

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MICROSOFT CORPORATION, MICROSOFT MOBILE INC., SAMSUNG  
ELECTRONICS AMERICA, INC. AND SAMSUNG ELECTRONICS CO. LTD.,  
Petitioners

v.

FASTVDO LLC,  
Patent Owner

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Case IPR2016-01179  
Patent 5,850,482

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**DECLARATION OF KENNETH A. ZEGER, PH.D., IN SUPPORT OF  
PATENT OWNER'S RESPONSE TO PETITION**

## I. INTRODUCTION

1. I, Dr. Kenneth A. Zeger, have been retained by Patent Owner FASTVDO LLC (“FASTVDO” or “Patent Owner”) through Zunda LLC to provide my opinions in support of their Response to the Petition for *Inter Partes* Review of U.S. Patent No. 5,850,482 to Meany *et al.*, issued on December 15, 1998 (“’482 Patent,” Ex. 1001) pursuant to the legal standards set forth below. Zunda LLC is being compensated for my time at the rate of \$790 per hour for time spent on non-deposition tasks and for deposition time. I have no interest in the outcome of this proceeding, and no part of my compensation is contingent upon the outcome of this proceeding.
2. I have also been asked to provide my technical review, analysis, insights, and opinions regarding the Declaration of Professor Robert L. Stevenson, Ph.D. (“Stevenson Declaration,” Ex. 1005) on the patentability of claims 1-3, 5, 6, 12-14, 16, 17, and 28 of the ’482 Patent and Microsoft Corporation, Microsoft Mobile Inc, Samsung Electronics America, Inc. and Samsung Electronics Co. Ltd.’s (“Petitioners”) Petition that relies on the Stevenson Declaration. I have also reviewed the deposition transcript of Dr. Stevenson from March 9, 2017 (Ex. 2006).
3. In preparing this Declaration, I have also reviewed U.S. Patent No. 5,392,037 to Kato (“Kato,” Ex. 1002) and U.S. Patent No. 5,243,629 to Wei (“Wei,”

Ex. 1004), portions of the file history of the '482 patent (Ex. 1003), as well as other documents referenced below in this Declaration.

4. The statements made herein are based on my own knowledge and opinions.

## **II. BACKGROUND AND QUALIFICATIONS**

5. I have studied, taught, and practiced electrical and computer engineering for more than thirty years.

6. I received a Bachelor's degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1984.

7. I received a Master of Science degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1984.

8. I received a Master of Arts degree in Mathematics from the University of California, Santa Barbara, CA in 1989.

9. I received a Ph.D. degree in Electrical and Computer Engineering from the University of California, Santa Barbara, CA in 1990.

10. I am currently a Full Professor of Electrical and Computer Engineering at the University of California, San Diego (UCSD). I have held this position since 1998, having been promoted from Associated Professor after two years at UCSD. I have been an active member of the UCSD Center for Wireless Communications for 18 years. I teach courses full-time at UCSD in the fields of Electrical and Computer Engineering, and specifically in subfields

including communications and information theory at the undergraduate and graduate levels. Prior to my employment at UCSD, I taught and conducted research as a faculty member at the University of Illinois, Urbana-Champaign for four years, and at the University of Hawaii for two years.

11. My twenty-plus years of industry experience includes consulting work for the United States Department of Defense as well as for private companies such as Xerox, Nokia, MITRE, ADP, and Hewlett-Packard. The topics upon which I provide consulting expertise include data communications for wireless networks, digital communications, information theory, computer software, and mathematical analyses.
12. I have authored approximately 73 peer-reviewed journal articles, the majority of which are on the topic of communications, information theory, or signal processing. I have also authored over 100 papers at various conferences and symposia over the past twenty-plus years, such as the: IEEE International Conference on Communications; IEEE Radio and Wireless Symposium; Wireless Communications and Networking Conference; IEEE Global Telecommunications Conference; International Symposium on Network Coding; IEEE International Symposium on Information Theory; UCSD Conference on Wireless Communications; International Symposium on Information Theory and Its Applications; Conference on Advances in

Communications and Control Systems; IEEE Communication Theory Workshop; Conference on Information Sciences and Systems; Allerton Conference on Communications, Control, and Computing; Information Theory and Its Applications Workshop; Asilomar Conference on Signals, Systems, and Computers. Roughly half of those papers relate to data compression. I also am co-inventor on a US patent disclosing a memory saving technique for image compression.

13. I was elected a Fellow of the IEEE in 2000, an honor bestowed upon only a small percentage of IEEE members. I was awarded the National Science Foundation Presidential Young Investigator Award in 1991, which included \$500,000 in research funding. I received this award one year after receiving my Ph.D.

14. I have served as an Associate Editor for the IEEE Transactions on Information Theory and have been an elected member of the IEEE Information Theory Board of Governors for three, three-year terms. I organized and have been on the technical advisory committees of numerous workshops and symposia in the areas of communications and information theory. I regularly review submitted journal manuscripts, government funding requests, conference proposals, student theses, and textbook

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