

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inter partes Review Case No. IPR2015-01440

Inter partes Review of: U.S. Patent No. No. 7,706,778

Issued: April 27, 2010

To: Peter R. Lowe

For: System and Method for Remotely Assigning and Revoking Access Credentials Using a Near Field Communication Equipped Mobile Phone

**DECLARATION OF BRUCE SCHNEIER IN SUPPORT OF REQUEST
FOR *INTER PARTES* REVIEW OF THE '778 PATENT**

1. I am Bruce Schneier. I have been retained by Proskauer Rose, LLP on behalf of UniKey Technologies, Inc. (“UniKey”), and have been asked by counsel to review relevant materials and render my expert opinion in connection with technical matters related to U.S. Patent No. 7,706,778 (Ex. 1001) (“’778 patent”). I submit this report on behalf of UniKey in support of its petition for *Inter Partes* Review (IPR) of the ’778 patent (“Petition”). For at least the reasons expressed in this declaration, I agree with the contents of the Petition, and I believe my opinions expressed below are consistent with the Petition.

I. INTRODUCTION

2. I understand that the parties involved in this IPR proceeding are the Petitioner, UniKey, and the patent owner, Assa Abloy AB.

3. For my efforts in connection with the preparation of this declaration, I have been compensated at my standard hourly rate for this type of consulting activity. However, my compensation is not dependent on the outcome of this proceeding. I am not an employee, consultant, or contractor of either party.

4. I have summarized in this next section relevant aspects of my educational background, career history, publications, and other relevant qualifications, the full details of which are set for in the curriculum vitae attached hereto as Appendix A.

II. QUALIFICATIONS

A. Educational Background

5. I hold an M.S. Degree in Computer Science, which I obtained from American University in 1986, and a B.S. Degree in Physics, which I obtained from the University of Rochester in 1984.

B. Career History

6. I presently hold the title of Chief Technology Officer of Resilient Systems, Inc. (formerly Co3 Systems, Inc.), in Cambridge, Massachusetts.

7. I am a fellow at the Berkman Center for Internet and Society at Harvard Law School, a program fellow at the New America Foundation's Open Technology Institute, a board member of the Electronic Frontier Foundation, and an Advisory Board member of the Electronic Privacy Information Center.

8. From 2006 until 2013, I held the titles of Chief Security Technology Officer and Security Futurologist for British Telecom.

9. Prior to that, from 1999 until 2006, I was Chief Technology Officer of Counterpane Internet Security, Inc., and prior to that I was the President of Counterpane Systems.

C. Books and Publications

10. I am the author of a number of books on the topics of cryptography, computer security, general security technology, trust, surveillance, and privacy, including the bestseller *Applied Cryptography: Protocols, Algorithms, and Source Code in C*, John Wiley & Sons (1994).

11. I have also coauthored numerous academic publications, including, but not limited to, the subjects of cryptography, information security, e-mail security, electronic commerce security, software encryption, encryption algorithm design, digital signature authentication, and hash functions.

12. I have also published numerous articles on the subject of security technology and its effects at individual and national levels, for publications such as *The New York Times*, *The Wall Street Journal*, *The Guardian*, *Forbes*, *Wired*, *Nature*, *The Bulletin of the Atomic Scientists*, *The Sydney Morning Herald*, *The Boston Globe*, *The San Francisco Chronicle*, and *The Washington Post*.

D. Patents

13. I am also a named co-inventor on eighty-two (82) issued U.S. Patents relating to cryptography, computer security, security technology, and electronic commerce.

E. Awards & Recognitions

14. I am the recipient of the following awards, among others:

- Electronic Privacy Information Center Lifetime Achievement Award, 2015;

- Berkman Fellow at the Berkman Center for Internet and Society at Harvard University, 2013–2016 academic years;

- named one of the IFSEC 40: The Most Influential People in Security & Fire, January 2013;

- Honorary Doctor of Science (ScD) from University of Westminster, London, December 2011;

- CSO Compass Award, May 2010; (6) Computer Professionals for Social Responsibility (CPSR) Norbert Weiner Award, January 2008;

- Electronic Frontier Foundation (EFF) Pioneer Award, March 2007;

- Dr. Dobb's Journal Excellence in Programming Award, April 2006;
- Infoworld CTO 25 Award, April 2005; and
- Productivity Award for Secrets and Lies in the 13th Annual Software Development Magazine Product Excellence Awards, 2000.

15. Accordingly, I consider myself to be an expert in the field of cryptography and systems security. Based on my extensive understanding of the technology at hand, I believe to be qualified to provide an opinion as to what a person of ordinary skill in the art would have understood, known, or concluded during and around the timeframe when the '778 Patent was filed.

16. In support of my conclusions, I may cite to various representative teachings within the prior art or disclosures within the '778 Patent. These citations are intended to be representative, rather than exhaustive.

F. Materials Considered

17. In my analysis, I considered the '778 Patent and its file history, as well as the prior art references and related documentation discussed below. I have also reviewed in detail the Petition to which this declaration relates.

18. I make this declaration based on personal knowledge, and I am competent to testify about the matters set forth herein.

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