I, Ron Britvich, make the following Declaration pursuant to 28 U.S.C. § 1746:

1. I currently reside at 2020 Coffer Ln, Placerville, CA, 95667. I am providing this Declaration in connection with the pending *Inter Partes* review proceedings currently instituted against certain U.S. Patents owned by Worlds, Inc.

2. Unless otherwise stated, the facts presented in this Declaration are based on my personal knowledge.

3. I am currently retained as a consultant to Worlds, Inc. (formerly Knowledge Adventure Worlds), the patent owner of the patents-at-issue in these proceedings. I am being paid shares of company stock for my work. My payment does not depend upon the outcome in these cases.

4. I joined Knowledge Adventure Worlds on January 30, 1995. I worked primarily out of my home in Carlsbad, California while developing a customizable virtual environment program known as both ActiveWorlds and AlphaWorld.

5. During my employment with Knowledge Adventure Worlds, I occasionally traveled to San Francisco, California to collaborate with the team developing the Worlds Chat program, and on occasion members of that team traveled to my home to collaborate with me. Additionally, my code for ActiveWorlds was uploaded to the company's servers, and so the Worlds Chat team was

able to view my code. I did not personally work on Worlds Chat, but because ActiveWorlds and Worlds Chat were both virtual world programs where users could interact with other users, the Worlds Chat team encountered some of the same problems I encountered in the development of ActiveWorlds, and we discussed possible solutions for overcoming these problems.

6. The team developing the Worlds Chat program included David Leahy, Judith Challinger, Mitra Ardon, and Bo Adler, and other programmers working under them.

7. During my meetings with this Worlds Chat team, I learned that this team developed a solution to the potential crowding problem that can occur in a virtual world. They described to me a procedure for limiting the amount of data transmitted from the server down to a particular client. Due to the reduced data being sent to this particular client, the client did not have to process as much data and this obviously reduced the processing burden on the client. Additionally, at the time, networks were slow compared to 2016 standards. By reducing the data transmitted to a particular client, the time required to transmit updates on the virtual world also was reduced. The tradeoff with this solution was that the processing burden on the server

increased, since the server had to determine which updates to transmit to each client.

8. During my visits to Worlds headquarters in San Francisco, I observed a demo of the Worlds Chat program, which allowed multiple avatars associated with different clients to interact with each other both visually and textually. Specifically, the avatars could see each other in the virtual world, and move relative to each other and see the other avatar's change in position and orientation. Also, the avatars could communicate with each other via a typing "chat" function.

9. The demo was run on personal computers, acting as clients, connected to a server overseeing the virtual world. The view displayed on each personal computer was a perspective or point of view of an avatar associated with that particular personal computer. This demo was shown to me before the official public release of the Worlds Chat program.

10. My recollection is that from early April 1995 until April 25, 1995, both ActiveWorlds and Worlds Chat software were available for download through an anonymous ftp site, though Worlds did not officially and publicly offer the Worlds Chat software for download by the public until April 25, 1995.

11. On April 25, 1995, Worlds, Inc. publicly announced the availability of Worlds Chat for download from Worlds' webpage (kaworlds.com). This announcement was made by press release through Business Wire.

12. Attached as Exhibit 2021 is a true and accurate copy of the Press Release issued by Worlds, Inc. on April 25, 1995.

13. To the best of my recollection, the statements in the Press Release were accurate at the time they were made.

14. As I explained above, during my employment with Worlds, Inc. beginning in January 1995, I worked occasionally with the inventors of the patents-at-issue in these *inter partes* review proceedings. I also observed working demonstrations of their Worlds Chat program, and learned how they implemented certain solutions including their "crowd control" feature.

15. In 2010, I received copies of archived code from the CEO of Worlds, Inc., Thom Kidrin.

16. Mr. Kidrin also asked me, in connection with my consulting work for Worlds, Inc., to review this code for certain features.

17. Based on his instructions, I reviewed both client-side and server-side code.

18. Based on my review, I submit the following conclusions about client-side code:

a. I inspected the FROBVPLA.CPP C++ code module that determines what objects (or portions thereof) are visible to a client-user according to the associated avatar's field of view. A true and accurate copy of this code module is provided as exhibit 2034.

b. To the extent that the claims of the patents-at-issue require a client to establish a field of view of an avatar, and to display the virtual world from that field of view (including the objects or other avatars in that field of view), this code module performs the same function.

c. This code was used in Worlds Chat clients.

d. The copyright of this code is from 1994, and therefore was written and implemented before April 11, 1995.

19. Based on my review, I submit the following conclusions about server-side code:

a. The Worlds Chat server repository was created on October 11, 1995. That repository includes a CHANGELOG with entries back to March 27, 1995.

b. Based on the CHANGELOG of the server-side code, the Worlds Chat programming team wrote and logged in code to perform the step of the server sending selected positional updates to each client.

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