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13 *Attorneys for Defendant*  
14 QUALYS INC.

15 **IN THE UNITED STATES DISTRICT COURT**  
16 **FOR THE NORTHERN DISTRICT OF CALIFORNIA**  
17 **OAKLAND DIVISION**

19 FINJAN, INC., a Delaware Corporation, ) CASE NO.: 4:18-cv-07229-YGR  
20 )  
21 Plaintiff, ) **DECLARATION OF DR. AVIEL**  
22 ) **RUBIN**  
23 v. )  
24 QUALYS INC., a Delaware Corporation, )  
25 )  
26 Defendant. )  
27 )  
28 )

1 I, Aviel Rubin, Ph.D., declare as follows:

2 1. I am a Professor of Computer Science at Johns Hopkins University where I have  
3 taught courses such as Computer Networks, Security and Privacy in Computing and Advanced  
4 Topics in Computer Security. I am also the Technical Director of the Johns Hopkins University  
5 Information Security Institute. I am also the found and managing partner of Harbor Labs, where  
6 I provide software and network consulting. I received a Ph.D. degree in Computer Science and  
7 Engineering from the University of Michigan, Ann Arbor in 1994, and I am a retained expert  
8 witness for Defendant Qualys Inc. (“Qualys”) in the above-captioned matter. I have personal  
9 knowledge of all the facts disclosed herein, such that, if called as a witness, I could, and would,  
10 competently testify thereto.

11 **I. INTRODUCTION**

12 2. I submit this Declaration in support of Qualys’ claim construction brief.

13 3. I have been asked to provide opinions about the understanding that a Person of  
14 Ordinary Skill in the Art (“POSITA”) would have regarding the terms “receiver” and  
15 “transmitter” as they appear in U.S. Patent Nos. 8,141,154 (“the ’154 Patent”), 8,677,494 (“the  
16 ’494 Patent”), and 6,965,968 (“the ’968 Patent”).

17 4. Specifically, I have been asked whether a POSITA in the field of computer  
18 software would understand the terms “receiver” and “transmitter” to have a sufficiently definite  
19 meaning as the name for structure. As discussed below, it is my opinion that they do not.

20 5. I have also been asked whether the specifications of the ’154, ’494, and ’968  
21 patent would disclose to a POSITA in the field of computer software sufficient structure that  
22 corresponds to the receiver’s function in those respective patents’ claims. Again, as discussed  
23 below, it is my opinion that the specifications do not do so.

24 **II. BACKGROUND AND QUALIFICATIONS**

25 6. I am being paid at my customary rate of \$775 per hour for time spent on this case.

26 7. I am also being reimbursed for reasonable and customary expenses. My  
27 compensation is not dependent in any way on the results of the lawsuit or the substance of my  
28 testimony.

1           8.       I provide below an overview of my background and qualifications. Additional  
2 details of my education and employment history, professional service, patents, publications, and  
3 other testimony are set forth in my current curriculum vitae, which can be found here:  
4 [http://avirubin.com/Avi\\_Rubins\\_home\\_page/Vita.html](http://avirubin.com/Avi_Rubins_home_page/Vita.html).

5           **A.       Education & Career**

6           9.       I received my Ph.D. in Computer Science and Engineering from the University of  
7 Michigan, Ann Arbor in 1994, with a specialty in computer security and cryptographic protocols.

8           10.      My thesis was titled “Nonmonotonic Cryptographic Protocols” and concerned  
9 authentication in long-running networking operations.

10          11.      I am currently employed as Professor of Computer Science at Johns Hopkins  
11 University, where I perform research, teach graduate courses in computer science and related  
12 subjects, and supervise the research of Ph.D. candidates and other students. Courses I have  
13 taught include Security and Privacy in Computing and Advanced Topics in Computer Security. I  
14 am also the Technical Director of the Johns Hopkins University Information Security Institute,  
15 the University’s focal point for research and education in information security, assurance, and  
16 privacy. The University, through the Information Security Institute’s leadership, has been  
17 designated as a Center of Academic Excellence in Information Assurance by the National  
18 Security Agency and leading experts in the field. The focus of my work over my career has been  
19 computer security, and my current research concentrates on systems and networking security,  
20 with special attention to software and network security.

21          12.      After receiving my Ph.D., I began working at Bellcore in its Cryptography and  
22 Network Security Research Group from 1994 to 1996. During this period I focused my work on  
23 Internet and Computer Security. While at Bellcore, I published an article titled “Blocking Java  
24 Applets at the Firewall” about the security challenges of dealing with JAVA applets and  
25 firewalls, and a system that we built to overcome those challenges.

26          13.      In 1997, I moved to AT&T Labs, Secure Systems Research Department, where I  
27 continued to focus on Internet and computer security. From 1995 through 1999, in addition to  
28

1 my work in industry, I served as Adjunct Professor at New York University, where I taught  
2 undergraduate classes on computer, network and Internet security issues.

3 14. I stayed at AT&T until 2003, when I left to accept a full-time academic position at  
4 Johns Hopkins University. I was promoted to full professor with tenure in April 2004.

5 15. I serve, or have served, on a number of technical and editorial advisory boards.  
6 For example, I served on the Editorial and Advisory Board for the International Journal of  
7 Information and Computer Security. I also served on the Editorial Board for the Journal of  
8 Privacy Technology. I have been Associate Editor of IEEE Security and Privacy Magazine and  
9 served as Associate Editor of ACM Transactions on Internet Technology. I am currently an  
10 Associate Editor of the journal Communications of the ACM. I was an Advisory Board Member  
11 of Springer's Information Security and Cryptography Book Series. I have served in the past as a  
12 member of the DARPA Information Science and Technology Study Group, a member of the  
13 Government Infosec Science and Technology Study Group of Malicious Code, a member of the  
14 AT&T Intellectual Property Review Team, Associate Editor of Electronic Commerce Research  
15 Journal, Co-editor of the Electronic Newsletter of the IEEE Technical Committee on Security  
16 and Privacy, a member of the board of directors of the USENIX Association, the leading  
17 academic computing systems society, and a member of the editorial board of the Bellcore  
18 Security Update Newsletter.

19 16. I have spoken on information security and electronic privacy issues at more than  
20 50 seminars and symposia. For example, I presented keynote addresses on the topics "Security of  
21 Electronic Voting" at Computer Security 2004 Mexico in Mexico City in May 2004; "Electronic  
22 Voting" to the Secure Trusted Systems Consortium 5th Annual Symposium in Washington DC  
23 in December 2003; "Security Problems on the Web" to the AT&T EUA Customer conference in  
24 March 2000; and "Security on the Internet" to the AT&T Security Workshop in June 1997. I  
25 also presented a talk about hacking devices at the TEDx conference in October 2011 and also  
26 another TEDx talk on the same topic in September 2015.

27 17. I was founder and President of Independent Security Evaluators (ISE), a computer  
28 security consulting firm, from 2005-2011. In that capacity, I guided ISE through the qualification

1 as an independent testing lab for Consumer Union, which produces Consumer Reports magazine.  
2 As an independent testing lab for Consumer Union, I managed an annual project where we tested  
3 all of the popular anti-virus products. Our results were published in Consumer Reports each year  
4 for three consecutive years.

5 18. I am currently the founder and managing partner of Harbor Labs, a software and  
6 networking consulting firm.

7 **B. Publications**

8 19. I am a named inventor on ten U.S. patents in the information security area.

9 20. I have also testified before Congress regarding the security issues with electronic  
10 voting machines and in the U.S. Senate on the issue of censorship. I also testified in Congress on  
11 November 19, 2013 about security issues related to the government's Healthcare.gov web site.

12 21. I am author or co-author of five books regarding information security issues:  
13 Brave New Ballot, Random House, 2006; Firewalls and Internet Security (second edition),  
14 Addison Wesley, 2003; White-Hat Security Arsenal, Addison Wesley, 2001; Peer-to-Peer,  
15 O'Reilly, 2001; and Web Security Sourcebook, John Wiley & Sons, 1997. I am also the author  
16 of numerous journal and conference publications, which are reflected in my CV.

17 **III. MATERIALS CONSIDERED**

18 22. I have considered information from various sources in forming my opinions.

19 23. Besides drawing from over two decades of experience in the computer industry, I  
20 also have reviewed the following documents: (a) the '154 Patent and its file history; (b) the '494  
21 Patent and its file history; (c) the '968 Patent and its file history; (d) Finjan's Opening Claim  
22 Construction Brief and exhibits thereto.

23 **IV. LEGAL STANDARDS**

24 24. I have been advised that patent claims are reviewed from the point of view of a  
25 hypothetical person of ordinary skill in the art ("POSITA") at the time of the filing of the patent.  
26 I have applied this standard in forming my opinions.

27 25. In my opinion, a POSITA for the '154, '494, and '968 Patents '780 patent would  
28 be a person with a Bachelor's degree in computer science or related academic fields and three to

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