UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE INC.
Petitioner

v.

ALFONSO CIOFFI, MEGAN ELIZABETH ROZMAN,
MELANIE ANN ROZMAN, AND MORGAN LEE ROZMAN
Patent Owners

_____

Patent No. RE43,528

_____

DECLARATION OF WILLIAM ARBAUGH, PH.D. REGARDING U.S. PATENT NO. RE43,528 IN SUPPORT OF PETITION FOR COVERED BUSINESS METHOD REVIEW

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I, William Arbaugh, Ph.D., declare as follows:

1. I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters stated herein.

2. I have been asked by Google Inc. to provide technical assistance in connection with the covered business method review of U.S. Patent No. RE43,528 (which I will refer to as the "'528 Reissue"). This declaration is a statement of certain opinions I have formed on issues related to the patentability of claims 1, 5, 8, 21, 22, 23, 24, 30, 44, 64, and 67 of the '528 Reissue.

3. I have also been retained as an expert witness by Google Inc. in connection with the district court lawsuit involving the '528 Reissue, and I have provided certain opinions in that proceeding. I have not been asked to restate all of my opinions on the patentability of claims in the '528 Reissue. I continue to hold the opinions that I have expressed in the district court lawsuit. The fact that I have not restated a particular opinion in this declaration does not mean that I have changed my previously expressed opinion.

4. I am compensated at $350 per hour for working on this matter. My compensation is not contingent in any way on the outcome of this matter.

I. BACKGROUND AND QUALIFICATIONS

5. In formulating my opinions, I have relied on my knowledge, training, and experience in the relevant field, which I will summarize briefly.

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6. I am a U.S. citizen residing in Ellicott City, Maryland.

7. I am a computer scientist consulting in the area of computer security, operating systems, and networking.

8. I earned a Bachelor of Science degree with a concentration in Computer Science in 1984 from the United States Military Academy at West Point. In 1985, I obtained a Master of Science in Computer Science degree from Columbia University. And, in 1999, I earned a Ph.D. in Computer Science from the University of Pennsylvania. For my Ph.D. dissertation I developed a system for securely starting a computer system.

9. I worked for the U.S. Army from 1987 to 1990 as a senior software engineer. I developed data intensive applications in support of the Army staff. From 1990 to 2000, I worked at the National Security Agency (NSA) in a variety of research, development, and operational roles. In one role, I was a team chief in the information security research group from approximately 1992-1994. My team was responsible for performing and funding both malware detection and advanced intrusion detection research. When I departed from the NSA in 2000, I was a senior technical advisor to the chief of the Office of Advanced Network Programs.

10. I joined the University of Maryland at College Park (UMCP) in 2000 as an Assistant Professor. While at UMCP, I built a research group focused on Information Systems Security. My research group was responsible for the creation

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