

I, Mark, L. Claypool, Ph.D., declare as follows:

I. INTRODUCTION

1. I have been asked by the party requesting this review, Supercell Oy (“Petitioner”), to provide my expert opinions in support of the above-captioned petition for post grant review of U.S. Patent No. 10,335,682 (the “’682 patent”), challenging the patentability of claims 1-16 of the ’682 patent.

2. I currently hold the opinions set forth in this declaration.

3. In summary, it is my opinion that the references cited below render obvious the challenged claims of the challenged patent. My detailed opinions on the claims are set forth below.

II. BACKGROUND AND QUALIFICATIONS

4. I earned a Bachelor of Arts degree from Colorado College and both a Masters of Science in 1993 and Ph.D. in 1997 from the University of Minnesota.

5. I am currently a professor in the department of Computer Science and a professor of Interactive Media and Game Development at Worcester Polytechnic Institute (“WPI”) in Worcester, Massachusetts. I have been a Full Professor at WPI since 2009. I began working as Assistant Professor at WPI in 1997 and became an Associate Professor in 2004. I have taught courses covering computing topics including operating systems, networks, distributed systems, multimedia networking,

as well as courses covering game development topics including data analysis for games, the game development process and technical game development.

6. I am an expert in computer games, including but not limited to the analysis, design and development of entertainment applications, with a research focus on the networking and distributed systems aspects of online games. I am the founder and Director for a decade for the Interactive Media and Game Development program, the first in the U.S. to offer a unique kind program to teach students all aspects of the fundamentals of computer game development. I teach technical game development courses to undergraduate students, and aspects of online games to graduate students in multimedia networking courses. I advise undergraduate student projects (akin to a “senior thesis”) and graduate student theses related to game development and game research. My expertise is enhanced and informed through peer-reviewing papers as part of the technical program committees I am part of: ACM Multimedia Systems (MMSys) 2011-2020 (chair 2011 and 2012), ACM Workshop on Network and Systems Support for Games (NetGames) 2004-2018 (chair 2008), ACM Network Support for Digital Audio and Video (NOSSDAV) 2006-2020 (chair 2006), and the ACM Multimedia Conference 2004-2017 and 2020, among others. I have received government funding from NSF and MIT Lincoln Labs to research and develop distributed systems and network games, as well as

industry funding from Core, EMC, Dyn, and, most recently, Intel and Google to measure, evaluate and improve existing distributed systems and games.

7. I have over 100 peer-reviewed publications issued from the early 1990s to the present on topics related to multimedia networking, network games, congestion control, information filtering and programming education. I am an author or co-author of two computer books related to computer games: *Dragonfly – Program a Game Engine from Scratch* and *Networking and Online Games: Understanding and Engineering Multiplayer Internet Games*. Online games are a core area of my research, making up about 1/3 of my research publications and over half of my most recent publications. In addition to my research and teaching responsibilities at WPI, I have advised over 25 Masters and Doctorate theses on a variety of relevant topics: multimedia scaling, games and latency, and cloud-based games. I have more than 25 years of experience in the field of computer science.

8. My professional background and technical qualifications also are reflected in my Curriculum Vitae, which is attached.

III. COMPENSATION AND RELATIONSHIP WITH PARTIES

9. I am being compensated for my time. This compensation is not contingent upon my performance, the outcome of this matter, or any issues involved in or related to this matter.

10. I have no financial interest in Petitioner or any related parties. I have been informed that GREE, Inc. (“GREE”) owns the challenged patent. I have no financial interest in and have no contact with GREE beyond the kinds of cursory interactions I often have with game industry professionals at conferences. I similarly have no financial interest in the challenged patent and have not had any contact with the named inventors.

IV. MATERIAL CONSIDERED

11. I have reviewed and considered, in the preparation of this declaration, the following related to the challenged patents:

- a. The '682 patent (Ex. 1001) and the prosecution file history for the '682 patent (Ex. 1002).

12. I also reviewed U.S. Patent No. 9,597,594 (Ex. 1003 “the '594 patent”) and the prosecution file history for the '594 patent (Ex. 1004), a parent application to the challenged patents.

13. I understand that, for purposes of determining whether a reference will qualify as prior art, the challenged claims of the challenged patent are entitled to an effective filing date of no earlier than September 27, 2013.

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