DECLARATION OF DR. STEPHEN HEPPE IN SUPPORT OF *INTER PARTES* REVIEW OF U.S. PATENT 8,013,732

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I. INTRODUCTION AND QUALIFICATIONS

1. 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.

2. I obtained a Bachelor's of Science degree in electrical engineering and computer science at Princeton University in 1977, a Master's of Science degree in electrical engineering (specializing in communications) from The George Washington University (GWU) in 1982, and a Doctor of Science in electrical engineering (specializing in communications, with minors in operations research and electrophysics) in 1989. I have worked in the fields of radio communication, computer and network communications, packet radio, and ad hoc packet radio networking since 1977. In the late 1980's, I was the lead communications engineer on a project demonstrating differentially-corrected GPS-based precision approach for a military aircraft. This system relied on the AX.25 packet radio specification for air/ground communications. From 1995 through 2002, I worked on standards as well as hardware and software for an ad hoc (distributed) airborne packet radio system that could exchange GPS position reports and data between aircraft and ground stations. This included augmentations that provided routing and transmission of user data through the airborne stations, allowing transfer of data between aircraft and distant ground stations connected to the Internet or other wide area networks. My detailed CV is provided as Exhibit 1011 to the Petition.

3.   I have been asked by the Petitioner, Emerson, to provide my opinions about the technical issues addressed below. I am being compensated for my time spent on this matter at my standard hourly compensation rate. I have no financial interest in the outcome of this or any related proceeding. My compensation is not dependent upon the opinions that I am providing in this declaration.

4.   I have reviewed U.S. Patent 8,013,732 ("the '732 patent"), its file history, and the prior art citations noted in my analysis and opinions.

5.   The '732 patent, awarded to Petite and Huff, claims a priority date of October 14, 1998 based on application No. 09/172,554. According to the Abstract, it is directed to a system for monitoring a variety of environmental and/or other conditions within a defined remotely located region, such as, e.g., utility meters in a defined area. The system is implemented using transmitters integrated into sensors (each) adapted to monitor a particular data input, transceivers dispersed throughout a region, and a gateway to translate and transfer information from the transmitters to a dedicated computer on a network. The system further includes means for identifying and applying an appropriate control signal at a designated actuator.

6.   Figure 2 of the '732 patent, shown below, illustrates a few of the key elements as described in the Abstract. Note that sensors and actuators can both be integrated with a transceiver.
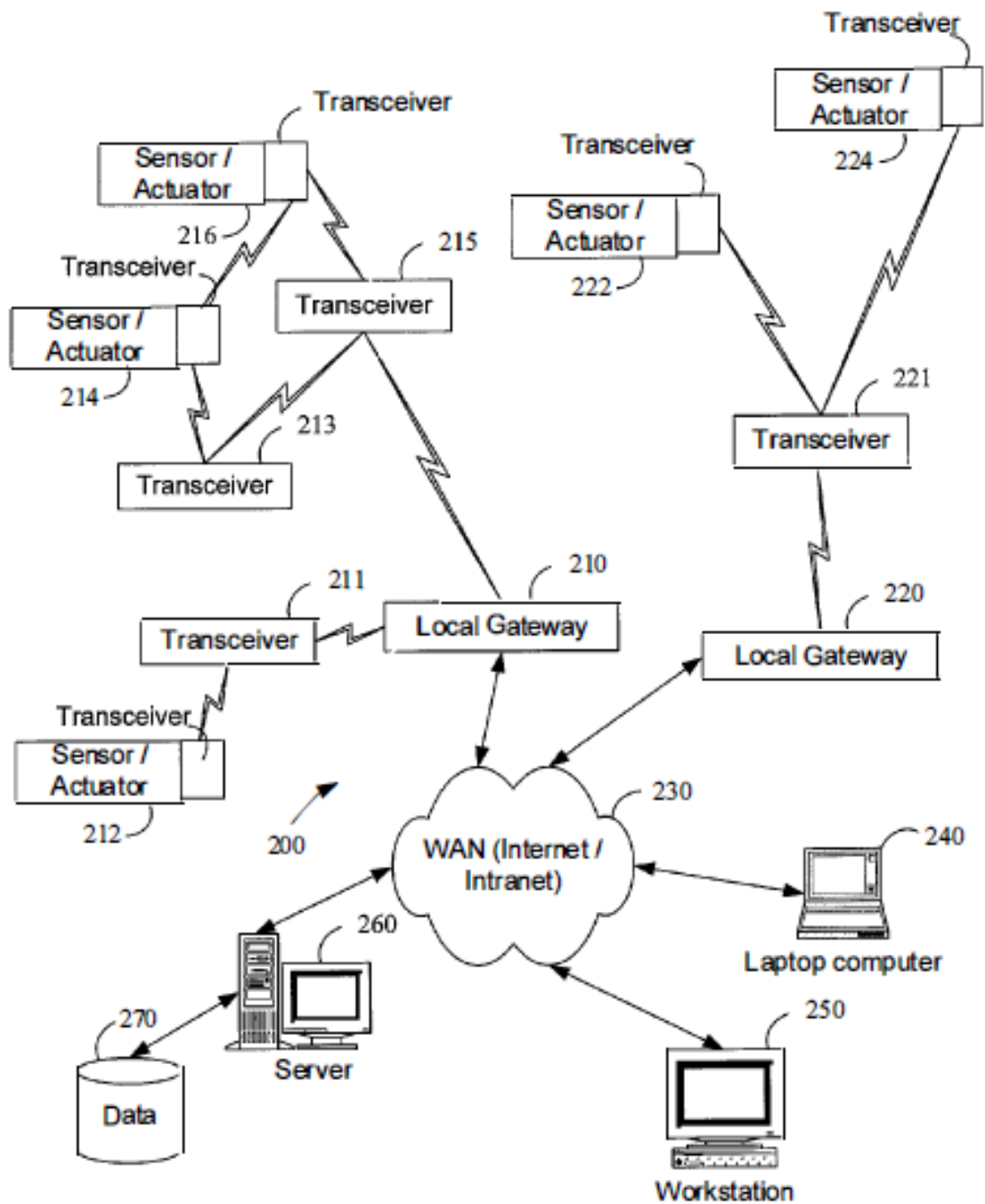
FIG. 2

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