IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

In the *Inter Partes* Review of:　　　　　)
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U.S. Patent No.:　7,448,084　　　　　)
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　　　　　　　　　　　　　　　　　)
For:　SYSTEM AND METHODS　　　)
　　　　FOR DETECTING　　　　　)
　　　　INTRUSIONS IN A　　　　　)
　　　　COMPUTER SYSTEM BY　　)
　　　　MONITORING OPERATING　)
　　　　SYSTEM REGISTRY ACCESS　)

Mail Stop Patent Board
Patent Trial and Appeal Board
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF MICHAEL T. GOODRICH, Ph.D. IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,448,084

I, Michael T. Goodrich, Ph.D., declare as follows:

I.   INTRODUCTION

1.   I have been asked by the party requesting this review, Symantec Corporation ("Petitioner"), to provide my expert opinions in support of the above-captioned petition for *inter partes* review of U.S. Patent No. 7,448,084 (the "'084 patent"), challenging the patentability of claims 1, 3-14, and 16-28 of the '084 patent.

2.   I currently hold the opinions set forth in this declaration.

3.   In summary, it is my opinion that the references cited below anticipate and render obvious claims 1, 3-14, and 16-28 of the '084 patent. My detailed opinions on the claims are set forth below.

II.   BACKGROUND AND QUALIFICATIONS

4.   I earned a Bachelor's Degree in Mathematics and Computer Science from Calvin College in 1983. I obtained my Master's Degree and Ph.D. in Computer Sciences from Purdue University in 1985 and 1987, respectively.

5.   I currently hold the position of Chancellor's Professor for the Department of Computer Science at the University of California, Irvine. I have been employed by the University of California, Irvine since 2001 and have spent more than two decades teaching computer science at the University of California, Irvine and previously at Johns Hopkins University.

6.   My research for more than 30 years has focused generally on algorithm and data structure design, information assurance and security, and parallel and distrib-

uted computing. In 2011 I co-authored a book entitled "Introduction to Computer Security," which was published by Addison-Wesley, Inc.

7.   I am a listed inventor on three issued U.S. Patents: U.S. Patent No. 7,257,711, titled "Efficient Authenticated Dictionaries with Skip Lists and Commutative Hashing," U.S. Patent No. 7,299,219, titled "High Refresh-Rate Retrieval of Freshly Published Content using Distributed Crawling," and U.S. Patent No. 8,681,145, titled "Attribute Transfer Between Computer Models Including Identifying Isomorphic Regions in Polygonal Meshes." Additionally, I have published over 100 papers and books.

8.   My professional background and technical qualifications also are reflected in my Curriculum Vitae, which is attached as Exhibit 1004.

III.   COMPENSATION AND RELATIONSHIP WITH PARTIES

9.   I am being compensated for my time. This compensation is not contingent upon my performance, the outcome of this matter, or any issues involved in or related to this matter.

10.   I have no financial interest in Petitioner or any related parties. I have been informed that The Trustees of Columbia University in the City of New York ("Columbia") owns the '084 patent. I have no financial interest in and have no contact with Columbia. I similarly have no financial interest in the '084 patent and have not had any contact with any of its investors.

IV. MATERIAL CONSIDERED

11. I have reviewed and considered, in the preparation of this declaration, the '084 patent (Ex. 1001) and the prosecution file history for the '084 patent (Ex. 1002).

12. I have also reviewed and considered the Claim Construction Order issued by the district court in the ongoing litigation between the Petitioner and the Patentee. (*The Trustees of Columbia University in the City of New York v. Symantec Corp.*, Civil Action No. 3:13-cv-808, Oct. 7, 2014 Claim Construction Order (Dkt. No. 123), Ex. 1005). I have also reviewed the district court's clarification of the Claim Construction Order, Ex. 1015.

13. I understand that, for purposes of determining whether a reference will qualify as prior art, the challenged claims of the '084 patent are entitled to a priority date of no earlier than January 25, 2002.

14. I have also reviewed and understand various publications as discussed herein, including the following references:

a. Jude Shavlik et al., *Evaluating Software Sensors for Actively Profiling Windows 2000 Computer Users* (RAID 2001) (Ex. 1006)

b. Rebecca G. Bace, INTRUSION DETECTION (MacMillian Technical Publishing, 2000) (Ex. 1007)

c. Mark Russinovich and David Solomon, INSIDE MICROSOFT WINDOWS 2000, 3rd Ed. (Microsoft Press, 2000) (Ex. 1008)

d. Mark Russinovich and Bryce Cogswell, *Examining the Windows 95 Registry*, Windows Developer's Journal, Vol. 7, No. 10 (October 1996) (Ex. 1009)

e. M. Debbabi et al, *Monitoring of Malicious Activity in Software Systems*, 1st Symposium on Requirements Engineering for Information Security (SREIS, March 2001) (Ex. 1010)

f. Johnathon Korba, *Windows NT Attacks for the Evaluation of Intrusion Detection Systems* (M.I.T. 2000) (Ex. 1011)

g. Terran Lane and Carla E. Brodley, *Temporal Sequence Learning and Data Reduction for Anomaly Detection,* ACM Transactions on Information and System Security, Vol. 2, No. 3 (August 1999) (Ex. 1012)

h. RAID 2001 Program, Oct. 10, 2001, Located at: https://web.archive.org/web/20011121095823/http://www.raid -symposium.org/raid2001/program.html (Ex. 1013)

i. Anup K. Ghosh, et al., *Learning Program Behavior Profiles for Intrusion Detection,* USENIX Proceedings of the Workshop on Intrusion Detection and Network Monitoring, Santa Clara, California, USA, (April 1999) (Ex. 1016)

j. Aaron Schwartzbard and Anup K. Ghosh, *A Study in the Feasibility of Performing Host-based Anomaly Detection on Windows NT,* Proceed-

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