IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Munger et al.
U.S. Patent No.: 6,502,135
Issue Date: Dec. 31, 2002
Appl. Serial No.: 09/504,783
Filing Date: Feb. 15, 2000
Title: AGILE NETWORK PROTOCOL FOR SECURE COMMUNICATIONS
WITH ASSURED SYSTEM AVAILABILITY

<u>DECLARATION OF DR. ROCH GUERIN</u>

1.   My name is Dr. Roch Guerin. I am the chair of the Computer Science &

Engineering department at Washington University in St. Louis. I have been asked

to offer technical opinions relating to U.S. Patent No. 6,502,135, and prior art

references relating to its subject matter. My current *curriculum vitae* is attached

and some highlights follow.

2.   I earned my diplôme d'ingénieur (1983) from École nationale supérieure des

télécommunications, in Paris, France. Thereafter, I earned my M.S. (1984) and

PhD (1986) in electrical engineering from The California Institute of Technology

in Pasadena, California.

3.   Prior to becoming a professor in engineering, I held various positions at the

IBM T.J. Watson Research Center. Specifically, from 1986 to 1990, I was a

research staff member within the Communication Department, where I worked to

design and evaluate high-speed switches and networks. From 1990 to 1991, I was a

research staff member within the IBM High Performance Computing and

Communications Department, where I worked to develop and deploy an integrated broadband network. From 1992 to 1997, I was the manager of Broadband Networking within IBM's Security and Networking Systems Department, where I led a group of researchers in the area of design, architecture, and analysis of broadband networks. One of the projects on which I worked, for example, led to U.S. Patent No. 5,673,318, which regards "[a] method and system for providing data authentication, within a data communication environment, in a manner which is simple, fast, and provably secure," and of which I am a named inventor. *See* U.S. Patent No. 5,673,318, Abstract. From 1997 to 1998, I was the manager of Network Control and Services within IBM's Security and Networking Systems Department, where I led a department responsible for networking and distributed applications, including topics such as advance reservations, policy support, including for Resource Reservation Protocol (RSVP), quality of service (QoS) routing, and security, and integrated switch and scheduling designs.

4.   I have been a professor of engineering for the past sixteen years. As such, but prior to becoming the chair of the Computer Science & Engineering department at Washington University in St. Louis, I was the Alfred Fitler Moore Professor of Telecommunications Networks (an honorary chair) in the Department of Electrical and Systems Engineering at the University of Pennsylvania. As a professor of engineering, I have taught many courses in networking, including

Advanced Networking Protocols (TCOM 502), which addressed, among other things, virtual private networks.

5.   I have authored more than fifty journal publications, including "On the Feasibility and Efficacy of Protection Routing in IP Networks," which was honored with the IEEE INFOCOM 2010 Best Paper Award. I have been named a Fellow by both the IEEE and ACM, and, from 2009 to 2012, I was the Editor-in-Chief of the IEEE/ACM Transactions on Networking. Furthermore, I am a named inventor on over thirty issued U.S. patents.

6.   I am familiar with the content of U.S. Patent No. 6,502,135 (the "'135 patent"). In addition, I have considered the various documents referenced in my declaration as well as additional background materials. I have also reviewed certain sections of the prosecution history of the '135 patent, the prosecution histories of reexamination control numbers 95/001,269, 95/001,679 and 95/001,682; and the claim construction orders from *VirnetX Inc. v. Microsoft Corp.*, Docket No. 6:07-CV-80 (E.D. Tex.) and *VirnetX Inc. v. Cisco Systems, Inc. et al.*, Docket No. 6:10-cv-417 (E.D. Tex.).

7.   Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the '135 patent as of its effective filing date, and I have done so during my review of these materials. I believe one of ordinary skill as of February 15, 2000 (the priority date of the '135 patent)

would have a Master's degree in computer science or computer engineering, or in a related field such as electrical engineering, as well as about two years of experience in computer networking and in some aspect of security with respect to computer networks. I base this on my own personal experience, including my knowledge of colleagues and others at the time.

8.   I have no financial interest in either party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

9.   My opinions, as explained below, are based on my education, experience, and background in the fields discussed above.

10.   This declaration is organized as follows:

I.   BRIEF OVERVIEW OF THE '135 PATENT

11.   The '135 patent is generally directed to a "agile network protocol for secure communications with assured system availability." Ex. 1001, Title. The '135 patent includes 18 claims, of which claims 1, 10, 13, and 18 are independent.

12.   A section of the '135 patent's specification titled "B. Use of a DNS Proxy to Transparently Create Virtual Private Networks" describes "the automatic creation of a virtual private network (VPN) in response to a domain name server look-up function," with reference to FIGS. 25-27. Ex. 1001 at 37:17-21. In the example embodiment, the '135 patent describes that a "specialized DNS server traps DNS requests and, if the request is from a special type of user (e.g., one for which secure communication services are defined), the server does not return the true IP address of the target node, but instead automatically sets up a virtual private network between the target node and the user." Ex. 1001 at 37:63-38:2.

13.   In the case of standard "DNS requests that are determined to not require secure services (e.g., an unregistered user), the DNS server transparently 'passes through' the request to provide a normal look-up function." Ex. 1001 at 38:6-9. On the other hand, if access to a secure site has been requested, the system described in the '135 patent "determines whether the user has sufficient security privileges to access the site," and, if so, transmits a message requesting that a virtual private

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