IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No. 8,542,815 **Currently in Litigation Styled:** **VoIP-Pal.com, Inc. v. Apple Inc.** **Case No: 2:16-cv-00260-RFB-VCF** **Issued: September 24, 2013** **Application Filed: November 1, 2007** **Applicant: Clay Perreault, et al.** **Title: Producing Routing Messages for Voice Over IP Communications**	**PETITION FOR *INTER PARTES* REVIEW PURSUANT TO 37 C.F.R. § 42.100 *ET SEQ*.**

Mail Stop *Inter Partes* Review
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF HENRY H. HOUH, PhD

I. Introduction

I, Henry H. Houh, PhD, declare:

1. I am making this declaration at the request of Apple Inc. in the matter of the *Inter Partes* Review of U.S. Patent No. 8,542,815 ("the '815 Patent") to Perreault, *et al*.

2. I am being compensated for my work in this matter. My compensation in no way depends upon the outcome of this proceeding.

3. In the preparation of this declaration, I have studied:

(1) The '815 Patent, Exhibit 1001;

(2) The prosecution history of the '815 Patent, Exhibit 1002;

(3) U.S. Patent No. 7,486,684 to Chu et al. ("Chu '684"), Exhibit 1003;

(4) U.S. Patent No. 6,760,324 to Scott ("Scott"), Exhibit 1004; and

(5) U.S. Patent Application Publication No. 2002/0122547 to Hinchey et al. ("Hinchey"), Exhibit 1006.

4. In forming the opinions expressed below, I have considered:

(1) The documents listed above,

(2) The relevant legal standards, including the standard for obviousness provided in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), and

(3) My knowledge and experience based upon my work in this area, as described below.

II. Qualifications and Professional Experience

5. My complete qualifications and professional experience are described in my curriculum vitae, a copy of which can be found attached hereto as Appendix A. The following is a brief summary of my relevant qualifications and professional experience.

6. I received a Ph.D. in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1998. I also received a Master of Science degree in Electrical Engineering and Computer Science in 1991, a Bachelor of Science Degree in Electrical Engineering and Computer Science in 1989, and a Bachelor of Science Degree in Physics in 1990.

7. As further indicated in my C.V., I have worked in the electrical engineering and computer science fields, including in streaming audio and video, on several occasions. As part of my doctoral research at MIT from 1991-1998, I worked as a research assistant in the Telemedia Network Systems (TNS) group at the Laboratory for Computer Science. The TNS group built a high speed gigabit network and applications which ran over the network, such as remote video capture, processing, segmentation and search on computer terminals. In addition to helping design the core network components, designing and building the high speed links, and designing and writing the device drivers for the interface cards, I also set up the group's web server, which at the time was one of the first several hundred web servers in existence.

8. I authored or co-authored twelve papers and conference presentations on our group's research. I also co-edited the final report of the gigabit networking research effort with the Professor (David Tennenhouse) and

Senior Research Scientist of the group (David Clark), who is generally considered to be one of the fathers of the Internet Protocol.

9. I started building web servers in 1993, having set up the web server for the MIT Telemedia, Networks, and Systems Group, to which I belonged. It was one of the first several hundred web servers in existence, and went on to provide what was likely one of the first live Internet video sessions initiated from a web site. I co-authored papers on our web server video system and on database-backed web sites for which I attended the first World Wide Web conference to present.

10. From 1997 to 1999, I was a Senior Scientist and Engineer at NBX Corporation, a start-up that made business telephone systems that streamed packetized audio over data networks instead of using traditional phone lines. NBX was later acquired by 3Com Corporation, and the phone system is still available and being used at tens of thousands of businesses or more. As part of my work at NBX, I designed the core audio reconstruction algorithms for the telephones, as well as the packet transmission algorithms. I also designed and validated the core packet transport protocol used by the phone system. The protocol is used millions of times daily currently. Two of the company founders and I received US Patent No. 6,967,963 titled "Telecommunication method for ensuring on-time delivery of packets containing time sensitive data," for some of the work I did there.

11. Starting in 2001, I was architect for the next generation of web testing product by Empirix known as e-Test Suite. e-Test Suite is now owned by Oracle Corporation. e-Test provided functional and load testing for web sites. e-Test emulated a user's interaction with a web site and provided web developers with a method of creating various scripts and providing both functional testing (*e.g.*, did the web site provide the correct response) and load testing (*e.g.,* could the web site handle 5000 users on its web site simultaneously). Among Empirix's customers was H&R Block, who used e-Test Suite to test the tax filing functionality of their web site as whether the web site could handle a large expected load prior to the filing deadline.

12. At Empirix, I also conceived, secured internal funding for, and managed the engineering for a new data platform test product known as the PacketSphere. The first capability the PacketSphere provided was to emulate a network so that lab testing could be done under conditions that mimicked the Internet, including configurable latency and packet loss. Later, PacketSphere provided the capability to generate large numbers of Voice-over-IP streams as well as measure the quality of the connection of VoIP streams. As part of my work, I continued to study the development of the Voice-over-IP market and worked with a number of Empirix customers to understand their market and product testing needs. Sonus Networks, a leading manufacturer of Voice-over-IP

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