EXPERT DECLARATION OF DOUGLAS CHRISSAN, PhD
FOR
INTER PARTES **REVIEW NOS. IPR2016-01006, -01007, -01008, -01009**

i

I.   INTRODUCTION & SUMMARY OF OPINIONS

1.   My name is Douglas A. Chrissan. I have been engaged by TQ Delta, LLC in connection with IPR numbers 2016-01006 (relating to U.S. Pat. No. 7,835,430 ("the '430 patent")), -01007 (relating to U.S. Pat. No. 8,432,956 ("the '956 patent")), -01008 (relating to U.S. Pat. No. 8,238,412 ("the '412 patent")), and -01009 (also relating to the '412 patent") before the United States Patent and Trademark Office. In this declaration I provide my opinion that the challenged claims of the '430, '412 and '956 patents, collectively the "Diagnostic Mode Patents," are not anticipated or obvious in view of the references and grounds asserted by the Petitioner, Cisco Systems, Inc. ("Cisco").[1]

II.   PROFESSIONAL QUALIFICATIONS

A.   Background and Experience

2.   I am presently a technical consultant in the areas of communications systems, multimedia systems, computer systems, and digital signal processing.

3.   I earned a B.S. and M.S. in Electrical Engineering from the University of Southern California in 1988 and 1990, respectively, and a Ph.D. in Electrical Engineering from Stanford University in 1998.

---

[1] When referring to exhibits, I note that Cisco's exhibits are identical across the four IPR proceedings except for Ex. 1001 (the relevant patent at issue) and Exhibit 1009 (Kiaei declaration), which I will cite specifically. TQ Delta's exhibits are also identical across the four IPRs (including my global declaration). In addition, when I address a given argument made by Cisco or Cisco's expert, my comments are intended to address that argument whereever it is present in each of the IPRs. Also, I understand that in the 1006 IPR, Dish Network has joined as a petitioner, and that motions for joinder are pending with respect to other of the IPRs; my opinions are directed to the Petitioners collectively, as they rely on the same petition and same declaration of Dr. Kiaei.

4.   A copy of my current CV is attached.

5.   I was a Masters Fellow and Member of the Technical Staff at Hughes Aircraft Company in El Segundo, California, from 1988–1993. While at Hughes Aircraft, I designed and developed communication systems for commercial and military spacecraft, including for the MILSTAR satellite program.

6.   Between 1992 and 1993, while at Hughes Aircraft Company, I designed and built a state-of-the-art, 800 megabit-per-second (Mbps) telecommunications modem for the NASA Lewis Research Center.

7.   From 1997–2003, I worked at 8x8, Inc., starting as a DSP software engineer in 1997, becoming a manager in 1998, a director in 1999, and Vice President of Engineering in 2000 (managing a team of approximately 60 engineers in the company's microelectronics group). I played a key role in developing several semiconductor products used worldwide in multimedia and communications devices, mainly for video conferencing systems and Internet Protocol ("IP") telephones. Some of these semiconductor products were in production more than ten years.

8.   From 2003–2007, I was a Systems Architect and Engineering Program Manager at Texas Instruments in the Digital Subscriber Line ("DSL") product business unit. At Texas Instruments, I was directly involved in the architecture, design, development and production of multicarrier DSL modem

2

products.   My work specifically included architecting a multicarrier DSL semiconductor and software product and managing all aspects of its development from inception to production.

9.   My Ph.D. dissertation and related publications are in the fields of statistical signal processing and communication systems, and more specifically in the area of impulsive noise modeling for communication systems.

10.   In 1995 I was the instructor for the graduate Statistical Signal Processing class (EE278) in the Electrical Engineering department at Stanford University.   Prior to teaching this class, I was a teaching assistant for ten different classes in signal processing and radio frequency electronics at Stanford.

11.   I have developed, and managed the development of, several successful semiconductor, software and systems products in the communications and multimedia fields.   These products are listed in the attached *curriculum vitae*.

B.   Compensation

12.   I am being compensated for my time in this case at the rate of $250 per hour (plus expenses) for analysis, depositions, and, if necessary, trial testimony.   My compensation for this matter is not determined by or contingent on the outcome of this case.

C.   Materials Relied Upon

13.   I reviewed and considered the challenged TQ Delta patents and their

prosecution histories, Cisco's petitions, the references asserted by Cisco against the TQ Delta patents, the other documents provided by Cisco in its petitions (including the declarations of Dr. Sayfe Kiaei), the transcript of Dr. Kiaei's deposition, and other documents cited below.

III. BACKGROUND

A. Technical Overview of the '430, '956, and '412 Patents

14. The Diagnostic Mode Patents claim improvements to multicarrier transceiver devices used for data communication. The multicarrier transceivers disclosed in the Diagnostic Mode Patents are capable of communicating certain specified test and diagnostic information about the communication channel over which the multicarrier transceiver communicates, as recited in the Diagnostic Mode Patent claims.

15. The claims claim are all related. In all of the challenged claims of the '430, '956, and '412 patents, bits in a diagnostic message or test message must be transmitted or received using DMT/QAM ("Discrete Multitone" / "Quadrature Amplitude Modulation") with more than 1 bit per subchannel, and the given parameter must be transmitted or received in an "array." The claims differ by variously requiring transmitting or receiving either test information or diagnostic information that includes different ones of the measured parameters.

16. Claims 1-8 of the '956 patent and claims 1-8 and 21 of the '412 patent

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

fastcase®
Smarter legal research.