

<p style="text-align: right;">Page 1</p> <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 style="text-align: right;">Page 3</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>
<p style="text-align: right;">Page 2</p> <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 style="text-align: right;">Page 4</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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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?

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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

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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

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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



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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

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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

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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

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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



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