZ-CROWLEY:</p> <p>3 Q Good morning, Dr. Alpert. How are you doing?</p> <p>4 A Good morning. It's a good morning here. Thank</p> <p>5 you.</p> <p>6 Q Good. It's been getting cold over in New York.</p> <p>7 Hopefully the weather is staying not too bad over there.</p> <p>8 I assume you have been deposed before?</p> <p>9 A Yes, I have.</p> <p>10 Q Okay. And I assume you've submitted a</p> <p>11 declaration and an inter partes review before?</p> <p>12 A I have, yes.</p> <p>13 Q Okay. I just want to mention a few things. I</p> <p>14 know you've been deposed before. A deposition is just a</p> <p>15 question-and-answer session.</p> <p>16 You understand that?</p> <p>17 A Yes, that's my understanding.</p> <p>18 Q And you understand that you're under oath,</p> <p>19 right?</p> <p>20 A Yes, of course. That's what we've just gone</p> <p>21 through, was the swearing.</p> <p>22 Q Right. And so you understand that that means</p>	<p style="text-align: right;">8</p> <p>1 that's the way these sessions operate.</p> <p>2 Q Okay. And can you agree to not look at any</p> <p>3 documents or anything on your computer or your phone</p> <p>4 unless I tell you to or unless you tell me that that's</p> <p>5 what you're doing?</p> <p>6 A Well, let -- I think -- let me just explain a</p> <p>7 little bit the setup that I have here, and then maybe you</p> <p>8 could ask a more specific question, which is I do have</p> <p>9 three binders like this (indicating) that the attorneys</p> <p>10 have provided me, attorneys from Sheppard Mullin, that</p> <p>11 include the -- my deposition, as well as other papers</p> <p>12 from the parties and the board, along with all the --</p> <p>13 there's three binders -- along with all the exhibits</p> <p>14 for -- I don't know if it's all of them for the petition,</p> <p>15 but certainly all that I cited.</p> <p>16 So I have those paper copies. I do</p> <p>17 have -- off to the left side of my computer here, I have</p> <p>18 a second screen, and I will bring up the PDFs,</p> <p>19 presumably, that are submitted as exhibits over there.</p> <p>20 And I do also have clean PDF copies of those same</p> <p>21 documents that I mentioned that there are paper copies.</p> <p>22 So I do have that available on computer.</p>
<p style="text-align: right;">7</p> <p>1 you have agreed to tell the truth today, correct?</p> <p>2 A Yes, I agree to tell the truth for sure.</p> <p>3 Q Okay. And so if you don't understand anything</p> <p>4 particularly in my question, please let me know.</p> <p>5 Otherwise I will assume that you've understood the</p> <p>6 question. Okay?</p> <p>7 A Yes, that's fine.</p> <p>8 Q Let me know if you need to take a break. We</p> <p>9 can take a break at any point. Just let me know. The</p> <p>10 only thing I ask is that if there's a pending question,</p> <p>11 then before we take a break, you could just answer the</p> <p>12 pending question and we can do that. Okay?</p> <p>13 A Sure, yeah. That's the format I am used to.</p> <p>14 Q Okay. Because this is a remote deposition,</p> <p>15 there's a few other things I just want to mention or ask.</p> <p>16 First of all, is there anyone in the room</p> <p>17 with you?</p> <p>18 A No, there's not.</p> <p>19 Q Can you agree to not communicate with your</p> <p>20 counsel during the deposition, including off screen,</p> <p>21 except on the record?</p> <p>22 A Yes, yes, I can agree to that. I understand</p>	<p style="text-align: right;">9</p> <p>1 Nothing else that's related to the case is on my</p> <p>2 computer. And so I would like to be able to refer to</p> <p>3 those documents at any time in response to questions that</p> <p>4 you're asking.</p> <p>5 Q Okay. So I guess let me ask a few things then.</p> <p>6 A Sure.</p> <p>7 Q Can you agree to not look at anything</p> <p>8 physically or on your computer besides what has been</p> <p>9 submitted in this proceeding?</p> <p>10 A Oh, yes, I can do that.</p> <p>11 Q And if you feel the need to, let me know and we</p> <p>12 can talk about it. I just want to make sure I at least</p> <p>13 kind of -- you know, I know what you're looking at so we</p> <p>14 can make sure I understand what's going on.</p> <p>15 Similarly, because this is going to be a</p> <p>16 written transcript, if you're looking at something, can</p> <p>17 you just try and remember to -- to say what you're</p> <p>18 looking at. So if I ask you a question and you want to</p> <p>19 look at something to answer it, can you just try and</p> <p>20 remember to say, you know, okay, well, let me look at</p> <p>21 XYZ? And if you forget, I can ask you.</p> <p>22 But does that make sense?</p>

<p style="text-align: right;">10</p> <p>1 A Well, let me say, first of all, it makes sense.</p> <p>2 But I understand -- my past experience in physical</p> <p>3 depositions is that I can look at any of the</p> <p>4 documentation, at least that's been submitted as an</p> <p>5 exhibit for the deposition. And in the past, I know I've</p> <p>6 been advised it's not necessary to kind of step through</p> <p>7 verbally each of the exhibits to the deposition that I</p> <p>8 might be looking at.</p> <p>9 So as I understand, you're asking me to do</p> <p>10 something different, which is to put on the record a</p> <p>11 statement of what documents related to the case I'm</p> <p>12 looking at as I'm preparing to answer your questions. Is</p> <p>13 my understanding correct?</p> <p>14 Q That's right. And you can either just say it,</p> <p>15 or if you want, each time I can ask you. But it will</p> <p>16 probably go faster if you just want to say it.</p> <p>17 A Sure. I can do that if -- I'm just looking at</p> <p>18 attorneys from Sheppard Mullin. I guess there's no</p> <p>19 objection. It's just different than I've done before.</p> <p>20 And so just to mention, I may need a reminder once in a</p> <p>21 while.</p> <p>22 Q No problem at all.</p>	<p style="text-align: right;">12</p> <p>1 first one then.</p> <p>2 A Yes. So I'm going to -- I actually had a</p> <p>3 couple of these open that were on my computer, but I'm</p> <p>4 going to -- I am going to close those out now, and we'll</p> <p>5 use the ones that you provide.</p> <p>6 Q Great. I dropped into the chat Exhibit 1001.</p> <p>7 Do you see that?</p> <p>8 (Exhibit 1001 marked.)</p> <p>9 A I see it's in the chat. I'm downloading it</p> <p>10 now.</p> <p>11 Okay. I've opened it. I can see it's</p> <p>12 searchable, so that's -- might be a big help.</p> <p>13 Q (BY MR. MATULEWICZ-CROWLEY) Great. Do you</p> <p>14 recognize Exhibit 1001?</p> <p>15 A As it opened in the middle -- going from the</p> <p>16 top, I recognize this is the '753 patent.</p> <p>17 Q Okay. And the '753 patent is the subject of</p> <p>18 this proceeding that we're doing this deposition for,</p> <p>19 right?</p> <p>20 A Yes, that's my understanding.</p> <p>21 Q Can you go down to Page 20 as marked on the</p> <p>22 bottom, where they have Claim 1?</p>
<p style="text-align: right;">11</p> <p>1 Okay. So -- so I understand -- I had</p> <p>2 planned to drop in exhibits into Zoom and have you open</p> <p>3 them that way. I don't have a particular preference</p> <p>4 between that and you looking at as-filed documents. Do</p> <p>5 you have a preference? Because you mentioned that you</p> <p>6 had some on your computer.</p> <p>7 A I do have on my computer and if -- I don't know</p> <p>8 if you know whether the documents that you drop in would</p> <p>9 be searchable, because some of these exhibits are quite</p> <p>10 lengthy. And I can tell just from my preparation that I</p> <p>11 would like to refer to the searchable version.</p> <p>12 So if what you're going to drop in is</p> <p>13 searchable, then I would think it makes the most sense</p> <p>14 just for the clarity of the record and the integrity of</p> <p>15 the whole process to -- for me to rely on the versions</p> <p>16 that you might be providing. I don't know if you have an</p> <p>17 answer to that.</p> <p>18 Q I believe everything should be searchable. If</p> <p>19 not, then we can -- if there's one that's not searchable,</p> <p>20 if for some reason Zoom does something odd to PDFs, we</p> <p>21 can certainly touch base about that then.</p> <p>22 Does that work? So I can drop in the</p>	<p style="text-align: right;">13</p> <p>1 A Page 20, Claim 1, yes.</p> <p>2 Q Okay. And do you see there's an element that</p> <p>3 begins, "One or more swappable pods or cards in one or</p> <p>4 more chassis, coupled through a messaging interface</p> <p>5 network"?</p> <p>6 A Yes, I see that's the first element of the</p> <p>7 claim.</p> <p>8 Q What is a messaging interface network?</p> <p>9 A Well, I think to understand what the messaging</p> <p>10 interface network is in the context of Claim 1, we can</p> <p>11 look further down in that claim where there's some</p> <p>12 additional information about what the network means and</p> <p>13 what would be a limitation on the network. And it tells</p> <p>14 us that it's "a network coupled to one or more swappable</p> <p>15 pods or cards and supporting message-based communication</p> <p>16 using packets," and then it goes on in some further</p> <p>17 detail about the structure of the header.</p> <p>18 Q Okay. Just for ease of reference, the -- can I</p> <p>19 refer to the element that we were just discussing as</p> <p>20 Element 1A?</p> <p>21 A Yes. That's my recollection, it's been</p> <p>22 called --</p>

<p style="text-align: right;">14</p> <p>1 Q Okay.</p> <p>2 A -- 1A.</p> <p>3 Q Okay. And then you just referenced Element 1E?</p> <p>4 A Yeah, I believe that's 1E, "a network coupled,"</p> <p>5 and so on.</p> <p>6 Q Right. Okay. So with that understanding, does</p> <p>7 the phrase "messaging interface network" in Claim</p> <p>8 Element 1A mean anything different than the network</p> <p>9 that's described in Claim Element 1E?</p> <p>10 A No. You know, I believe a person of ordinary</p> <p>11 skill in the art looking at the claim would understand</p> <p>12 that the requirements for the messaging interface network</p> <p>13 are identified in Claim 1E -- sorry, Element 1E.</p> <p>14 Q Okay. So the recitation of messaging interface</p> <p>15 network in Claim Element 1A does not add any requirements</p> <p>16 to the claim over what's recited in Claim Element 1E?</p> <p>17 A I would say that that is my understanding, yes.</p> <p>18 MR. MATULEWICZ-CROWLEY: Okay. I'm going</p> <p>19 to introduce two more exhibits. And let me ask, Jeff,</p> <p>20 really quick, do you have a preference for kind of</p> <p>21 creating exhibits numbers for this deposition or just</p> <p>22 going with the exhibit numbers or paper numbers from the</p>	<p style="text-align: right;">16</p> <p>1 to, whatever that's called, not a reply but the reaction.</p> <p>2 Okay. I have an exhibit open that's the</p> <p>3 petition. And this looks like my declaration, but I have</p> <p>4 to get back up to the top.</p> <p>5 All right. Then my declaration, yeah.</p> <p>6 Okay. And the declaration is searchable, I can see.</p> <p>7 Q Great. Okay. So if we can go back to look at</p> <p>8 Exhibit 1001, the '753 patent, the same place we were</p> <p>9 looking before.</p> <p>10 How does Claim 1 -- or is Claim 1, as</p> <p>11 written, any different than if Claim Element 1A only</p> <p>12 required that the things be coupled through a network</p> <p>13 instead of through a messaging interface network?</p> <p>14 A The question that you mentioned is not -- is</p> <p>15 not one that I've thought about, to the best of my</p> <p>16 recollection. But you know, sitting here right now, I --</p> <p>17 I don't see that -- that Claim 1 is necessarily more --</p> <p>18 Claim 1A -- Element 1A is necessarily more limiting than</p> <p>19 1E.</p> <p>20 Q Okay. Would a person of --</p> <p>21 A Sorry. Yeah. Actually, let me take it back,</p> <p>22 just as I'm looking. And Claim 1A does recite the one or</p>
<p style="text-align: right;">15</p> <p>1 docket?</p> <p>2 MR. LIANG: I think we can -- we can do</p> <p>3 whatever -- whatever you -- whatever you feel more</p> <p>4 comfortable with.</p> <p>5 MR. MATULEWICZ-CROWLEY: Okay. That's</p> <p>6 fine. Then I think we can probably just stick with the</p> <p>7 paper and exhibit numbers.</p> <p>8 I'm going to then drop into the chat a</p> <p>9 petition, which is paper Number 2 And your declaration,</p> <p>10 which is Exhibit 1003.</p> <p>11 (Exhibit 1003 marked.)</p> <p>12 Q (BY MR. MATULEWICZ-CROWLEY) If you can just</p> <p>13 open those both up and let me know when you've opened</p> <p>14 them.</p> <p>15 A I was just smiling because I was going to click</p> <p>16 on the second exhibit, and it gave me all these whatever,</p> <p>17 emojis or something that I could apply to it. But I</p> <p>18 chose -- I chose not to.</p> <p>19 Q It might make the experience of reading the</p> <p>20 petition more fun, you know, a little lighter and more</p> <p>21 jovial.</p> <p>22 A I doubt that, but in any event, no, I chose not</p>	<p style="text-align: right;">17</p> <p>1 more swappable pods or cards, and that is the antecedent</p> <p>2 basis for the Element 1E talking about the one or more</p> <p>3 swappable pods or cards. So there certainly -- without</p> <p>4 1A, there would certainly be some ambiguity in 1E.</p> <p>5 Q Right. Would a person of ordinary skill in the</p> <p>6 art consider two cards communicating point to point to be</p> <p>7 a network?</p> <p>8 A That particular question, I don't recall it</p> <p>9 being an issue in my analysis. But just kind of giving</p> <p>10 you my immediate reaction, I believe that the two cards</p> <p>11 communicating directly with each other could be a</p> <p>12 network.</p> <p>13 Q And what do you mean "it could be a network"?</p> <p>14 In what -- in what scenarios would it be a network?</p> <p>15 A Well, I'm thinking, for example, they could be</p> <p>16 communicating through Ethernet, in which case I believe</p> <p>17 that would be understood to be a network.</p> <p>18 If they were communicating, for example,</p> <p>19 simply over a bus, I don't know whether that would be</p> <p>20 considered to be a network. It's not something that I</p> <p>21 was concerned with in the analysis for my declaration.</p> <p>22 Q What do you mean you don't know whether</p>

<p style="text-align: right;">18</p> <p>1 point-to-point communication between cards over a bus 2 would be considered a network? 3 A Well, for example, if the communication were 4 unidirectional only, I don't know if that would meet the 5 requirements of the network. In particular, the network 6 here that is claimed in 1E is one that is packet-based 7 and has certain requirements for the header. 8 Q Would -- are you familiar with the term 9 "point-to-point communication"? 10 A I am, yes. 11 Q Okay. What does that mean? 12 A Point to point would mean that there were two 13 devices communicating directly with each other. That 14 would be in contrast to, say, a multipoint communication 15 where there might be more than two devices that were 16 electrically communicating with each other over the same 17 channel. 18 Q Does point-to-point communication have anything 19 to do with whether there was routing happening within the 20 communication? 21 A I don't think I understand -- I don't think I 22 understand the question.</p>	<p style="text-align: right;">20</p> <p>1 that's not something that I recall considering in the 2 context of my analysis, for the patents. So I don't 3 think I can give really an informed answer to that 4 question. I would be just shooting from the hip. 5 Q So I'm just trying to figure out what makes a 6 network a network. 7 A Okay. Was that a -- was there a question? 8 Q Yeah. I -- 9 A I might have missed it. 10 Q What makes a network a network? 11 A You know, sitting here right now, I don't think 12 I have an answer to that general question. 13 Q Okay. Network is one of the claim terms, 14 right? 15 A Network is one of the claim terms, and more 16 specifically, the claim network has some limitations that 17 I have considered in analyzing the prior art. It says -- 18 Q Right. But do you understand -- oops. 19 A Oh, wait. Sorry. It says it's message-based 20 communication using packets, with a header that has some 21 requirements for identifiers. 22 Q Right. But you understand that the claims, in</p>
<p style="text-align: right;">19</p> <p>1 What do you mean by routing? 2 Q Do you understand what routing means? 3 A In certain contexts I do, yes. 4 Q Okay. In the context of a communication or a 5 network, do you? 6 A In -- certainly for -- for certain networks, I 7 know what routing... 8 Q Okay. So is there any routing in 9 point-to-point communications? 10 A That's really not something I've considered in 11 the context of my analysis for the declaration, but I 12 would say that routing could be involved, and the 13 point-to-point communication could be from some type of 14 network device, communication device and a router. 15 Q Okay. I guess what I'm trying to understand is 16 if there's a difference between, you know, just two or 17 more cards directly communicating with each other versus 18 a network in which, you know, the communications have to 19 be routed and some intelligent decision-making has to 20 happen within that network. 21 Do you understand that distinction? 22 A I do understand the distinction, and again,</p>	<p style="text-align: right;">21</p> <p>1 addition to the headers, require a network, correct, and, 2 in particular, a messaging interface network? 3 A I understand that. And in the analysis of the 4 prior art, I've identified, particularly in Stroud, that 5 there's an Ethernet connection between Stroud's cards and 6 that the Ethernet would be a network. 7 Q Okay. Well, so how can you say that something 8 is or is not a network if you're not able to answer what 9 a network is? 10 A Well, I understand you're asking generally. I 11 think a person of ordinary skill in the art would 12 understand that Ethernet is a network. It's even got the 13 short form of network in its name. So I have no problem 14 saying that the Ethernet in Stroud does satisfy the 15 network requirement here other than, as my analysis 16 shows, potentially one type of identifier. 17 So I've got no problem standing behind 18 saying that Ethernet is a network, and in the context of 19 Stroud, it does satisfy the requirements, or at least 20 Stroud combined with DaSilva, it satisfies these 21 requirements. 22 I understand you're asking me for, say, a</p>

<p style="text-align: right;">22</p> <p>1 textbook explanation or definition of network. If I</p> <p>2 thought that were important to completing my analysis, I</p> <p>3 would have gone and looked at definitions, IEEE</p> <p>4 definitions as particular standard that relates to</p> <p>5 networking terms. And I would have understood that, and</p> <p>6 if it were -- if I thought it was relevant, I would have</p> <p>7 included that definition in the declaration.</p> <p>8 But as I'm sitting here right now, I can't</p> <p>9 define a network in general, but I didn't have to in</p> <p>10 order to determine that the Ethernet of Stroud was a</p> <p>11 network -- was a network that satisfied the limitations</p> <p>12 of Element 1E, at least when combined with DaSilva.</p> <p>13 Q And to be clear, I'm asking about a person of</p> <p>14 ordinary skill in the art's understanding of what network</p> <p>15 means in the context of the '753 patent.</p> <p>16 Does that change your answer at all?</p> <p>17 A Well, it does because Element 1E does tell us</p> <p>18 that the network has certain characteristics,</p> <p>19 message-based communication, particularly using packets</p> <p>20 and certain requirements for the header for those</p> <p>21 packets. So I think that's -- that was sufficient for my</p> <p>22 analysis, was to rely on the claim language itself.</p>	<p style="text-align: right;">24</p> <p>1 Q Right. But is it possible -- well, actually,</p> <p>2 strike that.</p> <p>3 Does the word "network" add any</p> <p>4 requirements whatsoever to the claim above and beyond the</p> <p>5 language after that, that it has to support</p> <p>6 messaging-based communications using packets, et cetera?</p> <p>7 A You know, sitting here right now, I don't -- I</p> <p>8 don't have an opinion or really an answer formed to that</p> <p>9 question. When I was going through the analysis of this</p> <p>10 claim, I looked at each of the -- the pieces and the</p> <p>11 requirements that are in 1E, and I did come to the</p> <p>12 conclusion that in Stroud, the Ethernet network that</p> <p>13 connects the cards does support the requirements related</p> <p>14 to communicating with packets and with having a header</p> <p>15 that has at least some of the identifiers there.</p> <p>16 Stroud -- the combination of Stroud and</p> <p>17 DaSilva I believe teaches all the limitations there where</p> <p>18 the network is the Ethernet of Stroud.</p> <p>19 Q Look at Claim 2 of the '753 patent, and let me</p> <p>20 know when you are there.</p> <p>21 A Okay. Yes, I am.</p> <p>22 Q Claim 2 requires that at least a subset of the</p>
<p style="text-align: right;">23</p> <p>1 Q Right. So just to be clear, in Element 1E,</p> <p>2 there's a network, and the network has to support</p> <p>3 messaging-based communication using packets, et cetera,</p> <p>4 correct?</p> <p>5 A Correct, yes.</p> <p>6 Q So those are two -- at least two requirements,</p> <p>7 correct? There's a network, and the network has to</p> <p>8 support messaging-based communication using packets?</p> <p>9 A Using packets. And furthermore, there's</p> <p>10 certain requirements on the header for those packets.</p> <p>11 Q Right. But those are two different</p> <p>12 requirements, correct? And I -- to clarify --</p> <p>13 A I'm not sure -- yeah, I'm not sure --</p> <p>14 Q -- there has to be a network, and the network</p> <p>15 has to support messaging-based communication, et cetera?</p> <p>16 A Sure. I'm not sure whether I understand the</p> <p>17 question, but 1E is a requirement of the claim.</p> <p>18 Q What do you not understand about the question?</p> <p>19 A I don't understand what you're asking me.</p> <p>20 1E -- it says a network, and the network is coupled to</p> <p>21 the cards and supporting packets, and the packets having</p> <p>22 a header, that's describing the claim network.</p>	<p style="text-align: right;">25</p> <p>1 one or more swappable pods or cards is an option for</p> <p>2 direct connection to one or more pods, cards, or</p> <p>3 components bypassing the module interface network.</p> <p>4 Do you see that?</p> <p>5 A Yes, I see it.</p> <p>6 Q How do you know if communication between the</p> <p>7 pods or cards or components is not on the module</p> <p>8 messaging interface network?</p> <p>9 A Well, at least one way would be if the direct</p> <p>10 connection were distinct from the network. And in the</p> <p>11 case of my analysis for Stroud, there are communication</p> <p>12 paths directly between the pods in addition to the</p> <p>13 Ethernet network. And so having a distinct path and a</p> <p>14 distinct protocol I believe would satisfy the requirement</p> <p>15 that the messaging interface network was bypassed.</p> <p>16 Q What if the communication paths directly</p> <p>17 between the pods also used Ethernet; would that disclose</p> <p>18 Claim 2?</p> <p>19 A If there were a separate Ethernet connection,</p> <p>20 direct connection, separate from the message interface</p> <p>21 network, then, you know, hypothetically I'm thinking</p> <p>22 that -- that such a configuration would satisfy Claim 2.</p>

<p style="text-align: right;">26</p> <p>1 Q Why is that direct Ethernet connection not also 2 a module messaging interface network? 3 A Well, it's -- just as I'm sitting here looking 4 at it now, the module messaging interface network, as 5 we've seen from Element 1E has a number of requirements, 6 particularly for the header. And the -- at least if the 7 direct connection, even if it were Ethernet, had a 8 different header, had some distinctions in the header, 9 then that second direct Ethernet connection would not be 10 a module messaging interface network. 11 Q Would it be a network? 12 A If it were the Ethernet, yes, it would be a 13 network. 14 Q Claim 2 recites a direct connection while 15 Claim 1 recites a network, correct? 16 A Yes. Generally, the pods in Claim 1 are 17 interconnected by a network, and the pods in Claim 2 have 18 a direct connection that's not required to be a network. 19 Q What is the difference between a direct 20 connection and a network? 21 A Again, I don't -- I don't -- I didn't consider 22 that question in doing my analysis, and I don't really</p>	<p style="text-align: right;">28</p> <p>1 would be a connection between two devices with no 2 intervening device, right? 3 A Yes, I believe I said that. And that sounds 4 like an acceptable definition to me. 5 Q Okay. What do you mean by an intervening 6 device? 7 A Well, for example, it would be that the first 8 device communicates with an intervening device, which in 9 turn the intervening device communicates with the -- the 10 second device that I mentioned before. So there are 11 examples, there are things like bus bridges and switches, 12 just some examples of what could be an intervening 13 device. 14 Q Okay. So a bus bridge or a switch -- okay. 15 Strike that. That's clear. 16 Can you turn to your declaration, and 17 specifically we're going to look at Paragraph 145. 18 A Okay. And I'm looking -- I turned -- remember 19 what we talked about before, I'm going to look at a paper 20 copy of it here. 21 Q Okay. Thank you. I appreciate it. 22 A Yeah. And I may go over to the electronic</p>
<p style="text-align: right;">27</p> <p>1 have an answer -- I don't really have an answer right 2 now. It wasn't necessary for me to consider that as I 3 was mapping the elements of the accused -- asserted 4 claims or challenged claims against the teachings of the 5 prior art. 6 Q What is a direct connection? 7 A Direct connection would be a connection between 8 two devices with no intervening device. 9 Q Can a direct connection also be a network? 10 A You know, sitting here right now -- and I think 11 I have might answered this before. But at least in the 12 case where the direct connection was Ethernet, I believe 13 that would be considered by a person of ordinary skill in 14 the art to be a network. 15 Q But you don't -- you did not consider what the 16 differences between a network and a direct connection 17 are, correct? 18 A I did not consider those differences in the 19 analysis. I identified direct connections in Stroud that 20 were separate from the Ethernet connection that was 21 taught by Stroud. 22 Q What do you -- you said the direct connection</p>	<p style="text-align: right;">29</p> <p>1 copy. 2 Okay. I'm at 145. 3 Q So in Paragraphs 145 to 147, you discuss 4 something regarding the Patent Owner's apparent 5 interpretation of the claims. 6 Do you see that? 7 A Yes. 8 Q What are you saying in this section? 9 A Okay. As I'm looking at the declaration, the 10 first thing I did was to go back and check that this is 11 in the context of the analysis for dependent Claim 2 12 where I had identified that in Stroud, it teaches an I2C 13 connection directly between the slots. 14 And so in 145 to 147, I indicated my 15 understanding of the Patent Owner's -- at least a portion 16 of the Patent Owner's infringement contentions that the 17 required -- let's see what the claim requires -- direct 18 connection to one or more pods or components, that that 19 requirement of the claim in the accused products would be 20 satisfied according to the Patent Owner's contentions by 21 Ethernet ports that are on the front of the -- the 22 blades.</p>

<p style="text-align: right;">30</p> <p>1 And so I was just indicating that to the</p> <p>2 extent that the Patent Owner's apparent contentions are</p> <p>3 correct in satisfying the claims, that an Ethernet port</p> <p>4 on the front of the blade could satisfy that. Then</p> <p>5 Stroud also discloses additional Ethernet ports that are</p> <p>6 on the front of the blade that's shown in Figure 4 as</p> <p>7 part of Paragraph 146.</p> <p>8 Q Okay. So is it -- is this a fair summary: In</p> <p>9 Paragraph 145 through 147, you say that Stroud also</p> <p>10 discloses the direct connection required by Claim 2 via</p> <p>11 disclosing Ethernet ports because plaintiffs'</p> <p>12 infringement contentions, in your opinion, claim that</p> <p>13 Ethernet ports satisfy the direct connection requirement</p> <p>14 of Claim 2?</p> <p>15 MR. LIANG: Objection to form.</p> <p>16 A Yeah, I mean, as I heard, you're asking me</p> <p>17 whether I'm saying Stroud teaches this limitation. And I</p> <p>18 think that my opinion here is only related to saying that</p> <p>19 Stroud has the same teaching as what I understand the</p> <p>20 Patent Owner is contending meets this limitation, so...</p> <p>21 Q (BY MR. MATULEWICZ-CROWLEY) So putting aside</p> <p>22 the Patent Owner's infringement contentions, does</p>	<p style="text-align: right;">32</p> <p>1 Claim 2 obvious?</p> <p>2 A I don't see that it says that here.</p> <p>3 Q Okay. So can we look at -- I'm going drop in</p> <p>4 Stroud itself.</p> <p>5 Putting aside the Patent Owner's</p> <p>6 infringement contentions, Stroud's teaching of Ethernet</p> <p>7 ports does not disclose the requirements of Claim 2,</p> <p>8 right?</p> <p>9 A Wait. Can I hear the question again?</p> <p>10 Q Okay. Putting aside Patent Owner's</p> <p>11 infringement contentions, in your opinion, Stroud's</p> <p>12 disclosure of Ethernet ports does not disclose the</p> <p>13 requirements of Claim 2, right?</p> <p>14 MR. LIANG: Objection to form.</p> <p>15 A I would say that the disclosure of Stroud that</p> <p>16 I've applied to the claims is for the I2C connection, and</p> <p>17 I haven't provided an opinion that Stroud does disclose</p> <p>18 the interconnection of the front panel Ethernet ports.</p> <p>19 Q (BY MR. MATULEWICZ-CROWLEY) Or the other</p> <p>20 Ethernet ports, correct?</p> <p>21 A I think I might need a more complete question</p> <p>22 there. For -- for the other Ethernet ports?</p>
<p style="text-align: right;">31</p> <p>1 Stroud's teaching of Ethernet ports, in your opinion,</p> <p>2 disclose the requirement of Claim 2?</p> <p>3 MR. LIANG: Objection to form.</p> <p>4 A Can I hear the question back?</p> <p>5 Q (BY MR. MATULEWICZ-CROWLEY) Putting aside the</p> <p>6 Patent Owner's infringement contentions, does Stroud's</p> <p>7 teaching of Ethernet ports, in your opinion, disclose the</p> <p>8 requirements of Claim 2?</p> <p>9 A No. I would say that I'm not providing an</p> <p>10 opinion that Stroud discloses the requirements of</p> <p>11 Claim 2. For example, the first sentence in</p> <p>12 Paragraph 147, I state that the test interfaces provide</p> <p>13 an option for the cards to directly connect with other</p> <p>14 cards or other components.</p> <p>15 And so it doesn't say that Stroud -- that</p> <p>16 Stroud, sorry, teaches the direct connection. I'm</p> <p>17 explaining that it's an option. And I believe a person</p> <p>18 of ordinary skill in the art would find it obvious to use</p> <p>19 the Ethernet connections shown in Figure 54 above to</p> <p>20 connect one card to another.</p> <p>21 Q Where do you say in your declaration that the</p> <p>22 Ethernet ports in Stroud would render the element of</p>	<p style="text-align: right;">33</p> <p>1 Q Sorry. I guess -- apologies. I thought you</p> <p>2 had referenced that in Paragraphs 146 and 147 you were</p> <p>3 discussing some other Ethernet ports besides the front</p> <p>4 Ethernet ports, but I might have been mistaken.</p> <p>5 So maybe the only Ethernet ports you're</p> <p>6 discussing are the front Ethernet ports; is that the</p> <p>7 case?</p> <p>8 A In the context of these three paragraphs, what</p> <p>9 do we have, 145 to 147, then as I recall, and I'm going</p> <p>10 back to reviewing now, those opinions relate to the front</p> <p>11 panel Ethernet ports.</p> <p>12 Q Understood. So --</p> <p>13 A I was just going to ask that -- I was going to</p> <p>14 open Stroud, which I haven't done yet, to download it.</p> <p>15 Q Yes. Okay. Yes.</p> <p>16 A Let me do that.</p> <p>17 Q My question was going to be to let me know when</p> <p>18 you've opened Stroud.</p> <p>19 A Okay.</p> <p>20 MR. MATULEWICZ-CROWLEY: For the record,</p> <p>21 Stroud is Exhibit 1004.</p> <p>22 (Exhibit 1004 marked.)</p>

<p style="text-align: right;">34</p> <p>1 A All right. I have 1004 open. I'm just going</p> <p>2 to go to the front.</p> <p>3 Q (BY MR. MATULEWICZ-CROWLEY) Okay. Well -- and</p> <p>4 actually, can you -- I mean, you can take a look at this</p> <p>5 and anything you would like to look at. But can you turn</p> <p>6 to Page 72.</p> <p>7 A Of Stroud?</p> <p>8 Q Yes, which is somehow the first prose page of</p> <p>9 Stroud.</p> <p>10 A The first prose page. Okay.</p> <p>11 I'm at the Paragraph 1 for Stroud.</p> <p>12 Q Stroud concerns testing communications</p> <p>13 networks, services and devices, correct?</p> <p>14 A Yes. That's what it says in Paragraph 1, that</p> <p>15 Stroud -- the disclosure relates to systems and methods</p> <p>16 for testing communication networks, services and devices.</p> <p>17 Q What does that mean?</p> <p>18 A It means that the purpose of Stroud is to be</p> <p>19 testing communication networks and the associated service</p> <p>20 and devices that form communication networks.</p> <p>21 Q Stroud is not about building or designing or</p> <p>22 developing those communication networks themselves,</p>	<p style="text-align: right;">36</p> <p>1 Q Do you see the section that stretches from</p> <p>2 Paragraph 30 to Paragraph 34?</p> <p>3 A Okay. Yes, I do see that.</p> <p>4 Q The section is entitled Patent Owner's District</p> <p>5 Court Allegations, right?</p> <p>6 A Yes, that's the title of this section.</p> <p>7 Q What is the purpose of the section from</p> <p>8 Paragraphs 30 to 34?</p> <p>9 A Generally the purpose is to summarize the --</p> <p>10 certain aspects of the infringement contentions that the</p> <p>11 Patent Owner has provided, because at other points in</p> <p>12 this declaration I compare the disclosures of the prior</p> <p>13 art with the interpretation and intentions of the</p> <p>14 Patent Owner.</p> <p>15 Q What is the role that the comparison of the</p> <p>16 disclosures of the prior art with the interpretations for</p> <p>17 infringement of the Patent Owner play in your analysis?</p> <p>18 A I would say that it's in addition to comparing</p> <p>19 the prior art to the claims under the -- I believe the</p> <p>20 proposed constructions or the plain meaning of those</p> <p>21 claims, as I've done with the prior art references.</p> <p>22 It is showing that under alternate</p>
<p style="text-align: right;">35</p> <p>1 correct?</p> <p>2 A To the best of my recollection, I don't recall</p> <p>3 that Stroud is teaching how to design communication</p> <p>4 networks.</p> <p>5 Q Stroud is not about building or designing or</p> <p>6 developing data centers, right?</p> <p>7 MR. LIANG: Objection to form.</p> <p>8 A I would -- I would disagree with that. I think</p> <p>9 Stroud is teaching that data centers should include the</p> <p>10 kind of system that Stroud is disclosing for testing the</p> <p>11 communication networks within the data center and --</p> <p>12 between the data center and external systems.</p> <p>13 Q (BY MR. MATULEWICZ-CROWLEY) Okay. So within</p> <p>14 the data center, Stroud is only concerned with the</p> <p>15 testing aspect, right?</p> <p>16 A Yes. I would say that Stroud is concerned with</p> <p>17 the testing where -- testing would also include</p> <p>18 performance measurements.</p> <p>19 Q Can you turn to Paragraph 30 of your</p> <p>20 declaration, Exhibit 1003.</p> <p>21 A Okay. I'm doing that as the paper copy.</p> <p>22 Yeah, I see that.</p>	<p style="text-align: right;">37</p> <p>1 interpretations that are apparently being applied by the</p> <p>2 Patent Owner in the contentions, that even under those</p> <p>3 alternate interpretations, the references do disclose --</p> <p>4 the disclosure -- I shouldn't say disclosure, but the</p> <p>5 teachings of the references, as combined, do satisfy the</p> <p>6 apparent interpretation that the Patent Owner is</p> <p>7 applying.</p> <p>8 And basically, as I understand it, the</p> <p>9 same interpretations must necessarily be applied for both</p> <p>10 infringement and for validity or invalidity analysis.</p> <p>11 And so the point here is just to summarize the Patent</p> <p>12 Owner's interpretation for infringement and then to</p> <p>13 provide some evidence that the prior art discloses even</p> <p>14 under Patent Owner's interpretation.</p> <p>15 Q And how did you determine what Patent Owner's</p> <p>16 interpretation of the claims are from the infringement</p> <p>17 contentions?</p> <p>18 A Well, for example, Paragraph 32 identifies that</p> <p>19 the -- that the Patent Owner had -- was reading TCP/IP</p> <p>20 packet headers on the claimed packet headers of the</p> <p>21 patent. And so I believe -- as I recall, later on in the</p> <p>22 declaration, I did identify that the prior art is</p>

<p style="text-align: right;">38</p> <p>1 disclosing TCP/IP packet headers.</p> <p>2 So to the extent that Patent Owner's</p> <p>3 interpretation is correct that the required headers of</p> <p>4 the patent are satisfied by TCP/IP packets headers, then</p> <p>5 the prior art references do teach -- well, it teaches</p> <p>6 TCP/IP packet headers.</p> <p>7 Q In your opinion, did TCP/IP packet headers</p> <p>8 disclose or satisfy the claimed headers from the '753</p> <p>9 patent?</p> <p>10 MR. LIANG: Objection to form.</p> <p>11 A Well, I'm not offering -- I'm not offering, you</p> <p>12 know, a well-considered opinion. But you know, sitting</p> <p>13 here right now, I --</p> <p>14 Q (BY MR. MATULEWICZ-CROWLEY) Well, and sorry to</p> <p>15 interrupt. I guess I should just ask, are you offering</p> <p>16 that opinion? And if...</p> <p>17 A I'm not offering. I'm not offering that</p> <p>18 opinion.</p> <p>19 Q Okay. So can you turn to Paragraph 41 of your</p> <p>20 declaration.</p> <p>21 A Okay. I am at Paragraph 41.</p> <p>22 Q Okay. So here it says you're applying Patent</p>	<p style="text-align: right;">40</p> <p>1 parties agreed on your construction of memory</p> <p>2 superposition?</p> <p>3 A Okay. And so it's my understanding that --</p> <p>4 that this whatever, this statement that I made here that</p> <p>5 the Petitioners have adopted it, my understanding is the</p> <p>6 petition itself carried that information.</p> <p>7 Q Okay. So that the only basis for that</p> <p>8 understanding is from the petition itself?</p> <p>9 A Again, with the caveat that some -- might have</p> <p>10 been some privileged discussions.</p> <p>11 Q Okay. Would it change your mind if Patent</p> <p>12 Owner were not using that construction of memory</p> <p>13 superposition?</p> <p>14 A I -- personally I think it's a fine</p> <p>15 construction. I have no issues with it, so I don't know.</p> <p>16 If Patent Owners offered an alternate construction, I</p> <p>17 would consider that. But this is what I had that both</p> <p>18 parties agreed to, and I thought it was a fine</p> <p>19 construction.</p> <p>20 Q What does this construction of memory</p> <p>21 superposition in Paragraph 41 of your declaration mean?</p> <p>22 A Well, it says -- and I think it's pretty</p>
<p style="text-align: right;">39</p> <p>1 Owner's proposed construction for the term "memory</p> <p>2 superposition"; is that right?</p> <p>3 A Yes. And I say further that the Petitioners</p> <p>4 have also adopted that construction. So my understanding</p> <p>5 is the parties have agreed on that construction, and</p> <p>6 that's what I applied in my analysis.</p> <p>7 Q Okay. And how did you come to the</p> <p>8 understanding that the parties agreed on this</p> <p>9 construction of memory superposition?</p> <p>10 MR. LIANG: I caution the witness not to</p> <p>11 reveal any attorney/client privileged communications,</p> <p>12 but, you know, otherwise, please proceed, Dr. Alpert.</p> <p>13 MR. MATULEWICZ-CROWLEY: And to be clear,</p> <p>14 we'll object to any privileged-based instruction about</p> <p>15 the basis of his opinion. So we can see if we get to it.</p> <p>16 A Okay.</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) I can repeat the</p> <p>18 question if you would like.</p> <p>19 A Yes, I was just going to ask you to repeat the</p> <p>20 question. I think I can navigate through those concerns,</p> <p>21 but, yes, please.</p> <p>22 Q How did you come to the understanding that the</p>	<p style="text-align: right;">41</p> <p>1 transparent -- "two or more types of memory that can be</p> <p>2 made available for data flow or other data processing</p> <p>3 operation." And so in particular, there would be</p> <p>4 multiple types of memory that can be made available for</p> <p>5 various types of data processing operations. So I don't</p> <p>6 know if you have a more specific question.</p> <p>7 Q Do the two or more types of memory have to be</p> <p>8 on the same processor? Can they be on different</p> <p>9 processors? If they're just anywhere within the system,</p> <p>10 does that count?</p> <p>11 A I believe that, you know, within this</p> <p>12 particular construction, there need to be two or more</p> <p>13 types of memory, but those could be anywhere in the</p> <p>14 system.</p> <p>15 Q Okay. And is that based on your opinion about</p> <p>16 what memory superposition means or just the construction</p> <p>17 you got from the petition?</p> <p>18 A Well, let me answer that in -- kind of in two</p> <p>19 parts.</p> <p>20 Memory superposition I don't believe is a</p> <p>21 term of the art. I'm quite familiar with the art for</p> <p>22 memory systems. So I think it's important to look at</p>

<p style="text-align: right;">42</p> <p>1 the -- at the specification of the '753 patent, and I</p> <p>2 believe this construction is consistent and follows the</p> <p>3 teachings of the '753 patent.</p> <p>4 Q Okay. And what I'm asking is, have you done</p> <p>5 that analysis of what memory superposition would mean to</p> <p>6 a person of ordinary skill in the art, in the '753</p> <p>7 patent?</p> <p>8 A Yes, I have looked at it. And I believe this</p> <p>9 is a -- it's a good definition, yes.</p> <p>10 Q You don't present that analysis in your</p> <p>11 declaration, correct?</p> <p>12 A Not that I recall, I don't. I didn't know</p> <p>13 there was any -- any controversy here.</p> <p>14 Q In Paragraph 42, you say, "The prior art</p> <p>15 teaches interleaved memory irrespective of whether the</p> <p>16 below construction is adopted."</p> <p>17 Do you see that?</p> <p>18 A Yes, I do.</p> <p>19 Q How can the meaning of a claim term not matter</p> <p>20 to whether it's disclosed?</p> <p>21 A I don't believe that I'm saying -- over here I</p> <p>22 certainly didn't mean to say that the -- that the claim</p>	<p style="text-align: right;">44</p> <p>1 understand what you just said, so was your point that</p> <p>2 interleaved memory within Claim 7 has to be -- it's</p> <p>3 described as a type of memory superposition. So</p> <p>4 therefore, you know, it requires interleaving different</p> <p>5 types of memory, which is not necessarily true of all</p> <p>6 interleaved memory in a vacuum?</p> <p>7 A Yes, I would say that's a good -- that is a</p> <p>8 good summary of the interleaved memory in the '753</p> <p>9 patent. And particularly in the claim, where you pointed</p> <p>10 it out, is a type of memory superposition which would</p> <p>11 involve two or more types of memory. And so the prior</p> <p>12 art does teach that. It also has more general teachings</p> <p>13 of interleaved memory.</p> <p>14 Q Do all of the four memory types recited in</p> <p>15 Claim 7 also have to be types of memory superposition?</p> <p>16 A That's my understanding of Claim 7. It says</p> <p>17 selecting a memory superposition, having a plurality of</p> <p>18 types of memory, and then with selectable arrangement of</p> <p>19 the plurality of types of memory, and then identifying</p> <p>20 four types of arrangement. And so those arrangements --</p> <p>21 types of memory...</p> <p>22 THE COURT REPORTER: I'm sorry. It kind</p>
<p style="text-align: right;">43</p> <p>1 construction was irrelevant or didn't need to be</p> <p>2 considered in deter- -- in the analyzing the prior art</p> <p>3 teaching. So I don't know if that answered the question.</p> <p>4 Maybe I missed something there.</p> <p>5 Q Well, then what do you mean in that paragraph?</p> <p>6 A What I mean is that the interleaved memory was</p> <p>7 a -- was and is a term of the art and that -- that the</p> <p>8 '753 patent doesn't use interleaved memory in a way</p> <p>9 that's different from the art. And so therefore, any</p> <p>10 construction that followed the '753 patent's teachings</p> <p>11 would be taught by the prior art interleaved memory.</p> <p>12 And with that, I should mention that at</p> <p>13 least interleaved memory in the context of superposition</p> <p>14 would require interleaving of different of types of</p> <p>15 memory, which wasn't owned in the prior art, but not the</p> <p>16 only usage in the prior art.</p> <p>17 Q Can you look back at the '753 patent first at</p> <p>18 Claim 7.</p> <p>19 A Yeah, I've got a paper copy here.</p> <p>20 Q Just let me know when you're there.</p> <p>21 A Okay. Claim 7.</p> <p>22 Q Looking at that last element. So just so I</p>	<p style="text-align: right;">45</p> <p>1 of broke up. You said, "And so those arrangements --</p> <p>2 types of memory," is what I got.</p> <p>3 A Okay. Yeah. Sorry about that.</p> <p>4 So those arrangements would be</p> <p>5 superposition of different types of memory.</p> <p>6 Q (BY MR. MATULEWICZ-CROWLEY) Can you look at</p> <p>7 Claim 1 now.</p> <p>8 A Okay. I've got that on the paper here.</p> <p>9 Q Great. Claim 1 uses the term "module" a few</p> <p>10 times. What does -- what does module mean in the claim?</p> <p>11 A Well, the claims referred to hardware modules</p> <p>12 and software modules and then -- that's in 1B. And then</p> <p>13 in 1C, it identifies that there are user-definable</p> <p>14 hardware modules or user-definable software modules. And</p> <p>15 this -- in the context of '753 patent, the embodiments</p> <p>16 identify that the hardware modules include an FPGA, and</p> <p>17 the software modules include a processor.</p> <p>18 My analysis for the -- for Stroud -- I was</p> <p>19 just trying to think if the combination was necessary.</p> <p>20 But as I recall, my analysis for Stroud also reads a</p> <p>21 user-definable hardware module as an FPGA and</p> <p>22 user-definable software module as either a network</p>

<p style="text-align: right;">46</p> <p>1 processor or a control processor.</p> <p>2 Q Okay. And to be clear, I'm not asking about</p> <p>3 Stroud right now. I don't know if -- I'll repeat the</p> <p>4 question.</p> <p>5 What does the term "module" mean, just</p> <p>6 that word?</p> <p>7 MR. LIANG: Objection; asked and answered.</p> <p>8 A Yeah, I don't believe I considered module on</p> <p>9 its own. I looked at hardware module. And then the</p> <p>10 further recitation and limitation of a user-definable</p> <p>11 hardware module, similarly for software modules. So I</p> <p>12 have I have not considered module on its own.</p> <p>13 Q (BY MR. MATULEWICZ-CROWLEY) I guess -- and</p> <p>14 maybe there's a miscommunication. You know, but like if</p> <p>15 someone asked me -- or if I -- if I told someone, hey,</p> <p>16 there's red car here, and they said, what's a car,</p> <p>17 certainly for me to be able to identify that I just saw</p> <p>18 red car, I would have to know what a car is, you know,</p> <p>19 with and without the adjective.</p> <p>20 So what I'm trying to figure out here --</p> <p>21 you know, I understand hardware. I understand that</p> <p>22 there's other effects that the module has to be and do.</p>	<p style="text-align: right;">48</p> <p>1 an FPGA as being a user-definable hardware module. It is</p> <p>2 a hardware circuit where the user can define the</p> <p>3 functionality and the interconnection of the functional</p> <p>4 circuit blocks.</p> <p>5 Q Okay. But to be clear --</p> <p>6 A So --</p> <p>7 Q -- are you not able to say what a -- a person</p> <p>8 of ordinary skill in the art would understand a</p> <p>9 user-definable hardware module to mean?</p> <p>10 MR. LIANG: Objection to form.</p> <p>11 A All I'm saying is that in my analysis, I did</p> <p>12 not rely on any particular meaning for that. I</p> <p>13 recognized that '753 patent teaches that a -- an FPGA is</p> <p>14 an example of a user-definable hardware module.</p> <p>15 And when I compared to the prior art, I</p> <p>16 saw that Stroud teaches the field programmable gate</p> <p>17 array. And so I've said that Stroud teaching does</p> <p>18 satisfy the user-definable hardware module of, what is</p> <p>19 it, 1C.</p> <p>20 Q (BY MR. MATULEWICZ-CROWLEY) Okay. Is FPGA the</p> <p>21 only example that you understand to be a hard -- a</p> <p>22 user-definable hardware module?</p>
<p style="text-align: right;">47</p> <p>1 I'm just trying to figure out what, in your opinion,</p> <p>2 module means?</p> <p>3 A Well, then I would say I'm not offering an</p> <p>4 opinion about --</p> <p>5 MR. LIANG: Objection to form.</p> <p>6 THE COURT REPORTER: I'm sorry. I'm</p> <p>7 sorry. I didn't get part of that.</p> <p>8 A Okay. I'm not offering an opinion on what</p> <p>9 module means in the context of the '753 patent claims.</p> <p>10 I've considered what's a hardware module and, more</p> <p>11 specifically, what's a user-definable hardware module,</p> <p>12 and similarly for software modules. So I'm not offering</p> <p>13 an opinion about what module on its own means.</p> <p>14 Q (BY MR. MATULEWICZ-CROWLEY) Okay. So -- and</p> <p>15 not looking for examples from the art. But what does a</p> <p>16 user-definable hardware module mean to a person of</p> <p>17 ordinary skill in the art?</p> <p>18 A I'm not aware of user-definable hardware module</p> <p>19 as a term of the art. And so it would be important for a</p> <p>20 person of ordinary skill to look in the context of the</p> <p>21 '753 patent.</p> <p>22 And the '753 patent provides an example of</p>	<p style="text-align: right;">49</p> <p>1 A No, I would -- I would say that there can be</p> <p>2 other types of circuits that would be user-definable</p> <p>3 hardware modules.</p> <p>4 Q And how would you know that --</p> <p>5 MR. LIANG: So, Counsel, sorry, I just</p> <p>6 have been trying to say for the couple -- past couple of</p> <p>7 questions that, you know, I just pointed out that we've</p> <p>8 been going about -- you know, about a minute and 18 or</p> <p>9 so, you know, 20 -- I'm sorry, an hour 14, an hour 20</p> <p>10 now. So, yeah, I don't -- I don't know if Dr. Alpert</p> <p>11 wants a break at some point, but I just wanted to, you</p> <p>12 know, put it out there.</p> <p>13 THE WITNESS: This would be a fine point</p> <p>14 or a little bit longer. I don't mind.</p> <p>15 MR. MATULEWICZ-CROWLEY: Okay. We can</p> <p>16 finish up and then take a break.</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) So -- but if you</p> <p>18 aren't able to provide what a person of ordinary skill in</p> <p>19 the art would understand a user-definable hardware module</p> <p>20 to be, then how is one to know if anything I see in the</p> <p>21 world is a user-definable hardware?</p> <p>22 A Well, I don't think I can -- I can help you</p>

<p style="text-align: right;">50</p> <p>1 with your being able to determine anything in the world</p> <p>2 being user-definable hardware module.</p> <p>3 But from my analysis, it was sufficient to</p> <p>4 identify that the user-definable hardware module includes</p> <p>5 an FPGA.</p> <p>6 Q Okay. So FPGA is the only thing that you're</p> <p>7 saying is for sure a hardware definable -- a</p> <p>8 user-definable hardware module?</p> <p>9 MR. LIANG: Objection to form.</p> <p>10 A You know, I'm not saying that's the only thing,</p> <p>11 but I'm saying that's one thing that the '753 patent</p> <p>12 teaches, and I found the same in Stroud.</p> <p>13 Q (BY MR. MATULEWICZ-CROWLEY) Okay. But an FPGA</p> <p>14 is the only thing you're identifying as a hardware</p> <p>15 definable -- sorry, a user-definable hardware module?</p> <p>16 A I'm going to look in -- sorry, this is the</p> <p>17 declaration I'm looking at.</p> <p>18 In Paragraph 86 of my declaration and it</p> <p>19 says there, "Regarding hardware modules, Stroud teaches</p> <p>20 that the configurable logic devices," and those are</p> <p>21 shown, for example, in Figure 5 of Stroud, "are hardware</p> <p>22 modules with 'programmable logic units,' for example,</p>	<p style="text-align: right;">52</p> <p>1 example of --</p> <p>2 Q And I -- I don't think I heard you explain how</p> <p>3 they're modules, though. You touched on hardware, and</p> <p>4 you touched on user definable, but how did you come to</p> <p>5 your decision that those are modules?</p> <p>6 MR. LIANG: Objection to form.</p> <p>7 A Well, we got to this -- as I remember, we got</p> <p>8 to this series of questions because you were asking would</p> <p>9 there be anything besides an FPGA that would -- and</p> <p>10 perhaps it was in Stroud, that would be the</p> <p>11 user-definable hardware modules.</p> <p>12 And so I was explaining now that Stroud</p> <p>13 talks about CLDs, and examples are PLDs and FPGAs, and so</p> <p>14 Stroud does talk about a broader class of devices than</p> <p>15 FPGAs that would satisfy the requirements for a</p> <p>16 user-definable hardware module.</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) Right. So that's</p> <p>18 the question. So you just said a CLD satisfies the</p> <p>19 requirements of a user-definable hardware module, right?</p> <p>20 A Yes.</p> <p>21 Q How do we know it's a module?</p> <p>22 MR. LIANG: Objection to form.</p>
<p style="text-align: right;">51</p> <p>1 'programmable logic devices' and 'FPGAs.'"</p> <p>2 So the analysis as I've written it here</p> <p>3 says that the user-definable hardware modules are CLDs,</p> <p>4 configurable logic devices, and that includes PLDs,</p> <p>5 programmable logic devices, and FPGAs, field programmable</p> <p>6 gate arrays.</p> <p>7 So those are Stroud's teachings of the</p> <p>8 claimed hardware modules.</p> <p>9 Q How do you know that all of those are hardware</p> <p>10 modules?</p> <p>11 A They're hardware, they're electronic circuits,</p> <p>12 and they are user definable in the sense -- and let me go</p> <p>13 back. Paragraph 15, looks like about the second</p> <p>14 sentence, I see --</p> <p>15 Q Of your declaration?</p> <p>16 A Yes, sorry, of my declaration, yes.</p> <p>17 "PLDs allowed users to define the function</p> <p>18 of hardware circuits in the IC by specifying the logical</p> <p>19 interconnections of those circuits, thereby creating</p> <p>20 custom hardware to perform custom functions."</p> <p>21 And so PLDs are a general class of</p> <p>22 user-definable hardware modules, and FPGAs are one</p>	<p style="text-align: right;">53</p> <p>1 Q (BY MR. MATULEWICZ-CROWLEY) How did you come</p> <p>2 to that decision?</p> <p>3 A Well, again, if we look at the '753 patent, the</p> <p>4 '753 patent tells us that an FPGA is an example of a</p> <p>5 user-definable hardware module, that's what it teaches.</p> <p>6 And I was just pointing out that, in</p> <p>7 addition to FPGAs, Stroud discloses or teaches CLDs and</p> <p>8 PLDs that have the same characteristics that they can be</p> <p>9 programmed by a user to perform custom functions.</p> <p>10 Q And how do you know those are modules? Why are</p> <p>11 those modules --</p> <p>12 MR. LIANG: Objection to form.</p> <p>13 Q (BY MR. MATULEWICZ-CROWLEY) -- in your opinion?</p> <p>14 A I'm saying they're modules because they have</p> <p>15 the same characteristics as FPGAs.</p> <p>16 Q What shared characteristics make them modules?</p> <p>17 MR. LIANG: Objection to form.</p> <p>18 A These are user-definable hardware modules. And</p> <p>19 the same characteristics that are there are what I've</p> <p>20 described in Paragraph 15 of -- of the declaration, that</p> <p>21 they allow users to define the function of hardware</p> <p>22 circuits, sometimes called configurable logic blocks, in</p>

<p style="text-align: right;">54</p> <p>1 the IC by specifying the logical interconnections of</p> <p>2 those circuits.</p> <p>3 Q (BY MR. MATULEWICZ-CROWLEY) What about that</p> <p>4 answer makes PLDs and CLDs modules?</p> <p>5 MR. LIANG: Objection to form.</p> <p>6 A I'm saying it's a user -- it -- it meets the</p> <p>7 requirements for a user-definable hardware module as</p> <p>8 claimed.</p> <p>9 Q (BY MR. MATULEWICZ-CROWLEY) And what are the</p> <p>10 requirements of a module?</p> <p>11 MR. LIANG: Please let him -- please let</p> <p>12 the witness finish his -- finish his answers.</p> <p>13 MR. MATULEWICZ-CROWLEY: I -- I -- these</p> <p>14 are very simple questions. I mean, we're getting very</p> <p>15 off-topic answers.</p> <p>16 Q (BY MR. MATULEWICZ-CROWLEY) So what are the</p> <p>17 requirements of a module?</p> <p>18 A I've looked at the claim, which does not use</p> <p>19 module in isolation. It talks about, in particular, a</p> <p>20 user-definable hardware modules as a further requirement</p> <p>21 on hardware modules, and I've looked at user-definable</p> <p>22 hardware modules in Stroud that --</p>	<p style="text-align: right;">56</p> <p>1 hardware module. And -- and similarly, I should say the</p> <p>2 user-definable software modules, so I looked for both of</p> <p>3 those.</p> <p>4 Q Right. But in your mind, that means the same</p> <p>5 thing as a user-definable hardware widget or a</p> <p>6 user-definable software widget; is that right?</p> <p>7 MR. LIANG: Objection to form.</p> <p>8 A No, I'm not saying that. I'm looking at the</p> <p>9 '753 patent, and the context of that patent, the claims</p> <p>10 require user-definable hardware modules.</p> <p>11 And what I looked at the specification, I</p> <p>12 could see that the '753 patent is teaching that FPGAs --</p> <p>13 that the user-definable hardware modules include FPGAs.</p> <p>14 Q (BY MR. MATULEWICZ-CROWLEY) I want to say this</p> <p>15 clearly, there was going to be a dispute about modules in</p> <p>16 this proceeding. This is your opportunity to tell the</p> <p>17 patent office what, in your opinion, module means within</p> <p>18 the claim and the phrase.</p> <p>19 What does module mean?</p> <p>20 A Yeah, I'm not offering an opinion of that. I</p> <p>21 did -- found no need to consider module in isolation.</p> <p>22 The claims refer to user-definable hardware modules and</p>
<p style="text-align: right;">55</p> <p>1 Q That doesn't include Stroud, just to be clear,</p> <p>2 I'm not asking about Stroud --</p> <p>3 THE COURT REPORTER: I'm sorry?</p> <p>4 MR. LIANG: Counsel, please -- Counsel,</p> <p>5 please -- Counsel, please, let the --</p> <p>6 THE COURT REPORTER: I can't hear you.</p> <p>7 MR. LIANG: Counsel, please let the</p> <p>8 witness finish his answers.</p> <p>9 Q (BY MR. MATULEWICZ-CROWLEY) I do want to be</p> <p>10 clear so that I don't waste your time, I'm not asking</p> <p>11 about Stroud. I'm asking about the '753 patent.</p> <p>12 So do you assign any meaning to the word</p> <p>13 "module" in the claim separate from the requirements of</p> <p>14 user definable and hardware?</p> <p>15 MR. LIANG: Objection to form.</p> <p>16 A No, I've looked for user-definable hardware</p> <p>17 module.</p> <p>18 Q (BY MR. MATULEWICZ-CROWLEY) So you assign no</p> <p>19 meaning or requirements to the word "module" by itself?</p> <p>20 MR. LIANG: Objection to form.</p> <p>21 Q (BY MR. MATULEWICZ-CROWLEY) Is that right?</p> <p>22 A That's right. I looked for user-definable</p>	<p style="text-align: right;">57</p> <p>1 user-definable software modules, and that was what I</p> <p>2 looked for in the prior art.</p> <p>3 MR. MATULEWICZ-CROWLEY: Okay. We can</p> <p>4 take a break now.</p> <p>5 THE WITNESS: Okay.</p> <p>6 THE COURT REPORTER: Off the record at</p> <p>7 12:30 p.m.</p> <p>8 (Break taken from 12:30 p.m. to 12:39</p> <p>9 p.m.)</p> <p>10 THE COURT REPORTER: We are back on the</p> <p>11 record at 12:39 p.m.</p> <p>12 Q (BY MR. MATULEWICZ-CROWLEY) In the '753</p> <p>13 patent, what does module identifier mean?</p> <p>14 MR. LIANG: Objection to form.</p> <p>15 A Module identifier would mean an identifier</p> <p>16 for -- for a module.</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) Okay. You see</p> <p>18 there's also an instance identifier, correct?</p> <p>19 A At -- yes, I see there's an instance</p> <p>20 identifier.</p> <p>21 Q What is the instance -- in the '753 patent,</p> <p>22 what does the term "instance identifier" mean?</p>

<p style="text-align: right;">58</p> <p>1 A It's an identifier for an instance of a certain 2 type of module.</p> <p>3 Q Okay. So what is the module identifier 4 identifying in the '753 patent if not the instance of a 5 module?</p> <p>6 A Let me just hear the question back.</p> <p>7 Q In the '753 patent, what is the module 8 identifier identifying if not the instance of a module?</p> <p>9 A The -- a module identifier is identifying a 10 hardware -- one of the hardware modules or software 11 modules. And the instance identifier is distinguishing 12 between multiple hardware modules or software modules of 13 the same type.</p> <p>14 Q Okay. And just because type is used in a 15 different -- well, elsewhere in the claim, so I don't 16 want to double up on words, would it be fair to say the 17 instance identifier is distinguishing between multiple 18 hardware modules or software modules of the claim class?</p> <p>19 A I'm just looking back on the specification 20 of --</p> <p>21 Q And -- and just to be --</p> <p>22 A -- the '753.</p>	<p style="text-align: right;">60</p> <p>1 A And the example at Column 8, say Line 64 to 65, 2 it says the module being a hardware type. And so my 3 understanding was the instance identifier was something 4 that distinguished between hardware modules or software 5 modules of the same type.</p> <p>6 Q Okay. But there's a module identifier, an 7 instance identifier, and a type identifier, right?</p> <p>8 A Yes, there are three of -- all those three.</p> <p>9 Q Okay. So what does the module identifier 10 identify?</p> <p>11 A The module identifier identifies a hardware or 12 software module.</p> <p>13 Q Isn't that what the type identifier identifies?</p> <p>14 A Oh, it identifies the specific one.</p> <p>15 Q What do you mean by that?</p> <p>16 A I mean that the module identifier, a different 17 value for each of the hardware or software modules.</p> <p>18 Q But not the individual modules, correct, 19 because those are identified by the instance identifier?</p> <p>20 A My understanding is that the module identifier 21 would -- would identify a specific one of the hardware or 22 software modules.</p>
<p style="text-align: right;">59</p> <p>1 Q And just to be transparent, I'm more trying to 2 land on shared language here, so if you think there's a 3 different term, I am also -- you know, please let me 4 know.</p> <p>5 A Now I'm actually going to look -- I'm 6 searching.</p> <p>7 Q And what are you searching through?</p> <p>8 A The '753 patent.</p> <p>9 Q Okay.</p> <p>10 A Okay. So I was looking in the '753 patent, 11 Column 8. There's a paragraph that begins at Line 47 12 that provides a -- an explanation for the identifiers. 13 And may I hear that question back again?</p> <p>14 Q Is the instance identifier distinguishing 15 between multiple modules within the same class of module?</p> <p>16 A Yeah, I don't know. I'm not sure what class 17 would mean in this context but --</p> <p>18 Q Okay. Yeah, I'm happy to find a -- a different 19 word just so we're on the same page.</p> <p>20 A Well, I had understood that there's a 21 specification of an identifier for the type.</p> <p>22 Q Right.</p>	<p style="text-align: right;">61</p> <p>1 Q What does the instance identify -- identifier 2 identify?</p> <p>3 A It does identify an instance of -- of a certain 4 type.</p> <p>5 Q Are you looking for something?</p> <p>6 A Yeah, I was actually looking -- I was 7 remembering something, and it might have been in Stroud 8 rather than in --</p> <p>9 Q Okay. And to be clear, I'm not asking what 10 Stroud discloses or any questions about Stroud right now.</p> <p>11 A Okay. Yes, I understand that. I was just 12 trying to refresh my memory, but, okay, so let's go.</p> <p>13 Q Okay. So you said the module identifier 14 identifies a specific module, correct?</p> <p>15 A Yes, a specific user -- hardware module or 16 software module.</p> <p>17 Q When you -- is that -- when you say a specific 18 hardware module or software module, does that mean a 19 specific physical thing?</p> <p>20 A I believe, yes, there would be a -- a physical 21 embodiment of the hardware module or software module. 22 And the module ID in the header would identify a module</p>

<p style="text-align: right;">62</p> <p>1 and in particular so that the -- the module can be</p> <p>2 addressed through the header.</p> <p>3 Q Okay. So if the module identifier addresses --</p> <p>4 or strike that. I'm going to start the question again.</p> <p>5 If the module identifier identifies a</p> <p>6 physical module, then what does the instance identifier</p> <p>7 identify?</p> <p>8 A I think I've indicated that my understanding is</p> <p>9 the instance identifier identifies an instance of a type</p> <p>10 of module where there might be multiple instances of the</p> <p>11 same type.</p> <p>12 Q And by type of module, do you mean hardware or</p> <p>13 software?</p> <p>14 A I think that's an example that's given back at,</p> <p>15 where is it, Column 8. Again, at that Line 64 to 65. It</p> <p>16 says the module being a hardware type, so it could</p> <p>17 indicate a hardware module. It might be -- there might</p> <p>18 also be different types of hardware modules.</p> <p>19 It doesn't seem as though the '753 patent</p> <p>20 gives us any more detail than what I've just talked</p> <p>21 about.</p> <p>22 Q What is an instance of a type of module?</p>	<p style="text-align: right;">64</p> <p>1 opinion, the instance identifier and the module</p> <p>2 identifier both uniquely identify a particular module?</p> <p>3 A No, that's not what I'm saying. The instance</p> <p>4 identifier is identifying an instance when there are --</p> <p>5 of multiple modules of the same type. So it's not</p> <p>6 uniquely identifying a module, it's uniquely identifying</p> <p>7 a module of a certain type.</p> <p>8 Q If there were multiple modules of the same</p> <p>9 type, the instance identifier will identify one</p> <p>10 particular module of that type, correct?</p> <p>11 A Yes, that's my understanding of what the</p> <p>12 instance identifier does.</p> <p>13 Q What would the module identifier identify?</p> <p>14 A The module identifier would identify the module</p> <p>15 for all of the hardware and software modules regardless</p> <p>16 of the type.</p> <p>17 Q What does that mean? I'm just not</p> <p>18 understanding.</p> <p>19 A It -- yeah, that means it's identifying the</p> <p>20 module regardless of the type.</p> <p>21 Q Okay. If we look on Column 8, Line 61, in the</p> <p>22 '753 patent, there's this example you've referenced a few</p>
<p style="text-align: right;">63</p> <p>1 A Well, if there were, for example, two types</p> <p>2 of -- sorry, two modules of the same type, then the</p> <p>3 instance would indicate which of those two --</p> <p>4 Q But isn't that module --</p> <p>5 A -- modules.</p> <p>6 Q -- already uniquely identified by the module</p> <p>7 identifier?</p> <p>8 A But my understanding is there can be some</p> <p>9 overlap or redundancy in these identifiers --</p> <p>10 Q What if they're always --</p> <p>11 A I don't know if that --</p> <p>12 Q Sorry.</p> <p>13 A Yeah, I don't know if that answered your</p> <p>14 question.</p> <p>15 Q Well, wouldn't there always be perfect overlap</p> <p>16 because both the module identifier and the instance</p> <p>17 identifier, according to what you just said, would always</p> <p>18 uniquely identify a physical hardware or software module?</p> <p>19 MR. LIANG: Objection to form.</p> <p>20 A I would say that there can be some redundancy</p> <p>21 in -- that might include a total overlap.</p> <p>22 Q (BY MR. MATULEWICZ-CROWLEY) So in your</p>	<p style="text-align: right;">65</p> <p>1 times, right?</p> <p>2 A Yes.</p> <p>3 Q And here it says that the module number could</p> <p>4 be seven, right?</p> <p>5 A Yes.</p> <p>6 Q Do you see that -- okay.</p> <p>7 And then it says the "instance Number 3 of</p> <p>8 that module on that board." Do you see that?</p> <p>9 A Yes, I see that.</p> <p>10 Q Doesn't that mean that the module identifier</p> <p>11 identifies the category of module here, category</p> <p>12 Number 7, and the instance identifier identifies the</p> <p>13 particular instance of the particular module within that</p> <p>14 module category?</p> <p>15 MR. LIANG: Objection to form.</p> <p>16 A Okay. Can I hear the question again?</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) The '753 patent</p> <p>18 specification explains that the module number provides</p> <p>19 the category of module. In this example, the 7th</p> <p>20 category. And then the instance is the particular module</p> <p>21 instance within that category. Here, module instance</p> <p>22 Number 3 within module category Number 7.</p>

<p style="text-align: right;">66</p> <p>1 MR. LIANG: Objection to form.</p> <p>2 A The question part again? I'm looking at this,</p> <p>3 and I'm trying to nail down my answer.</p> <p>4 Q (BY MR. MATULEWICZ-CROWLEY) Okay. This</p> <p>5 passage of the specification, Column 8, starting Line 21,</p> <p>6 is describing a module identifier of 7, indicating the</p> <p>7 seventh category of modules, and the instance identifier</p> <p>8 3, indicating the third instance within that category of</p> <p>9 modules, correct?</p> <p>10 MR. LIANG: Objection to form.</p> <p>11 A No, I would say I -- I don't agree with the</p> <p>12 characterization. And in particular, I'm looking, it</p> <p>13 says "module Number 7 on that board."</p> <p>14 Q (BY MR. MATULEWICZ-CROWLEY) Okay.</p> <p>15 A And so --</p> <p>16 Q So --</p> <p>17 A I don't -- yeah, I don't understand that it's</p> <p>18 referring to any category. It's just saying each module</p> <p>19 on the board has a number, and that corresponds to the</p> <p>20 module ID in the claims.</p> <p>21 Q Okay. So then what does the instance Number 3</p> <p>22 of module Number 7 mean?</p>	<p style="text-align: right;">68</p> <p>1 the basis of your objection?</p> <p>2 MR. LIANG: I think you are -- you are</p> <p>3 mischaracterizing what the patent actually says. You're</p> <p>4 mischaracterizing the evidence.</p> <p>5 MR. MATULEWICZ-CROWLEY: Okay.</p> <p>6 Understood.</p> <p>7 A Okay. And before that back and forth there was</p> <p>8 a question pending, I believe.</p> <p>9 Q (BY MR. MATULEWICZ-CROWLEY) Uh-huh.</p> <p>10 If the module number refers to a</p> <p>11 particular module, how can there be different instances</p> <p>12 of that module that have the same module number?</p> <p>13 A I -- I don't believe it could be the same</p> <p>14 module number with the same instance.</p> <p>15 Q So do you retract your previous answer?</p> <p>16 A No, I don't think so. What -- what was my --</p> <p>17 Q Okay. Then we can start the line again.</p> <p>18 A Yes.</p> <p>19 Q You said that it is possible to have a module</p> <p>20 Number 7, instance Number 2, correct?</p> <p>21 A Yes.</p> <p>22 Q In addition to there being a module Number 7,</p>
<p style="text-align: right;">67</p> <p>1 MR. LIANG: Objection to form.</p> <p>2 A And I believe a person of ordinary skill in the</p> <p>3 art would understand that the instance number is -- when</p> <p>4 it says of that module on that board is meaning an</p> <p>5 instance of a multiple of the same modules or the same</p> <p>6 type of modules. There would be multiple modules on the</p> <p>7 board. And this one, Number 7, would have an instance</p> <p>8 number that corresponds to its -- the number among</p> <p>9 identical modules.</p> <p>10 Q (BY MR. MATULEWICZ-CROWLEY) Is there an</p> <p>11 instance -- or strike that.</p> <p>12 Is there a module Number 7 instance</p> <p>13 Number 2?</p> <p>14 A My understanding is that there can be, that</p> <p>15 that would be a potential -- consistent values for those</p> <p>16 fields.</p> <p>17 Q Okay. Okay. So if the module number refers to</p> <p>18 a particular module, how can there be different instances</p> <p>19 of that module that have the same module number?</p> <p>20 MR. LIANG: Objection to form.</p> <p>21 MR. MATULEWICZ-CROWLEY: And just to</p> <p>22 understand so that we don't have an issue later, what is</p>	<p style="text-align: right;">69</p> <p>1 instance Number 3, correct?</p> <p>2 MR. LIANG: Objection to form.</p> <p>3 A No, that's not my opinion. I don't know if I</p> <p>4 said something --</p> <p>5 Q (BY MR. MATULEWICZ-CROWLEY) Okay. That might</p> <p>6 be where the disconnect is.</p> <p>7 A -- that was confusing before, yeah.</p> <p>8 Q So why not?</p> <p>9 A Why not? Well --</p> <p>10 Q Why can there not be a module Number 7,</p> <p>11 instance Number 2 and a module Number 7, instance</p> <p>12 Number 3?</p> <p>13 A And that would be because the -- the module</p> <p>14 Number 7 would have an instance number, would now have</p> <p>15 multiple instance numbers. Different modules of the same</p> <p>16 type might have different instance numbers.</p> <p>17 Q A module identifier has to identify a</p> <p>18 particular module?</p> <p>19 A It identifies a module. I think that's what</p> <p>20 you're saying. I think we're in agreement or --</p> <p>21 Q Okay.</p> <p>22 A -- actually, you were just -- you were just</p>

<p style="text-align: right;">70</p> <p>1 asking a question. I don't know if that's what you agree</p> <p>2 with.</p> <p>3 Q Well, it's -- it's more about if you agree with</p> <p>4 it.</p> <p>5 A I -- I realize that afterwards, yes.</p> <p>6 Q I can re-ask.</p> <p>7 A Okay.</p> <p>8 Q A module identifier has to identify a</p> <p>9 particular module, correct?</p> <p>10 A Yes, it should. Yeah, it does.</p> <p>11 Q Can we go back down to Claim 1?</p> <p>12 A Yes. Claim 1. I'm at -- I'm at that in the</p> <p>13 paper here.</p> <p>14 Q Okay. You see it, Claim 1 says that -- okay,</p> <p>15 that each type of module, each instance of a type of</p> <p>16 module, and each module on each board in each chassis can</p> <p>17 be addressed through the header.</p> <p>18 Do you see that?</p> <p>19 A Yes, I see that. And in fact, I'm noticing</p> <p>20 here it does say each instance of a type of module, even</p> <p>21 though it was potentially less clear back at the Column</p> <p>22 8. So my understanding is the instance refers to</p>	<p style="text-align: right;">72</p> <p>1 A Okay.</p> <p>2 Q All right. And actually, for clarity, I might</p> <p>3 also refer to them as the right routing CLD and the left</p> <p>4 routing CLD.</p> <p>5 Do you understand that?</p> <p>6 A Yes, that's good.</p> <p>7 Q Okay. Is the right routing CLD a module?</p> <p>8 A Yes, that's a -- as the claim requires, a</p> <p>9 user-defined hardware module.</p> <p>10 Q Is the --</p> <p>11 A -- or user -- sorry, user-definable hardware</p> <p>12 module.</p> <p>13 Q Is the left routing CLD a user-definable</p> <p>14 hardware module?</p> <p>15 A Yes, the left routing CLD is a user-definable</p> <p>16 hardware module.</p> <p>17 Q Are the left and right routing CLDs different</p> <p>18 user-definable hardware modules?</p> <p>19 A And when you say different, do you mean are</p> <p>20 they programmed differently? Do you mean</p> <p>21 are --</p> <p>22 Q Let me rephrase.</p>
<p style="text-align: right;">71</p> <p>1 multiple instances of a type of mod -- module. Those are</p> <p>2 distinguished by the instance number. So I think I went</p> <p>3 and maybe clarified a previous question. If it helps,</p> <p>4 the immediate question is do I see that, and I do see it.</p> <p>5 Q Can you open Stroud?</p> <p>6 A Which exhibit is that? That's --</p> <p>7 Q That is 1004.</p> <p>8 A Okay. I have the electronic copy open here,</p> <p>9 and I'm -- I'll turn to the paper copy.</p> <p>10 Q Okay.</p> <p>11 A Which was binder -- it's Number 3 in my binder.</p> <p>12 That's -- I'm talking to myself.</p> <p>13 Q And can you turn to Page 8, which has Figures 4</p> <p>14 and 5 on it, and let me know when you're there.</p> <p>15 A Yes, I'm at the Figures 4 and 5.</p> <p>16 Q Okay. Do you see Routing CLD 102B in Figure 5?</p> <p>17 A Yes.</p> <p>18 Q Okay. There's actually two ROUTING CLDs 102Bs</p> <p>19 in Figure 5, right?</p> <p>20 A That's right, there are two ROUTING CLDs.</p> <p>21 Q Okay. And I'm going to refer to the right 102B</p> <p>22 and the left 102B, okay?</p>	<p style="text-align: right;">73</p> <p>1 A Yeah.</p> <p>2 Q Well, actually, no, sorry. I mean, just are</p> <p>3 they different particular modules? Would they have</p> <p>4 different module IDs?</p> <p>5 A Would they have different -- yes, they would.</p> <p>6 Q Is the capture and offload CLD a module?</p> <p>7 A And there are two of them? I don't know if</p> <p>8 you're referring to a specific one?</p> <p>9 Q That's a good -- that's a good catch. There</p> <p>10 were two captured --</p> <p>11 A I'm just trying to understand the question. I</p> <p>12 don't know that I -- that I caught anything. But,</p> <p>13 please --</p> <p>14 Q Well, no, not a --</p> <p>15 A -- please go ahead.</p> <p>16 Q Not a bad catch, but a -- a thing I should have</p> <p>17 caught.</p> <p>18 A Okay.</p> <p>19 Q There are two capture offload CLDs labeled</p> <p>20 102A, correct?</p> <p>21 A That's correct, yes.</p> <p>22 Q Okay. Is the right capture/offload CLD a</p>

<p style="text-align: right;">74</p> <p>1 module?</p> <p>2 A It is, yes.</p> <p>3 Q Is the left capture/offload CLD a module?</p> <p>4 A Yeah. Well, and -- and specifically it refers</p> <p>5 to the previous question also. It's a user-definable</p> <p>6 hardware module.</p> <p>7 Q Okay. And are the right and left</p> <p>8 capture/offload CLDs different particular user-definable</p> <p>9 hardware modules?</p> <p>10 A They're different in the sense that they would</p> <p>11 have distinct module IDs. I think that might have been</p> <p>12 what you were asking.</p> <p>13 Q Okay. Are the -- is the right capture offload</p> <p>14 CLD a different module than the routing CLD?</p> <p>15 A It is a different user-definable hardware</p> <p>16 module.</p> <p>17 Q All right. Is the traffic generating CLD a</p> <p>18 user-definable hardware module?</p> <p>19 A Yes, the traffic CLD is also a user-definable</p> <p>20 hardware module.</p> <p>21 Q Is a routing CLD, a capture/offload CLD, and a</p> <p>22 traffic generating CLD all different user-definable</p>	<p style="text-align: right;">76</p> <p>1 A I'm looking at my declaration, and particularly</p> <p>2 to see whether I've had any reference to that 348.</p> <p>3 Okay. Can I hear that question again?</p> <p>4 Q Is a CPLD power control reset timing a</p> <p>5 user-definable hardware module?</p> <p>6 A I believe that the power control reset timing</p> <p>7 module 348 is not user definable. I don't see where</p> <p>8 Stroud says that it's user definable or how it would be</p> <p>9 defined by the user.</p> <p>10 Q Okay. Is it a hardware module?</p> <p>11 A So that question is not something that I've</p> <p>12 considered. And just sitting here right now, I'm not</p> <p>13 prepared to offer an opinion about that block 348 in</p> <p>14 Figure 14A.</p> <p>15 Q Is it a -- is block 348 in Figure 14A a module?</p> <p>16 MR. LIANG: Objection to form.</p> <p>17 A You know what, just like the last question,</p> <p>18 it's not something that I've considered. I haven't</p> <p>19 considered it because it's not a claim term distinct from</p> <p>20 a hardware module or user definable-hardware module, so</p> <p>21 I'm not prepared to offer an opinion about 348.</p> <p>22 Q (BY MR. MATULEWICZ-CROWLEY) Can you go back to</p>
<p style="text-align: right;">75</p> <p>1 hardware modules?</p> <p>2 A Yes, those are different user-definable</p> <p>3 hardware modules.</p> <p>4 Q Okay. Can you go to Figure 14A on Page 20 of</p> <p>5 Exhibit 1004?</p> <p>6 A Yes.</p> <p>7 Q Do you see the FPGA Routing 102B in the middle</p> <p>8 of Figure 14A?</p> <p>9 A I do, yes.</p> <p>10 Q Is that a user-definable hardware module?</p> <p>11 A Yes, that is a user-definable hardware module.</p> <p>12 Q Do you see the CPLD power control reset timing</p> <p>13 in Figure 14A?</p> <p>14 A Yes, I see that.</p> <p>15 Q And that has Number 348, right?</p> <p>16 A Correct, it's labeled 348.</p> <p>17 Q Is CPLD power control reset timing a</p> <p>18 user-definable hardware module?</p> <p>19 A I'm going to look at the electronic copy of</p> <p>20 Stroud.</p> <p>21 Q And so I understand, what -- what are you</p> <p>22 looking at?</p>	<p style="text-align: right;">77</p> <p>1 the patent -- '753 patent?</p> <p>2 A Yeah.</p> <p>3 Q Claim 1?</p> <p>4 A Claim 1, yes.</p> <p>5 Q Okay. So the patent says so that each type of</p> <p>6 module, each instance of a type of module, and each</p> <p>7 module on each board in each chassis can be addressed</p> <p>8 through the header. We talked about this language</p> <p>9 before. Do you see that?</p> <p>10 A Yes, I see it.</p> <p>11 Q Are you interpreting this claim to be that --</p> <p>12 limited to only each user-definable module on each board</p> <p>13 in each chassis must be able to be addressed through the</p> <p>14 header?</p> <p>15 A No, the language here says each -- each module,</p> <p>16 and I believe that would refer back to the hardware</p> <p>17 modules or software modules of -- for 1B, element 1B.</p> <p>18 Q Are you interpreting claim element 1E to only</p> <p>19 require that each user-definable module can be addressed</p> <p>20 through the header as contrasted with requiring that each</p> <p>21 module, regardless of whether it is user definable or</p> <p>22 not, can be addressed through the header?</p>

<p style="text-align: right;">78</p> <p>1 A Looking at the claim language where it says</p> <p>2 each module in claim element 1E, I believe that would be</p> <p>3 referring to the hardware modules and software modules of</p> <p>4 1B.</p> <p>5 Q That are user definable?</p> <p>6 A I missed that.</p> <p>7 Q That are user definable? That was my question.</p> <p>8 Go ahead.</p> <p>9 A No, as I'm -- as I'm reading the claim, it</p> <p>10 would refer to the hardware modules and software modules</p> <p>11 of 1B, not only to the user-definable hardware modules or</p> <p>12 user-definable software modules of 1C.</p> <p>13 Q Okay. So Claim 1 requires that each module can</p> <p>14 be addressed through the header regardless of whether or</p> <p>15 not the module is user definable?</p> <p>16 MR. LIANG: Objection to form.</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) Is that correct?</p> <p>18 A Okay. Let me -- let me just hear that one more</p> <p>19 time.</p> <p>20 Q Claim 1 requires that each module can be</p> <p>21 addressed through the header regardless of whether or not</p> <p>22 the module is user definable, correct?</p>	<p style="text-align: right;">80</p> <p>1 1:28 p.m.</p> <p>2 (Break taken from 1:28 p.m. to 1:41 p.m.)</p> <p>3 THE COURT REPORTER: We are back on the</p> <p>4 record at 1:41 p.m.</p> <p>5 Q (BY MR. MATULEWICZ-CROWLEY) Dr. Alpert, have</p> <p>6 you discussed the substance of your testimony or opinion</p> <p>7 with your counsel during the deposition today?</p> <p>8 A No, I haven't.</p> <p>9 Q Okay. Can you turn back to Figure 14A from</p> <p>10 Stroud?</p> <p>11 A Oh, I'm down at 14A.</p> <p>12 Q Okay. I asked you before whether the CPLD 348</p> <p>13 was a hardware -- was a user-definable hardware module.</p> <p>14 Do you remember that?</p> <p>15 A Generally. I remember questions similar to</p> <p>16 that anyway.</p> <p>17 Q Okay. A CPLD is a configurable programmable</p> <p>18 logic device, correct?</p> <p>19 A Yes, that's what the abbreviation stands for.</p> <p>20 Q Okay. But do you have an opinion about whether</p> <p>21 CPLD 348 is a user-definable hardware module?</p> <p>22 A I do have an opinion, which I think I expressed</p>
<p style="text-align: right;">79</p> <p>1 A Each -- each hardware module and software</p> <p>2 module from Claim 1B must be identified through the</p> <p>3 header. I think that --</p> <p>4 Q So the answer is --</p> <p>5 A -- answers your question, yeah.</p> <p>6 Q So it's rephrasing my question a little bit,</p> <p>7 and so I'm just left unsure if it's answering my question</p> <p>8 or not.</p> <p>9 A Okay.</p> <p>10 Q Or if there's a delta there. So what -- what I</p> <p>11 said, so just me let me know, Claim 1 requires that each</p> <p>12 hardware and software module can be addressed through the</p> <p>13 header regardless of whether or not the module is user</p> <p>14 definable, correct?</p> <p>15 MR. LIANG: Objection to form.</p> <p>16 A That is my understanding, that when it says</p> <p>17 each module in element 1E, it's referring back to the</p> <p>18 hardware and software modules of 1B.</p> <p>19 MR. MATULEWICZ-CROWLEY: Okay. Let's take</p> <p>20 a short break.</p> <p>21 THE WITNESS: Okay.</p> <p>22 THE COURT REPORTER: Off the record at</p>	<p style="text-align: right;">81</p> <p>1 before. But I don't find any teaching in Stroud that</p> <p>2 that CPLD is user definable.</p> <p>3 Q Okay. Even though it is configurable, correct?</p> <p>4 A Correct. Even though it's configurable, I</p> <p>5 mean, for example, it might be programmed when it's</p> <p>6 manufactured or when the board is manufactured, when the</p> <p>7 component's manufactured or before it's placed on the</p> <p>8 board, or after it's placed on the board when the board</p> <p>9 is manufactured, but still not be programmable by a user.</p> <p>10 Q Okay. So what does user definable in the '753</p> <p>11 patent claims require?</p> <p>12 A User definable would require that the -- that</p> <p>13 the user-definable hardware module, for example, would</p> <p>14 require that the hardware could be configured by -- by a</p> <p>15 user of the system of the -- we're talking about the '753</p> <p>16 patent, right?</p> <p>17 Q That's right.</p> <p>18 A Yeah, system of the '753 patent, that the user</p> <p>19 can change the configuration of the hardware modules.</p> <p>20 And that would be for the purpose of altering the type of</p> <p>21 processing. I think it gives examples with video</p> <p>22 processing where there might be different standards or</p>

<p style="text-align: right;">82</p> <p>1 different types of processing that might be employed on a 2 video screen.</p> <p>3 Q And you have no opinion of whether CPLD 348 is 4 a hardware module, correct?</p> <p>5 A I'm just going back to 14A. Back at the 6 declaration and -- to the best of my recollection, that 7 I've not considered whether CPLD 348 is a hardware 8 module, and I'm not offering any opinion about that.</p> <p>9 Q Is that answer the same for whether CPLD 348 is 10 a module in general?</p> <p>11 A I would say in general that's not something 12 that I've considered in particular. I've only looked at 13 the claim terms for hardware module and user-definable 14 hardware modules.</p> <p>15 Q Do you see XLR 105?</p> <p>16 A Can you give me a clue where it is? I don't 17 see it right away.</p> <p>18 Q Yes. It is just above CPLD 348 in Figure 14A.</p> <p>19 A Okay. Yes, XLR 145. Yes, I see that.</p> <p>20 Q Okay. 105 in Stroud refers to the -- NPs, the 21 network processors, correct?</p> <p>22 A Yes, 105 in this figure is a network processor.</p>	<p style="text-align: right;">84</p> <p>1 A More specifically, I have no opinion about 2 whether it's a hardware module.</p> <p>3 Q Well, then I will -- I will ask you. 4 Do you have an opinion as to whether CPLD 5 in Figure 14B is a module?</p> <p>6 MR. LIANG: Objection to form.</p> <p>7 A No, I'm not offering any opinion about whether 8 CPLD 348 is a module.</p> <p>9 Q (BY MR. MATULEWICZ-CROWLEY) Can you turn back 10 to the '753 patent?</p> <p>11 A Okay. Any particular --</p> <p>12 Q Yes. In particular, Claim 7.</p> <p>13 A Okay.</p> <p>14 Q Okay. The claims require selecting a memory 15 superposition.</p> <p>16 Do you see that?</p> <p>17 A Yes, I see that. I guess it's 7D, it looks 18 like.</p> <p>19 Q I think that's right. 20 So we've talked about memory 21 superposition. What does it mean to select a memory 22 superposition?</p>
<p style="text-align: right;">83</p> <p>1 Q All right. 105 is a user-definable software 2 module, correct?</p> <p>3 A That's correct, yes. 105 together with the 4 software, with its configuration of the software.</p> <p>5 Q Okay. 105 -- or strike that. Let me rephrase 6 the question.</p> <p>7 XLR 105 is a different module than FPGA 8 Routing 102B, correct?</p> <p>9 A XLR 105 is a software module, and FPAG -- FPGA 10 Routing is a different module. It's -- in particular, 11 it's a user-definable hardware module.</p> <p>12 Q Okay. Can you look at 14B?</p> <p>13 A Okay.</p> <p>14 Q In Figure 14B the FPGA Routing 102B is a 15 user-definable hardware module, right?</p> <p>16 A It is, yes.</p> <p>17 Q XLR 105 is a user-definable software module, 18 correct?</p> <p>19 A Yes, it is. It's a user-definable software 20 module.</p> <p>21 Q And you do -- and in Figure 14B you do not have 22 any opinion as to whether CPLD 348 is a module, correct?</p>	<p style="text-align: right;">85</p> <p>1 A Well, it says, "selecting a memory 2 superposition," and a little bit later the language says 3 that there's a "selectable arrangement of the plurality 4 of types of memory." And the arrangements, there are 5 four types of arrangements as I recall that are listed.</p> <p>6 So Claim 7 is a method claim, and it 7 requires selecting from those selectable arrangements.</p> <p>8 Q So what does that mean?</p> <p>9 A I mean, what --</p> <p>10 Q Well, so -- so I asked you what selecting a 11 memory superposition means. And I think the answer we 12 got to was that it means selecting.</p> <p>13 So I'm trying to figure out what that 14 selecting means.</p> <p>15 A Yeah. Well, in -- in this particular claim 16 element there's an indication that there are four 17 different superposition arrangements that are required. 18 And so the method must, in fact, select or choose from -- 19 from those arrangements.</p> <p>20 Q Who must select or choose from those 21 arrangements?</p> <p>22 A The -- I don't understand that there's any</p>

<p style="text-align: right;">86</p> <p>1 particular requirement on -- on who might do that</p> <p>2 selecting or when that selecting might be done.</p> <p>3 Q So would it meet the claim element if, when the</p> <p>4 card was manufactured, they selected one of these four</p> <p>5 memory arrangements?</p> <p>6 A Okay. When it would be manufactured? First of</p> <p>7 all, let me say it's something that I haven't considered.</p> <p>8 But looking at it now, I'd have some questions about</p> <p>9 whether at manufacturing the last arrangement memory</p> <p>10 allocated to specified address ranges according to</p> <p>11 parameterized task needs (indiscernible). And I can</p> <p>12 think of --</p> <p>13 Q I think you cut off. Sorry. I don't mean to</p> <p>14 interrupt you. But I saw your mouth moving and no sound</p> <p>15 coming out, so I just wanted to --</p> <p>16 A Okay. I'm --</p> <p>17 Q I'm just saying that --</p> <p>18 A Yeah. Sitting here right now, in answer of</p> <p>19 your question about hypothetically selecting it when the</p> <p>20 board's manufactured or -- then I have some concerns</p> <p>21 about whether the last superposition arrangement would be</p> <p>22 satisfied, the memory allocated to specified address</p>	<p style="text-align: right;">88</p> <p>1 operation or whether possibly the arrangement is</p> <p>2 selectable before the operation begins or some -- in some</p> <p>3 other way.</p> <p>4 Q (BY MR. MATULEWICZ-CROWLEY) What if the</p> <p>5 selection is made during the design of the platform; does</p> <p>6 that still count as selectable?</p> <p>7 A You know, as I'm -- I'm sitting here right now,</p> <p>8 I -- I don't see anything that prohibits having it be</p> <p>9 selectable during the design. It's not something I</p> <p>10 considered before.</p> <p>11 Q Okay. So in your view, this claim is met if</p> <p>12 the designer of the platform selects one of these four</p> <p>13 memory arrangements, and then that memory arrangement is</p> <p>14 statically fixed into the platform?</p> <p>15 A Well, what I'd say is, it does say that it's</p> <p>16 selectable, so each of them must be selectable. Must</p> <p>17 be --</p> <p>18 Q Right.</p> <p>19 But the designer could choose between one</p> <p>20 of those four, right?</p> <p>21 A You know, as I understand what you're asking</p> <p>22 and, again, just a little bit off the cuff sitting here</p>
<p style="text-align: right;">87</p> <p>1 ranges according to parameterized task needs.</p> <p>2 I don't know at the time the board is</p> <p>3 manufactured, but I -- it's -- it's hard for me to say</p> <p>4 whether or not the parameterized task needs could be</p> <p>5 known and -- and this particular limitation could be</p> <p>6 satisfied.</p> <p>7 Q So what additional requirement is added by the</p> <p>8 language that the arrangement has to be selectable?</p> <p>9 A My understanding is when it says "selectable"</p> <p>10 here, it means that it's possible to select one or more</p> <p>11 of these arrangements. That, in other words, if it were</p> <p>12 totally fixed, then it would not be selectable.</p> <p>13 Q Okay. So the claim requires that during the</p> <p>14 operation of the card or pod -- actually, strike that.</p> <p>15 The claim requires that during the</p> <p>16 operation of the platform, each of the four memory types</p> <p>17 must be able to be selected --</p> <p>18 MR. LIANG: Objection --</p> <p>19 Q (BY MR. MATULEWICZ-CROWLEY) -- is that right?</p> <p>20 MR. LIANG: -- to form.</p> <p>21 A I have to say, sitting here right now, I don't</p> <p>22 know whether the -- it needs to be selectable during the</p>	<p style="text-align: right;">89</p> <p>1 right now, I believe if the design were capable of all</p> <p>2 four of these arrangements, then I don't see anything</p> <p>3 that prohibits the selection from being made at design</p> <p>4 time.</p> <p>5 Q Okay. So in your view, it's really just that</p> <p>6 the platform has to be compatible with or the -- sorry,</p> <p>7 compatible with the four memory arrangements or that</p> <p>8 those four memory arrangements are possible, right?</p> <p>9 MR. LIANG: Objection to form.</p> <p>10 A You know, I think the four of them have to be</p> <p>11 possible. The system needs the capability of all four of</p> <p>12 those.</p> <p>13 You know, you had been asking me about</p> <p>14 whether it could be actually selected at design time.</p> <p>15 And I'm not saying that it can be. I'm just saying, you</p> <p>16 know, sitting here right now off the cuff, I don't see</p> <p>17 any reason that it couldn't be.</p> <p>18 I don't KNOW if I studied it more or</p> <p>19 someone else presented some analysis for me to consider,</p> <p>20 whether I might, in fact, conclude the opposite, that it</p> <p>21 was not -- that the claim wasn't met if a selection were</p> <p>22 done, say, only at design time.</p>

<p style="text-align: right;">90</p> <p>1 Q (BY MR. MATULEWICZ-CROWLEY) Do "selecting" and 2 "selectable" add different requirements? 3 A Well, as I read the claim language, I think 4 selectable is a kind of a structural requirement, that 5 the arrangement of the memories must support these types 6 of superposition. And selecting means that there is, in 7 fact, actually a selection that is made. 8 Q A card can have different types of memory all 9 operating at the same time, right? 10 A Yes, that's certainly possible. 11 Q Right. 12 You could have different processors on one 13 card, and each of those different processors could have a 14 different type of memory arrangement, right? 15 A I would say that -- that I agree, that you 16 could have a card with a processor and multiple types of 17 memory. 18 Q Okay. 19 A And there could be different arrangements. 20 Q Would a card with four different processors, 21 each of which has one of the four claimed memory types, 22 unchangeably satisfy Element 7D?</p>	<p style="text-align: right;">92</p> <p>1 of types of memory that are required, just multiple types 2 of memory. 3 Well, it says plurality types of memory, 4 so two or more. 5 Q Okay. So Claim Element 7D specifies four 6 claimed memory arrangements, correct? 7 A Yes. Four of them are listed here in Element 8 7D. 9 Q Okay. So if I refer to the four claimed memory 10 arrangements, those are the ones I'm talking about, 11 understood? 12 A I think so, yes. 13 Q Okay. Stroud does not disclose the four 14 claimed memory arrangements, correct? 15 A Stroud does not disclose all four of those 16 memory arrangements. 17 Q Okay. I'm going to put a new exhibit in here. 18 (Exhibit 1007 marked.) 19 Q (BY MR. MATULEWICZ-CROWLEY) This will be 20 Exhibit 1007, which is Saulsbury. 21 Let me know when you have that open. Oh, 22 you know what, I'm sorry, I put in the wrong one.</p>
<p style="text-align: right;">91</p> <p>1 A You know, sitting here right now off the cuff 2 and looking at the claim language, I -- I don't believe 3 that if the arrangements were fixed, even if there were 4 multiple fixed arrangements, that the selectable and 5 selecting requirements would be satisfied. 6 Q But wouldn't in that instance the designer have 7 selected those memory arrangements at design time? 8 A I have to admit, at this point I am confused, 9 and I'm really offering no opinion related to that -- 10 Q Okay. 11 A -- question. That's gone too far from what -- 12 hypothetically from cases I've considered before. 13 Q 117D specifies four claimed memory types, 14 right? 15 A Yes. Four types of memory or what? Four 16 arrangements of memory? I don't know -- 17 Q I'm mostly actually just trying to get on the 18 same vocab page right now. 19 So four memory arrangements, is that of 20 the better terminology? 21 A I think that's the more accurate description. 22 I don't think it requires -- there's any specific number</p>	<p style="text-align: right;">93</p> <p>1 Actually, I mean Exhibit 1006, Cragon. This one might 2 take a second. 3 (Exhibit 1006 marked.) 4 Q (BY MR. MATULEWICZ-CROWLEY) So actually, let 5 me switch again. Cragon is going to take a second. So 6 if you have a moment to open it and try and download it 7 once it shows up. But I can actually ask you some 8 questions about Saulsbury just because that's the one 9 that's already up. 10 A Yeah, I've got Saulsbury open. 11 Q Okay. Saulsbury does not disclose the four 12 claimed memory arrangements, correct? 13 A I think if I understand what -- what you're 14 asking, Saulsbury doesn't disclose all four of the 15 claimed memory arrangements. 16 Q Okay. And so Saulsbury does not disclose 17 having the four claimed memory arrangements on a single 18 card, correct? 19 A That's correct. I would say Saulsbury does not 20 disclose all four on a single card. 21 Q Okay. And Stroud does not disclose all four 22 memory arrangements -- all four claimed memory</p>

<p style="text-align: right;">94</p> <p>1 arrangements on a single card, correct?</p> <p>2 A I'm just looking at my declaration.</p> <p>3 Can I just see that question again?</p> <p>4 Q Stroud does not disclose all four claimed</p> <p>5 memory arrangements on a single card, correct?</p> <p>6 A You know, I -- I would say that Stroud does not</p> <p>7 disclose all four. The ground two --</p> <p>8 Q Okay.</p> <p>9 A -- that covers this point relies on a</p> <p>10 combination of Stroud and Cragon.</p> <p>11 Q Okay. Can you turn to Paragraph 65 of</p> <p>12 Saulsbury?</p> <p>13 A Okay. I'm at Paragraph 65, yes.</p> <p>14 Q Okay. Paragraph 65 through 69 disclose</p> <p>15 switching between cache memory and physical memory,</p> <p>16 correct?</p> <p>17 A If you can hold on for a moment, I'm going to</p> <p>18 actually look -- since it's going to more than that</p> <p>19 paragraph, I'm going to look for the paper copy that I</p> <p>20 have here.</p> <p>21 Okay. And you said -- well, actually,</p> <p>22 before -- I'll ask for the question again. But which</p>	<p style="text-align: right;">96</p> <p>1 is -- that is the -- the two configurations that</p> <p>2 Saulsbury teaches.</p> <p>3 Q How does the switch between cache memory and</p> <p>4 physical memory occur? Not how is it triggered, but how</p> <p>5 does it occur?</p> <p>6 A Well, looking at Paragraph 68, for example, it</p> <p>7 does explain that in one embodiment of the invention,</p> <p>8 memory 14 includes a control input bit 32 which controls</p> <p>9 the mode of memory. For example, when control bit 32 is</p> <p>10 in one state, the memory 14 operates as cache memory.</p> <p>11 And when control bit 32 is in another state, memory 14</p> <p>12 operates as physical memory.</p> <p>13 So Saulsbury teaches using a control bit</p> <p>14 to select the arrangement of the memory.</p> <p>15 Q I guess, but how -- how did it do that? I</p> <p>16 understand how the -- you know, one bit or another bit</p> <p>17 chooses it. But how does the switch actually occur?</p> <p>18 A So I -- I'm trying to understand. You're --</p> <p>19 you're asking how does the configuration of the memory</p> <p>20 circuitry on the chip change from one mode to another?</p> <p>21 Q Yes.</p> <p>22 A Okay. Well, in the mode where there's a cache,</p>
<p style="text-align: right;">95</p> <p>1 portions did you say, 65 to --</p> <p>2 Q 69?</p> <p>3 A 69. Okay. Let me glance through there.</p> <p>4 Okay. And now what's the question about</p> <p>5 those paragraphs?</p> <p>6 Q Paragraph 65 through 69 of Stroud --</p> <p>7 A Oh, sorry, of Stroud or --</p> <p>8 Q Oh, sorry. No, no, no, no. Sorry. No, that</p> <p>9 was on me. Saulsbury, sorry.</p> <p>10 A Okay.</p> <p>11 Q Saulsbury, correct.</p> <p>12 A I've got -- that's what I've got in front of</p> <p>13 me.</p> <p>14 Q Yeah. Yeah, you were correct. Didn't mean to</p> <p>15 panic you there.</p> <p>16 Paragraph 65 through 69 of Saulsbury</p> <p>17 disclosed switching between cache memory and physical</p> <p>18 memory, right?</p> <p>19 A Yes, that's what Saulsbury discloses there.</p> <p>20 Q Okay. Saulsbury doesn't disclose any other</p> <p>21 type of memory switching, correct?</p> <p>22 A To the -- to the best of my recollection, that</p>	<p style="text-align: right;">97</p> <p>1 then the memory 14 would receive addresses, use those</p> <p>2 addresses to look up in something that's called the tags</p> <p>3 associated with the cache, and compare the address that's</p> <p>4 being referenced with the tags to determine whether</p> <p>5 there's a copy of the data at that address location</p> <p>6 stored in the cache. In this case, whether the data</p> <p>7 would be in one of the DRAM banks.</p> <p>8 And if the -- if there's a match, it's</p> <p>9 called a cache hit. Then the data can, for example, be</p> <p>10 read out or be written to based on what's called an</p> <p>11 associative lookup using the address.</p> <p>12 If the mode were changed to -- to be the</p> <p>13 -- DRAM is an extension of the physical memory, then the</p> <p>14 address that was presented by the memory controller would</p> <p>15 be decoded to identify a particular location in the -- in</p> <p>16 the DRAM memory. And then the data at that location</p> <p>17 would be accessed, either read or written, from the</p> <p>18 memory controller.</p> <p>19 So that's kind of a -- maybe a very</p> <p>20 abbreviated lesson from an Introduction to Computer</p> <p>21 Architecture. I don't know if it answered your question.</p> <p>22 Q Okay. I -- I think so.</p>

<p style="text-align: right;">98</p> <p>1 So that is the -- the switch that would 2 physically occur when whoever switched from one mode to 3 another mode in Saulsbury? 4 A Wait. I didn't catch -- what is the question? 5 What -- 6 Q So -- so that is how the switch from cache to 7 physical memory occurs in Saulsbury? 8 A Yes. The switch that occurs would select one 9 or the other of those kind of operating modes for -- for 10 the memory accesses from the memory controller. 11 Q Saulsbury references control bit 32. 12 Do you see that? 13 A Can you point me a little more specifically? 14 Q Yeah. In -- in Paragraph 68 of Saulsbury, 15 this -- for example, "when control bit -- bit 32 is in 16 one state," and then it goes on. 17 A Yes. Well, I see that now, yes. 18 Q Okay. How many values can a bit have? 19 A A bit can have two values. 20 Q Okay. Can you open up Cragon? 21 A So that's 1006; is that right? I see that's 22 the last one here.</p>	<p style="text-align: right;">100</p> <p>1 Q So does that mean that it is about -- what did 2 you say -- system design? 3 A I -- I would say yes, this section is about 4 issues related to system design for interfacing systems 5 to a disk or to disks. 6 Q Do you see where it says, "The usual design 7 approach is to assume," and then it goes on? 8 A Yes, I see that. 9 Q What does that sentence mean? 10 A I think in this context of -- of Cragon back in 11 1996, he was saying that disks are slow compared to many 12 of the other components of the system, such as 13 processors, memory, networking, and that the first issue 14 in designing the disk subsystem is to make sure that the 15 capacity or the amount of storage there is adequate, and 16 then to look at what might be the best performance that 17 could be achieved from the disks. 18 Q What types of memory arrangements does Cragon 19 disclose? 20 A I have to admit, I really didn't count them. 21 It does disclose the four claimed arrangements. 22 Q Does it claim any -- or does it disclose any</p>
<p style="text-align: right;">99</p> <p>1 Q Yes, it is. 2 A Okay. I've got it opened. 3 Q Okay. Can you go to Page 536? 4 A So on the PDF? 5 Q That's right. 6 A Just a minute. Okay. I'm there. It says Page 7 254 of Cragon at the top. 8 Q Yeah. Yes. 9 So this Section 5.2.1 concerns designing a 10 disk, right? 11 MR. LIANG: Objection to form. 12 A Sorry. 5.2.1? 13 Q (BY MR. MATULEWICZ-CROWLEY) That's right. 14 A That's Page 530 -- okay. I went back to look 15 at the context here. 16 So I -- I don't specifically see that this 17 section of Cragon is -- is talking about how to design a 18 disk. Maybe I misheard the question. 19 Q Okay. What -- what does Section 5.2.1 concern? 20 A It does talk about the -- some of the issues 21 that a system designer would face related to the 22 performance and other characteristics of disks.</p>	<p style="text-align: right;">101</p> <p>1 other memory arrangements? 2 A You know, I'd have to conduct a lengthy search 3 through here in order to identify anything more than the 4 four that -- that I have identified related to the claim 5 analysis. I don't know if that's something you want me 6 to do. 7 Q Well, why didn't you look to see if there were 8 any other memory arrangements in Cragon? 9 A At the time I was doing this analysis, I -- 10 I knew that Cragon was a well-established textbook, and 11 it did have a broad coverage on the memory systems. So I 12 looked at that. And frankly, at this point I don't 13 remember what I looked at in the totality of Cragon. But 14 I did identify portions of Cragon that did teach the four 15 types of claimed memory arrangements. 16 So best of my memory, I did look more 17 broadly at Cragon. I just don't remember now. 18 Q Okay. So -- but in performing your analysis, 19 did you just look in Cragon for the four memory 20 arrangements listed in the '753 patent? 21 MR. LIANG: Objection to form. 22 A I'd say I looked somewhat more broadly. But</p>

<p style="text-align: right;">102</p> <p>1 even from the -- from the title of the section headings,</p> <p>2 I could see which would be -- which portions would be</p> <p>3 related, you know, for looking at the cache analysis for</p> <p>4 multilevel caches.</p> <p>5 Q (BY MR. MATULEWICZ-CROWLEY) Right.</p> <p>6 A Look at -- there's a section particularly on</p> <p>7 interleaving.</p> <p>8 Q Okay. So because you -- you knew which four</p> <p>9 memory arrangements were listed in the '753 patent, you</p> <p>10 could look through Cragon to find those in there?</p> <p>11 MR. LIANG: Objection to form.</p> <p>12 A You know, what -- what I say is that these four</p> <p>13 arrangements were well known to persons of ordinary skill</p> <p>14 in the art. In this period it's Cragon's textbook.</p> <p>15 Is 1996. It's 20 years later until the time frame for</p> <p>16 the '753 patent.</p> <p>17 And I just thought Cragon was a good</p> <p>18 reference. It did cover memory systems. And I thought I</p> <p>19 would use that as a way of explaining the knowledge of a</p> <p>20 person of ordinary skill in the art.</p> <p>21 Q (BY MR. MATULEWICZ-CROWLEY) Right.</p> <p>22 And then I apologize if I was unclear.</p>	<p style="text-align: right;">104</p> <p>1 systems.</p> <p>2 Q Dozens or hundreds or...</p> <p>3 A In terms of combinations, I don't know, off the</p> <p>4 top of my head I'd say hundreds.</p> <p>5 Q All right. So there were hundreds of memory</p> <p>6 arrangements out there as of the priority date?</p> <p>7 MR. LIANG: Objection to form.</p> <p>8 A You know, off the top of my head, yes, that's</p> <p>9 what I would say.</p> <p>10 Q (BY MR. MATULEWICZ-CROWLEY) Okay. Cragon does</p> <p>11 not disclose using all four of the claimed memory</p> <p>12 arrangements together on one card, right?</p> <p>13 A Cragon does not disclose all four arrangements</p> <p>14 being used in one card.</p> <p>15 Q Okay.</p> <p>16 A It would be a person of ordinary skill in the</p> <p>17 art that would look to Cragon and would know that, with</p> <p>18 the multiple types of memory that Stroud discloses, how</p> <p>19 to combine the teachings of Cragon and Stroud in order to</p> <p>20 arrive at the selectable arrangement that's claimed.</p> <p>21 Q Is every type of memory arrangement suitable</p> <p>22 for all purposes?</p>
<p style="text-align: right;">103</p> <p>1 I'm not asking how you chose Cragon in the first place.</p> <p>2 But when looking at Cragon, you, armed with the four</p> <p>3 claimed memory arrangements in the patent, looked through</p> <p>4 I think you said the table of contents in Cragon more</p> <p>5 generally to find where it referenced those arrangements?</p> <p>6 MR. LIANG: Objection to form.</p> <p>7 A You know, I'd say I started with a general</p> <p>8 opinion and knowledge that a person of skill -- ordinary</p> <p>9 skill in the art would have been familiar with these four</p> <p>10 arrangements. There's nothing novel about these</p> <p>11 arrangements, even going back to 1996, certainly no</p> <p>12 novelty in 2018.</p> <p>13 So I did turn to Cragon and looked for the</p> <p>14 explanations that would have been known to a person of</p> <p>15 ordinary skill in the art that specifically related to</p> <p>16 these four claimed arrangements.</p> <p>17 Q (BY MR. MATULEWICZ-CROWLEY) How many memory</p> <p>18 arrangements existed as of the priority date?</p> <p>19 A You know, it's not something that I thought</p> <p>20 about. But there's a large -- just a very large variety</p> <p>21 of ways that memories have been arranged in order to</p> <p>22 achieve performance and cost goals for different types of</p>	<p style="text-align: right;">105</p> <p>1 A No, I don't think so.</p> <p>2 Q Okay. Can you combine all types of memory</p> <p>3 arrangements together successfully?</p> <p>4 A It's not something I thought about. I don't</p> <p>5 think I have an opinion whether all types can be</p> <p>6 combined.</p> <p>7 Q Can memory arrangements be incompatible with</p> <p>8 each other?</p> <p>9 A I -- I've thought about -- sitting here right</p> <p>10 now, I have no opinion.</p> <p>11 Q Okay. Let's turn to a different tag. Can you</p> <p>12 back to the '753 patent?</p> <p>13 A Any particular place you got?</p> <p>14 Q Claim 3.</p> <p>15 MR. LIANG: Counsel, I think we've been</p> <p>16 going about a -- you know, I guess -- well, it's about</p> <p>17 12:30 over here. So it may be a good time to pause for</p> <p>18 lunch.</p> <p>19 THE WITNESS: Yeah, I was going to say I</p> <p>20 think a pause for lunch would be good. It seems like</p> <p>21 we're at a, like, breaking point. I know there's no</p> <p>22 question pending.</p>

<p style="text-align: right;">106</p> <p>1 MR. MATULEWICZ-CROWLEY Yeah.</p> <p>2 THE WITNESS: And we're going to another</p> <p>3 claim.</p> <p>4 MR. MATULEWICZ-CROWLEY: Yeah. How long</p> <p>5 would -- we -- we can about go off the record.</p> <p>6 THE COURT REPORTER: Off the record at</p> <p>7 2:30 p.m.</p> <p>8 (Lunch break taken from 2:30 p.m. to 3:02</p> <p>9 p.m.)</p> <p>10 THE COURT REPORTER: We are back on the</p> <p>11 record at 3:02 p.m.</p> <p>12 Q (BY MR. MATULEWICZ-CROWLEY) Dr. Alpert, can</p> <p>13 you look at Claim 3 of the '753 patent.</p> <p>14 Are you there? Oh, you're on mute.</p> <p>15 A Yes, I have Claim 3 in front of me right now on</p> <p>16 paper.</p> <p>17 Q Okay. What is a hardware task?</p> <p>18 A I was just looking through the '753 patent, and</p> <p>19 I don't -- yeah, I didn't find any reference to hardware</p> <p>20 tasks outside the claims.</p> <p>21 But my understanding in this context,</p> <p>22 particularly context of the patent, is that hardware</p>	<p style="text-align: right;">108</p> <p>1 hardware to software execution.</p> <p>2 Q Okay. So offloading hardware tasks to software</p> <p>3 means transferring a task that's been previously assigned</p> <p>4 to hardware to be performed by software instead?</p> <p>5 A Yeah. I would say yes, that it is transferring</p> <p>6 a task from -- that had been assigned from -- to</p> <p>7 hardware --</p> <p>8 Q Okay.</p> <p>9 A -- transferring that to software.</p> <p>10 And the offloading, I think that's</p> <p>11 connoted by the offloading, to offload kind of to remove</p> <p>12 the burden from the hardware.</p> <p>13 Q Can we go to Stroud now.</p> <p>14 A Okay. Any particular...</p> <p>15 Q Yeah. So let's start at Figure 3.</p> <p>16 A Okay. I'm at Figure 3.</p> <p>17 Q Okay. Is there a -- Figure 3 has what it calls</p> <p>18 an architecture 100A, and this is in the topmost card</p> <p>19 slot, Slot 0.</p> <p>20 A Okay. I see where it's marked 100A.</p> <p>21 Q Okay. And then it -- it's there's a 100B in</p> <p>22 Slot 1.</p>
<p style="text-align: right;">107</p> <p>1 tasks would be some operations, some processing that was</p> <p>2 generally done in hardware as opposed to doing that task</p> <p>3 in software on a processor.</p> <p>4 Q What do you mean by "generally done"?</p> <p>5 A Well, I think the point -- the point over here</p> <p>6 is that the tasks -- it's a task that can either be done</p> <p>7 by dedicated hardware, or it can be done by software</p> <p>8 executing on a processor. And it's a task that the</p> <p>9 system would assign to some specialized hardware to</p> <p>10 perform, rather than software. I was going to say in</p> <p>11 general, which I guess just repeats what I said before.</p> <p>12 But, for example, unless the hardware was</p> <p>13 overloaded or fully occupied. That would be one example</p> <p>14 where you would want to take a task that was being</p> <p>15 performed in hardware and to move it to software.</p> <p>16 Q So hardware tasks that are intended to be</p> <p>17 performed by hardware?</p> <p>18 A I would say that they're tasks that are</p> <p>19 assigned to hardware when the hardware is available.</p> <p>20 Q Okay. What is offloading?</p> <p>21 A Offloading would be, in this context,</p> <p>22 transferring a task or assigning a task that -- from</p>	<p style="text-align: right;">109</p> <p>1 Do you see that?</p> <p>2 A Yes, I see that.</p> <p>3 Q And then if we go and you look at Figure 4, for</p> <p>4 example, Figure 4 is a diagram of architecture 100A,</p> <p>5 correct?</p> <p>6 A Yes. I see Figure 4, it indicates a label of</p> <p>7 100A on the right side there.</p> <p>8 Q Okay. Figures 4 through 10 all show</p> <p>9 architecture 100A -- well, actually, let me rephrase</p> <p>10 that.</p> <p>11 Figures 4 through 10 all concern</p> <p>12 architecture 100A, correct?</p> <p>13 A I was just looking through Stroud to consider</p> <p>14 your question, and I guess I can see 100A labeled in</p> <p>15 Figure 4. I don't see a label for 100A in the other.</p> <p>16 Q That's -- that's fair. And actually let me --</p> <p>17 maybe if I direct you to someplace else --</p> <p>18 A Yes, that would be --</p> <p>19 Q -- it would be easier.</p> <p>20 If you go to Paragraph 321 of Stroud,</p> <p>21 Paragraph 321.</p> <p>22 A Okay.</p>

<p style="text-align: right;">110</p> <p>1 Q And just let me know --</p> <p>2 A I'm there, yes.</p> <p>3 Q Okay. So then -- this is going to sound a bit</p> <p>4 different for a moment. But Figure 15 illustrates an</p> <p>5 alternative, testing and simulation architecture 100B,</p> <p>6 according to an example embodiment.</p> <p>7 And then it says, "Architecture 100B may</p> <p>8 be generally similar to architecture 100A shown in</p> <p>9 Figures 4 through 10," and then it goes on.</p> <p>10 Do you see that?</p> <p>11 A I do see it, yes.</p> <p>12 Q Okay. So my question is, is the only</p> <p>13 difference in Stroud between embodiment 100A shown in</p> <p>14 Figures 4 through 10 and embodiment 100B shown in Figure</p> <p>15 15, is that embodiment 100B includes more NPs and CLDs?</p> <p>16 Correct?</p> <p>17 A Well, the specific statement that we were</p> <p>18 looking at in Paragraph 321, it says, "Architecture 100B</p> <p>19 may be generally similar to architecture 100A, but</p> <p>20 includes additional network processors."</p> <p>21 So I don't see that the Paragraph 321</p> <p>22 definitively says the only difference between 100A and</p>	<p style="text-align: right;">112</p> <p>1 Q Okay. So a PLD is a broader term than a --</p> <p>2 than FPGA?</p> <p>3 A Yes, it is broader.</p> <p>4 Q Okay. So if I'm understanding right, is it</p> <p>5 fair to say that a PLD is limited to an integrated</p> <p>6 circuit where the user can alter the connection pattern</p> <p>7 of the circuits?</p> <p>8 MR. LIANG: Objection to form.</p> <p>9 A Yeah, I would say that the PLD allows the user</p> <p>10 to define the function of the circuits and the</p> <p>11 interconnection of the circuits.</p> <p>12 Q (BY MR. MATULEWICZ-CROWLEY) Okay. So do you</p> <p>13 disagree with that definition?</p> <p>14 A As I heard --</p> <p>15 Q I can repeat it.</p> <p>16 A Yeah.</p> <p>17 Q Okay.</p> <p>18 MR. LIANG: Counsel, I will caution that</p> <p>19 you -- I will caution you should restrict yourself to the</p> <p>20 scope of this deposition, and I will -- I will -- I will</p> <p>21 shut down this line of questioning if you proceed to ask</p> <p>22 questions in anticipation of the '943 IPR deposition.</p>
<p style="text-align: right;">111</p> <p>1 100B is the additional elements identified.</p> <p>2 Q But that's the only difference disclosed by</p> <p>3 Stroud, correct?</p> <p>4 A I'm looking at this paragraph. That is the</p> <p>5 only specific difference that Stroud identifies and</p> <p>6 describes.</p> <p>7 Q Okay. Can you go to Paragraph 107.</p> <p>8 Do you see in Paragraph 107, it describes</p> <p>9 something we have talked about before, PLDs?</p> <p>10 A I see it does mention PLDs about the middle of</p> <p>11 Paragraph 107.</p> <p>12 Q What is a PLD?</p> <p>13 A A PLD is a programmable logic device.</p> <p>14 Q And what is that?</p> <p>15 A Just looking in my declaration, and I explain</p> <p>16 in Paragraph 15 that, "PLDs allowed users to define the</p> <p>17 function of hardware circuits in the IC by specifying the</p> <p>18 logical interconnection of those circuits, thereby</p> <p>19 creating custom hardware to perform custom functions."</p> <p>20 Q How is a PLD different than an FPGA?</p> <p>21 A FPGA would be a type of, you know, a PLD. It's</p> <p>22 more specific.</p>	<p style="text-align: right;">113</p> <p>1 MR. MATULEWICZ-CROWLEY: Okay. We can</p> <p>2 fight about that if you do it.</p> <p>3 Q (BY MR. MATULEWICZ-CROWLEY) Is it fair to say</p> <p>4 that a PLD is limited to an integrated circuit where the</p> <p>5 user can alter the connection pattern of the circuits?</p> <p>6 A I would say that it's both the pattern of the</p> <p>7 interconnections as well as the function of the circuit</p> <p>8 blocks that are being interconnected.</p> <p>9 Q Okay. So that definition is too narrow?</p> <p>10 A I think it might be, yes.</p> <p>11 Q Okay. Can you look at Paragraph 109.</p> <p>12 A Of?</p> <p>13 Q Of Stroud.</p> <p>14 A Of Stroud. Okay. I'm there.</p> <p>15 Q And you can take a second, but is Paragraph 109</p> <p>16 accurate?</p> <p>17 A Yeah, I am there.</p> <p>18 Q Yeah. Is Paragraph 109 accurate?</p> <p>19 A I would say Paragraph 109 is -- is generally</p> <p>20 accurate, yeah. I don't have any objections to it.</p> <p>21 Q Okay. Can you turn to Paragraph 219 in Stroud.</p> <p>22 A Can you repeat which one again?</p>

<p style="text-align: right;">114</p> <p>1 Q 219.</p> <p>2 A Yeah, it was just a little bit cut out there.</p> <p>3 Q No problem at all.</p> <p>4 A Okay. I'm at 219 of Stroud, right?</p> <p>5 Q Of Stroud, yeah.</p> <p>6 Do you see that this section is entitled</p> <p>7 "Application-Level Simulation and Measurement Subsystem"?"</p> <p>8 A Yes, I see that.</p> <p>9 Q What does that mean?</p> <p>10 A I think it's relating to the fact that the test</p> <p>11 system would be used to simulate the traffic, the network</p> <p>12 traffic from an example application, and then to be able</p> <p>13 to measure the performance and the results of the traffic</p> <p>14 flow.</p> <p>15 Q What does that mean, application level?</p> <p>16 A Well, for example, I'm looking at Paragraph</p> <p>17 234, and I guess there aren't line numbers here. But it</p> <p>18 says, about the second sentence, "A user can model an</p> <p>19 application behavior in a user interface," referring to</p> <p>20 Figures 13A to D, "that provide high-level application</p> <p>21 primitives, such as making a database query or loading a</p> <p>22 web page."</p>	<p style="text-align: right;">116</p> <p>1 Q Okay. And CLD 102B is the routing CLD, right?</p> <p>2 A Yes. In particular in Figure 5, it's called</p> <p>3 the routing CLD. It might have slight different names</p> <p>4 elsewhere.</p> <p>5 Q Stroud generally discloses that its routing and</p> <p>6 load balancing is done by that routing CLD 102B, right?</p> <p>7 A Yeah, these paragraphs of Stroud do say that</p> <p>8 the CLD 102B is doing the load -- the routing and load</p> <p>9 balancing.</p> <p>10 Q And that's true for Stroud generally, right?</p> <p>11 A Yes. That's true for Stroud, and there's just</p> <p>12 a number of different places that 102B is identified in</p> <p>13 the figures.</p> <p>14 Q And these Paragraphs 245 to 248 are about</p> <p>15 routing and load balancing between NPs, right?</p> <p>16 A I would say in the -- there's a specific</p> <p>17 statement here. It says, "In the event that the</p> <p>18 configured attributes for incoming packets are not</p> <p>19 unique, a system can make inefficient use of multiple</p> <p>20 processors, e.g., all traffic goes to one processor</p> <p>21 rather than being fairly distributed."</p> <p>22 So my understanding is that the 102B, in</p>
<p style="text-align: right;">115</p> <p>1 So those would be examples of the type of</p> <p>2 applications or the type of simulation that an</p> <p>3 application would provide to the system.</p> <p>4 Q Okay. If you look at Paragraphs 245 through</p> <p>5 248, the next column, those paragraphs are talking about</p> <p>6 the CLD 102B doing some routing and load balancing; is</p> <p>7 that right?</p> <p>8 A Well, let me take a moment to --</p> <p>9 Q Okay.</p> <p>10 A -- to read through it.</p> <p>11 Q I can rephrase my question, actually, when</p> <p>12 you've read through it.</p> <p>13 A Okay. So I think you said you want to rephrase</p> <p>14 the question.</p> <p>15 Q Yeah. Paragraphs 245 through 248 discuss</p> <p>16 routing and load balancing, right?</p> <p>17 A Yes. The topic is routing and -- packet</p> <p>18 routing and load balancing.</p> <p>19 Q Okay. And in those paragraphs, the routing and</p> <p>20 load balancing is being done by CLD 102B, right?</p> <p>21 A Yes. What's described here relates to the CLD</p> <p>22 102B.</p>	<p style="text-align: right;">117</p> <p>1 performing particular the -- to achieve the load</p> <p>2 balancing is sending to different processors.</p> <p>3 Q Okay. So just to confirm, the paragraphs in</p> <p>4 Stroud 245 to 248 are just talking about routing and load</p> <p>5 balancing between different NPs, correct?</p> <p>6 A In this particular -- particular section, I --</p> <p>7 I don't see any other description of the operation beyond</p> <p>8 routing and load balancing to achieve the -- whatever,</p> <p>9 efficient use of multiprocessing.</p> <p>10 Q Can you look back at Paragraph 117.</p> <p>11 A Of Stroud?</p> <p>12 Q Yes.</p> <p>13 So again, in -- towards the end of</p> <p>14 Paragraph 117 in Stroud, it discusses routing data</p> <p>15 between components of architecture 100A.</p> <p>16 Do you see that?</p> <p>17 A Yes, I see that part, second-to-last sentence.</p> <p>18 Q You know, actually we can -- we can strike</p> <p>19 that.</p> <p>20 Can you turn to Figure 23 in Stroud.</p> <p>21 A Okay. I'm at Figure 23.</p> <p>22 Q We've discussed this before, but just because</p>

<p style="text-align: right;">118</p> <p>1 we're looking at a new figure, I just want to make sure.</p> <p>2 Is 100 -- 102A, is that a user-definable hardware module?</p> <p>3 A Yes, 102A is.</p> <p>4 Q And 102B is a user-definable hardware module as</p> <p>5 well, right?</p> <p>6 A Yes, 102B is a user-definable hardware module.</p> <p>7 Q In Figure 3, packets coming from or going --</p> <p>8 going out of the test port go through 102A before going</p> <p>9 to 102B, right?</p> <p>10 A I think something might have been cut off</p> <p>11 there. I thought you said Figure 3, but now I'm thinking</p> <p>12 that's not what you meant.</p> <p>13 Q Oh, I apologize. I said Figure 23.</p> <p>14 A Yeah, Figure 23. Okay. So I misheard. And</p> <p>15 now just state it again.</p> <p>16 Q In Figure 23, packets coming from or going out</p> <p>17 of test -- the test ports have to go through 102A before</p> <p>18 going to 102B, correct?</p> <p>19 A Yes. Figure 23 shows that packets arriving at</p> <p>20 the test port 101 go through the capture offload CLD 102A</p> <p>21 before they arrive at the routing CLD 102B.</p> <p>22 Although, I will point out that some of</p>	<p style="text-align: right;">120</p> <p>1 user-definable requirement and the user-configurable</p> <p>2 requirement?</p> <p>3 A The user-definable requirements are in the</p> <p>4 context of user-definable hardware modules or</p> <p>5 user-definable software modules. And by defining those</p> <p>6 modules, that's one way the -- that the pods and cards</p> <p>7 are user configurable. But there are other ways that the</p> <p>8 pods or cards can be configured other than by the</p> <p>9 configuration of the user-definable hardware modules or</p> <p>10 user-definable software modules.</p> <p>11 Q In your opinion, do all cards with</p> <p>12 user-definable hardware or software modules, are those</p> <p>13 cards automatically user configurable?</p> <p>14 A Yes, I believe that one way that the cards can</p> <p>15 be user configurable is with user-definable hardware</p> <p>16 modules or user-definable software modules.</p> <p>17 Q Element 1A says, "One or more swappable pods or</p> <p>18 cards in one more chassis coupled to a messaging</p> <p>19 interface network."</p> <p>20 Do you see that?</p> <p>21 A Yes.</p> <p>22 Q Do you understand what that element means?</p>
<p style="text-align: right;">119</p> <p>1 the other figures, like Figure 14, show additional</p> <p>2 pathways by which the data can arrive from 102A to 102B,</p> <p>3 but the sequence that you mentioned would hold.</p> <p>4 Q Okay. Can we go back to the '753 patent,</p> <p>5 looking at Claim 1.</p> <p>6 A Okay. I'm there.</p> <p>7 Q You see that Claim 1 recites both user</p> <p>8 definable and user configurable?</p> <p>9 Do you see that?</p> <p>10 A Yes, I see that.</p> <p>11 Q So the pods and cards have to be user definable</p> <p>12 and user configurable, right?</p> <p>13 A The pods and cards need to have a portion</p> <p>14 that's user-definable hardware modules or user-definable</p> <p>15 software modules. And then additionally, the pods need</p> <p>16 to be configurable, user configurable.</p> <p>17 Q What is the difference between the user --</p> <p>18 user-definable requirements and the user-configurable</p> <p>19 requirement?</p> <p>20 A I'm just going to look at my declaration now.</p> <p>21 Okay. Can I hear that question again?</p> <p>22 Q What is the difference between the</p>	<p style="text-align: right;">121</p> <p>1 A Yes, I believe so.</p> <p>2 Q Okay. And can you apply what that</p> <p>3 understanding is to render an invalidity opinion?</p> <p>4 Are you able to -- I'm not asking you to. Just say</p> <p>5 that --</p> <p>6 A Okay, okay. Yes, I believe so. That's several</p> <p>7 hundred pages of my declaration, not all of it on Element</p> <p>8 1A, but some amount relates to that.</p> <p>9 Q Okay. Element 1B says, "Each of the one or</p> <p>10 more swappable pods or cards having one or more hardware</p> <p>11 modules or one or more software modules."</p> <p>12 Do you see that?</p> <p>13 A Yes, I see that.</p> <p>14 Q Okay. And do you understand what element 1B</p> <p>15 means?</p> <p>16 A Yes, I believe that I do.</p> <p>17 Q Okay. And you're able to understand what</p> <p>18 Element 1B means well enough to apply it to render an</p> <p>19 invalidity opinion?</p> <p>20 A Yes. I'm able and I believe I've done so in</p> <p>21 the declaration.</p> <p>22 Q Okay. Element 1C says, "One or more of the</p>

<p style="text-align: right;">122</p> <p>1 plurality of swappable pods or cards having a portion for</p> <p>2 user-definable hardware modules or user-definable</p> <p>3 software modules."</p> <p>4 Do you see that?</p> <p>5 A I do see it, yes.</p> <p>6 Q Do you understand what Element 1C means?</p> <p>7 A Yes, I believe I understand what Element 1 --</p> <p>8 1 -- wait. What are we on? 1C?</p> <p>9 Q Yes.</p> <p>10 A Yeah. Yes, I believe I understand what Element</p> <p>11 1C means.</p> <p>12 Q You're able to understand what Element 1C means</p> <p>13 well enough to apply it to render an invalidity opinion?</p> <p>14 A Yes, I believe so. And I believe I've done so</p> <p>15 in my declaration.</p> <p>16 Q Element 1D says, "The plurality of swappable</p> <p>17 pods or cards being user configurable to implement data</p> <p>18 flow processing architectures."</p> <p>19 Do you see that?</p> <p>20 A I do see it, yes.</p> <p>21 Q Do you understand what Element 1D means?</p> <p>22 A Yes, I believe I do.</p>	<p style="text-align: right;">124</p> <p>1 Q Do you see the term "sandbox"?</p> <p>2 A Yes, I see that's in the Claim 3.</p> <p>3 Q What is a sandbox? What does that mean?</p> <p>4 A Looking at my declaration again.</p> <p>5 Q And there is a discussion of sandbox that I can</p> <p>6 direct you. It's on -- in Paragraph 161 of your</p> <p>7 declaration.</p> <p>8 A Yeah. Thank you. Yeah, I've just arrived</p> <p>9 there, and I was confused.</p> <p>10 Q Oh, great.</p> <p>11 A Okay. And if I can just hear the question</p> <p>12 again.</p> <p>13 Q Uh-huh. What is a sandbox?</p> <p>14 A The construction of sandbox that I apply to</p> <p>15 understand, it's something the Patent Owner had posed</p> <p>16 earlier, is a portion designated for programmable</p> <p>17 electronic circuits.</p> <p>18 Q Do you -- where did you get that construction</p> <p>19 from?</p> <p>20 A There's a cite to an Exhibit 1036 at Page 4 --</p> <p>21 I'm sorry. This is Footnote 7 at the bottom of Page 107</p> <p>22 that I was looking at.</p>
<p style="text-align: right;">123</p> <p>1 Q You're able to understand what Element 1D means</p> <p>2 well enough to apply it to render an invalidity opinion?</p> <p>3 A Yes, I believe so. And I believe I've done so</p> <p>4 in the declaration.</p> <p>5 Q Do you understand what Element 1D means --</p> <p>6 sorry. Do you understand what Element 1E means?</p> <p>7 A Yes, I do. I believe I do, yes.</p> <p>8 Q You're able to understand what Element 1E means</p> <p>9 well enough to apply it to render an invalidity opinion?</p> <p>10 A Yes, I do understand that 1E well enough. And</p> <p>11 again, I believe I've done so in my declaration.</p> <p>12 Q A person of ordinary skill in the art would</p> <p>13 understand what Elements 1A through 1E mean individually</p> <p>14 and together, correct?</p> <p>15 A Yes, I believe so. I've not tried to argue --</p> <p>16 I forgot what the term is -- "indefiniteness," I believe.</p> <p>17 So, yes, I believe that a person of ordinary skill in the</p> <p>18 art would understand those terms.</p> <p>19 Q Okay. Can you look at Claim 3 again, this time</p> <p>20 on the last -- second to last line. Let me know when</p> <p>21 you're there.</p> <p>22 A Yes, I'm there.</p>	<p style="text-align: right;">125</p> <p>1 And as I recall, although my recollection</p> <p>2 may not be perfect, that was -- that meaning, Exhibit</p> <p>3 1036, was a list of proposed constructions from the</p> <p>4 Patent Owner.</p> <p>5 Q Did you apply the construction of sandbox that</p> <p>6 you list in Footnote 7 of your declaration?</p> <p>7 A I did apply that, yes.</p> <p>8 Q Is the construction of sandbox listed in</p> <p>9 Footnote 7 of your declaration correct?</p> <p>10 A What do you mean by "correct"? Have I --</p> <p>11 Q Is --</p> <p>12 A -- defined it incorrectly or do I --</p> <p>13 Q No. Is that what sandbox means?</p> <p>14 A I think that's a -- I think that it's a good</p> <p>15 construction. I saw that at least a portion of this</p> <p>16 construction that relates to programmable electronic</p> <p>17 circuits is in the specification of the '753 patent. I</p> <p>18 don't know if I could find it immediately.</p> <p>19 Q Is something a sandbox just because it has user</p> <p>20 configurable -- I'm sorry. Strike that.</p> <p>21 Is something a sandbox just because it has</p> <p>22 programmable electronic circuits?</p>

<p style="text-align: right;">126</p> <p>1 A In the context of Claim 3, it would have to be</p> <p>2 programmable electronic circuits or other portion</p> <p>3 designated for programmable electronic circuits that were</p> <p>4 executing in cooperation with the -- with a processor.</p> <p>5 Q I'm not sure that answered my question.</p> <p>6 A Okay. Maybe let's try again.</p> <p>7 Q Okay. Is something a sandbox just because it</p> <p>8 has programmable electronic circuits?</p> <p>9 MR. LIANG: Objection to form.</p> <p>10 A Well, looking at Claim 3, the claim sandbox</p> <p>11 would have to have the programmable electronic circuits,</p> <p>12 but the claim sandbox is also -- has the software on a</p> <p>13 processor executing in cooperation --</p> <p>14 Q (BY MR. MATULEWICZ-CROWLEY) I am going ask</p> <p>15 you --</p> <p>16 A -- with programmable electronic circuits.</p> <p>17 Q Yeah. So I understand that there's other</p> <p>18 elements to the claim. There's always going to be other</p> <p>19 elements to the claim. I'm not asking about those right</p> <p>20 now.</p> <p>21 All I'm asking about is what sandbox</p> <p>22 means. I'm asking if something meets the requirement</p>	<p style="text-align: right;">128</p> <p>1 the context of the claims what might sandbox mean to a</p> <p>2 person of ordinary skill in the art? Is that what you're</p> <p>3 asking?</p> <p>4 Q Well, why would it be outside the context of</p> <p>5 the claims? Help me understand your question.</p> <p>6 A Well, I'm saying that because I don't see any</p> <p>7 requirement in the claims for isolation associated with</p> <p>8 the sandbox, at least for the --</p> <p>9 Q But you understand --</p> <p>10 A -- '753 patent.</p> <p>11 Q Right. But you understand that like words mean</p> <p>12 something. So a claim could say computer, and a person</p> <p>13 of ordinary skill in the art would understand that that</p> <p>14 would involve electricity even if the claims don't</p> <p>15 literally say electricity. And that's because that's</p> <p>16 what a computer means to a person of ordinary skill in</p> <p>17 the art.</p> <p>18 So what I'm trying to get at is what, in</p> <p>19 your opinion, a person of ordinary skill in the art would</p> <p>20 understand that word "sandbox" to mean when they read it.</p> <p>21 So it can be in the context of all this, but just the</p> <p>22 word "sandbox," what does that mean?</p>
<p style="text-align: right;">127</p> <p>1 that it's a sandbox just because it has programmable</p> <p>2 electronic circuits, or is something else required when</p> <p>3 someone thinks of what a sandbox is?</p> <p>4 A I haven't relied on any other definition or</p> <p>5 construction. You know, I think as its stated here, a</p> <p>6 device that has a portion designated for programmable</p> <p>7 electronic circuits would be a sandbox.</p> <p>8 Q What does it mean that it has a portion</p> <p>9 designated for programmable electronic circuits? Does</p> <p>10 that mean it can't be all of it?</p> <p>11 A Well, a portion would include all of it, but it</p> <p>12 means that it does not have to be the entirety of the</p> <p>13 device.</p> <p>14 Q Okay. Does a sandbox have to be isolated in</p> <p>15 any way?</p> <p>16 A In the context of the '753 patent, I don't see</p> <p>17 any requirement for isolation in the claims.</p> <p>18 Q Well, I'm asking about just the word "sandbox,"</p> <p>19 the word "sandbox" by itself. Would a person of ordinary</p> <p>20 skill in the art understand the word "sandbox" to mean an</p> <p>21 isolated portion?</p> <p>22 A So let me understand. You're asking me outside</p>	<p style="text-align: right;">129</p> <p>1 A And I applied a construction that sandbox means</p> <p>2 a portion designated for programmable electronic</p> <p>3 circuits.</p> <p>4 Q Why did you apply that construction?</p> <p>5 A I applied that because I understood that was</p> <p>6 one that the Patent Owner had proposed, and I saw some</p> <p>7 support for that in the specification. And I thought</p> <p>8 that -- that there wouldn't be an objection to it.</p> <p>9 Q Did -- did you consider the question of whether</p> <p>10 a person of ordinary skill in the art would understand</p> <p>11 the word "sandbox" to require it to be an isolated</p> <p>12 portion when rendering your opinion?</p> <p>13 A Yes, I did consider that.</p> <p>14 Q So you did consider whether a sandbox must be</p> <p>15 isolated?</p> <p>16 A I did consider that, yes.</p> <p>17 Q Okay. And what did that consideration look</p> <p>18 like? What did you do?</p> <p>19 A Well, I believe I looked at the definitions for</p> <p>20 sandbox in the art.</p> <p>21 Q Oh, now you did look at definitions of sandbox.</p> <p>22 That's not in your declaration, correct?</p>

<p style="text-align: right;">130</p> <p>1 A No, it's not in my declaration.</p> <p>2 Q Okay. Why not?</p> <p>3 A It's not in my declaration because I didn't</p> <p>4 rely on that information. I relied instead on this</p> <p>5 construction proposed by the Patent Owner, which I</p> <p>6 thought was supported by the specification.</p> <p>7 Q Okay. So the basis --</p> <p>8 A Sorry. The specification of the '753 patent</p> <p>9 claim.</p> <p>10 Q So basis for your application of this</p> <p>11 construction in Footnote 7 of sandbox is that it's your</p> <p>12 understanding that it was the Plaintiffs' construction;</p> <p>13 is that right?</p> <p>14 A It's my understanding it was the Plaintiffs'</p> <p>15 construction, and I thought that I would apply that</p> <p>16 definition over here in the declaration.</p> <p>17 Q Is anything that's user configurable a sandbox?</p> <p>18 MR. LIANG: Objection to form.</p> <p>19 A I would say in general, there are types of user</p> <p>20 configuration that would not be programmable electronic</p> <p>21 circuits and would, therefore, not be a sandbox.</p> <p>22 Q (BY MR. MATULEWICZ-CROWLEY) What -- what sort?</p>	<p style="text-align: right;">132</p> <p>1 designated for programmable electronic circuits is a</p> <p>2 sandbox?</p> <p>3 A That's not something that I've considered up</p> <p>4 until now in -- we were looking at Paragraph 161 in the</p> <p>5 declaration and identified -- I identified that the CLDs</p> <p>6 are a sandbox; in particular, the portion of the CLD</p> <p>7 that's user-programmable electronic circuits is a</p> <p>8 sandbox.</p> <p>9 Sitting here right now, I don't see any</p> <p>10 reason to exclude the entire card or pod being a sandbox</p> <p>11 based on a portion being designated for programmable</p> <p>12 electronic circuits.</p> <p>13 Q Okay. Can you look at Figure -- we're back in</p> <p>14 the Stroud, and look at Figure 14B.</p> <p>15 A I'm there.</p> <p>16 Q Okay. Do you see on the bottom right, there's</p> <p>17 the Serial Port Access System 366?</p> <p>18 A Yes, I see that.</p> <p>19 Q And there's an I2C backplane signaling, 374?</p> <p>20 A I see that also.</p> <p>21 Q There's an S with a circle above that.</p> <p>22 Do you see that?</p>
<p style="text-align: right;">131</p> <p>1 A Well, there can be user configurations, say, of</p> <p>2 a circuit from an external pin that would not be</p> <p>3 programmable electronic circuit. There could be</p> <p>4 configuration of a memory by loading different values in.</p> <p>5 There might be different instructions that would be</p> <p>6 executed or performed by the circuit. So I would say</p> <p>7 that user configurable would be broader than just the</p> <p>8 sandbox.</p> <p>9 Q Okay. So you can have user-configurable pods</p> <p>10 and cards that don't have sandboxes, right?</p> <p>11 A You say that just have or don't have?</p> <p>12 Q Don't have.</p> <p>13 A Yes, you could have user-configurable whatever,</p> <p>14 pods that don't have sandboxes.</p> <p>15 Q And in your opinion, a pod or card that is made</p> <p>16 up entirely of one portion designated for programmable</p> <p>17 electronic circuits would be a sandbox?</p> <p>18 MR. LIANG: Objection to form.</p> <p>19 A So let me just hear -- let me hear that again,</p> <p>20 please.</p> <p>21 Q (BY MR. MATULEWICZ-CROWLEY) In your opinion, a</p> <p>22 pod or a card that is made up entirely of one portion</p>	<p style="text-align: right;">133</p> <p>1 A Yes.</p> <p>2 Q And that seems to tie into the S that's -- with</p> <p>3 a circle that's in the middle of Figure 14B; is that</p> <p>4 right?</p> <p>5 A There's an S with a circle, at least two copies</p> <p>6 of that that are shown as a connection to the network</p> <p>7 processors, 344. And there's also an S shown as a</p> <p>8 connection to the control processor 134, which is in</p> <p>9 Figure 14A. That's the places that I've identified that</p> <p>10 the S connects to.</p> <p>11 Q Okay. So sticking with 14B, the serial port --</p> <p>12 I guess the S, the 366, 372 and 374, are those a part of</p> <p>13 the card otherwise shown in Figure 14B?</p> <p>14 A Specifically the I2C backplane connection and</p> <p>15 the signaling is shown in Figure 46 as being part of</p> <p>16 the -- the card in the top left. There's the backplane</p> <p>17 I2C connection of the card.</p> <p>18 Q Oh, that's the backplane -- so you're referring</p> <p>19 to 958 backplane I2C connection in Figure 46, right?</p> <p>20 A Yes. Showing that the I2C is a part of the</p> <p>21 card that's connected to the backplane.</p> <p>22 Q Right. But then the I2C backplane, signaling</p>

<p style="text-align: right;">134</p> <p>1 374, serial port access system 366, and then the RS 232, 2 372 are not shown to be within the card, right? 3 A Yeah, I believe a person of ordinary skill in 4 the art would understand where this S is shown in Figure 5 14A and B, that there's a connection on the card from the 6 places where the S is shown connected to the -- what's it 7 called again -- the controller processor 134, and the 8 network processor is 105. I believe that would be on the 9 card, the connection to the serial port access system. 10 Q Well, why is it -- 11 A And -- yes, okay. 12 Q Why is it shown with an -- with an S then and 13 not just actually shown in the card in Figure 14B? 14 A Well, I think it's common when drawing 15 schematics to indicate when there is a connection that 16 would go to a number of places, just to use this kind of 17 shorthand S, rather than to make the diagram kind of very 18 busy and confusing by showing all those connections S 19 within the diagram. 20 Q Okay. And so just to be clear, in your 21 opinion, none of 366, 372, or 374 are located anywhere 22 other than on the card?</p>	<p style="text-align: right;">136</p> <p>1 short break to look over my -- to look over all my notes 2 from today, so let's just go off the record. 3 MR. MATULEWICZ-CROWLEY: Okay. 4 THE COURT REPORTER: Off record at 4:09 5 p.m. 6 (Break taken from 4:09 p.m. to 4:26 p.m.) 7 THE COURT REPORTER: Back on the record at 8 4:26 p.m. 9 CROSS-EXAMINATION 10 BY MR. LIANG: 11 Q Good afternoon, Dr. Alpert. So I just had a 12 couple of questions. I wanted to follow up on some of 13 the topics that were asked -- questions you were asked 14 earlier today. 15 Can we start by -- can you refer to your 16 declaration, paragraph -- if you could go to Paragraph 17 20, and read it to yourself, and then let me know when 18 you are done. 19 A Okay. I've read Paragraph 20 of the 20 declaration. 21 Q Was multilevel cache a memory arrangement that 22 was taught to undergraduate students?</p>
<p style="text-align: right;">135</p> <p>1 A I would say I don't believe that I've offered 2 an opinion in the declaration about 372, the RS 232 3 connection; and you know, Stroud is very large. I don't 4 know if -- what it might say about whether that's on the 5 card and used for the card-to-card connection. 6 Q Do you have any opinions about whether 366 and 7 374 are located on a card? 8 A Yes. It's my understanding, and I believe 9 that's the way a person of ordinary skill in the art 10 would read this figure, as showing that 366 and 374 and 11 372 are on the card. 12 MR. MATULEWICZ-CROWLEY: Let's take a very 13 short break, but I think we can probably wrap up. 14 THE WITNESS. Okay. 15 THE COURT REPORTER: Off the record at 4 16 o'clock p.m. 17 (Break taken from 4:00 p.m. to 4:09 p.m.) 18 THE COURT REPORTER: We are back on the 19 record at 4:09 p.m. 20 MR. MATULEWICZ-CROWLEY: Okay. I pass the 21 witness. 22 MR. LIANG: Okay. So, Counsel, I need a</p>	<p style="text-align: right;">137</p> <p>1 MR. MATULEWICZ-CROWLEY: Objection; form. 2 A Yes. Yes, it was. 3 Q (BY MR. LIANG) Was interleaved memory a type 4 of memory arrangement that was taught to undergraduate 5 students? 6 MR. MATULEWICZ-CROWLEY: Objection; form. 7 A And let me just clarify. What -- what time 8 frame are we talking about? 9 Q (BY MR. LIANG) Oh, okay. Yeah. Let me -- 10 okay. Let me re-ask the question. 11 In the 2018 time frame, would a person of 12 ordinary skill in the art have specifically known about 13 multilevel cache? 14 MR. MATULEWICZ-CROWLEY: Objection; form. 15 A Yes, they definitely would have known about 16 multilevel cache. 17 Q (BY MR. LIANG) In 2018, would a person of 18 ordinary skill in the art have known about interleaved 19 memory? 20 MR. MATULEWICZ-CROWLEY: Objection; form. 21 A Yes. Okay. Sorry. Yes, such a person would 22 have known about interleaved memory.</p>

<p style="text-align: right;">138</p> <p>1 Q (BY MR. LIANG) In 2018, would a person of 2 ordinary skill in the art have known about swap files? 3 MR. MATULEWICZ-CROWLEY: Objection; form. 4 A Yes, a person of ordinary skill in the art 5 would have known about swap files. 6 Q (BY MR. LIANG) And in 2018, would a person of 7 ordinary skill in the art have known about memory 8 allocated to specified address ranges according to 9 parameterized task needs? 10 MR. MATULEWICZ-CROWLEY: Objection; form. 11 A Yes, a person of ordinary skill in the art 12 would have known about memory allocated to specified 13 address ranges according to particular parameterized task 14 needs. 15 And, in fact, I -- I believe I mentioned 16 that during the direct examination, and that according to 17 Cragon for documentation, that even back in 1996, those 18 things would have been known to a person of ordinary 19 skill in the art and that they were taught in textbooks. 20 Q (BY MR. LIANG) Why would a person of ordinary 21 skill in the art have known about these specific four 22 types of memory arrangements?</p>	<p style="text-align: right;">140</p> <p>1 cache, interleaved memory, swapped memory over a 2 specified address range, and memory allocated to a 3 specified address range according to parameterized task 4 needs to a single one of Stroud's cards? 5 MR. MATULEWICZ-CROWLEY: Objection; form. 6 A Yes, I believe a person of ordinary skill in 7 the art would have known how to apply those techniques of 8 Cragon for those four arrangements of memory to one of 9 Stroud's cards. 10 Q (BY MR. LIANG) Why would a person of ordinary 11 skill in the art have been able to apply Cragon's 12 teachings regarding the four memory arrangements recited 13 in Claim 7 to one of Stroud's cards? 14 MR. MATULEWICZ-CROWLEY: Objection; form. 15 I'll also just say, Counselor, this is going beyond his 16 declaration. And to the extent you're trying to get new 17 opinion and testimony from him, you know, we're going to 18 move to strike that. 19 A Okay. But I understand I should go ahead to 20 answer? 21 Q (BY MR. LIANG) What -- let me re -- let me ask 22 the question.</p>
<p style="text-align: right;">139</p> <p>1 MR. MATULEWICZ-CROWLEY: Objection; form. 2 A Well, these types of arrangements were commonly 3 used in -- generally in computer systems, both in 4 personal computer servers as well as embedded systems 5 used these types of memory arrangements. 6 Q (BY MR. LIANG) I would like you to turn to 7 Paragraph 239 of your declaration. This is on Page 146, 8 and it appears in the section -- it appears in the 9 section regarding Ground 2, the combination of Stroud in 10 view of Cragon. Let me know when you get to Paragraph 11 239. 12 A I'm at there now. I think I would like to take 13 a quick read through. 14 Q Okay. Please let me know when you're ready. 15 A Okay. I've read through Paragraph 239. 16 Q I'd also like to ask you some questions about, 17 yeah, Paragraph 239 to 240. So take a look at that 18 section, and let me know when you're ready for questions. 19 A Okay. Yes, I have looked through Paragraphs 20 239 and 240. 21 Q Would a person of ordinary skill in the art 22 have been able to apply Cragon's teachings of multilevel</p>	<p style="text-align: right;">141</p> <p>1 Why would a person of ordinary skill in 2 the art have been able to apply Cragon's teachings 3 regarding the four memory arrangements recited in Claim 7 4 to one of Stroud's cards? 5 MR. MATULEWICZ-CROWLEY: Same objections. 6 A Well, I think there's -- there's a number of 7 reasons, starting with the fact that Stroud -- Stroud is 8 emphasizing flexibility for different types of processing 9 for testing networks. And according to that flexibility, 10 Stroud identifies a number of different types of memory 11 that would be included on that card. 12 And then in terms of Cragon, Cragon is 13 explaining the different types of memory arrangements 14 that are claimed. And a person of ordinary skill in the 15 art would have the -- the skill, the knowledge from 16 training and experience, to be able to apply those 17 arrangements from Cragon to the multiple types of memory 18 that Stroud has included in its cards. 19 Q (BY MR. LIANG) Would the four memory 20 arrangements recited in Claim 7 have been compatible when 21 applied to one of Stroud's cards? 22 MR. MATULEWICZ-CROWLEY: Objection; form.</p>

<p style="text-align: right;">142</p> <p>1 And this is so far beyond his disclosed testimony.</p> <p>2 Q (BY MR. LIANG) Let me ask the question.</p> <p>3 A Okay.</p> <p>4 Q Would the four types of memory arrangements</p> <p>5 recited in Claim 7 have been compatible when applied to</p> <p>6 one of Stroud's cards?</p> <p>7 MR. MATULEWICZ-CROWLEY: Same objections;</p> <p>8 form. And, again, I just -- Counselor, you -- this is so</p> <p>9 far beyond his disclosed testimony.</p> <p>10 A Yes, the -- the four types of memory would be</p> <p>11 compatible. Stroud discloses internal memory for the</p> <p>12 FPGAs, QDR static RAMs associated with the FPGAs, as well</p> <p>13 as flash memory and DDR SDRAM associated with the FPGAs.</p> <p>14 And a person of ordinary skill in the art</p> <p>15 would know that within that arrangement -- I shouldn't</p> <p>16 say arrangement, but within that set of memory types that</p> <p>17 Stroud teaches, that it would be compatible for such</p> <p>18 person to be able to implement the arrangements that are</p> <p>19 in the Claim 7 of the '753 patent.</p> <p>20 Q (BY MR. LIANG) Earlier today you mentioned</p> <p>21 that you -- you may not have an opinion regarding the</p> <p>22 compatibility of all possible memory arrangements.</p>	<p style="text-align: right;">144</p> <p>1 And so for example, an implementation of</p> <p>2 multilevel cache would -- a person of ordinary skill in</p> <p>3 the art would know to use the internal memory for a level</p> <p>4 one cache, would know to use external DRAM, for example,</p> <p>5 as a level two cache, and to use the flash memory as a</p> <p>6 main memory.</p> <p>7 I believe the next type was the</p> <p>8 interleaved memory. And the person of ordinary skill in</p> <p>9 the art would know that to implement interleaved memory</p> <p>10 by alternating the use of DRAM and flash memory, for</p> <p>11 example.</p> <p>12 The third type was a swapped memory. And</p> <p>13 the person of ordinary skill in the art would know that</p> <p>14 swap memory would be implemented between the DRAM and the</p> <p>15 flash memory implementing the virtual arrangement --</p> <p>16 virtual memory arrangement that Cragon teaches.</p> <p>17 And finally, we had -- what is the last</p> <p>18 one? Memory allocated --</p> <p>19 Q (BY MR. LIANG) I think we're on --</p> <p>20 A Sorry. Memory -- I see it here now.</p> <p>21 Memory allocated to specified address</p> <p>22 ranges according to parameterized past needs, and in this</p>
<p style="text-align: right;">143</p> <p>1 But sitting here now, do you have an</p> <p>2 opinion regarding the compatibility of the specific four</p> <p>3 memory arrangements recited in Claim 7 as applied to one</p> <p>4 of Stroud's cards?</p> <p>5 MR. MATULEWICZ-CROWLEY: Same objections.</p> <p>6 A Yes, I believe that these four claimed</p> <p>7 arrangements would be compatible as applied to one of</p> <p>8 Stroud's cards.</p> <p>9 Q (BY MR. LIANG) And can you look at -- can you</p> <p>10 explain why with -- with reference to -- to Stroud -- so</p> <p>11 if I direct you, for example, to Stroud Figure 5, let me</p> <p>12 know when you get there.</p> <p>13 A Okay, I'm at Figure 5.</p> <p>14 Q How would the four memory arrangements that</p> <p>15 we've been discussing be applied to the card shown in</p> <p>16 Stroud Figure 5?</p> <p>17 MR. MATULEWICZ-CROWLEY: Same objections.</p> <p>18 A The -- the various CLDs, the routing and</p> <p>19 capture offload CLDs, Stroud teaches that those include</p> <p>20 internal memory, and the memories -- external memories</p> <p>21 attached to those CLDs would include flash and would</p> <p>22 include DDR DRAM and would include a QDR SRAM.</p>	<p style="text-align: right;">145</p> <p>1 case, even Stroud alone discloses the difference in the</p> <p>2 parameterized task needs, for example, for bandwidth,</p> <p>3 speed, and cost. That would be used to select ranges of</p> <p>4 memory that would be used for different task needs.</p> <p>5 Stroud does go through that.</p> <p>6 Q I'd like to now turn back to your declaration,</p> <p>7 Dr. Alpert, Paragraph 239. Let me know when you get</p> <p>8 there.</p> <p>9 A Okay. I'm at Paragraph 239.</p> <p>10 Q Okay. All right. So do you see in the middle</p> <p>11 of the paragraph it discusses how, "The combination</p> <p>12 provides routine details that a POSITA would have looked</p> <p>13 for in textbooks such as Cragon. Moreover, Stroud</p> <p>14 teaches CLDs, such as FPGAs, on its cards, and a POSITA</p> <p>15 would have been more than capable of implementing</p> <p>16 CLD/FPGA designs to use the memory on Stroud's cards</p> <p>17 according to the textbook arrangements taught by Cragon."</p> <p>18 A Yes, I see that.</p> <p>19 Q And what were you referring to here when you</p> <p>20 were discussing the CLD/FPGA designs?</p> <p>21 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>22 A What I meant over there talking about the CLD</p>

<p style="text-align: right;">146</p> <p>1 or FPGA is that those designs would need to be customized</p> <p>2 or configured such that the various memory arrangements</p> <p>3 were supported and selectable.</p> <p>4 Q (BY MR. LIANG) Would the customization of CLD</p> <p>5 and FPGA designs -- oh, withdrawn.</p> <p>6 How does the customization of CLD and FPGA</p> <p>7 designs differ from the design and manufacture of</p> <p>8 physical cards?</p> <p>9 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>10 A I'm not sure I understand exactly what you're</p> <p>11 asking, but let me try by answering that during the</p> <p>12 physical manufacturing of the cards, the CLDs and FPGAs</p> <p>13 would be placed in the cards, it would be assembled with</p> <p>14 the card, generally by soldering that in place.</p> <p>15 And then the programming or configuration</p> <p>16 of the CLD or FPGA would be accomplished while the card</p> <p>17 is -- is in play -- sorry -- while the chips, the CLDs or</p> <p>18 FPGAs are in place on the card. The configuration</p> <p>19 information would be loaded to that.</p> <p>20 In fact, specifically, the named field</p> <p>21 programmable gate array denotes that this is a type of</p> <p>22 gate array that can be programmed and can be programmed</p>	<p style="text-align: right;">148</p> <p>1 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>2 A Yes, I would say that I considered -- that</p> <p>3 Stroud's, at least the routing CLD and capture offload</p> <p>4 CLD are -- the functionality can be defined by users.</p> <p>5 Q (BY MR. LIANG) Did you consider the design of</p> <p>6 FPGA functionality by users when forming your opinions</p> <p>7 regarding Stroud?</p> <p>8 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>9 A Yes. Yes, I did. And -- and I will -- to just</p> <p>10 talk about CLDs, I was looking at Figure 5.</p> <p>11 If we look at a different figure, like</p> <p>12 Figure 14, we can see that the 102D, the routing CLD is</p> <p>13 identified to be an FPGA. And 102A, the capture offload</p> <p>14 CLD is also identified to be an FPGA.</p> <p>15 So the comments I just had about the user</p> <p>16 programming, the CLD supplies as well through user</p> <p>17 programming the FPGAs.</p> <p>18 Q (BY MR. LIANG) Did you consider the design of</p> <p>19 FPGA functionality by users when forming your opinions</p> <p>20 regarding the '753 patent?</p> <p>21 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>22 A Yes, I did consider the user configurability of</p>
<p style="text-align: right;">147</p> <p>1 in the field; in other words, within a system, not just</p> <p>2 before that the -- the CLD would be inserted or assembled</p> <p>3 into the system board.</p> <p>4 Q (BY MR. LIANG) Earlier today you were asked</p> <p>5 about the design or the manufacture of physical cards.</p> <p>6 What kind of design are you referring to here in your</p> <p>7 declaration regarding the -- your opinions for Ground 2?</p> <p>8 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>9 Q (BY MR. LIANG) In your discussion of CLD and</p> <p>10 FPGA designs?</p> <p>11 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>12 A What I meant by that was the designs would be</p> <p>13 the programming that could -- configuring of the CLD or</p> <p>14 FPGA, meaning determining the logic functions and the</p> <p>15 interconnection of those logic functions, to perform more</p> <p>16 complex or customized logic functions.</p> <p>17 And that would -- the design would include</p> <p>18 also the assignment of the internal memory and the</p> <p>19 external memory to various functions.</p> <p>20 Q (BY MR. LIANG) Did you consider the design of</p> <p>21 CLD functionality by users when forming your opinions</p> <p>22 regarding Stroud?</p>	<p style="text-align: right;">149</p> <p>1 FPGAs in -- for the -- in the context of the '753 patent.</p> <p>2 In fact, embodiment -- embodiments disclosed by the '753</p> <p>3 patent expressly indicate that FPG- -- that the</p> <p>4 user-definable hardware modules include FPGA embodiments.</p> <p>5 Q (BY MR. LIANG) If a user-implemented CLD</p> <p>6 designs into a selectable arrangement of memory on</p> <p>7 Stroud's cards according to the textbook arrangements</p> <p>8 taught by Cragon, would that have satisfied Claim 7?</p> <p>9 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>10 A Yes, I believe that would have satisfied Claim</p> <p>11 7, and, in particular, as long as the arrangement was</p> <p>12 selectable.</p> <p>13 Q (BY MR. LIANG) Does Claim 7 allow the claim</p> <p>14 selection to be performed when the user designs software</p> <p>15 and CLD functionality?</p> <p>16 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>17 A Yes, I do believe that the -- that the</p> <p>18 arrangement can be selectable when the user is designing</p> <p>19 the functionality of -- of a CLD or FPGA. I don't know</p> <p>20 if the scope included more than those two classes of</p> <p>21 devices.</p> <p>22 MR. LIANG: Okay. Thank you, Dr. Alpert.</p>

<p style="text-align: right;">150</p> <p>1 And I will pass the witness.</p> <p>2 REDIRECT EXAMINATION</p> <p>3 BY MR. MATULEWICZ-CROWLEY:</p> <p>4 Q Okay. Dr. Alpert, you just gave a number of</p> <p>5 opinions in response to questions from Counsel for</p> <p>6 Petitioners, correct?</p> <p>7 A I've answered the questions as well as I could.</p> <p>8 Q Sure.</p> <p>9 A I don't -- yeah, I don't know if you want to</p> <p>10 characterize those as giving opinions.</p> <p>11 Q Okay. Well, those -- those answers were not in</p> <p>12 your declaration, correct?</p> <p>13 MR. LIANG: Objection to form.</p> <p>14 A Could you be more specific which answers</p> <p>15 weren't?</p> <p>16 Q (BY MR. MATULEWICZ-CROWLEY) Yeah. So your</p> <p>17 opinion that the four claimed memory arrangements would</p> <p>18 be compatible on a single card, was that opinion in your</p> <p>19 declaration anywhere?</p> <p>20 A Just looking at a portion, at least, of the</p> <p>21 declaration now, I -- I don't see that I've expressly</p> <p>22 given that opinion.</p>	<p style="text-align: right;">152</p> <p>1 believe the combination of Stroud, Cragon, and Saulsbury,</p> <p>2 that's Ground 3, teaches the multilevel cache --</p> <p>3 Q (BY MR. MATULEWICZ-CROWLEY) Right. I'm not</p> <p>4 asking that, and so there must have been a</p> <p>5 misunderstanding.</p> <p>6 You just gave a very specific answer to</p> <p>7 your attorney about how the four claimed memory</p> <p>8 arrangements would be applied to Figure 5 in Stroud.</p> <p>9 And so I'm asking you, right, those</p> <p>10 opinions, that answer, that's not in your declaration,</p> <p>11 right?</p> <p>12 MR. LIANG: Objection to form.</p> <p>13 A I think -- I think that explanation is within</p> <p>14 the pages of the -- the declaration.</p> <p>15 Q (BY MR. MATULEWICZ-CROWLEY) Okay. Please show</p> <p>16 me every paragraph where it's disclosed in your</p> <p>17 declaration.</p> <p>18 A The multilevel cache --</p> <p>19 Q By paragraph number, if you can.</p> <p>20 A So for the multilevel cache, I would look at</p> <p>21 Ground 3.</p> <p>22 Q But Ground 3 is with Saulsbury, right?</p>
<p style="text-align: right;">151</p> <p>1 Q Okay.</p> <p>2 A But I do believe a person of ordinary skill in</p> <p>3 the art would be able to do that implementation.</p> <p>4 Q Okay. That's not in your declaration, right?</p> <p>5 MR. LIANG: Objection to form.</p> <p>6 A That's not expressly in my declaration.</p> <p>7 Q (BY MR. MATULEWICZ-CROWLEY) Okay. And you</p> <p>8 opined about how the four claimed memory arrangements</p> <p>9 would be applied to a card shown in Stroud Figure 5.</p> <p>10 That opinion is not in your declaration, right?</p> <p>11 MR. LIANG: Objection to form.</p> <p>12 A Okay. I've looked back at portions of my</p> <p>13 declaration. Sorry for the delay, but what -- could you</p> <p>14 ask the question one more time?</p> <p>15 Q (BY MR. MATULEWICZ-CROWLEY) You opined how</p> <p>16 specifically the four claimed memory arrangements would</p> <p>17 be applied to the card shown in Figure 5 of Stroud. That</p> <p>18 opinion was not disclosed in your declaration, correct?</p> <p>19 MR. LIANG: Objection to form.</p> <p>20 A The opinions in my declaration relate to the</p> <p>21 obviousness of those combinations, teaching the</p> <p>22 arrangements. In terms of the arrangements themselves, I</p>	<p style="text-align: right;">153</p> <p>1 A With Saulsbury, yes.</p> <p>2 Q I'm sorry, Saulsbury. And your answer only --</p> <p>3 A Saulsbury.</p> <p>4 Q -- had to do with Cragon and Stroud, right?</p> <p>5 A I'm not sure if I understand the question. If</p> <p>6 there is a place that involves Cragon, Saulsbury and --</p> <p>7 sorry, Stroud, Cragon, and Saulsbury, that does teach the</p> <p>8 multilevel cache.</p> <p>9 Are you saying you don't want me to point</p> <p>10 to that?</p> <p>11 Q Well, I'm not asking you where you talk about</p> <p>12 multilevel cache. I think you certainly talk about that.</p> <p>13 You had a very specific answer about how,</p> <p>14 for example, multilevel cache as disclosed in Cragon</p> <p>15 would be applied to the specific card shown in Figure 5</p> <p>16 in Stroud.</p> <p>17 I was very interested to hear that opinion</p> <p>18 because I'd never heard it before. And so I'm asking you</p> <p>19 where do you disclose that particular opinion and the</p> <p>20 same for the other three claimed memory arrangements?</p> <p>21 A All right. I don't see the multilevel cache in</p> <p>22 the declaration exactly as I described it before.</p>

<p style="text-align: right;">154</p> <p>1 Q Okay. And that's true for the other three 2 memory arrangements of the patent as well? 3 A Well, let's go through the other three. 4 MR. LIANG: Objection to form. 5 A Let's go through the other three. 6 THE COURT REPORTER: I'm sorry, I didn't 7 hear that, your answer. 8 THE WITNESS: You didn't hear my answer? 9 THE COURT REPORTER: No, I didn't. 10 A I said let's go through the other three. 11 So for interleaved memory is on Paragraph 12 222 of the declaration. I disclose -- I describe the 13 interleaved memory. And starting about the third line, I 14 indicate that, "Here, Cragon interleaves, in parentheses, 15 alternates, access to different types of memory. As 16 Cragon explains, high-order living -- interleaving, dot, 17 dot, dot, permits the easy intermixing of different 18 memory technology such as a combination of RAM and ROM. 19 "When Cragon's teachings are applied to 20 Stroud, it would have been obvious to arrange the 21 multiple types of memory as high-order enter interleaved 22 memory."</p>	<p style="text-align: right;">156</p> <p>1 Q Dr. Alpert, I too can read, and so I'm asking 2 you what paragraphs you're saying you disclose these 3 opinions in. You do not have to read them to me, those 4 paragraphs. 5 A All right. So Paragraph 228. 6 Q And then for the fourth one, what paragraph 7 discloses the opinion you told your counsel for the 8 fourth memory arrangement? 9 A I -- I don't see the specific example that I 10 gave earlier. 11 MR. MATULEWICZ-CROWLEY: Okay. Pass the 12 witness. 13 RE-CROSS-EXAMINATION 14 BY MR. LIANG: 15 Q Dr. Alpert, I think there might have been some 16 confusion in these questions you were just asked because, 17 you know, Mr. Matulewicz-Crowley was asking about your 18 opinions regarding Stroud Figure 5. 19 So I'd like you to turn to page -- 20 Paragraph 215 of your declaration. 21 A Okay. I'm there. 22 Q Okay. And what are you explaining in Paragraph</p>
<p style="text-align: right;">155</p> <p>1 And so the example that I provided of 2 interleaved memory applied to Stroud was the use of RAM 3 and ROMs, but more specifically DDR, DRAM, and flash ROM 4 and accessing those alternately. 5 Q (BY MR. MATULEWICZ-CROWLEY) Okay. So that 6 paragraph, 222, is where you say you disclosed the answer 7 you gave to your counselor? 8 A Yes. 9 Q Okay. What about the other two claimed memory 10 arrangements? 11 A For the third arrangement, swap memory over a 12 specified address range, I explain that Cragon is 13 teaching to swap portions of memory in and out between a 14 disk and the main memory. 15 And in Paragraph 228, I indicate that 16 "when Cragon's teachings are applied to Stroud, the 17 combination teaches a plurality of memory types, in 18 parentheses, on-chip or on-card, closed parentheses, as 19 swap memory over a specified address range. For example, 20 a POSITA would have found it obvious to us DRAM as the 21 main physical memory and disk as non-volatile storage for 22 the swap file."</p>	<p style="text-align: right;">157</p> <p>1 215 of your declaration? 2 MR. MATULEWICZ-CROWLEY: Objection to form 3 and to counselor's testimony. 4 A That Paragraph 215 is providing some specific 5 examples of the types of memory that Stroud teaches for 6 use with -- with the various processors and FPGAs. In 7 particular, they're shown in Claim 14 -- sorry, Figure 8 14. 9 Q (BY MR. LIANG) But why did you cite to Figure 10 5 on Page 131 of your declaration? 11 A I think that Figure 5 is just showing a -- a 12 somewhat more -- a simplified version of the card and the 13 elements on the card, a little bit easier to grasp in one 14 figure rather than, for example, Figure 14. 15 Q Right. 16 A Which goes across two pages. 17 Q And what claim limitation were you addressing 18 with your citation to Figure 5 on Page 131? 19 A Well, in particular, in the first sentence of 20 Paragraph 215 identifies that this is an analysis that's 21 related to the limitation, at least one of the plurality 22 of swappable pods or cards, having a plurality of types</p>

<p style="text-align: right;">158</p> <p>1 of memory. So what -- what's cited in 215 and shown in</p> <p>2 Figure 5 is the plurality of types of memory that Stroud</p> <p>3 teaches.</p> <p>4 Q And then in Paragraph 218, if you could -- if</p> <p>5 you could turn to Page -- to Paragraph 218 and let me</p> <p>6 know when you get there.</p> <p>7 A I'm there. I'm still reading through it.</p> <p>8 Okay. I've read through that.</p> <p>9 Q Did you provide an opinion on -- in your</p> <p>10 declaration that applies the plurality of -- or</p> <p>11 withdrawn.</p> <p>12 Did you apply a -- an opinion in your</p> <p>13 declaration that combines the plurality of types of</p> <p>14 memory on each card of -- that Stroud teaches to the</p> <p>15 memory arrangements taught by Cragon?</p> <p>16 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>17 A Yes, I do. In the beginning of Paragraph 218,</p> <p>18 I talk about Stroud teaching of plurality of types of</p> <p>19 memory on each card. And towards the middle, I indicate</p> <p>20 it would have been obvious to select between common</p> <p>21 memory arrangements taught in textbooks such as Cragon to</p> <p>22 suit the particular application of a card.</p>	<p style="text-align: right;">160</p> <p>1 discuss in your declaration those common memory</p> <p>2 arrangements?</p> <p>3 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>4 A Well, one place, at least, is in the following</p> <p>5 paragraphs. 220 covers the beginning of multilevel cache</p> <p>6 and going through -- and it looks like 230, but all the</p> <p>7 way to 233. I talk about the -- teachings about the use</p> <p>8 of the different arrangements of memory. I don't know if</p> <p>9 that answered your question.</p> <p>10 Q (BY MR. LIANG) Yes, I think so. So putting --</p> <p>11 so just putting together what you were just explaining,</p> <p>12 in Paragraph 215 through 218, you discuss Stroud's card,</p> <p>13 including the teachings of Stroud Figure 5, correct?</p> <p>14 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>15 Q (BY MR. LIANG) Well, let me -- let me -- let</p> <p>16 me rephrase.</p> <p>17 A Sure.</p> <p>18 Q In your declaration, in Paragraphs 215 through</p> <p>19 218, what opinions are you providing with respect to</p> <p>20 Stroud's cards?</p> <p>21 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>22 A Well, that -- I'm providing opinions that</p>
<p style="text-align: right;">159</p> <p>1 Then it goes on to talk about how Stroud's</p> <p>2 user-definable hardware modules would be altered to</p> <p>3 provide custom functionality that would determine how the</p> <p>4 memories are used.</p> <p>5 Q (BY MR. LIANG) And then with respect to the</p> <p>6 common memory arrangements taught in textbooks such as</p> <p>7 Cragon, that you are combining with Stroud, where does</p> <p>8 that -- where does that discussion appear in your</p> <p>9 declaration?</p> <p>10 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>11 A Can I have that specific question again?</p> <p>12 Q (BY MR. LIANG) Yeah. You just -- you were</p> <p>13 just explaining that in Paragraph 218, you were talking</p> <p>14 about Stroud and the types of memory on each card in</p> <p>15 Stroud and -- and combining that with common memory</p> <p>16 arrangements taught in textbooks such as Cragon.</p> <p>17 Do you remember you -- that answer you</p> <p>18 just gave?</p> <p>19 A Yes, that's in Paragraph 218 for sure.</p> <p>20 Q Okay. And then regarding the common memory</p> <p>21 arrangements taught in textbooks such as Cragon, which</p> <p>22 you are combining with a card in Stroud, where do you</p>	<p style="text-align: right;">161</p> <p>1 Stroud's cards include multiple types of memory and that</p> <p>2 the combination of Stroud and Cragon teaches or suggests</p> <p>3 a selectable arrangement of the plurality of types of</p> <p>4 memory.</p> <p>5 Q (BY MR. LIANG) And in your opinions, do you --</p> <p>6 A I was going to -- I might add something else.</p> <p>7 Hold on. Sorry.</p> <p>8 Yeah, I think I'm also providing an</p> <p>9 opinion that a person of ordinary skill in the art would</p> <p>10 have known how to configure Stroud's CLDs or FPGAs with a</p> <p>11 circuitry that can alter the functionality with which the</p> <p>12 CLD uses it and interacts with memory. Now I'm done.</p> <p>13 Q Did you apply your opinions in Paragraphs 215</p> <p>14 through 218 to Stroud's teachings regarding Figure 5?</p> <p>15 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>16 A Yes, I would say both and applying to Stroud's</p> <p>17 Figure 5 and Figure 14.</p> <p>18 Q (BY MR. LIANG) Okay. And then in the</p> <p>19 subsequent paragraphs, 220 through 233, you provide</p> <p>20 opinions -- or withdrawn. Let me rephrase.</p> <p>21 And in the subsequent paragraphs, 220</p> <p>22 through 233, what opinions are you providing there with</p>

<p style="text-align: right;">162</p> <p>1 respect to the combination of Stroud and Cragon?</p> <p>2 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>3 A I'm providing an opinion for each of the</p> <p>4 claimed arrangements, each of those four claimed</p> <p>5 arrangements, that it would have been obvious for a</p> <p>6 person of ordinary skill in the art to apply Cragon's</p> <p>7 teachings about how the memory is going to be arranged,</p> <p>8 apply that to the combination with Stroud's teachings</p> <p>9 about the types of memory that are on the card in order</p> <p>10 to arrive at the limitation of Claim 7, 7 -- 7D.</p> <p>11 Q (BY MR. LIANG) Go to the next paragraph, 234</p> <p>12 through 238. What are -- what opinions are you providing</p> <p>13 in those paragraphs?</p> <p>14 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>15 A This is a section beginning at 234 that's says</p> <p>16 it's motivation to combine, and as I understand, an</p> <p>17 obviousness requirement -- sorry, an obviousness analysis</p> <p>18 requires that the -- in this case two references when</p> <p>19 combined do teach the claim limitations.</p> <p>20 And in addition, it's necessary to show</p> <p>21 that a person of ordinary skill in the art would have a</p> <p>22 motivation to combine those references.</p>	<p style="text-align: right;">164</p> <p>1 A Yes, the discussion here does explain that</p> <p>2 Stroud and Cragon, the teachings are compatible as part</p> <p>3 of the reason to do the combination.</p> <p>4 Q (BY MR. LIANG) And in Paragraphs 215 through</p> <p>5 233, you explained -- or withdrawn.</p> <p>6 In Paragraphs 215 through 233, do you</p> <p>7 apply -- did you apply the memory modes taught by Cragon</p> <p>8 to Stroud Figure 5?</p> <p>9 MR. MATULEWICZ-CROWLEY: Objection to</p> <p>10 form.</p> <p>11 A Yes, that is what's described in the chapters,</p> <p>12 what is it, 2 -- sorry, paragraphs 215 to 233.</p> <p>13 MR. LIANG: Okay. Pass the witness.</p> <p>14 MR. MATULEWICZ-CROWLEY: No further</p> <p>15 questions. Thank you very much.</p> <p>16 THE COURT REPORTER: Really quick.</p> <p>17 Mr. Liang, were you wanting to order a copy of the</p> <p>18 transcript?</p> <p>19 MR. LIANG: Yes, just the -- just the</p> <p>20 final transcript, no rush.</p> <p>21 THE COURT REPORTER: Okay. The rough</p> <p>22 draft will be available; did you want that?</p>
<p style="text-align: right;">163</p> <p>1 And this section, 234 through 238, is</p> <p>2 explaining the motivation that a person of ordinary skill</p> <p>3 in the art would have had to combine Stroud and Cragon.</p> <p>4 Q (BY MR. LIANG) And then in the last two</p> <p>5 paragraphs of this section is 239 to 240.</p> <p>6 What were you explaining in paragraphs --</p> <p>7 can you give me a high level summary of what you were</p> <p>8 explaining in Paragraphs 239 and 240?</p> <p>9 A Yes, this is citing reasonable --</p> <p>10 MR. MATULEWICZ-CROWLEY: Objection; form.</p> <p>11 A This section -- Paragraph 239 has a label</p> <p>12 beginning discussion about reasonable expectation of</p> <p>13 success, and this is explaining that a person of ordinary</p> <p>14 skill in the art would have had sufficient education and</p> <p>15 skill level to be able to accomplish the combination as</p> <p>16 explained in the previous sections.</p> <p>17 Q (BY MR. LIANG) So having -- after having</p> <p>18 flipped through this section regarding limitation 7B, do</p> <p>19 you provide an opinion regarding the compatibility of</p> <p>20 Cragon's teachings of the memory modes taught by Cragon</p> <p>21 in Paragraphs 234 through 240 of your declaration?</p> <p>22 MR. MATULEWICZ-CROWLEY: Objection; form.</p>	<p style="text-align: right;">165</p> <p>1 MR. LIANG: I don't need the rough, just</p> <p>2 the final.</p> <p>3 MR. MATULEWICZ-CROWLEY: I'll take the</p> <p>4 rough. And what do you have on the order for us?</p> <p>5 THE COURT REPORTER: Rough draft and five</p> <p>6 business days.</p> <p>7 Do you need it sooner?</p> <p>8 MR. MATULEWICZ-CROWLEY: If we could,</p> <p>9 yeah, that would be great.</p> <p>10 THE COURT REPORTER: How soon?</p> <p>11 MR. LIANG: I think maybe we don't need to</p> <p>12 be on the line for all of this, so --</p> <p>13 MR. MATULEWICZ-CROWLEY: Well, she did say</p> <p>14 she had some questions about (inaudible) and things,</p> <p>15 yeah.</p> <p>16 THE WITNESS: I know, that is what I was</p> <p>17 wondering about, if I --</p> <p>18 THE COURT REPORTER: I was just trying to</p> <p>19 get an order on the record.</p> <p>20 MR. MATULEWICZ-CROWLEY: Yeah, it's just</p> <p>21 going to take three days. I don't think that's too much</p> <p>22 more, three days, three business days. That'd be great.</p>

<p style="text-align: right;">166</p> <p>1 THE COURT REPORTER: Thank you. Off the 2 record at 5:22 p.m. 3 (End of proceedings at 5:22 p.m.) 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</p>	<p style="text-align: right;">168</p> <p>1 parties to the action in which this deposition is taken, 2 and further that I am not a relative or employee of any 3 attorney or counsel employed by the parties hereto, or 4 financially interested in the action. 5 In witness whereof, I have hereunto set my hand and 6 affixed my seal this 11th day of December, A.D., 2025. 7 I further certify that before the completion of the 8 deposition, the deponent and/or a party did not request 9 to review the transcript pursuant to Federal Rule 10 30(e)(1). 11 12 13 14 15 KELLY HASSELL, CSR No. 5729 16 Cert. Expires 10/31/26 17 Digital Evidence Group, LLC 18 1730 M Street, Northwest 19 Suite 812 20 Washington, D.C. 20036 21 (202) 232-0646 22 (240) 465-6538 (Fax)</p>
<p style="text-align: right;">167</p> <p>1 STATE OF TEXAS) 2 I, Kelly Hassell, RPR, CLR, CSR in and for the State 3 of Texas, do hereby certify that, pursuant to the 4 agreement hereinbefore set forth, there came before me on 5 the 9th day of December, A.D., 2025, at 11:01 a.m. CST, 6 located in the City of Los Altos, State of California, 7 the following named person, to wit: DONALD ALPERT, PhD, 8 who was by me duly cautioned and sworn to testify the 9 truth, the whole truth and nothing but the truth, of his 10 knowledge touching and concerning the matters in 11 controversy in this cause; and that he was thereupon 12 carefully examined upon his oath, and his examination was 13 reduced to writing under my supervision; that the 14 deposition is a true record of the testimony given by the 15 witness, same to be sworn to and subscribed by said 16 witness before any Notary Public, pursuant to the 17 agreement of the parties; and that the amount of time 18 used by each party at the deposition is as follows: 19 Mr. Matulewicz-Crowley - 4 hours, 29 minutes, 20 Mr. Liang - 40 minutes; 21 I further certify that I am neither attorney or 22 counsel for, nor related to or employed by, any of the</p>	<p style="text-align: right;">169</p> <p>1 Case:Advanced Micro Devices, Inc., et al. v. Concurrent Ventures, LLC, et al. 2 Witness Name: Donald Alpert, Ph.D. 3 Deposition Date: 12/9/2025 4 5 6 Please be advised that the transcript in the above 7 referenced matter is now complete and ready for signature. 8 The deponent may come to this office to sign the transcript, 9 a copy may be purchased for the witness to review and sign, 10 or the deponent and/or counsel may waive the option of 11 signing. Please advise us of the option selected. 12 Please forward the errata sheet and the original signed 13 signature page to counsel noticing the deposition, noting the 14 applicable time period allowed for such by the governing 15 Rules of Procedure. If you have any questions, please do 16 not hesitate to call our office at (202)-232-0646. 17 18 Sincerely, 19 Digital Evidence Group 20 Copyright 2025 Digital Evidence Group 21 Copying is forbidden, including electronically, absent 22 express written consent.</p>

<p style="text-align: right;">170</p> <p>1 Digital Evidence Group, L.L.C. 1730 M Street, NW, Suite 812 2 Washington, D.C. 20036 (202) 232-0646 3 4 SIGNATURE PAGE 5 Case: Advanced Micro Devices, Inc., et al. v. Concurrent Ventures, LLC, et al. 6 Witness Name: Donald Alpert, Ph.D. 7 Deposition Date: 12/9/2025 8 I do hereby acknowledge that I have read 9 and examined the foregoing pages 10 of the transcript of my deposition and that: 11 (Check appropriate box): 12 () The same is a true, correct and 13 complete transcription of the answers given by 14 me to the questions therein recorded. 15 () Except for the changes noted in the 16 attached Errata Sheet, the same is a true, 17 correct and complete transcription of the 18 answers given by me to the questions therein 19 recorded. 20 _____ DATE WITNESS SIGNATURE 21 22 _____ DATE NOTARY</p>	<p style="text-align: right;">171</p> <p>1 Errata Sheet 2 NAME OF CASE: Advanced Micro Devices, Inc., et al. v. Concurrent Ventures, LLC, et al. 3 DATE OF DEPOSITION: 12/9/2025 4 NAME OF WITNESS: Donald Alpert, Ph.D. 5 Reason Codes: 1. To clarify the record. 6 2. To conform to the facts. 7 3. To correct transcription errors. 8 Page ____ Line ____ Reason ____ 9 From ____ to ____ 10 Page ____ Line ____ Reason ____ 11 From ____ to ____ 12 Page ____ Line ____ Reason ____ 13 From ____ to ____ 14 Page ____ Line ____ Reason ____ 15 From ____ to ____ 16 Page ____ Line ____ Reason ____ 17 From ____ to ____ 18 Page ____ Line ____ Reason ____ 19 From ____ to ____ 20 21 _____ 22 DONALD ALPERT, Ph.D.</p>
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