

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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ZTE (USA) INC.,

Petitioner

v.

BELL NORTHERN RESEARCH, LLC,

Patent Owner

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**DECLARATION OF PAUL MIN, PH.D.**

Case No. IPR2019-01438

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## **I. Introduction**

1. My name is Paul Min, Ph.D. I submit this declaration on behalf of ZTE (USA) Inc., (“Petitioner”), which I understand is challenging the validity of claims 9-12 (“the challenged claims”) of U.S. Patent No. 8,416,862 (“the ’862 patent”) (Ex. 1001) in a petition for *inter partes* review.

2. I have been asked to provide an opinion on the validity of the challenged claims. In my opinion, U.S. Patent Application Publication No. 2006/0068718 (“Li”) (Ex. 1005) anticipates claims 9-12 of the ’862 patent. Additionally, the combination of Li, U.S. Patent No. 7,570,696 (“Maltsev”) (Ex. 1006) renders obvious claims 9-12 of the ’862 patent.

3. Furthermore, it is my opinion that, U.S. Patent Application Publication No. 2008/0108310 (“Tong”) (Ex. 1007) anticipates claims 9-12 of the ’862 patent. Additionally, the combination of Tong and U.S. Patent No. 5,541,607 (“Reinhardt”) (Ex. 1014) renders obvious claim 10 of the ’862 patent.

## **II. Background/Qualifications**

4. I summarize in this section my educational background, career history, publications, and other relevant qualifications. Appendix A to this declaration is my curriculum vitae, which sets forth my qualifications.

5. I received a B.S. degree in Electrical Engineering in 1982, an M.S. degree in Electrical Engineering in 1984, and a Ph.D. degree in Electrical

Engineering in 1987 from the University of Michigan in Ann Arbor. I received several academic honors, including my B.S. degree with honors, a best graduate student award and a best teaching assistant award during my M.S. study, and a best paper award from a major international conference for reporting results from my Ph.D. thesis.

6. After receiving my Ph.D., I worked at Bellcore in New Jersey from August 1987 until August 1990. At Bellcore, I was responsible for evolving the public switched telephone network (PSTN) into a multi-services voice and data network that incorporated packet switches, optical technologies, and wireless technologies.

7. In September 1990, I joined the faculty at Washington University in St. Louis. In July 1996, I was promoted to an Associate Professor of Electrical Engineering with tenure. I am currently a Senior Professor of Electrical and Systems Engineering at Washington University. I have also served as the Chair of the Graduate Curriculum (2000-2002) and the Chair of the Undergraduate Curriculum (2011-2014) for the Department of Electrical and Systems Engineering.

8. At Washington University, I have conducted research in communication, computing, and related electronic hardware and software. My research group has pioneered a new paradigm for designing electronic circuits that

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