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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT: 6,424,625

INVENTOR: Larsson, P. et al.

FILED: October 29, 1998

ISSUED: July 23, 2002

TITLE: METHOD AND APPARATUS FOR DISCARDING PACKETS
IN A DATA NETWORK HAVING AUTOMATIC REPEAT REQUEST

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DECLARATION OF HARRY BIMS, PH.D.

I, Harry Bims, declare as follows:

General Background

1. My name is Harry Bims. I have been asked to offer opinions regarding whether the claims of U.S. Patent No. 6,424,625 (the '625 patent) are anticipated or would have been obvious in view of the prior art, and to review a Petition for *Inter Partes* Review of the '625 patent.

2. I received my B.S. in computer and systems engineering from Rensselaer Polytechnic Institute in 1985, my M.S. in electrical engineering from Stanford University in 1988, and my Ph.D. in electrical engineering from Stanford University in 1993. Since receiving my doctorate, I have worked on a number of

wireless and mobile technologies, including wireless pagers, wireless home LAN protocols, cellular products including 2.5G and 3G products, wireless network infrastructures based on the 802.11 wireless specification, and wireless networks in the 4G technology known as WiMAX, an implementation of 802.16.

3. I have been actively involved in the development of the 802.16 standards, which is a series of wireless broadband standards written by the Institute of Electrical and Electronics Engineers (IEEE), including as a vice-chair of the 802.16 working group, and chair of two task groups. Previously, I was the vice-chair and secretary of the IEEE 802.16h License Exempt Task Group.

4. I am currently working as both a technology consultant in the industry and an expert consultant for litigation matters.

5. I began my technical career in 1992 just before completing my Ph.D. as one of the first employees at Glenayre Technologies, where I worked until 1998. While at Glenayre, I designed and built a 4-channel wireless pager demonstration based on the ReFLEX wireless protocol developed by Motorola, which led to an award for Narrowband Personal Communications Service (PCS) development. I invented, designed, and built a two-way pager test system for the ReFLEX protocol that was deployed around the country for testing pagers. Additionally, I co-developed a wireless application protocol for sending and receiving encrypted

email messages over the paging channel, which was ultimately deployed for government agencies.

6. In 1999, I was a member of the technical staff at T-SPAN Systems Corporation LLC, where I designed a wireless home LAN protocol. In 1999 I also served as a technical leader to Gigabit Wireless, Inc., where I lead the Wireless Media Access Control (MAC) design group. My work at Gigabit Wireless involved analyzing competing wireless MAC protocol standards, creation of a proprietary MAC protocol specification document, simulation of the protocol, and ultimate implementation of the protocol in a prototype. I also participated in meetings for the 802.16 standards starting at about that time.

7. From 1999 to 2001, I served as the director of software architecture at Symmetry Communications Systems LLC, where I was responsible for the software architecture for their core products for the GPRS market. In 2001, I also worked as an entrepreneur in residence at the venture capital firm Bay Partners LLC, where I served as a technology expert to the partners of the firm on a range of wireless and networking subjects.

8. From 2001 to 2004 I founded my own company, AirFlow Networks, Inc. LLC, where I served as CEO and CTO. AirFlow Networks was involved with a wireless network infrastructure based on the 802.11 wireless specification.

9. From 2007 to 2009 I worked as a technology consultant to Apple, Inc., including participating in IEEE 802.16 standards meetings.

10. I am a named inventor on nineteen U.S. Patents that involve various aspects of wireless and mobile communications. Examples of my patents include U.S. Patent No. 6,788,658 entitled “Wireless communication system architecture having split MAC layer,” which issued on September 7, 2004; and U.S. Patent No. 6,557,134 entitled “ARQ method for wireless communication,” which issued on April 29, 2003; and most recently, U.S. Patent No. 8,468,426 entitled “Multimedia-aware quality-of-service and error correction provisioning,” which issued on June 18, 2013. Additionally, I have authored or co-authored a number of articles in the fields of electrical engineering and computer science.

11. I have been a member or vice-chair of numerous associations, including the chair of the Silicon Valley Chapter of the IEEE Engineering Management Society, and vice-chair of the 802.16 Working Group of the IEEE 802 Standards Development Committee.

12. A copy of my latest *curriculum vitae* (CV) is attached as Appendix A.

13. I am being compensated at my normal consulting rate for my work. My compensation is not dependent on and in no way affects the substance of my statements in this Declaration.

14. I have no financial interest in Petitioner. I have been informed that Ericsson purports to own the patent for which review is requested. I have no financial interest in Ericsson.

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15. I have reviewed and understand the specification, claims, and file history of the '625 patent.

16. I have considered certain issues from the perspective of a person of ordinary skill in the art. In my opinion, a person of ordinary skill in the art for the '625 patent would be a person with a bachelor's or graduate degree in a relevant field, such as electrical or computer engineering or computer science, with some amount of work experience in communications.

Technical Background

17. Automatic repeat request ("ARQ") refers to a class of protocols for packet data networks that allows a transmitter to automatically retransmit packets (known also as protocol data units ("PDUs"), cells, frames, or fragments thereof) to a receiver when those packets are not received or are incorrectly received by the receiver (e.g., '625 patent, 1:34-37, Ex. 1001). A receiver can transmit a positive acknowledgement ("ACK" or "PACK") that one or more data units have been received (and which can include a request for a data unit), and/or a negative acknowledgement ("NAK" or "NACK") indicating that one or more packets have

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