Paper No. ____

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BUNGIE, INC.,
Petitioner,

v.

WORLDS INC.,
Patent Owner.

Patent No. 8,082,501

DECLARATION OF MICHAEL ZYDA, D.SC.

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I, Michael Zyda, declare as follows:

I. QUALIFICATIONS

1. I began my career in Computer Graphics in 1973 as part of an undergraduate research group, the Senses Bureau, at the University of California, San Diego. I received a BA in Bioengineering from the University of California, San Diego in La Jolla in 1976, an MS in Computer and Information Science from the University of Massachusetts, Amherst in 1978 and a D.Sc. in Computer Science from Washington University, St. Louis, Missouri in 1984.

2. I am currently the Founding Director of the University of Southern California (USC) GamePipe Laboratory, and a Professor of Engineering Practice in the USC Department of Computer Science. At USC, I founded the USC Games joint Advanced Games course and took the USC Games program from no program to the preeminent Games program in the world in five years. The USC Games program has been rated #1 by the Princeton Review for six straight years. My alums have shipped games played by over 880 million players.

3. My research interests include computer graphics, large-scale, networked 3D virtual environments and games, agent-based simulation, modeling human and organizational behavior, interactive computer-generated story, computer-generated characters, video production, entertainment/defense collaboration, modeling and simulation, and serious and entertainment games. I am considered a pioneer in the fields of computer graphics, networked virtual environments, modeling and simulation, and serious and entertainment games.

4. From 1986 until 2000, I was the Director of the NPSNET Research Group. I began working in the networked visual simulation field in 1987. I received my first large piece of funding in that area from DARPA in 1991 as part of the Warbreaker Program. My research group's role in that program was to build a low-cost, workstation based (Silicon Graphics workstations) visual simulator that could read SIMNET data packets and SIMNET terrain databases. By 1993, our NPSNET system could interoperate with SIMNET and the DIS standard and take part in the large-scale exercises that were part of the Warbreaker Program. As part of Warbreaker, we received a connection to the Defense Simulation Internet, DSINET. DSINET was a network dedicated to large-scale military simulation exercises. The DSINET supported the use of SIMNET and DIS (Distributed Interactive Simulation) network packets as well as simultaneous video teleconferencing.

5. In August 1993, DARPA funded my program to put on a joint demonstration with the Air Force Institute of Technology (AFIT) at the annual SIGGRAPH Conference in Anaheim, California. Our team purchased a T-1 link that connected our Anaheim-based LAN to the DSINET. We ran a demonstration showing off NPSNET connected to the AFIT-HOTAS system and had some 50 workstations playing inside of that demonstration. We put on a special demonstration for the Director of DARPA, who was in his office in Arlington, VA. During that demonstration, the DARPA Director could watch what was going on from a workstation on the DSINET in Arlington and speak to us by video link across the DSINET at the same time. We additionally spoke to our Program

Manager across the DSINET to Arlington. We continued to utilize the DSINET in developing the NPSNET system through the end of 1996.

6. In 1994, the NPSNET Research Group began to experiment with the then new Multicast Backbone of the Internet (Mbone). The Mbone was a virtual network built on top of the Internet and invented by Van Jacobson, Steve Deering and Stephen Casner in 1992. The purpose of Mbone was to minimize the amount of data required for multipoint audio and video conferencing. Mbone was free and it used a network of routers that supported IP multicast, and it enabled access to real-time interactive multimedia on the Internet, including networked simulation packets, game packets and video conferencing. The first visual simulation system to play on the Mbone was NPSNET in 1994.

7. In 1995, I chaired the SIGGRAPH Symposium on Interactive 3D Graphics. The symposium was the fourth in an ongoing series of conferences focused on the frontier of real-time interactive 3D graphics. These conferences grew out of the Workshop on Interactive 3D Graphics, held in 1986. Following that workshop I decided to found the Symposium on Interactive 3D Graphics. I served as chair of the symposium in 1990, 1995, and 2003. The 1995 conference came at a time when the widespread usage of 3D graphics, for example 3D games such as Doom, was exploding. Response to the conference was enthusiastic, attesting to the wide interest that the field of 3D interactive graphics had garnered. Among the papers presented at the 1995 Symposium was a paper written by Thomas Funkhouser, discussed in more detail below.

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