IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

ANCORA TECHNOLOGIES, INC.,
 	
      Plaintiff,
 v.
 	
 LG ELECTRONICS INC. and LG ELECTRONICS U.S.A., INC.,
 	
      Defendants.
	CIVIL ACTION NO. 1:20-cv-0034
	
	 JURY TRIAL DEMANDED

ANCORA TECHNOLOGIES, INC.,
 	
      Plaintiff,
 v.
 	
 SAMSUNG ELECTRONICS CO., LTD. and SAMSUNG ELECTRONICS AMERICA, INC.,
 	
      Defendants.
	CIVIL ACTION NO. 1:20-cv-0034
	
	 JURY TRIAL DEMANDED

DECLARATION OF EREZ ZADOK, PH.D. IN SUPPORT OF CLAIM CONSTRUCTION FOR U.S. PATENT NO. 6,411,941

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I, Erez Zadok, Ph.D. declare as follows:

I.   INTRODUCTION

1.   I have been retained as a technical consultant by Defendants LG Electronics Inc., LG Electronics U.S.A., Inc., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. I have been asked by counsel for Defendants to provide certain opinions and views related to U.S. Patent No. 6,411,941 (the "'941 patent") in this declaration.

2.   I am over 18 years of age. I have personal knowledge of the facts stated in this Declaration and could testify competently to them if asked to do so.

3.   My findings and opinions in this matter are based on my education, experience, and background in the field. My opinion and the underlying reasoning for this opinion is set forth below.

II.   BACKGROUND AND QUALIFICATIONS

4.   I am a Professor in the Computer Science Department at Stony Brook University (part of the State University of New York ("SUNY") system). I direct the File-systems and Storage Lab (FSL) at Stony Brook's Computer Science Department. My research interests include file systems and storage systems, operating systems, information technology and system administration, security and information assurance, networking, energy efficiency, performance and benchmarking, compilers, applied machine learning, and software engineering.

5.   I studied at a professional high school in Israel, focusing on electrical engineering ("EE"), and graduated in 1982. I spent one more year at the high school's college division, receiving a special Certified Technician's degree in EE. I then went on to serve in the Israeli Defense Forces for three years (1983–1986). I received my Bachelor of Science degree in computer science ("CS") in 1991, my Master's degree in CS in 1994, and my Ph.D. in CS in 2001—all from Columbia University in New York.

6.   When I began my undergraduate studies at Columbia University, I also started working as a student assistant in the various campus-wide computer labs, eventually becoming an assistant to the head labs manager, who was managing all public computer labs on campus. During that time, I also became more involved with research within the CS Department at Columbia University, conducting research on operating systems, file and storage systems, security, and other topics. I also assisted the CS department's computer administrators in managing the department's computers, which included storage, IT, networking, and cyber-security related duties.

7.   During the late 1980's, I became exposed to and aware of information assurance topics. As the then fledgling Internet was growing in popularity, so were cyber-attacks of various sorts. For example, I was an undergraduate student working on computer programming assignments when the infamous "Morris Worm" hit the Internet in November of 1988.

8.   In 1991, I joined Columbia University's CS department as a full-time systems administrator, studying towards my MS degree part-time. My MS thesis topic related to file system reliability, fault tolerance, replication, and failover in mobile networked systems. My main duties as a systems administrator involved installing, configuring, and managing many networked servers, proxies, and desktops running several operating systems, as well as network devices setup; this included many hardware upgrades, device upgrades, and BIOS firmware/chipset updates/upgrades. My duties also included ensuring reliable, secure, authenticated access to networked systems and licensed software, as well as software updates, security and bug fixes. Examples of servers and their protocols included email (SMTP), file transfer (FTP), domain names (DNS), network file systems (NFS), network news systems (NNTP), and Web (HTTP).

9.   In 1994, I left my systems administrator position to pursue my doctoral studies at

Columbia University. My Ph.D. thesis topic was on versatile file system development, with

examples in the fields of security and encryption, efficiency, reliability, and failover. I continued

to work part-time as a systems administrator at the CS department, and eventually I was asked to

serve as manager to the entire information technology ("IT") staff. From 1991 to 2001, I was a

member of the faculty-level Facilities Committee that oversaw all IT operations at the CS

department. During this entire time, topics of information assurance and software protection

became more prominent and time-consuming in the lives of system administrators worldwide,

and my work at Columbia was no different. For example, configuring/maintaining firewalls and

proxies and applying security patches, and [re]licensing software, became more important and a

dominant part of everyday IT duties, as well as defending against a growing list of copyright

violations and malicious software threats (e.g., viruses, worms, Trojans, spyware, and more).

10.   As part of my Ph.D. studies at Columbia, I collaborated on projects to develop

advanced AI-like techniques to detect previously unknown viruses (a.k.a. "zero-day malware"),

using data mining and rule-based detection. This work led to several highly cited papers (1,100

citations for one of the papers alone), and two patents. I also became a Teaching Assistant (TA)

for a first-ever Computer Security course given at Columbia University's CS department with

Dr. Matt Blaze as instructor.

11.   From 1990 to 1998, I consulted for SOS Corporation and HydraWEB

Technologies, as a systems administrator and programmer, managing data storage use and

backup/restore duties, as well as information assurance and cyber-security (e.g., malware

protection, software licensing). From 1994 to 2000, I led projects at HydraWEB Technologies,

and then became the Director of Software Development—overseeing the development of several

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