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<p>1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 3 BEFORE THE PATENT TRIAL AND APPEAL BOARD 4 5 CISCO SYSTEMS, INC.,) Case No. 6) IPR2016-01020 7 Petitioner,) -and- 8) Case No. 9 -vs-) IPR2016-01021 10) 11 TQ DELTA, LLC,) U.S. Patent No. 12) 9,014,243 13 Patent Owner.) 14 15 The deposition of DOUGLAS A. CHRISSAN, 16 Ph.D., taken in the above-entitled cause, before 17 SUSAN K. TODAY, a Notary Public within and for the 18 County of DuPage, State of Illinois, and a 19 Certified Shorthand Reporter of said state, C.S.R. 20 No. 84-2212, at Suite 3500, 500 West Madison 21 Street, Chicago, Illinois, on May 9, 2017, 22 commencing at 9:12 a.m. 23 24</p>	<p>1 PRESENT: (Continued) 2 DUANE MORRIS LLP, 3 (1075 Peachtree Street NE, Suite 2000, 4 Atlanta, Georgia 30309-3929, 5 404-253-6917), by: 6 MR. COREY J. MANLEY, 7 cjmanley@duanemorris.com, 8 appeared on behalf of Arris, Comcast, 9 Cox, Verizon, and Time Warner Cable; 10 11 COOLEY LLP, 12 (Reston Town Center, 13 11951 Freedom Drive, 14th Floor, 14 Reston, Virginia 20190-5656, 15 703-456-8130), by: 16 MR. STEPHEN MCBRIDE, 17 smcbride@cooley.com, 18 appeared via telephonic communications 19 on behalf of Dish Network; 20 21 22 23 24</p>
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<p>1 PRESENT: 2 HAYNES AND BOONE, LLP, 3 (2323 Victory Avenue, Suite 700, 4 Dallas, Texas 75219, 5 214-651-5533), by: 6 MR. JOHN RUSSELL EMERSON, 7 russ.emerson@haynesboone.com, 8 -and- 9 HAYNES AND BOONE, LLP, 10 (2505 North Plano Road, Suite 4000, 11 Richardson, Texas 75082-4101, 12 972-739-8649), by: 13 MR. THEODORE M. FOSTER, 14 theo.foster@haynesboone.com, 15 MR. GREGORY HUH, 16 gregory.huh@haynesboone.com, 17 appeared on behalf of the Petitioner; 18 19 20 21 22 23 24</p>	<p>1 PRESENT: (Continued) 2 McANDREWS, HELD & MALLOY, LTD., 3 (500 West Madison Street, 34th Floor, 4 Chicago, Illinois 60661, 5 312-775-8000), by: 6 MR. PETER J. McANDREWS, 7 pmcandrews@mcandrews-ip.com, 8 MR. RAJENDRA A. CHIPLUNKAR, 9 rchiplunkar@mcandrews-ip.com, 10 appeared on behalf of the Patent Owner. 11 12 ALSO PRESENT: 13 MR. SAYFE KIAEI. 14 15 16 17 18 19 20 21 22 23 REPORTED BY: SUSAN K. TODAY, C.S.R., R.P.R. 24 License No. 84-2212.</p>



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1 MR. EMERSON: Good morning, Dr. Chrissan.
2 How do you pronounce your name?
3 DR. DOUGLAS CHRISSAN: Chrissan, like the
4 ship.
5 MR. EMERSON: Chrissan. Okay. Great.
6 Good morning, Dr. Chrissan. Do you
7 understand that you're here as TQ Delta's
8 testifying expert in four different IPRs?
9 DR. DOUGLAS CHRISSAN: I do.
10 MR. EMERSON: And for the record those IPRs
11 are IPR2016-01006, -01007, -01008, and -01009,
12 correct?
13 DR. DOUGLAS CHRISSAN: Yes.
14 (WHEREUPON, the witness was duly
15 sworn.)
16 DOUGLAS A. CHRISSAN, Ph.D.,
17 called as a witness herein, having been first duly
18 sworn, was examined and testified as follows:
19 EXAMINATION
20 BY MR. EMERSON:
21 Q. Great. So you don't want to change your
22 answers now that you've been sworn to tell the
23 truth? I'm kidding. Since I asked you the first
24 question before you were sworn in.

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1 All right. You understand I represent
2 Cisco in those four IPRs, right?
3 A. Yes.
4 Q. All right. And would you just state
5 your full name for the record?
6 A. My name is Douglas A. Chrissan.
7 Q. How many times have you been deposed
8 before, Dr. Chrissan?
9 A. This will be my fourth.
10 Q. Okay. When was the first time you were
11 deposed?
12 A. September of 2016.
13 Q. Okay. And in what proceeding were you
14 deposed in September of 2016?
15 A. I was in this building. It was for the
16 district litigation for these -- essentially these
17 same patents.
18 Q. The Delaware case, the district court
19 case?
20 A. I know it was a district court case. I
21 believe it was Delaware. I know it was for some of
22 these same family of patents, and it was -- I
23 believe the attorneys may have been representing
24 Comcast.

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1 Q. Okay. All right. So that was number
2 one. When was number two?
3 A. Number two was March 20th -- March 22nd
4 of this year.
5 Q. Was that also related to these
6 proceedings?
7 A. No. That was related to the
8 intellectual ventures DSL case in the Western
9 District of Texas.
10 Q. Okay. And then when was the next one?
11 A. The third one was April 13th of this
12 year for the same case.
13 Q. And then this will be the fourth one?
14 A. This will be the fourth one.
15 Q. Okay. In your prior deposition in the
16 related litigation for this family of patents what
17 were you opining on?
18 You were engaged as an expert in that
19 case, right?
20 A. Oh, yes.
21 Q. Was it claim construction or invalidity?
22 A. I was opining with respect to
23 declarations that I had submitted for claim
24 construction.

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1 Q. So you understand that you're under oath
2 today, right?
3 A. Yes.
4 Q. And it's the same oath you would take in
5 a court of law?
6 A. Understood.
7 Q. And so you're sworn to tell the truth,
8 right?
9 A. That's correct.
10 Q. Okay. Is there any reason why you can't
11 give me complete and truthful answers today?
12 A. No, there's no reason why I can't give
13 complete and truthful answers today.
14 Q. You're not on any medication or anything
15 like that?
16 A. No.
17 Q. Okay. So you see that we have a court
18 reporter here, right?
19 A. Yes.
20 Q. And she takes down everything we say.
21 You understand that?
22 A. I do.
23 Q. And we will make her job easier if we
24 will not talk over each other. All right?



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1 A. I understand.
2 Q. Sometimes I fall short on that so I'll
3 do my best to help her.
4 The other thing is that we need audible
5 answers, words.
6 A. Understood.
7 Q. Not head nods or shakes or uh-huh or
8 uhn-uhn. Okay?
9 A. Understood.
10 Q. I'll ask you to tell me if you don't
11 understand my question. Okay?
12 A. I will.
13 Q. We'll try to take a break at least every
14 hour or so. Okay?
15 A. Okay.
16 Q. Anytime you want to take a break, let me
17 know. I'm not going to keep you here against your
18 will. All I ask is that if there's a question
19 pending, let's finish the answer and then we can
20 take a break.
21 So you are engaged by TQ Delta in these
22 IPRs, correct?
23 A. That's correct.
24 Q. Do you remember when you were engaged by

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1 TQ Delta?
2 A. Approximately one year ago.
3 Q. All right. And who approached you on
4 behalf of TQ Delta?
5 A. An attorney in this office named Anna
6 Targowska.
7 Q. Before Anna Targowska approached you
8 about this matter had you ever heard of TQ Delta?
9 A. I had not.
10 Q. Were you familiar at all with the three
11 patents at issue in these IPRs?
12 A. I was not.
13 Q. Do you have any financial interest in
14 these proceedings?
15 A. As stated in my declaration, I'm paid by
16 the hour and that does not depend on any outcome.
17 Q. You don't own any stock in TQ Delta or
18 have ownership interest in TQ Delta?
19 A. That's correct; I have no ownership
20 interest in TQ Delta and no -- how should I put
21 it? -- compensation depending on the outcome of
22 this litigation or this IPR.
23 Q. Okay. What do you do for a living?
24 A. I am a self-employed technical

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1 consultant.
2 Q. What does that mean?
3 A. The self-employed part means that I am
4 100-percent self-employed. I don't get a W-2 from
5 anyone; I'm not fully employed by any company.
6 The technical consultant means I work
7 for entities by the hour consulting as needed.
8 Q. What kind of consulting do you typically
9 do?
10 A. That is contained in the CV that I
11 believe would have been an attachment to my
12 declaration.
13 I do IP litigation consulting as an
14 expert witness. I do IP litigation consulting
15 doing work that's non-expert witness work. I also
16 do technical work for engineering companies. All
17 of those things are listed in my CV.
18 Q. Approximately what proportion of your
19 consulting work is related to litigation?
20 A. That would have to be taken on a
21 period-by-period basis because it varies.
22 Q. Okay. Is there a typical range in which
23 it varies?
24 A. I think you would have to ask a more

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1 specific question. What do you mean by typical
2 range? It varies.
3 Q. Okay. So is it ever 100-percent
4 litigation-related?
5 A. There are times when it's 100-percent
6 litigation-related.
7 Let me go back to your original
8 question. Could you restate your original
9 question?
10 Q. I'm just trying to get a feel for the
11 proportion of your time that's devoted to
12 litigation-type stuff and the proportion that's
13 related to non-litigation type stuff. That's all.
14 A. Again, it varies. I don't spend
15 100-percent of my time on litigation consulting. I
16 don't spend 100-percent of my time on pure
17 technical development work.
18 Q. When did you start doing litigation
19 consulting?
20 A. In 2013.
21 Q. Okay. But you hadn't been deposed until
22 last September?
23 A. That's correct.
24 Q. Other than these IPRs have you been



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<p style="text-align: right;">Page 13</p> <p>1 involved in any other IPRs? 2 A. I have been involved in at least one 3 other IPR. Also with TQ Delta. 4 Q. Okay. And you haven't been deposed for 5 that one yet, have you? 6 A. That's correct, I have not been deposed 7 for that one yet. 8 Q. What did you do to prepare for your 9 deposition today? 10 A. I reviewed the patents at issue, my 11 declaration, Dr. Kiaei's declaration and deposition 12 transcript, and Cisco's petition, and any other 13 documents listed in the report. 14 Q. Did you read the prior art? 15 A. I did read the prior art, the asserted 16 prior art, yes. 17 Q. And you submitted one declaration in 18 support of all four IPRs, right? 19 A. Yes, that's correct. 20 Q. Did you look at the Board's decisions in 21 these IPRs? 22 A. I did look at the document instituting 23 the IPR from the Board, yes. 24 Q. For each IPR? All four of them?</p>	<p style="text-align: right;">Page 15</p> <p>1 your question, the answer is no. 2 Q. Okay. You used to work at Texas 3 Instruments, correct? 4 A. I did. 5 Q. Okay. Before you worked at Texas 6 Instruments had you ever designed or developed any 7 DSL systems? 8 A. Before I worked at Texas Instruments I 9 was involved in communication systems. Those 10 communication systems were other than DSL. 11 Q. Okay. So then the answer to my question 12 would be no? 13 A. How do you define DSL? 14 Q. How do you define DSL? 15 A. I define DSL as digital subscriber line. 16 That's any system that would communicate over 17 twisted copper. 18 Q. Okay. You said that "before I worked at 19 Texas Instruments I was involved in communication 20 systems. Those communication systems were other 21 than DSL." Okay. Do you recall that? 22 A. I do. 23 Q. All right. So then would it be fair to 24 say that before you worked at Texas Instruments you</p>
<p style="text-align: right;">Page 14</p> <p>1 A. I know I opened at least two. 2 Q. Okay. 3 A. I may not have opened all four. And 4 read. Opened and read at least two. 5 Q. Sure. Did you meet with anyone to 6 prepare for your depo? 7 A. I met with counsel here yesterday to 8 prepare for this depo. 9 Q. Peter and Raj? 10 A. Primarily Raj and an attorney named 11 Chris. 12 Q. Okay. 13 A. I did meet with Pete briefly near the 14 end of the day. 15 Q. Did you do any -- perform any 16 calculations or anything like that in preparation 17 for your deposition? 18 A. Could you please explain what you mean 19 by performing calculations in preparation? 20 Q. Did you run through and do any -- you 21 know, run through any hypotheticals where you would 22 calculate anything at all in preparation for your 23 deposition today? 24 A. To the best of my ability to understand</p>	<p style="text-align: right;">Page 16</p> <p>1 did not work on DSL systems? 2 A. I want to think and clarify that I took 3 a broad enough approach to DSL when I answered your 4 question that you just gave back to me. 5 Yes, I would have to say that before 6 Texas Instruments my communication experience was 7 with wireless systems. So that's true. That's not 8 DSL. 9 Q. Okay. What was your job title at TI? 10 A. That's contained in my CV. I joined TI 11 with a job title I believe it was system architect 12 or system architect engineer. I would want to look 13 at the CV again to get the wording exactly. 14 And into my role at TI I was promoted to 15 a position entitled engineering program manager. 16 Q. When you were at TI did you manage 17 intellectual property? 18 A. I did not manage intellectual property 19 at TI. 20 Q. Okay. Were you in a position where you 21 managed engineers? 22 A. I was in a position where I managed 23 engineers. I managed a product development team. 24 And the way TI was established and the way projects</p>



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<p style="text-align: right;">Page 17</p> <p>1 were managed, I managed the engineers that were on 2 that product development team. 3 Q. Did you personally design hardware for 4 production? 5 A. I architected the system. I was in the 6 group that architected the DSL system. As it's 7 stated in my CV, I spent a good deal of time 8 working directly in the architecture of a DSL modem 9 chipset. In addition, I managed and was very 10 closely involved in the design of a DSL 11 semi-conductor. 12 Q. Did you personally develop any software 13 for production? 14 A. I did not type code if that's what you 15 mean. 16 Q. Okay. Do you think that you -- well, 17 would you say that you were involved in software 18 development for production? 19 A. Yes. I was involved in software 20 development in terms of setting requirements. I 21 personally wrote lengthy requirements documents. I 22 personally interacted with the software team. I 23 personally managed a production -- the first 24 production release that went with the device, the</p>	<p style="text-align: right;">Page 19</p> <p>1 products from different vendors would interoperate 2 with each other. That, of course, is the purpose 3 of a standard. 4 Q. So would you agree with me then that 5 engineers rely on the requirements articulated in 6 that standard? 7 A. Could you give me a little bit more 8 detail about what you mean by, quote, unquote, 9 relied on? 10 Q. No. I don't know if I can. It seems 11 pretty simple. 12 If one is designing a chipset that is 13 designed to be used in a DSL system, would it be 14 important for one to rely on the relevant standard? 15 A. Okay. So you're saying take into 16 account the requirements. And -- well, the 17 requirements and design specified by the standard 18 in designing the product. 19 Yes. The answer to that is yes. They 20 rely on a number of other things as well; but to 21 the extent that functionality and requirements are 22 specified in the standard, engineers would rely on 23 that as aspects and functionality in the standard. 24 Q. And because engineers rely on those</p>
<p style="text-align: right;">Page 18</p> <p>1 first software production release and the first 2 hardware production release that went with the DSL 3 chipset modem system. 4 Q. What was that called? 5 A. That was called UR8. The code name 6 within TI was called UR8. 7 Q. Did the UR8 implement the T1.413 8 standard? 9 A. It implemented ADSL2 and ADSL1. I 10 believe it was also backward-compatible with the 11 T1.413 1998 standard as that standard was 12 implemented at the time of release of the product. 13 Q. Let me back up. You're familiar with 14 the T1.413 standard, correct? 15 A. I am. 16 Q. What is that standard? 17 A. The T1.413 standard is a standard for 18 describing digital subscriber line modems. A 19 version was published in 1995. It's typically 20 known as Issue 1. Another version was published in 21 1998. It's typically known as Issue 2. 22 Those were standards used by those in 23 the industry to produce functional standard -- 24 functional DSL modem chipsets and systems such that</p>	<p style="text-align: right;">Page 20</p> <p>1 aspects and functionality in the standard, it's 2 important for the standard to be precise in its 3 language, would you agree? 4 A. Within the DSL art things have to be 5 considered within the time frame that they 6 happened. It was known when the 1995 standard was 7 published that it was not precise enough to 8 guarantee interoperability among vendors. 9 Without going into a long discussion 10 about the industry at that time, I can say that 11 most vendors at the time of Issue 1 had proprietary 12 systems. DSL was in its infancy. It was young. 13 DSL was young at the time. It had not been widely 14 deployed. Vendors had generally proprietary 15 systems. 16 I believe that some vendors at the time 17 were happy keeping things fairly proprietary and 18 not having a precise standard. Other vendors 19 pushed harder for a more precise standard. 20 The Issue 1 standard was not precise 21 enough to guarantee interoperability among all 22 vendors. That was known. 23 TI has a white paper that's still 24 available on its website describing certain aspects</p>



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