UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.
Petitioner

v.

JUNIPER NETWORKS, INC.
Patent Owner

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CASE IPR2013-00369
Patent 7,107,612

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DECLARATION OF KEVIN C. ALMEROTH

Dated: March 28, 2014

Respectfully submitted,

Kevin C Almeroth

_____

Kevin Almeroth

DECLARATION OF KEVIN C. ALMEROTH
REGARDING VALIDITY OF THE '612
PATENT

**CONFIDENTIAL ATTORNEY EYES ONLY
INFORMATION**

**CONFIDENTIAL ATTORNEY EYES ONLY
INFORMATION**

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I.   INTRODUCTION AND BACKGROUND

1.   I have been retained as an independent expert in this *Inter Partes* Review by the law firm of Irell & Manella LLP on behalf of Juniper Networks, Inc. ("Juniper") to provide opinions and conclusions regarding the unpatentability assertions by Palo Alto Networks ("PAN"). Among other things, I have been asked to offer a rebuttal to the Expert Report of John Mitchell included as Exhibit 1004 to PAN's petition requesting *Inter Partes* Review of U.S. Patent No. 7,107,612. I refer to this patent as "the '612 patent."

2.   As discussed in further detail in this report and any supplemental reports, testimony, or declarations that I may provide, it is my opinion that PAN has failed to prove, including through the Mitchell declaration, that the challenged claims of the '612 patent are unpatentable. It is further my opinion that the challenged claims are in fact valid.

3.   This expert report, including the accompanying exhibits, sets forth my opinions, conclusions, and other matters on which I expect to testify.

4.   My opinions are based on information including (i) documents and other evidence that I have reviewed, including the patents-in-suit and related prosecution histories, deposition transcripts, and other discovery materials from this litigation, (ii) other materials noted in this report and the Mitchell declaration, and (iii) my own education, training, experience and knowledge.I may rely on any of these materials, experiences and knowledge, in addition to the evidence specifically cited as supportive examples in particular sections of this report, as additional support for my opinions.

5.   I may also provide testimony (i) in rebuttal to PAN's position, including opinions of any PAN experts and materials they discuss or rely upon, (ii) based on any orders by the Board, (iii) based on documents or other discovery that PAN has not yet produced or that were produced too late to be considered before my report was due, or (iv) based on witness testimony which has not been given or was given too late to be considered before my report was due. I reserve the right to supplement or amend my opinions as further documentation and information is received.

6.   If called to testify in this matter, I may use as exhibits various documents produced in this matter that refer to or relate to the matters discussed in this report. In addition, I may supplement these materials with other documents, charts, illustrations, or diagrams to provide context, background or information, and may prepare summaries and demonstrative exhibits (such as a PowerPoint presentation or live demonstration) to assist any presentation by me or counsel for Juniper.

7.   I further observe that much of the Mitchell declaration is repetitive, and arguments and explanations regarding references are often duplicated and cross-referenced throughout the report. It should therefore be assumed that, where I respond to any particular argument from the Mitchell declaration in one place in my detailed analysis below, that same

response and analysis should be understood as applicable and responsive to similar arguments wherever they may appear throughout the Mitchell declaration or elsewhere in PAN's submissions.

8.   I reserve the right to supplement or amend this report if additional facts and information that affect my opinions become available.

II.   BACKGROUND AND QUALIFICATIONS

9.   I am currently a Professor in the Department of Computer Science at the University of California, Santa Barbara ("UCSB"). At UCSB, I also hold faculty appointments and am a founding member of the Computer Engineering (CE) Program, Media Arts and Technology (MAT) Program, and the Technology Management Program (TMP). I have been a faculty member at UCSB since July 1997.

10.   I hold three degrees from the Georgia Institute of Technology: (1) a Bachelor of Science degree in Information and Computer Science (with minors in Economics, Technical Communication, and American Literature) earned in June, 1992; (2) a Master of Science degree in Computer Science (with specialization in Networking and Systems) earned in June, 1994; and (3) a Doctor of Philosophy (Ph.D.) degree in Computer Science (Dissertation Title: Networking and System Support for the Efficient, Scalable Delivery of Services in Interactive Multimedia System, minor in Telecommunications Public Policy) earned in June, 1997.

11.   One of the major concentrations of my research to date has been the delivery of multimedia content and data between computing devices. In my research, I have studied large-scale content delivery systems, and the use of servers located in a variety of geographic locations to provide scalable delivery to hundreds, even thousands of users simultaneously. I have also studied smaller-scale content delivery systems in which content is exchanged between individual computers and portable devices. My work has emphasized the exchange of content more efficiently across computer networks, including the scalable delivery of content to many users, mobile computing, satellite networking, delivering content to mobile devices, and network support for data delivery in wireless networks.

12.   Beginning in 1992, at the time I started graduate school, the initial focus of my research was on the provision of interactive functions (e.g., VCR-style functions like pause, rewind, and fast-forward) for near video-on-demand systems in cable systems, in particular, how to aggregate requests for movies at a cable head-end and then how to satisfy a multitude of requests using one audio/video stream broadcast to multiple receivers simultaneously.

13.   In 1994, I began to research issues associated with the development and deployment of a one-to-many communication facility (called "multicast") in the Internet (first deployed as the Multicast Backbone, a virtual overlay network supporting one-to-many communication). Some of my more recent research endeavors have looked at how to use the scalability offered by multicast to provide streaming media support for complex applications like

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Juniper Exhibit 2096-4

~~Palo Alto v. Juniper~~
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distance learning, distributed collaboration, distributed games, and large-scale wireless communication.

14. I have also studied issues concerning how users choose content, especially when considering the price of that content. My research has examined how dynamic content pricing can be used to control system load.

15. As a parallel research theme, I began researching issues related to wireless devices. In particular, I was interested in showing how to provide greater communication capability to "lightweight devices," i.e., small form-factor, resource-constrained (e.g., CPU, memory, networking, and power) devices.

16. Protecting networks, including their operation and content, has been an underlying theme of my research almost since the beginning. Starting in 2000, I have also been involved in several projects that specifically address security, network protection, and firewalls. After significant background work, a team on which I was a member successfully submitted a $4.3M grant proposal to the Army Research Office (ARO) in the Department of Defense to propose and develop a high-speed intrusion detection system. Once the grant was awarded, we spent several years developing and meeting the milestones of the project. I have also used firewalls in developing techniques for the classroom to ensure that students are not distracted by online content.

17. As an important component of my research program, I have been involved in the development of academic research into available technology in the marketplace. One aspect of this work is my involvement in the Internet Engineering Task Force (IETF) including many content delivery-related working groups like the Audio Video Transport (AVT) group, the MBone Deployment (MBONED) group, the Source Specific Multicast (SSM) group, the Inter-Domain Multicast Routing (IDMR) group, the Reliable Multicast Transport (RMT) group, the Protocol Independent Multicast (PIM) group, etc. I have also served as a member of the Multicast Directorate (MADDOGS), which oversaw the standardization of all things related to multicast in the IETF. Finally, I was the Chair of the Internet2 Multicast Working Group for seven years.

18. I am an author or co-author of nearly 200 technical papers, published software systems, IETF Internet Drafts, and IETF Request for Comments (RFCs). The titles and subject matter of these technical papers are listed in full on my CV, attached as Ex. 2096.

19. My involvement in the research community extends to leadership positions for several academic journals and conferences. I am the co-chair of the Steering Committee for the ACM Network and System Support for Digital Audio and Video (NOSSDAV) workshop and on the Steering Committees for the International Conference on Network Protocols (ICNP), ACM Sigcomm Workshop on Challenged Networks (CHANTS), and IEEE Global Internet (GI) Symposium. I have served or am serving on the Editorial Boards of IEEE/ACM Transactions on Networking, IEEE Transactions on Mobile Computing, IEEE Network, ACM Computers in

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