

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PLR WORLDWIDE SALES LIMITED,
Petitioner

v.

FLIP PHONE GAMES INC.
Patent Owner

U.S. Patent No. 8,688,089
Inter Partes Review No. 2024-00133

DECLARATION OF JOSÉ ZAGAL, PH.D.

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND AND QUALIFICATIONS	2
III.	COMPENSATION AND RELATIONSHIP WITH PARTIES.....	5
IV.	MATERIALS REVIEWED AND CONSIDERED	5
V.	UNDERSTANDING OF THE RELEVANT LEGAL STANDARDS.....	6
A.	The Person of Ordinary Skill in the Art	6
B.	Claim Construction.....	7
C.	Anticipation	7
D.	Obviousness.....	8
E.	Objective Indicia of Non-Obviousness	11
VI.	SUMMARY OF OPINIONS.....	12
VII.	TECHNOLOGY BACKGROUND.....	13
A.	Video Games	13
B.	Mobile Games	14
C.	Dynamic Content and In-Game Advertising	17
D.	Easter Eggs and Other Secret In-Game Content.....	19
VIII.	THE '089 Patent	22
A.	Specification.....	22
B.	Prosecution History	24

C.	Claims.....	25
IX.	LEVEL OF ORDINARY SKILL IN THE ART	27
X.	CLAIM CONSTRUCTION	30
XI.	OVERVIEW OF THE PRIOR ART	31
A.	International Patent Pub. No. WO 2008/008038 (“Ho”)	31
B.	International Patent Pub. No. WO 2000/070489 (“Jiau”).....	34
C.	International Patent Publication No. WO 2006/071246 (“Sturman”) ..	35
D.	U.S. Patent No. 8,825,521 (“Ellis”)	38
E.	U.S. Patent Pub. No. 2007/0174490 (“Choi”)	38
XII.	OBVIOUSNESS ANALYSIS FOR THE CHALLENGED CLAIMS	39
A.	Ground 1: Ho in view of Jiau and Choi Renders Obvious Claims 1-10	40
1.	Rationale to Combine Ho, Jiau, and Choi	40
2.	Claim 1	47
a)	Element 1[a]: A method for providing a hot spot associated with a mobile video game, the mobile video game being operable on a mobile communication device, the method comprising the steps of:	47
b)	Element 1[b]: storing hot spot information on a computer-readable medium;	49
c)	Element 1[c]: receiving a communication from a mobile communication device;	51
d)	Element 1[d]: determining the hot spot information to provide to the mobile device based upon the communication, the hot spot information comprising: ..	52

- e) Element 1[d][i]: a location in-game associated with activating the hot spot, wherein the location in-game is represented by a non-promotional background object; and.....54
- f) Element 1[d][ii]: hidden promotional content for presenting to the user, within a gaming environment of the mobile video game, when the hot spot is activated; and.....58
- g) Element 1[e]: uploading the hot spot information to the mobile communication device.....60
- 3. Claim 2: The method of claim 1, wherein the location in-game is associated with activating the hot spot within the gaming environment of the mobile video game. 60
- 4. Claim 3: The method of claim 1, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content. 61
- 5. Claim 6.....62
 - a) Element 6[c]: a server in communication with the storage medium; 62
 - b) Element 6[d]: an interface coupled to the server and a network, wherein the interface receives a request for hot spot information from the mobile communication device over the network; 63
 - c) Element 6[e]: wherein the server is operative to receive the request through the interface and utilize the request to determine the hot spot information for the mobile video game, and send the hot spot information to the mobile communication device, the hot spot information comprising: 64
- 6. Claim 7: The method of claim 6, wherein the hidden promotional content is pre-selected based on the proximity of

	the mobile communication device to a physical location related to the hidden promotional content.	65
7.	Claim 8: The system of claim 6, wherein the hot spot information is pre-selected by the server based on a model type associated with the communications device, a service subscription associated with the communications device, or a service provider for the service subscription associated with the communications device.....	65
B.	Ground 2: Ho in view of Jiau, Choi, and Ellis Render Obvious Claims 4-5 and 9-10.....	66
1.	Rationale to Combine Ho and Ellis	66
2.	Claim 4: The method of claim 1, further comprising the step of tracking the hot spot information that has been downloaded to the mobile communication device.	70
3.	Claim 5: The method of claim 4, wherein the tracked hot spot information is used for billing a third party associated with the hot spot information.	71
4.	Claims 9-10	71
C.	Ground 3: Sturman in view of Ho Renders Obvious Claims 1-10	71
1.	Rationale to Combine Sturman and Ho	71
2.	Claim 1	75
a)	Element 1[a]: A method for providing a hot spot associated with a mobile video game, the mobile video game being operable on a mobile communication device, the method comprising the steps of:	75
b)	Element 1[b]: storing hot spot information on a computer-readable medium;	77
c)	Element 1[c]: receiving a communication from a mobile communication device;	77

- d) Element 1[d]: determining the hot spot information to provide to the mobile device based upon the communication, the hot spot information comprising: ..78
 - e) Element 1[d][i]: a location in-game associated with activating the hot spot, wherein the location in-game is represented by a non-promotional background object; and.....79
 - f) Element 1[d][ii]: hidden promotional content for presenting to the user, within a gaming environment of the mobile video game, when the hot spot is activated; and.....83
 - g) Element 1[e]: uploading the hot spot information to the mobile communication device.....84
3. Claim 2: The method of claim 1, wherein the location in-game is associated with activating the hot spot within the gaming environment of the mobile video game. 84
4. Claim 3: The method of claim 1, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content. 86
5. Claim 4: The method of claim 1, further comprising the step of tracking the hot spot information that has been downloaded to the mobile communication device. 86
6. Claim 5: The method of claim 4, wherein the tracked hot spot information is used for billing a third party associated with the hot spot information. 87
7. Claim 6.....87
- a) Element 6[c]: a server in communication with the storage medium; 88
 - b) Element 6[d]: an interface coupled to the server and a network, wherein the interface receives a request for hot

	spot information from the mobile communication device over the network;	88
c)	Element 6[e]: wherein the server is operative to receive the request through the interface and utilize the request to determine the hot spot information for the mobile video game, and send the hot spot information to the mobile communication device, the hot spot information comprising:	89
8.	Claim 7: The method of claim 6, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.	89
9.	Claim 8: The system of claim 6, wherein the hot spot information is pre-selected by the server based on a model type associated with the communications device, a service subscription associated with the communications device, or a service provider for the service subscription associated with the communications device.....	89
10.	Claims 9-10	90
D.	Secondary Considerations	91
XIII.	CONCLUSION.....	91

EXHIBIT LIST

No.	Short Name	Exhibit
1001	'089 Patent	U.S. Patent No. 8,688,089
1002	'089 File History	Prosecution history for U.S. Patent No. 9,731,202
1003		Declaration of Dr. José Zagal
1004	Ho	International Patent Publication WO 2008/008038 to Ho
1005	Jiau	International Patent Publication WO 2000/070489 to Jiau <i>et al.</i>
1006	Sturman	International Patent Publication WO 2006/071246 to Sturman
1007	Ellis	U.S. Patent No. 8,825,521 to Ellis <i>et al.</i>
1008	Choi	U.S. Patent Publication No. 2007/0174490 to Choi <i>et al.</i>
1009		<i>Curriculum Vitae</i> of Dr. José Zagal
1010	History of Video Games	Steven Kent, <i>The Ultimate History of Video Games</i> (2001)
1011	Encyclopedia of Digital Communications	Frans Mayra, "Mobile Games," in <i>the International Encyclopedia of Digital Communications and Society</i> , 1 st ed. (2015)
1012	Wireless Gaming	N. Leavitt, "Will wireless gaming be a winner?" in <i>Computer</i> , Vol. 36, No. 1, pp. 24-27 (Jan. 2003)
1013	ACM	Jason Soh & Bernard Tan, "Mobile Gaming," in <i>Communications of the ACM</i> , Vol. 51, No. 3, pp. 35-39 (Mar. 2008)

No.	Short Name	Exhibit
1014	IEEE Computer Graphics	Michael Zyda <i>et al.</i> , “Educating the Next Generation of Mobile Game Developers,” in <i>IEEE Computer Graphics and Applications</i> , Vol. 27, No. 2, pp. 92-96 (Mar./Apr. 2007)
1015	Productive Play	Mark Andrejevic, “Productive Play 2.0: The Logic of In-Game Advertising” in <i>Media International Australia</i> , Vol. 130, No. 1, pp. 66-76 (Feb. 2009)
1016	Vedrashko Thesis	Ilya Vedrashko, <i>Advertising in Computer Games</i> (Doc. No. 123290221) [Master’s Thesis, Mass. Inst. of Technology], DSpace@MIT
1017	Exit Games Press Release	Exit Games, <i>In-Game Advertising Goes Mobile</i> [Press Release] (Mar. 21, 2006)
1018	Partanen	Jussi-Pekka Partanen, <i>Mobile Gaming: A Framework for Evaluating the Industry 2000-2005</i> (2001)
1019	FPG Infringement Charts	Exemplary infringement charts for U.S. Patent No. 8,688,089 served by Patent Owner in <i>Flip Phone Games Inc. v. PLR Worldwide Sales Ltd.</i> , No. 2:23-cv-139 (E.D. Tex.)

I, José P. Zagal, Ph.D., declare as follows:

I. INTRODUCTION

1. I have been retained by Quinn Emanuel Urquhart & Sullivan on behalf of PLR Worldwide Sales Ltd. (“Playrix” or “Petitioner”). I understand that Playrix is the petitioner in an *inter partes* review (“IPR”) of U.S. Patent No. 8,688,089 (the “’089 Patent”) (Ex. 1001) before the Patent Trial and Appeal Board (“PTAB” or “Board”). I understand the ’089 Patent is assigned to Patent Owner Flip Phone Games, Inc. (“Patent Owner”).

2. I have been asked to provide my independent analysis of the ’089 Patent in light of the materials cited in this declaration and my knowledge and experience in the field of video games and game design during the relevant period. I have been asked to consider what a person of ordinary skill in the art as of the priority date of the ’089 Patent would have understood from the teachings of the ’089 Patent, including scientific and technical knowledge related to the ’089 Patent. I have also been asked to consider whether the references relied on by Playrix render obvious claims 1-10 of the ’089 Patent. All the opinions set forth in this declaration are my own.

II. BACKGROUND AND QUALIFICATIONS

3. I earned a Bachelor of Engineering Sciences degree from Pontificia Universidad Catolica de Chile in 1997. I obtained my title of Civil Industrial Engineer with a Computer Science Diploma and my Master's degree in Engineering Science from Pontificia Universidad Catolica de Chile in 1999. I obtained my Ph.D. in Computer Science from Georgia Institute of Technology in 2008.

4. I currently hold the position of Professor (Lecturing) in the Division of Games at the University of Utah. I have been employed by the University of Utah since 2013 and was employed as an Assistant Professor for the College of Computing and Digital Media at DePaul University from 2008 to 2015. I have spent more than two decades teaching, researching, or working in the field of gaming and computer science.

5. My research for more than 20 years has focused generally on gaming, electronic media, and computer science. I have authored four books: *Game Design Snacks* (as editor), *Role-Playing Games Studies: Transmedia Foundations* (as editor, with Dr. Sebastian Deterding), *The Videogames Ethics Reader* (as editor), and *Ludoliteracy: Defining, Understanding, and Supporting Games Education*. I have also authored numerous peer-reviewed articles related to gaming and electronic media, and I regularly speak at both academic and game industry events such as the Game Developers Conference.

6. I have knowledge and experience in the area of mobile games and online games through my academic research, teaching activities, as well as the activities of students here at the University of Utah. My very first academic publication from over 20 years ago proposed a model to support the design of multiplayer games¹ at a time when multiplayer videogames were much rarer than they are nowadays. Since then, among other things, I have examined collaborative gameplay and the ethical considerations surrounding competition in multiplayer games. Mobile games and multiplayer games are also regular areas of discussion and analysis in the game design and ethics in videogame classes I teach at both the undergraduate and graduate levels (e.g. Introduction to Game Design, Mobile Game Design, Ethics in Games, etc.). For example, I designed and teach an undergraduate class on mobile game design that is offered as an elective in the BS in Games degree offered at the University of Utah. Mobile games are covered in most of the other courses I teach on games and game design.

7. Also, I have professional experience in the area of online communities and social websites. From 2000 to 2002, I was the Director of Content and Community Development at Virtualia S.A. Virtualia was a Chilean company that

¹ Zagal, J.P., Nussbaum, M., Rosas, R. (2000) "A Model to Support the Design of Multiplayer Games", Presence, Vol. 9, No. 5, October 2000, 448-462.

created and developed an online community of the same name. The site included many social features including chat, message boards, and more. One of its more unique features was its own virtual currency that users could spend to obtain virtual as well as real-world items. Furthermore, during the summer months from 2005 to 2007, I served as Director of Community Development for Studiocom, a full-service interactive media agency that designed and developed custom online communities for commercial clients such as Coca-Cola (CokeStudios, MyCoke) and Mattel (BarbieGirls.com).

8. My past experience as an expert witness includes in support of the plaintiff in *Segan LLC v Zynga Inc.* (United States District Court for the Northern District of California, Case No. 3:14-cv-01315-CV) concerning U.S. Patent No. 7,954,928, in support of the plaintiff in *Catherine Alexander v. Take Two Interactive Software Inc. et al.* (United States District Court for the Southern District of Illinois, Case No. 3:18-cv-0966-MJR-DGW) concerning copyright infringement, in support of the defendant in *Ragnarok Game, LLC and ESDFOS, LLC v. Nine Realms, Inc. dba Human Head, et al.* (Superior Court for the State of California, County of Los Angeles, Central District, Case No. 19STCV43434), and in support of the plaintiff in *Skillz Platform Inc. v. AviaGames Inc.* (United States District Court for the Northern District of California, Case No. 5:21-cv-02436) concerning U.S. Patent No. 9,649,564. I have also been retained as an expert witness for the defendant in

GREE, Inc. v. Supercell Oy (United States District Court for the Eastern District of Texas, Case Nos. 2:19-cv-00070, -161, -172, -311). I have also submitted expert declarations in support of petitions for post-grant and *inter partes* review in the following cases: *Supercell Oy v. GREE, Inc.*, IPR2020-00893, IPR2020-00513, IPR2020-00310, IPR2020-00215, IPR2020-00993, PGR2021-00041, and PGR-2021-00034.

9. My professional background and technical qualifications also are reflected in my Curriculum Vitae, which is attached as Exhibit 1009.

III. COMPENSATION AND RELATIONSHIP WITH PARTIES

10. 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.

11. I have no financial interest in Petitioner or any related parties. I have been informed that Flip Phone Games, Inc. owns the '089 Patent. I have no financial interest in and have no contact with Flip Phone Games, Inc. I similarly have no financial interest in the '089 Patent and have not had any contact with the named inventor.

IV. MATERIALS REVIEWED AND CONSIDERED

12. I have reviewed and considered, in the preparation of this declaration, the '089 Patent (Ex. 1001) and relevant portions of the prosecution file history for

the '089 Patent (Ex. 1002). I have also reviewed and considered the documents listed in the Exhibit List of this declaration, including the prior art I opine on in this declaration. I have also relied upon my education and experience in the relevant field of the art, and have considered the viewpoint of a POSITA as of the priority date of the '089 Patent.

V. UNDERSTANDING OF THE RELEVANT LEGAL STANDARDS

A. The Person of Ordinary Skill in the Art

13. I understand that central to the process of understanding the disclosures in a patent and assessing the validity of a patent is the notion of a person of ordinary skill in the art, sometimes referred to as a “POSITA.”

14. I have been informed that a person having ordinary skill in the art is a hypothetical person who is used to analyze the prior art without the benefit of hindsight. Such a person is presumed to be one who thinks along the lines of conventional wisdom in the art. It is my understanding that factors such as the education level of those working in the field, the sophistication of the technology, the types of problems encountered in the art, the prior art solutions to those problems, and the speed at which innovations are made may help establish the level of skill in the art.

15. I have been informed that the hypothetical person of ordinary skill is presumed to have knowledge of all references that are sufficiently related to one

another and to the pertinent art, and to have knowledge of all arts reasonably pertinent to the particular problem that the claimed invention addresses.

B. Claim Construction

16. I have been informed that “[i]n an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b).

17. I understand that there are certain exceptions to the general rule of construing claims in accordance with their ordinary and customary meaning, including lexicography and disavowal, but I have not been asked to analyze those exceptions for the purposes of this declaration.

C. Anticipation

18. I understand that to anticipate a claim, each and every element in the claim must be present in a single item of prior art. I understand that anticipation must be found in a single reference, device, or process. In other words, anticipation does not allow an additional reference to supply a missing claim limitation.

19. In determining whether every one of the elements of the claimed invention is found in the prior art, I understand that one should take into account

what a person of ordinary skill in the art would have understood from his or her examination of the particular prior art.

20. I understand that an element may be inherent within a prior art reference, and therefore disclosed for purposes of anticipation. In order to rely on inherency, however, one must demonstrate that the element is necessarily present in the prior art reference, not merely likely or possibly present.

21. I also understand that the prior art reference alleged to be anticipatory must also enable one of ordinary skill in the art to make the claimed invention without undue experimentation. I understand there is a rebuttable presumption that prior art patents are enabled.

22. I understand that any differences between a prior art reference and a claimed invention invoke the question of obviousness, not anticipation.

D. Obviousness

23. I understand that a patent claim is also unpatentable if the claimed invention would have been obvious to a person of ordinary skill in the field at the time the claimed invention was made. This means that even if all of the requirements of the claim cannot be found in a single prior art reference that would anticipate the claim, a person of ordinary skill in the relevant field who knew about all this prior art would have come up with the claimed invention.

24. I understand an obviousness determination can be based on a single prior art reference or a combination of multiple prior art references and the knowledge of a POSITA.

25. I further understand that the ultimate conclusion of whether a claim is obvious should be based upon several factual determinations. That is, a determination of obviousness requires inquiries into: (1) the level of ordinary skill in the field; (2) the scope and content of the prior art; (3) what difference, if any, existed between the claimed invention and the prior art; and (4) any secondary evidence bearing on obviousness.

26. I further understand that, in determining the scope and content of the prior art, in order to be considered as prior art, a reference must be reasonably related to the claimed invention of the patent. A reference is reasonably related if it is in the same field as the claimed invention or is from another field to which a person of ordinary skill in the field would look to solve a known problem.

27. I understand that a patent claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art. In evaluating whether such a claim would have been obvious, I may consider whether there is a reason that would have prompted a person of ordinary skill in the field to combine the elements or concepts from the prior art in the same way as in the claimed invention. I understand the prior art itself may

provide a suggestion, motivation, or reason to combine or modify the teachings of the prior art, or that such a reason may come from other sources, such as the knowledge of a POSITA, common sense, and market forces.

28. I further understand, however, that I must be careful not to determine obviousness using the benefit of hindsight. I should put myself in the position of a person of ordinary skill in the field at the time the claimed invention was made and I should not consider what is known today or what is learned from the teaching of the patent.

29. I further understand that there is no single way to define the line between true inventiveness on the one hand (which is patentable) and the application of common sense and ordinary skill to solve a problem on the other hand (which is not patentable). For example, market forces or other design incentives may be what produced a change, rather than true inventiveness. I may consider whether the change was merely the predictable result of using prior art elements according to their known functions or substituting one known element for another, rather than being the result of true inventiveness. I may also consider whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent. I may consider whether the innovation applies a known technique that had been used to improve a similar device or method in a similar way. I may also consider whether the claimed invention would have been

obvious to try, meaning that the claimed innovation was one of a relatively small number of possible approaches to the problem with a reasonable expectation of success by those skilled in the art.

30. Finally, I understand that any obviousness rationale for modifying or combining prior art must include a showing that a person of ordinary skill would have had a reasonable expectation of success. The expectation of success need only be reasonable; a perfect implementation or commercial embodiment of the invention is not required.

E. Objective Indicia of Non-Obviousness

31. I understand that objective evidence may be considered as an indication that the claimed invention would not have been obvious at the time the claimed invention was made. I understand that the purpose of such objective indicia of non-obviousness, also sometimes referred to as secondary considerations of non-obviousness, is to prevent a hindsight analysis of the obviousness of the claims.

32. I understand that objective indicia of obviousness or non-obviousness may include the commercial success of the invention, industry praise for the invention, skepticism of the invention, licensing of the invention, copying of the invention, any long-felt need that the invention solved, failure of others, and unexpected results of the invention.

33. I further understand that in order for evidence of secondary considerations to be significant, there must be a sufficient nexus between the claimed invention and the evidence of secondary considerations. I understand that this nexus serves to provide a link between the merits of the claimed invention and the evidence of secondary considerations provided.

VI. SUMMARY OF OPINIONS

34. For purposes of this declaration, I have been asked to analyze claims 1-10 of the '089 Patent ("the Challenged Claims") in view of the prior art. In my opinion, the Challenged Claims are obvious based on the following prior art:

35. Claims 1-3 and 6-8 are obvious based on International Patent Publication No. WO 2008/008038 ("Ho") in combination with International Patent Publication No. WO 2000/070489 ("Jiau") and U.S. Patent Publication No. 2007/0174490 ("Choi").

36. Claims 4-5 and 9-10 are obvious based on Ho, Jiau, and Choi in further combination with U.S. Patent No. 8,825,521 ("Ellis").

37. Claims 1-10 are obvious based on International Patent Publication No. WO 2006/071246 ("Sturman") in combination with Ho.

38. I provide my detailed reasoning for the above opinions in the sections that follow.

VII. TECHNOLOGY BACKGROUND

39. In this section, I provide an overview of technical concepts and design principles underlying the '089 Patent.

A. Video Games

40. Video games have been available on a variety of different platforms for decades. The earliest video games date back to at least the late 1950s or early 1960s. For example, in 1958, Willy Higinbotham, a scientist at Brookhaven National Laboratory, programmed an oscilloscope to enable people to use it to play an interactive tennis game. Ex. 1010 at 35. In early 1961, one of the first proper computer games was developed by students at MIT, programmed on a computer the University had recently purchased—a computer that cost roughly \$120,000 and was the size of a large vehicle. *Id.* at 34. The first version of the game—called “Spacewar,” and allowing players to engage in simple one-on-one duels between rocket ships—took nearly six months and 200 hours of work to complete. *Id.* at 35.

41. Video games became much more popular and mainstream beginning in the 1970s. A number of different companies began developing and making video games for coin-operated arcade machines in the 1970s, leading to a significant boom in the industry by the end of the decade. *See generally* Ex. 1010 at 140-166 (discussing the “Golden Age” of video games from 1979-1980). The 1970s also saw video games enter the home and personal device market. In 1972, Magnavox

released one of the first home video game consoles, called the Odyssey. Ex. 1010 at 42. In 1977, Atari released the Atari home video game console (originally branded as the Video Computer System or VCS). *Id.* at 124. The system included a controller with dials and a joystick for playing games, and worked with video game cartridges, which players could insert into the system in order to play different games. *Id.* Many foundational games in video game history also find their origins in arcade machines and home console games, including Pong, Space Invaders, and Pac-Man. In the 1980s, video games on personal devices (such as home game consoles) became even more popularized, particularly with Nintendo's release of the "Famicom" in 1983 (later released in the United States as the "Nintendo Entertainment System"), followed shortly thereafter but Sega's "Master System." *Id.* at 295, 320. The growth of the video game market only accelerated with the passing years. For example, by 1989, video game companies such as Nintendo were reporting billions of dollars in sales per year. *Id.* at 429.

B. Mobile Games

42. Video game companies began developing portable video game products as early as some of the earliest home video game consoles. For example, in the 1970s, Nintendo created a portable watch-shaped video game device, named the "Game & Watch." Ex. 1010 at 296; Ex. 1011 at 2. In 1989, Nintendo released the Game Boy, designed by the same team that originally created the Game &

Watch—the first handheld video game system that used interchangeable cartridges, allowing players to play different games on the same device. Ex. 1010 at 430; Ex. 1011 at 2. Wireless network communication capabilities soon also became standard features in handheld video game systems including the Nintendo DS and Sony’s PlayStation Portable (PSP) both released in 2004. Ex. 1011 at 2. Ex. 1013 at 4.

43. Video games did not make a pronounced appearance on mobile *phones*, specifically, until the 1990s. One of the earliest mobile phone games was a mobile version of the arcade game *Snake*, preinstalled on Nokia mobile handsets beginning in 1997. Ex. 1011 at 2; Ex. 1012 at 2. As capabilities of mobile devices improved in the late 1990s and through the early 2000s—for example, bigger screens with color displays, faster processors, and increased memory capacity—demand for mobile games rapidly increased, and both handset manufacturers and game developers began to increasingly devote time and effort to the development of mobile games and mobile game platforms. Ex. 1012 at 2; Ex. 1013 at 2. As one example, in 2002, Nokia introduced the N-Gage, a portable gaming device built on mobile phone hardware and incorporating mobile phone functionality. Ex. 1013 at 4.

44. Designing games for mobile devices did pose some well-recognized challenges: for example, because different phones incorporated different screen sizes, color depths, APIs, and user inputs, developers had to design their games to

support a wide variety of different mobile device hardware. Ex. 1012 at 1; Ex 1014 at 1. Despite these challenges, however, mobile gaming was considered to be one of the fastest growing segments in the video game industry in the mid-2000s. Ex. 1014 at 1. For example, by 2003, experts already predicted that the mobile game market would generate over \$15 billion in annual revenue within several years. Ex. 1012 at 1. Many of the largest video game publishers also recognized the value of mobile games and sought to establish a foothold in that market—for example, in 2006, Electronic Arts acquired mobile game developer Jamdat for \$680 million. Ex. 1014 at 1.

45. Indeed, the challenges in mobile game design were far from insurmountable. By the early 2000s, multiple companies were already working on approaches to facilitate mobile game development. For example, Intel developed a 3D graphics toolkit for its mobile processors, designed to provide support for 3D rendering in mobile devices using fewer processing resources, and NVIDIA released a 3D wireless media processor to support increased improved graphics processing not previously possible on mobile devices. Ex. 1012 at 3; Ex. 1013 at 3. Mobile handset developers such as Ericsson and Motorola were working to define standardized APIs and software development kits to support game development on mobile devices, and, indeed, by 2007 had already published APIs for standard applications used by game developers, such as communications and multimedia. Ex.

1012 at 3; Ex. 1014 at 1. And companies such as Oracle and Qualcomm released mobile software platforms, such as J2ME (Oracle) and BREW (Qualcomm), which allowed game developer to create games that develop their game once and offer it on many different types of mobile devices. *Id.*; Ex. 1013 at 2-3.

46. By June 2007, the priority date of the '089 patent, mobile devices and mobile games were both widespread and popular. For example, the '089 Patent itself notes in the specification that “[m]any mobile communication devices ... are capable of operating video games,” and “gaming on mobile communication devices has become a popular mode of entertainment.” Ex. 1001, 1:12-15, 1:25-27. Numerous publications and articles in industry journals similarly recognized the significance of mobile games and their expected long-term impact on the video game industry. *See generally, e.g.,* Exs. 1012, 1013, 1014.

C. Dynamic Content and In-Game Advertising

47. Around the time that mobile games were rising in popularity, particularly in the early-to-mid-2000s, video game publishers and advertising companies both began to appreciate the potential value of incorporating dynamic advertisements into video games.

48. The idea of incorporating new content into video games after their initial publication and release had already been popularized long before advertisers entered the picture. Many game developers had already developed expansion packs

for their games that would add new maps or items for released games, allowing players to experience older games in a new way. Similar concepts worked their way into mobile games as well. For example, by 2001, Nokia had launched a subscription service for its customers called “Club Nokia.” Ex. 1018 at 52. Club Nokia members could download game packs that added new levels or other in-game elements for applicable games on their mobile devices. *Id.*

49. By the early-to-mid-2000s, advertisers realized that video games represented an untapped market for reaching consumers and began partnering with video game developers and publishers to incorporate advertisements into video games. These joint efforts soon led to the development of in-game ad networks, utilizing advertising servers to dynamically supply ads for display in a wide variety of video games. For example, by 2006, multiple companies had launched in-game advertising networks, including Double Fusion, Massive Inc. (later acquired by Microsoft), IGA Worldwide, and AdScape (later acquired by Google). Ex. 1015 at 1-2; Ex. 1016 at 22-23. Although in-game ads frequently took the form of images overlaid on billboards, some ads were designed to be interactive within the game. For example, in 2006, Massive partnered with the game *Anarchy Online* to provide interactive billboards advertising the Toyota Yaris. Ex. 1016 at 45. These billboards would display additional information about the car when a player interacted with them. *Id.*

50. Some in-game ad networks were also designed to extend into mobile games as well. For example, in 2006, IGA Worldwide announced a partnership with Exit Games to deliver dynamic in-game advertising for mobile games. Ex. 1017 at 1. Several of the prior art references that I discuss later in this declaration are patents and patent publications that originated from these companies and contemplate incorporating dynamic in-game ads into mobile games. *See, e.g.*, Ex. 1006 (Massive), Ex. 1008 (Greystripe),.

D. Easter Eggs and Other Secret In-Game Content

51. The '089 Patent generally relates to “in-game hot spots,” which the patent describes as “a location or item, sometimes hidden within the game, that triggers additional specialized content when activated by a user or some other in-game element.” Ex. 1001, 1:63-66; *see also id.*, 2:21-23 (“A hot spot is an in-game feature that includes an activation element and a content element that is triggered by the activation element.”).

52. The term “hot spot” has a few different uses in the context of video games. However, the use of the term and the functionality the '089 Patent is referring to represents a fundamental concept in game design that dates back to many early and widely known games. In the 1980s and 1990s, there was a genre of video games called point-and-click adventure games, with popular games such as those in the *King's Quest* series (starting in 1984) and the *Monkey Island* series (starting in

1990). The “point-and-click” part of the genre’s name comes from the primary mode of interaction: players had to use the mouse to control a cursor on the screen (point) to interact with objects on the screen (by clicking the mouse button). In these games, those areas of the screen that were interactive (i.e., would react when the cursor was placed on them and the mouse button clicked) were called “hot spots.” A simple interaction might involve, for example, clicking on a refrigerator door that is then opened, revealing the contents of the refrigerator. This concept continues to be used to this day in other game genres, beyond point-and-click adventure games.

53. An interesting feature of hot spots, and one that was rapidly adopted and widely used even back in the day, was to designate as hot spots areas of the screen that were not visually distinct (i.e., hidden) such that they would only be found by players “clicking” on parts of the screen for which there was no indication that anything would happen. These invisible hot spots would then reveal some sort of secret—*e.g.*, play a funny sound, play a short animation, display a message—that would be enjoyable, surprising, and interesting to players. For example, a player might click on a random brick on a wall in the background, and a game character might quip, “Nothing happens, what were you expecting, a secret doorway to open?” In videogames, these types of features that are not necessary to the completion of a game are referred to as easter eggs, hidden objects or locations, secrets, or special features.

54. One of the earliest examples of easter eggs in video games is in the Atari game *Adventure*, developed in 1979. Ex. 1010 at 202-206. At the time, Atari had a policy prohibiting individual game developers from receiving any publicity—which also included a ban on in-game credits identifying the individuals who worked on a particular game. Instead, the sole developer of *Adventure*, Warren Robinett, decided to hide his name in a secret location within the game. To enter the secret room, players had to find and retrieve an object from a different location in the game—an object represented in game as a single gray dot, and itself hidden in a difficult-to-access location within a maze, camouflaged on a wall of the same color as the dot itself. If the player found and picked up the gray dot, and brought it (along with some other in-game objects) to the designated room within the game, it would grant the player access to the secret room, where “Created by Robinett” was displayed in rainbow colors.

55. Although Robinett’s easter egg was purely decorative—in the sense that the player did not receive any in-game advantage for discovering it—easter eggs can be functional as well. Indeed, easter eggs are well recognized as a fundamental element used in game design, and examples can be found in countless games, including many that predate the ’089 Patent. For example, in Nintendo’s *Super Mario Bros.* (1985), hidden coins and power-ups may be contained in blocks—some of which are either invisible or disguised as normal breakable blocks—when the

player hits the blocks by jumping into them from below. Players may also find secret in-game locations by attempting to enter pipes (many of which are non-interactive background elements) or by exploring secret paths outside of the bounds of the normal game level. Similarly, in Nintendo's *The Legend of Zelda* (1986), players could discover secret areas with power-ups by bombing certain in-game walls and burning certain in-game bushes. In many instances, the walls and bushes that hid these secret areas were indistinguishable from walls and bushes that merely represented impassible, non-interactive background elements.

VIII. THE '089 Patent

56. In this section, I provide an overview of the '089 Patent and a summary of the prosecution history.

57. The '089 Patent is titled "*Methods and systems for providing in-game hot spots.*" Ex. 1001. It was filed on June 26, 2007 and does not claim priority to any earlier application. *Id.*

A. Specification

58. The specification of the '089 Patent is directed to "providing hot spots for mobile games on mobile communication devices that receive hot spot information." Ex. 1001, Abstract. The mobile communication devices may be "cellular phones, PDAs, and other handheld devices capable of communicating with

a server.” *Id.*, 1:12-14. The “hot spots may be hidden aspects of the game and promotional in nature,” *i.e.* containing advertisements. *Id.*

59. As I note above, the term “hot spot” is not typically used in the field of video game design to describe in-game elements. However, the patent describes a “hot spot” as “a location or item, sometimes hidden within the game, that triggers additional specialized content when activated by a user or some other in-game element.” Ex. 1001, 1:63-66. A “hot spot” according to the ’089 Patent “includes an activation element and a content element that is triggered by the activation element.” *Id.*, 2:21-23. “The activation element may comprise an area location or an item, sometimes hidden in the game, that can be triggered by a user or some other in-game element.” *Id.*, 2:27-29. The content element is “displayed when the hot spot is activated” and “may include ... a message, and the message may be promotional.” *Id.*, 2:3:34-37.

60. The ’089 Patent explains that a “mobile communication device may contact a server to check for hot spot information to download.” *Id.*, 7:32-34. This includes communicating with the server “over the Internet.” *Id.*, 9:17-20. The server may “determine what hot spot information should be sent to the mobile communication device ... based on the model type of the mobile communication device, the service plan to which the mobile device belongs, the service provider that provides the plan to the mobile device, ... and/or other criteria.” *Id.*, 13:19-27.

Once the hot spot information has been determined, “the hot spot information may be sent to the mobile communication device.” *Id.*, 13:56-57.

61. Once the hot spot information is downloaded by the mobile communication device, location information is used “to designate a location in-game for activating the particular hot spot.” *Id.*, 11:41-44. When “activation of a hot spot via user manipulation of the hot spot location” is detected, “content may be presented to the user.” *Id.*, 12:13-27.

B. Prosecution History

62. The application that issued as the '089 Patent was filed on June 26, 2007. Ex. 1002.

63. During prosecution of the '089 patent, the examiner made a number of rejections. In response to those rejections, applicant amended the independent claims several times to include limitations stating that (1) an activated hot spot displays content “within a gaming environment of the mobile game”; (2) downloaded hot spot information includes “a location in-game associated with activating the hot spot”; and (3) the in-game location of the hot spot “is represented by a non-promotional background object.” *Id.*, 80-83, 117-120, 205-208, 238-241.

64. On November 14, 2013, after the applicant amended the claims to require that the in-game location of a hotspot is “represented by a non-promotional **background** object,” specifically (*i.e.*, the applicant specifically amended the claims

to add the term “background”), the Examiner filed a Notice of Allowance allowing all of the claims. *Id.*, 67-69, 79-87. The patent then issues on April 1, 2014.

65. I note, however, that both the Ho and the Jiau references, which are discussed in the grounds below, describe hot spots that are represented in-game by a non-promotional background object. Neither reference was cited or considered by the examiner.

C. Claims

66. I understand that Petitioner challenges claims 1-10 of the '089 Patent, which I reproduce below:

Claim 1	
1(a)	A method for providing a hot spot associated with a mobile video game, the mobile video game being operable on a mobile communication device, the method comprising the steps of:
1(b)	storing hot spot information on a computer-readable medium;
1(c)	receiving a communication from a mobile communication device;
1(d)	determining the hot spot information to provide to the mobile device based upon the communication, the hot spot information comprising:
1(d)(i)	a location in-game associated with activating the hot spot, wherein the location in-game is represented by a non-promotional background object; and
1(d)(ii)	hidden promotional content for presenting to the user, within a gaming environment of the mobile video game, when the hot spot is activated; and
1(e)	uploading the hot spot information to the mobile communication device.
Claim 2	

2	The method of claim 1, wherein the location in-game is associated with activating the hot spot within the gaming environment of the mobile video game.
Claim 3	
3	The method of claim 1, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.
Claim 4	
4	The method of claim 1, further comprising the step of tracking the hot spot information that has been downloaded to the mobile communication device.
Claim 5	
5	The method of claim 4, wherein the tracked hot spot information is used for billing a third party associated with the hot spot information.
Claim 6	
6(a)	A system for providing a hot spot associated with a mobile video game, the system comprising:
6(b)	a storage medium for storing hot spot information for use in the mobile video game;
6(c)	a server in communication with the storage medium;
6(d)	an interface coupled to the server and a network, wherein the interface receives a request for hot spot information from the mobile communication device over the network;
6(e)	wherein the server is operative to receive the request through the interface and utilize the request to determine the hot spot information for the mobile video game, and send the hot spot information to the mobile communication device, the hot spot information comprising:
6(e)(i)	a location in-game associated with activating the hot spot, wherein the location in-game is represented by a non-promotional background object; and
6(e)(ii)	hidden promotional content for presenting to the user, within a gaming environment of the mobile video game, when the hot spot is activated.
Claim 7	

7	The method of claim 6, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.
Claim 8	
8	The system of claim 6, wherein the hot spot information is pre-selected by the server based on a model type associated with the communications device, a service subscription associated with the communications device, or a service provider for the service subscription associated with the communications device.
Claim 9	
9	The system of claim 6, wherein the server tracks what hot spot information has been downloaded.
Claim 10	
10	The method of claim 9, wherein the tracked hot spot information is used for billing a third party associated with the hot spot information.

IX. LEVEL OF ORDINARY SKILL IN THE ART

67. In my opinion, based upon my knowledge and experience in the field of the '089 Patent (*i.e.*, video game design and associated software programming), a POSITA as of June 26, 2007 would have had at least an undergraduate degree in game design or development, computer science, computer engineering, or a related field, and at least two years of experience working with computer gaming systems or software application development. Less work experience may be compensated by a higher level of education or vice versa. The following reasons support my opinion.

68. First, the typical level of education for persons working in the field would include an undergraduate degree in game design or development, computer science, computer engineering, or a similar field. Video games are essentially a

specific type of software application, and developing video games involves developing the software for the game. For example, by 2007, most video games included, at a minimum, software programming to enable (1) computer graphics, such as for displaying a game world, game characters, and game objects on the screen; (2) user input, such as from a keyboard, mouse, joystick, or other controller, to allow the user to control a character or interact with the game world; and (3) logic for progressing through the game and changing the game world or game state in response to the user input. By 2007, many games also included a multiplayer or online component, which additionally required software programming for communicating with devices of other players in the game or a game server (i.e. networking). I would expect a college graduate with a degree in game design or development, computer science, or computer engineering to be familiar with these aspects of software programming. Indeed, by early 2007, several colleges already offered courses specifically focusing on game design and even mobile game design. Ex. 1014 at 2.

69. Second, two years of experience working with computer gaming systems or software application development would be typical for a person deemed to have ordinary skill in the technology underlying the '089 Patent. This level of experience may provide an engineer with more specialized focus in software development that may be relevant to video games. It may also provide an engineer

with an understanding of common video game elements and design principles and how those principles would be implemented in the software of a video game.

70. Third, the objective of game designers and developers in the field typically involved making games more engaging and appealing to players. Various elements could contribute to these objectives, such as improved computer graphics to catch the player's eye, larger game worlds to offer the player more opportunities to explore and interact with the game, more interactive in-game elements to engage the player, improved artificial intelligence for computer-controlled characters (*e.g.*, in-game enemies) to make the game world more realistic, or to better adapt the challenge of the game to the player's skill level, and dynamic and updateable content to keep the game "fresh" even after the player becomes familiar with the game mechanics. A game developer or software engineer with a game design or computer science/engineering background and at least two years of experience with gaming systems or software development would have been familiar with these problems and programming techniques to implement and address them. For example, an entry level game developer or game programmer would be familiar with basic game elements such as maps, characters, items, and user input, and would have a sufficient understanding of programming techniques to implement those elements in a video game.

71. Fourth, the proposed level of skill is consistent with the sophistication of the technology claimed in the '089 Patent. The patent and claims relate to a typical problem in game design, *i.e.*, how to keep games interesting for longer periods of time, and only require standard programming techniques to implement the alleged invention, such as defining and displaying objects in the game, providing responses to user input, communicating with a server over a network, and making certain decisions based on criteria.

72. I note that I meet and exceed the definition of a POSITA offered above.

X. CLAIM CONSTRUCTION

73. For purposes of this declaration, I have applied the ordinary and customary meaning of the claim terms as they would have been understood to a POSITA as of the priority date of the '089 Patent, June 26, 2007. I have considered that meaning in the context of the patent and its prosecution history.

74. Based upon my review of the '089 Patent, and my based on my own knowledge, expertise, and experience in this field, the claims do not use any specialized terms that would require additional explanation or express definitions, beyond those expressly provided in the specification of the patent (namely, for the term “hot spot”). The ordinary and customary meaning of the claims and the terms used therein, read in the context of the specification, would have been understood by a POSITA.

XI. OVERVIEW OF THE PRIOR ART

75. In this section, I provide an overview of the prior art references that I have relied on to inform my opinions.

76. As I describe in this section, all of the references I rely upon in my obviousness analysis relate to video games, and more specifically, to one or both of (1) the provision and display of advertisements in a video game (and typically, a video game running on a mobile communication device), or (2) the provision and display of dynamic interactive elements in a video game. Thus, all of these references would be obvious sources that a POSITA would have considered when seeking to improve mobile video games, as they all relate to the same field of endeavor, *i.e.*, systems and methods for delivering dynamic advertisements and interactive elements (including interactive advertisements) to video games.

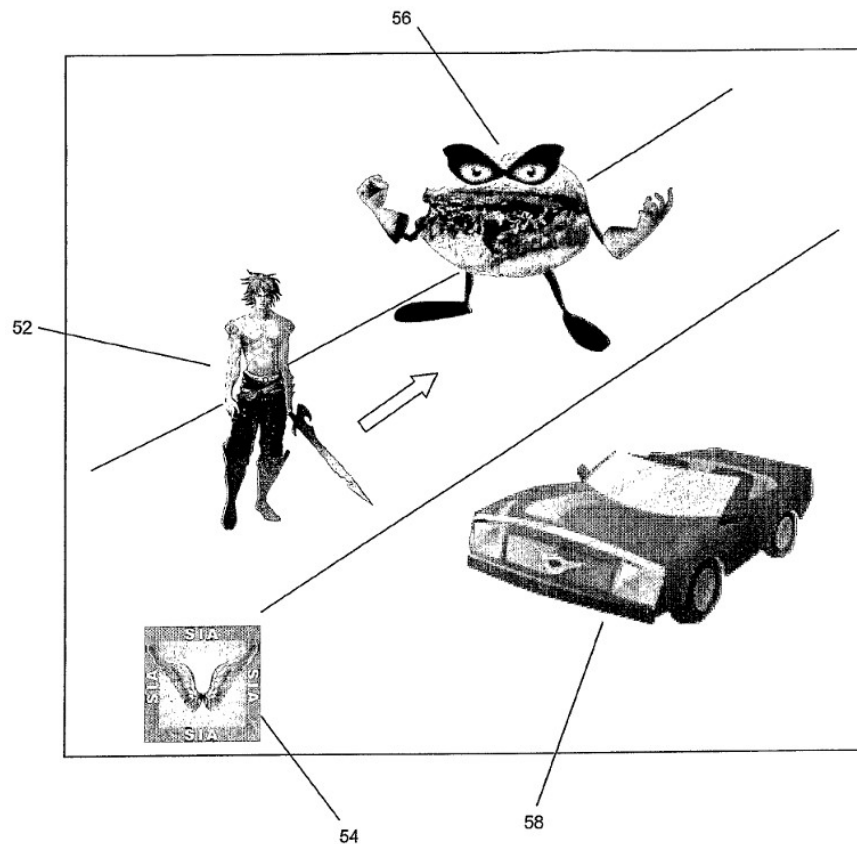
A. International Patent Pub. No. WO 2008/008038 (“Ho”)

77. Ho is titled *An Incentive-Based Video Gaming System*. Ex. 1004. Ex. 1004. Ho was filed on July 12, 2006.

78. Ho is directed to “a video game incorporated with at least one interactive information element.” Ex. 1004, 1:5-6. In particular, Ho focuses on how to improve advertisements in video games by making them both dynamic and interactive. Specifically, Ho seeks to overcome two problems with then-existing in-game advertisements: that there was “no impetus for the player to pay more attention

to the static advertisements while playing the video game,” and that there were “no methods available to incorporate interactive and update-able advertisements into existing video games without a major revision of the source code.” *Id.*, 1:28-31, 1:35-37.

79. Ho describes “a video game with at least one interactive information element incorporated within the game,” which includes games on “a video games console, a mobile telephone, [or] a personal digital assistant.” *Id.*, 2:1-2, 2:20-22. The interactive information element appears in the game as “an icon in the game, a character in the game or an item in the game.” *Id.*, 2:11-12. For example, in one embodiment, illustrated in Figure 3 (reproduced below), the interactive information elements may be “a ‘wings’ button 54 to enable the character 52 to fly (an example of an icon in the game), a hamburger monster 56 (an example of a character in the game) and a car 58 (an example of an item in the game).”



Id., Fig. 3, 5:1-5. Engaging with the “interactive information element may activate[] an action such as, for example, an on-screen presentation,” which may be “either within the course of gameplay or in a sub-screen in the game.” *Id.*, 2:22-26. The content associated with the interactive information element “may be either advertisements or public announcement services.” *Id.*, 2:9-10.

80. The interactive information element can also “be updated.” *Id.* 2:17-18. In one example, the video game client (*e.g.*, the mobile communication device) may connect to a server and “automatically download[] and replac[e] relevant sub-modules of the interactive information elements in the video game.” *Id.*, 9:31-33,

10:2-6. The server “determines whether the interactive information element(s) needs to be changed/renewed,” and if they do, “then new interactive information element(s) are sent to the client end device.” *Id.*, 10:14-19.

B. International Patent Pub. No. WO 2000/070489 (“Jiau”)

81. Jiau is titled *Method and Apparatus for Providing Hotspots in a Shared Virtual World*. Ex. 1005. Jiau was filed on May 12, 2000 and published November 23, 2000. *Id.*

82. Jiau is directed to “shared three-dimensional virtual worlds” such as those provided by many “three-dimensional games.” *Id.*, Abstract, 1:22-24. However, Jiau’s virtual world is divided into “a plurality of ‘lots,’ similar to ‘lots’ of real estate in the real world,” which users “can reserve ... to design as they please.” *Id.*, 1:32-2:2. Each lot may also include “objects ... that have certain behaviors, such as playing an ad or animation when selected.” *Id.*, 2:19-20. Information about lots and objects is stored “in a memory or database of the server,” and the user’s device “fetches objects within lots ... as the user ‘moves’ through the virtual three-dimensional world.” *Id.*, 2:7-9, 3:18-21.

Objects in Jiau’s virtual world may have an associated “link,” so that “when a user selects (via a mouse click, etc.) an object that is defined as having an associated link, the client system takes various actions, depending on the type of

link.” *Id.*, 12:13-15. A link can “cause an action ... such as display of an advertisement or an animation.” *Id.*, 12:25-27.

Jiau’s objects may also have “hotspots” and “hotspaces” that “cause the performance of a predefined action.” *Id.*, 16:29-30. A “hotspot” may be a region “that causes actions to occur when the user touches or selects the object.” *Id.*, 16:30-31. Similarly, a “hotpace” may be “a predetermined space surrounding an object” that causes an action when the user interacts with the hotpace, for example, “when a user walks within ten virtual feet of a hotpace.” *Id.*, 16:32-17:4.

**C. International Patent Publication No. WO 2006/071246
 (“Sturman”)**

83. Sturman is titled *Matching and Scoring of Advertisements for Targeted Delivery into Multiple Video Games, Such as Single and Multiplayer Games*. Ex. 1006. Sturman was filed on March 8, 2005 and published July 6, 2006. *Id.*

84. Sturman is directed to “[a]n advertisement delivery scheme and associated facility provide targeted advertisements for multiple video games without advertisers having to specify specific game titles in which they would like their advertisements placed.” *Id.*, Abstract. In particular, Sturman describes “[a]n advertisement delivery scheme and associated computerized facility” that “allow advertisers to deliver their campaign messages to specific audiences they wish to target across one or more multiple game titles played across multiple platforms (e.g.,

PC, console, mobile, etc.).” *Id.*, ¶18. This is done by the “game playing device ... request[ing] and receiv[ing] advertisements from the advertisement management service system.” *Id.*, ¶33. The advertisement management service system selects which advertisements to deliver using “an advertising matching and weighting system,” which “calculate[s] [a] weight of each advertisement based on several factors including ... information regarding the specific client type.” *Id.*, ¶47. Advertisements may also be targeted based on the player’s “location” and “demographics.” *Id.*, ¶31.

85. The below annotated Figure 1 shows the relationship between Sturman’s various systems.

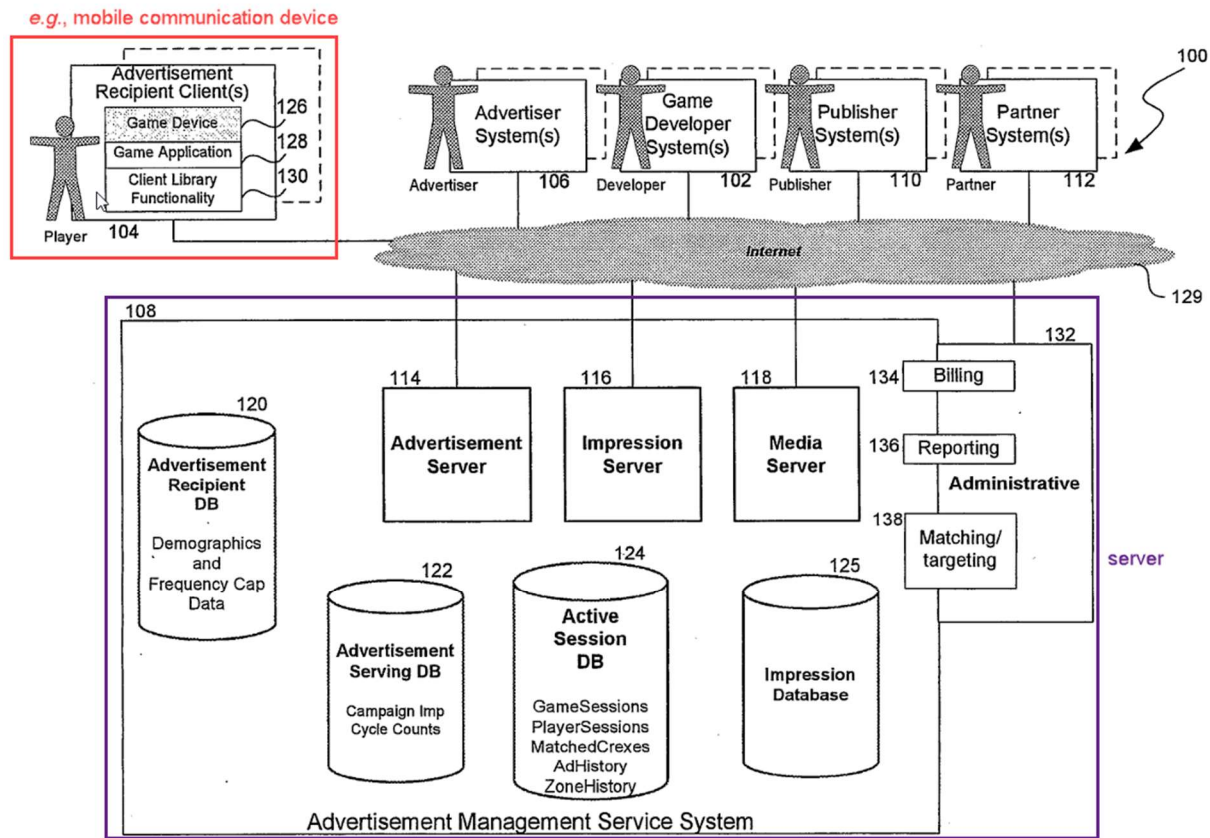


FIG. 1

86. When the video game receives advertisements from the server, the advertisements are “presented in the appropriate available ad units at the appropriate time during game play.” *Id.*, ¶22. These ad units may be in-game locations such as “billboards, storefront signs, panel trucks, Jumbotron screens in a sports stadium, posters on walls, T-shirts on a game character, items used by game characters (e.g., a brand name soft drink or energy bar) and so on.” *Id.*, ¶19. Information sent to the video game from the advertisement server is “track[ed] and record[ed],” and collected information may “be used in billing” for advertisers. *Id.*, ¶42, ¶26.

D. U.S. Patent No. 8,825,521 (“Ellis”)

87. Ellis is titled *Method and system for dynamically incorporating advertising content into multimedia environments*. Ex. 1007. Ellis was filed on August 30, 2006. *Id.*

88. Ellis is directed to “[m]ethods and systems for dynamically incorporating advertising content into multimedia environments, such as games.” *Id.*, Abstract. More specifically, Ellis’s methods and systems are configured to provide a “minimally intrusive mechanism that allows an advertiser to dynamically incorporate content, such as advertisements, into a video game.” *Id.*, 2:31-36. Ads are selected by an “advertising server” that “maintains a collection or a list of dynamically modifiable advertisements for incorporation into the game” and “selects a particular advertisement from its collection according to a set of criteria” in response to a request from a game client. *Id.*, 4:34-42. “The advertising client then provides the advertisement to the game software executing on the game client system, which inserts the advertisement into the game.” *Id.*, 4:42-47. Information about ads delivered to a game client are logged at a server and may be used “for billing the advertiser” and “for statistical analysis and reports.” *Id.*, 19:57-20:9.

E. U.S. Patent Pub. No. 2007/0174490 (“Choi”)

89. Choi is titled *System and methods for managing content in pre-existing mobile applications*. Ex. 1008. Choi was filed on January 19, 2007. *Id.*

90. Choi is directed to “[m]ethods and systems for managing distribution and retrieval of data (for example advertising content and viewing statistics) ... into pre-existing mobile applications” such as “portable game consoles.” Ex. 1006, Abstract, ¶3. In selecting advertisements to deliver to the mobile game, Choi describes using “demographic information from the carrier” of the mobile device as well as using “GPS location information to request location-specific advertising.” Ex. 1006, ¶¶84, 43. Choi obtains demographic information from the carrier by inference because “a users’ carrier implies a certain demographic.” *Id.*, ¶86, ¶96 (“[S]ome carriers have users that are older, younger, businesses, family, etc.”). Choi also describes selecting advertisements based on the “device model” of a user’s mobile device because “different devices have differing capabilities” which may affect their ability to display ads. *Id.*, ¶7, 89.

XII. OBVIOUSNESS ANALYSIS FOR THE CHALLENGED CLAIMS

91. In this section, I provide an analysis of how the prior art renders obvious claims 1-9 of the ’089 Patent. I have organized my analysis into the following grounds:

Grounds	Claims	Statutory Basis	Prior Art
1	1-3, 6-8	§103	Ho in view of Jiau and Choi
2	4-5, 9-10	§103	Ho in view of Jiau, Choi, and Ellis
3	1-10	§103	Sturman in view of Ho

92. For each ground, I address motivation to combine and reasonable expectation of success, and then analyze the teachings of the prior art on an element-by-element basis.

A. Ground 1: Ho in view of Jiau and Choi Renders Obvious Claims 1-10

93. For the reasons set forth in detail below, and based on my review of the '089 Patent, file history, and the prior art references cited in my analysis, a POSITA would have readily understood that the teachings of Ho in view of Jiau and Choi render obvious all elements of claims 1-3 and 6-8.

1. Rationale to Combine Ho, Jiau, and Choi

94. In my opinion, a POSITA would have found it obvious to modify Ho's system for incorporating interactive information elements that display advertisements in mobile games by incorporating Jiau's teachings, which include implementation details for similar well-known dynamic in-game interactive elements that are not expressly described in Ho, as well as Choi's teachings for implementing targeted and device-specific advertisements.

95. I understand that references cannot be combined as obvious unless they are analogous art to the challenged patent, *e.g.* that they are directed to the same field of endeavor. In my opinion, Ho, Jiau, and Choi are analogous art to the '089 Patent, as they all are directed to video games and dynamic in-game advertising in video games. *See* Ex. 1001, Abstract ("Systems and methods for providing hot spots for

mobile video games.... The hot spots may be hidden aspects of the game and promotional in nature...."); Ex. 1004, 1:5-7 ("This invention relates to a video game incorporated with at least one interactive information element."), 2:8-9 ("Preferably, the information element may be either advertisements or public announcement services."), 2:17-18 ("It is advantageous that the at least one interactive element is able to be updated."); Ex. 1005, Abstract ("A method and apparatus for providing hotspots and hotspaces in a shared three-dimensional virtual world."), 1:15-16 ("[G]ames were developed that allowed users to explore these virtual worlds using a three-dimensional graphical interface."), 3:18-21 ("The client data processing system fetches and discards lots (including objects in the lots) and fetches objects within lots ... as the user 'moves' through the virtual three-dimensional world."), 12:13-27 ("As discussed above, when a user selects (via a mouse click, etc.) an object that is defined as having an associated link, the client system takes various actions ... such as display of an advertisement or animation."); Ex. 1008, Abstract ("Methods and systems for managing distribution and retrieval of data (for example advertising content and viewing statistics) ... into pre-existing mobile applications."), ¶¶109, 111, 120-121 (describing examples where the mobile application is a "game"), ¶88 (describing how the mobile application "sends a request for new ad content to the ad server" and "the ad content server selects ad content" and "returns the content to the ... application").

96. In my opinion, a POSITA would have been generally motivated to modify Ho based on the teachings of Jiau and Choi because all three relate to similar types of improvements for video games, including their design and monetization, and a POSITA would have understood that Jiau's and Choi's teachings could be utilized to further improve Ho. In fact, all three references relate to the same types of improvements in game design and monetization that the '089 Patent describes. For example, the '089 Patent explains that video games "have a popularity life span," and users "may stop playing [a] particular game" when "game elements become increasingly familiar." Ex. 1001, 1:28-32. The '089 Patent also explains that "in-game advertising ... is an attractive proposition" because "when a user plays a game on the mobile communication device, the user's full attention may be directed to the screen of the mobile communication device." 1:47-52. Ho, Jiau, and Choi all describe how their inventions provide precisely those improvements in video games. For example, Ho explains that its "interactive information elements" can be used to provide advertisements that "engage the player during the course of gameplay" and can be updated "without a major revision of the source code of the video game." Ex. 1004, 1:26-37. Jiau describes customizable in-game objects and hotspots that improve on games that "involve a predetermined, predefined virtual world that does not change." Ex. 1005, 1:22-24, 2:26-32. And Choi describes how to provide new

advertising content “that could be added to a mobile application after it has been developed and sent to an application distributor.” Ex. 1008, ¶¶4-7.

97. In my opinion, a POSITA would also have been specifically motivated to incorporate Jiau’s teachings regarding interactive elements in virtual worlds to Ho’s video game and video game system because of the well-known benefits of dynamic, interactive in-game ads. For example, Jiau explains that a disadvantage of prior “three-dimensional games” is that they “involve a predetermined, predefined virtual world that does not change.” Ex. 1005, 1:22-24. Jiau describes how to make virtual worlds more dynamic by providing “lots” that “can be constantly updated and changed to suit the desires and needs of the users of the virtual world,” with “objects,” “hotspots,” and “hotspaces” that can similarly be customized, including to display custom advertisements. *Id.*, 2:30-32, 3:1-11, 11:16-12:27, 16:29-17:6. A POSITA would have been motivated to apply Jiau’s well-known techniques to improve Ho’s video games, because Ho’s video games also include virtual worlds. For example, Ho describes that its video game may be a Massively Multiplayer Online Role Playing Game (MMORPG), which is a well-known genre of games in which players create a character and go on adventure or quests in a virtual world. Ex. 1004, 7:25-38.

98. A POSITA would also have been motivated to incorporate Choi’s teachings regarding targeted advertising into Ho’s video game and video game

system because of the well-known advantages of utilizing targeted advertisements to identify advertisements that may be of particular interest to a user. For example, Choi describes how targeted advertising based on user data retrieved from an application (such as a video game) can be used to improve monetization of mobile applications and games. Ex. 1008, ¶5. Choi also explains that for mobile applications, specifically, ads need to be selected to suit the capabilities of the user's specific device. *Id.*, ¶7. Importantly, while Ho describes interactive advertisements through interactive information elements, Ho does not describe how to tailor advertisements to a particular player's interests and/or the capabilities of the player's device. Thus, a POSITA would have understood that Choi's well-known techniques for personalizing ad content would further improve Ho's interactive information elements.

99. A POSITA would have also been motivated specifically to use Choi's teachings regarding using demographic gleaned from a user's carrier because doing so allows for targeted advertising without impinging privacy concerns and regulations. *Id.*, ¶84 ("It is generally not permissible by advertising industry standard practices to transmit or store any user-related information in such a way that the user identity can be determined from that information."), ¶86 ("[A] users' carrier implies a certain demographic."), ¶96 ("[S]ome carriers have users that are older, younger, businesses, family, etc.").

100. A POSITA would have also been motivated to request and use GPS location of the mobile device as taught by Choi because of the information's well-known benefits for targeted advertising. In particular, Choi teaches that its "Ad Manager module can use GPS location information to request location-specific advertising content from the network server." *Id.*, ¶43. A POSITA would be motivated to use GPS location because the GPS location of the mobile communication device (and therefore of the user) is highly relevant information for targeted advertising. A POSITA would know that, for example, advertisements for services, retailers, and restaurants near the user would be far more relevant than those that are not near the user.

101. A POSITA would have also been motivated to apply Jiau's and Choi's teachings to Ho's video game and video game system because they provide implementation details that would be applicable to Ho's system, but are not expressly provided by Ho. For example, Ho teaches that its "interactive information elements" solve a "major disadvantage" in static in-game advertisements, where there is "no impetus for the player to pay more attention to the static advertisements while playing the video game" and the ads "do not engage the player during the course of gameplay" are needed. Ex. 1004, 1:28-33. But while Ho provides examples of interactive information elements and some details regarding their implementation (*e.g.*, *id.*, 7:25-38 (examples with a "hamburger monster" that a

player may fight, or a “car” that a player may enter), 9:27-35 (implementation using a “module” with “sub-modules” that may be updated)), Ho omits many of the low-level implementation details. Thus, a POSITA would have looked to other references that describe similar systems and techniques to identify additional interactive game elements and in-game advertising techniques for use within Ho’s general framework, and additional details regarding the implementation of those techniques within Ho’s system.

102. Jiau and Choi provide well-known examples and implementation details that a POSITA would have understood could be incorporated into Ho’s video games. For example, as discussed above, Jiau describes customizable objects, hotspots, and hotspaces, methods of interacting with those objects, hotspots, and hotspaces, and how to implement the objects, hotspots, and hotspaces within a client-server architecture. *See* Ex. 1005, 6:22-8:13 (object registration and storage), 11:16-13:7 (player interaction with objects), 13:8-32, 17:16-18:12 (exchanging object data between server and game client), 15:3-16:2, 16:29-17:13 (hotspot and hotspace implementation). Choi describes implementations of well-known techniques for targeted advertising, and tailoring ads to meet the capabilities of a particular device. Ex. 1008, ¶¶83-91, 96-97.

103. A POSITA would have reasonably expected the proposed combination of Ho, Jiau, and Choi to succeed. Choi describes a simple method for selecting and

targeting ads based on information collected about a user and the user's device, such as the user's GPS location, device type, and device carrier. A POSITA would have already understood that this information can be determined based on communications received from a mobile device. Similarly, Jiau describes a simple method for defining and registering custom objects on a server, and communicating those objects to individual game clients. Both Choi and Jiau implement these techniques using standard hardware (e.g., a conventional computer, mobile phone, PDA, game console, etc.) and basic software functions (reading/writing data, sending/receiving data over a network, displaying objects and information on a screen, etc.). Thus, incorporating Choi's and Jiau's teachings into Ho would be well within the capabilities of a POSITA, because such modifications would be straightforward to implement. Indeed, Ho already provides systems and methods for implementing customized dynamic objects within a game, and for exchanging information between a game client and a server.

2. Claim 1

- a) *Element 1[a]: A method for providing a hot spot associated with a mobile video game, the mobile video game being operable on a mobile communication device, the method comprising the steps of:*

104. To the extent the preamble is limiting, in my opinion, Ho discloses this limitation.

105. First, Ho describes the claimed “hot spots.” For example, Ho describes an “interactive information element.” Ex. 1004, Abstract. Ho’s interactive information elements are consistent with the ’089 Patent’s description of a “hot spot” as “an in-game feature that includes an activation element and a content element that is triggered by the activation element.” Ex. 1001, 2:21-23. Specifically, Ho’s “interactive information elements” may be “engaged [*i.e.*, activated] in different ways” by the player, including by “fight[ing] and successfully slay[ing]” an interactive monster, “enter[ing]” an interactive vehicle, or “clicking” on an interactive icon. Ex. 1004, 5:7-14. When the player engages (activates) these interactive information elements, they display new content on the screen, such as “an on-screen presentation” either “within the courses of gameplay or in a sub-screen in the game.” *Id.*, 5:27-30.

106. Second, Ho teaches that the “interactive information elements” (*i.e.*, “hot spots”) are incorporated “into a video game,” which “may be run on a device such as ... a video games console, a mobile telephone, [or] a personal digital assistant [*i.e.*, a mobile communication device].” *Id.*, Abstract, 2:20-22.

107. Jiau also describes “hot spots” incorporated into a video game, and renders this limitation obvious when applied to Ho’s mobile game on a mobile communication device. For example, Jiau describes a “virtual world,” which may be part of a video game, that includes “lots” and “objects.” Ex. 1005, 1:10-21, 1:32-

2:3, 2:13-21. Jiau also describes “hotspots” and “hotspaces,” which are also consistent with the ’089 Patent’s description of a “hot spot” because they correspond to in-game locations (such a location on or surrounding an object) that “cause actions to occur,” which may include displaying “a pop-up advertisement,” when the user activates the in-game location, such as by “touch[ing] or select[ing] the object” or “walk[ing] within ten virtual feet of a hotspot”). *Id.*, 16:29-17:4.

b) Element 1[b]: storing hot spot information on a computer-readable medium;

108. In my opinion, Ho discloses or renders obvious this limitation.

109. Ho teaches that its video games are played on a “client end device,” which may include a “a video games console, a mobile telephone, [or] a personal digital assistant.” Ex. 1004, 10:3-6. The “client end device” may “connect[] to a server” to receive “new interactive information element(s) [*i.e.*, hot spot information]” from the server. *Id.*, 10:3-6, 10:14-17. A POSITA would have understood that the interactive information elements must thus be stored somewhere on the server, so that the server can retrieve them and send them to the client end device.

110. In addition, a POSITA would have understood that the server is a computer, and thus stores information (such as hot spot information) on a computer-readable medium. A POSITA would have been familiar with servers and client-

server architectures, and would have understood that the term “server” may refer to a particular computer, or to software running on a computer. For example, a computer can be configured to host multiple servers in parallel—so a server may refer to the computer hardware where the server is located, or the software component that implements the server role at a particular computer or set of computers. A POSITA would have also known that servers store information on computer-readable media, such as mass storage devices (*e.g.*, hard drives), and that data such as Ho’s interactive information elements would be stored on such media at the server.

111. Jiau also discloses this limitation, and renders it obvious when applied to Ho’s mobile game and server. Jiau describes a “server system” with “one or more processors and appropriate data storage, such as memory or mass-storage device,” and a “database” that stores information about “objects” (including “hotspot” and “hotspace” information associated with an object). Ex. 1005, 6:4, 7:7-12, 7:23-25, 8:7-10, Fig. 13(b). A POSITA would have understood that Jiau’s teachings thus provide one possible implementation for Ho’s server, which includes a computer readable medium (*e.g.*, memory, mass-storage devices, and/or databases) that stores hot spot information (*e.g.*, information about objects, hotspots, and hotspaces).

c) *Element 1[c]: receiving a communication from a mobile communication device;*

112. In my opinion, Ho discloses or renders obvious this limitation.

113. For example, Ho's "client end device," which may be a mobile communication device (*e.g.*, "a video games console, a mobile telephone, [or] a personal digital assistant") "may be activated and subsequently connected to a server via a network." Ex. 1004, 10:2-6. The server receives communications from the mobile device, such as "obtain[ing] data from the client end device." *Id.*, 10:6-8.

114. Jiau also discloses this limitation, and renders it obvious when applied to Ho's mobile game and server. For example, Jiau's server system is "in communication with" multiple "client data processing systems" that may include "world play software" for "brows[ing] ... the virtual world" (*i.e.*, playing a video game such as an MMORPG). Ex. 1005, 6:22-6:31. The client systems and server system include "software for loader/network (NW) communication software ... that allows a client system to communicate with [the] server system [] in order to load lots and objects from [the] server system." *Id.*, 6:31-7:2. A POSITA would have understood that Jiau's teachings thus provide one possible implementation for client-server communications that could be used to receive communications at Ho's server from a mobile communication device.

d) *Element 1[d]: determining the hot spot information to provide to the mobile device based upon the communication, the hot spot information comprising:*

115. In my opinion, Ho discloses or renders obvious this limitation.

116. Ho describes how, when a client end device connects to the server, the server “check[s] information on the client end device relating to the interactive information element(s)” and “determines whether the interactive information element(s) needs to be changed/renewed.” Ex. 1004, 10:10-15. “If the interactive information element(s) needs to be changed/renewed, then new interactive information element(s) are sent to the client end device.” *Id.*, 10:15-17. “If change/renewal of the interactive information element(s) is not required, then the interactive information element(s) remains the same in the client end device.” *Id.*, 10:17-19.

117. Ho does not specifically state that determining whether an interactive information element needs to be changed or renewed is based on information communicated by the mobile device, but it would have been obvious to a POSITA to determine the need for change/renewal in this way. Ho already teaches that the client end device provides data to the server, and that the server uses this data to “determine whether the interactive information element(s) is legitimate.” *Id.*, 10:6-8. A POSITA would have understood that the same type of data that could be used to determine whether or not an element is legitimate (e.g., a signature, hash, version

identifier, etc.) could also be used to determine whether the interactive information element is up to date, or whether it needs to be updated (*i.e.*, changed or renewed), and to select and send updated interactive information elements to the mobile device.

118. Choi also discloses this limitation, and renders it obvious when applied to Ho's mobile game and server. For example, Choi's mobile application "communicates periodically with the ad server." Ex. 1008, ¶78. The communication may include "a request for new ad content to the ad server." *Id.* A request may include information about the "operational environment" of a mobile device, *e.g.*, "location." *Id.* Choi also teaches that the information received from the mobile device—including its GPS location, specifically—can be used to select targeted advertisements to send back to the mobile device. *Id.*, ¶43 ("the Ad Manager module can use GPS location information to request location-specific advertising content from the network server"). Choi teaches that other information that may be communicated by the mobile device (including carrier/service provider and device type) may also be used to select targeted ads to send to the mobile device. *Id.*, ¶86 ("Identification of a users' carrier implies a certain demographic."), claims 48-49 ("receiving data specific to at least one of a group comprising the user or the user's device ... wherein the data includes at least one of a group comprising the user's service provider, the user's location, [or] the user's device..."). Information about the capabilities of the user's device may also be used to select an ad "that is best

suited for presentation on the device to which the ad is to be served.” *Id.*, ¶¶89-90.

A POSITA would have understood that Choi’s teachings provide an improvement to Ho’s interactive information elements by enabling the selection of ad content associated with those elements so that the ads are (1) targeted to the interests of the user, and (2) selected based on compatibility with the user’s mobile device.

e) Element 1[d][i]: a location in-game associated with activating the hot spot, wherein the location in-game is represented by a non-promotional background object; and

119. In my opinion, Ho renders this limitation obvious in view of Jiau.

120. First, Ho’s interactive information elements (*i.e.*, “hot spots”) include associated information regarding the in-game location of the element. For example, the interactive information element may be “a character in the game or an item in the game” that is “located at a juncture in the game, such as ... a specific location in the game.” Ex. 1004, 2:11-17. The interactive information elements themselves are implemented as part of a “module” within the game. *Id.*, 9:27-31. The module “enable[s] the location of the at least one interactive information element at a juncture in the video game.” *Id.*, 9:33-35. Although Ho does not expressly state that the “module” stores in-game location information, a POSITA would have understood that the module must include this information in order to enable the interactive information element at a particular in-game location.

121. Second, as discussed above, Ho teaches that interactive information elements may be “changed/renewed” by sending “new interactive information element(s)” from the server to a client end device.” *Id.*, 10:15-17. The change/renewal process involves “automatically downloading and replacing relevant sub-modules of the interactive information elements in the video game whenever the player goes online.” *Id.*, 9:31-33. Ho does not specifically state that the location of an interactive information element is one of the “sub-modules” that can be downloaded and replaced. However, it would have been obvious to a POSITA that this is, indeed, the case. As noted above, a POSITA would have understood that Ho’s module that implements interactive information elements includes in-game location information for those elements. Since that information is already part of the module, it would further be obvious that it can be incorporated into one of the updateable “sub-modules.” This would allow the interactive information elements to be used more dynamically and creatively by allowing developers or advertisers to change their in-game locations over time (e.g., to suit a particular advertisement or in-game event). Jiau further demonstrates the obviousness of updating Ho’s location information, because Jiau expressly describes that information about in-game objects stored at the server includes the “location and properties of the object” within the game. Ex. 1008, 8:7-10, 16:3-28, 17:7-13, Fig. 12. Jiau merely confirms that storing and retrieving the location of in-game

objects from a server would have been well known to a POSITA, and thus an obvious way to implement Ho's interactive information elements.

122. Third, the in-game representation of Ho's interactive information elements is consistent with the description of "non-promotional background objects" stated by the applicant in the prosecution history of the '089 Patent. Specifically, the Applicant stated that "'non-promotional background objects' are not game components," *i.e.*, "featured objects that a user manipulates in order to play the game"; instead, they are "outside of the primary focus of game play" and "are not themselves needed or required in order to play the game." Ex. 1002, 85. This is true for Ho's interactive information elements. Ho's interactive information elements are displayed as non-promotional in-game elements—they only display an advertisement when a player activates them. Ex. 1004, 2:11-12 ("Preferably the at least one interactive information element may be, for example, an icon in the game, a character in the game or an item in the game."), 5:1-7 (examples using a "hamburger monster" and a "car"), 5:27-38 (actions such as an "on-screen presentation" are performed "[i]f the player chooses to engage any of the interactive information elements"). Ho's interactive information elements are also consistent with the Applicant's description of "background" objects because they are not featured objects that a user manipulates in order to play the game—to the contrary, "engagement of the at least one interactive information element may not be

mandatory for the continuation of gameplay,” (not needed or required in order to play the game), and activation “does not disrupt gameplay” (is outside of the primary focus of gameplay). *Id.*, 4:26-28, 5:30-33, 5:36-38. For example, Ho describes an interactive information element that just causes “an airliner with a particular airline’s (an advertiser) paint scheme flying across the screen.” *Id.*, 8:11-16. The element is “overlaid on the game environment” so it “does not disrupt gameplay”—in other words, it is entirely optional and incidental to the focus of the game play. *Id.*, 8:13-16.

123. Jiau also discloses this limitation, and renders it obvious when applied to Ho’s mobile game and server. As discussed above, Jiau describes “hot spots” in the form of objects, hotspots, and hotspaces with links. Jiau also expressly states that the server stores the “location and properties of [in-game] object[s],” including objects with hotspots and hotspaces that can be activated. Ex. 1008, 8:7-10, 16:3-28, 17:7-13, Fig. 12. Thus, the location in-game for activating the “hot spot” would be among the “hot spot information” sent to the mobile device when objects, hotspots, and hotspaces are loaded from the server.

124. In addition, Jiau’s “hotspots” and “hotspaces” are associated with an in-game location that is consistent with the description of “non-promotional background objects” in the prosecution history of the ’089 Patent. Like Ho’s interactive information elements, Jiau’s objects, hotspots, and hotspaces correspond

to objects in the virtual world, and only show promotional content when activated (and thus are themselves non-promotional). Jiau's "hotspaces" in particular correspond to "background" objects because they are assigned to an in-game location that is "a predetermined space surrounding an object," rather than the associated object itself. Ex. 1005, 16:29-17:1. The hotspot region "may or may not have an object located therein." *Id.*, 15:32-16:2. A POSITA would have understood from these descriptions that a background object with no links and no other associated activation (*e.g.*, "solid object" or an "object with pass-through")—*i.e.*, an object that would be considered part of the background—may be located in the region of a different object's hotspot. *Id.*, 11:18-20, 11:29-31. A POSITA would have understood that Jiau's teachings regarding hotspots and hotspaces provide one possible implementation for Ho's interactive information elements, or a way to improve Ho's interactive information elements by providing more varied ways to make an element interactive.

f) Element 1[d][ii]: hidden promotional content for presenting to the user, within a gaming environment of the mobile video game, when the hot spot is activated; and

125. In my opinion, Ho discloses this limitation.

126. When a player in Ho's video game "engage[s]" an interactive information element (*i.e.*, by interacting with and activating the in-game location

associated with that element), it “activates an action such as, for example, an on-screen presentation,” which may be “within the course of gameplay” (*i.e.*, in the gaming environment of the game). Ex. 1004, 2:22-26. The on-screen presentation is not shown until the user activates the interactive information element, and so it is “hidden” in that sense. *Id.*, 7:31-40. This is consistent with how the applicant described “hidden content” in the prosecution history of the ’089 Patent. Ex. 1002, 86 (“hidden” content appears when a hot spot is activated). The “on-screen presentation” can be an advertisement, which is one type of promotional content. Ex. 1004, 8:11-21 (examples of advertisements that may be shown when a player engages with an interactive information element).

127. Jiau also discloses this limitation, and renders it obvious when applied to Ho’s mobile game. Jiau teaches that “hotspots” and “hotspaces” may have “links” associated with them, which take “various actions, depending on the type of link” (*e.g.*, “caus[ing] an action ... such as display of an advertisement or an animation”). Ex. 1005, 12:13-27, 15:9-10. Like Ho’s interactive information elements, Jiau’s hotspots and hotspaces activate “hidden” content because they do not display their associated advertisements until the user activates them and causes the link to perform the associated action (for example, displaying an advertisement when a player enters a designated hotspace location. *Id.*, 15:4-8, 17:1-4 (providing examples). A POSITA would have understood that Jiau’s teachings regarding hotspots and

hotspaces provide one possible implementation for Ho's interactive information elements, or a way to improve Ho's interactive information elements by providing more varied ways to make an element interactive.

g) *Element 1[e]: uploading the hot spot information to the mobile communication device.*

128. In my opinion, Ho discloses this limitation. I explained above in connection with element 1[d] that Ho's server checks "[i]f the interactive information element(s) needs to be changed/renewed," and if it does, "then new interactive information element(s) [*i.e.*, hot spot information] are sent [*i.e.*, uploaded] to the client end device [*i.e.*, the mobile communication device] ." Ex. 1004, 10:15-17.

3. Claim 2: The method of claim 1, wherein the location in-game is associated with activating the hot spot within the gaming environment of the mobile video game.

129. In my opinion, Ho renders this limitation obvious. As I describe above in connection with element 1[d][i], Ho's interactive information elements (*i.e.*, "hot spots") are implemented using a "module" that "enable[s] the location of the at least one interactive information element at a juncture in the video game" (*e.g.*, at a specific location within the game). *Id.*, 9:27-35. I also describe above why it would be obvious to a POSITA that the location information may be among the updateable hot spot information sent from the server to the mobile device.

130. Jiau also discloses this limitation, and renders it obvious when applied to Ho's mobile game and server. As discussed above, Jiau describes "hot spots" in the form of objects, hotspots (which correspond to a location on an object), and hotspaces (which correspond to a location surrounding an object). Jiau's objects, hotspots, and hotspaces may have links that cause an action when a user interacts with (*i.e.*, activates) the object, hotspot, or hotspace. Ex. 1005, 12:13-27, 15:9-10, 15:31-16:2, 16:29-17:4. In other words, the in-game location of a hotspot or hotspace with a link is used to activate the hotspot or hotspace within the game.

4. Claim 3: The method of claim 1, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.

131. In my opinion, Ho renders this limitation obvious in view of Choi. As I describe above in connection with element 1[d], Choi describes ways to select targeted advertisements for delivery to a player. One way to target advertising is to select "location-specific advertising content" based on a user's "GPS location information." Ex. 1008, ¶43. In that particular example provided by Choi, advertising content would be selected based on the proximity of the user's mobile device to a physical location related to that advertisement (*i.e.*, based on the user's proximity to the physical location associated with the location-specific advertising content). A POSITA would have understood that Choi's teachings provide an

improvement to Ho's interactive information elements by enabling the selection of ad content that is more relevant to the user (*e.g.*, specific to the user's physical location).

5. Claim 6

132. Claim 6 is a system claim that largely tracks the method in claim 1. Specifically, elements 6[a], 6[b], 6[e][i], and 6[e][ii] are, in substance, the same as elements 1[a], 1[b], 1[d][i], and 1[d][ii]. Thus, in my opinion, these elements are rendered obvious by Ho, Jiau, and/or Choi for the reasons I provide above.

133. I address elements 6[c], 6[d], and 6[e] below.

a) Element 6[c]: a server in communication with the storage medium;

134. In my opinion, Ho discloses this limitation. As I discuss above for elements 1[a] and 1[b], Ho's system includes a "client end device" such as "a video games console, a mobile telephone, [or] a personal digital assistant," which may "connect[] to a server," to receive "new interactive information element(s) [*i.e.*, hot spot information]" from the server. Ex. 1004, 10:3-6, 10:14-17. I explain above for element 1[b] why a POSITA would have understood that Ho's server includes a computer-readable medium for storing interactive information elements ("hot spot information"). A POSITA would have similarly understood that the server must be in communication with the storage medium, since the server must retrieve the hot spot information from the storage medium in order to send it to client end devices.

135. Jiau also discloses this limitation, and renders it obvious when applied to Ho's mobile game and server. As discussed above for elements 1[a] and 1[b], Jiau describes a "server system" with "one or more processors and appropriate data storage, such as memory or mass-storage device," and a "database" that stores information about "objects" (including "hotspot" and "hotspace" information associated with an object). Ex. 1005, 6:4, 7:7-12, 7:23-25, 8:7-10, Fig. 13(b). A POSITA would have understood that Jiau's server is in communication with its data storage elements since those elements are part of the server. A POSITA would also have understood that Jiau's teachings provide one possible implementation for Ho's server.

b) Element 6[d]: an interface coupled to the server and a network, wherein the interface receives a request for hot spot information from the mobile communication device over the network;

136. In my opinion, Ho discloses this limitation.

137. According to the '089 Patent, an interface "may be part of [the] server" that "pass[es] a request for hot spot information to [the] server." Ex. 1001, 5:29-33. Ho's "client end device" connects to its server "via a network" in order to receive new interactive information elements. Ex. 1004, 10:4-19. A POSITA would have understood that Ho's server would include a software or hardware interface for

connecting to the network and receiving network communications (such as requests for new interactive information elements from a client end device).

138. Jiau also discloses this limitation, and renders it obvious when applied to Ho's server. Jiau specifically describes interface software (*i.e.*, "loader/network (NW) communication software") within its "server system" that "allows a client system to communicate with server system [] in order to load lots and objects from server system." Ex. 1005, 6:31-7:2. The "loader/network (NW) communication software" is an interface coupled to the server system, which communicates with client systems (*e.g.*, to receive receives requests from the client systems). A POSITA would have understood that Jiau's teachings provide one possible implementation for Ho's server.

- c) *Element 6[e]: wherein the server is operative to receive the request through the interface and utilize the request to determine the hot spot information for the mobile video game, and send the hot spot information to the mobile communication device, the hot spot information comprising:*

139. In my opinion, Ho renders this limitation obvious in view of Jiau and Choi. As I explained above in connection with element 6[d], both Ho and Jiau describe a server where requests from a client device are received via an interface with a network. I also explain above in my discussion of elements [1d] and 1[e] how Ho and Choi disclose determining the hot spot information to send to a client device

based on the communication (*i.e.*, request) received the client device, and then sending the selected hot spot information back to the mobile device. Those discussions collectively address the full scope of this limitation.

6. **Claim 7: The method of claim 6, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.**

140. Claim 7 is identical to claim 3. Thus, I refer back to my analysis of claim 3 above.

7. **Claim 8: The system of claim 6, wherein the hot spot information is pre-selected by the server based on a model type associated with the communications device, a service subscription associated with the communications device, or a service provider for the service subscription associated with the communications device.**

141. In my opinion, Ho renders this limitation obvious in view of Choi.

142. As I discuss above in connection with element 1[d], Choi teaches that advertisements may be selected for delivery to a particular mobile device based on information about the user or information about the device itself. One such example is using demographic information about the user, inferred based on the carrier or service provider associated with the user's device, in order to target ads for that user. Ex. 1008, ¶83 ("Ad targeting depends on collection of user demographic and contextual information."), ¶86 ("Identification of a users' carrier implies a certain demographic."), claims 48-49 ("receiving data specific to at least one of a group

comprising the user or the user's device ... wherein the data includes at least one of a group comprising the user's service provider, the user's location, [or] the user's device..."). Another example is using information about the user's device itself (*i.e.*, its "capabilities" or "model") to select an ad "that is best suited for presentation on the device to which the ad is to be served." *Id.*, ¶¶89-90. A POSITA would have understood that Choi's teachings provide an improvement to Ho's interactive information elements by enabling the selection of ad content associated with those elements so that the ads are (1) targeted to the interests of the user, and (2) selected based on compatibility with the user's mobile device.

B. Ground 2: Ho in view of Jiau, Choi, and Ellis Render Obvious Claims 4-5 and 9-10

143. As I discussed above in Ground 1, Ho in view of Jiau and Choi render obvious claims 1-3 and 6-8. Further modifying Ho in view of Ellis also renders obvious claims 4-5 and 9-10.

1. Rationale to Combine Ho and Ellis

144. I describe in Ground 1 why a POSITA would have found it obvious to modify Ho's system for incorporating interactive information elements that display advertisements in mobile games by incorporating Jiau's teachings, which include implementation details for similar well-known dynamic in-game interactive elements that are not expressly described in Ho, as well as Choi's teachings for implementing targeted and device-specific advertisements. A POSITA would have

found it obvious to further modify Ho based on well-known techniques in Ellis for tracking advertisements and using the tracked information to bill third-party advertisers.

145. As I note above, I understand that references cannot be combined as obvious unless they are analogous art to the challenged patent. Like Ho, Jiau, and Choi, Ellis is analogous art, both to the other references and to the '089 Patent, because it is also directed video games and dynamic in-game advertising in video games. *See* Ex. 1007, Abstract (“Methods and systems for dynamically incorporating advertising content into multimedia environments, such as games.”), 4:63-5:5 (game client may be a “hand-held communication device[]” such as “a telephone that supports text messaging or other data communication protocols”).

146. In my opinion, a POSITA would have been generally motivated to modify Ho based on the teachings of Ellis because they relate to similar types of improvements relating to game design and monetization, and a POSITA would have understood that Ellis’s teachings could be utilized to further improve Ho. For example, Ho explains that its “interactive information elements” can be used to provide advertisements that “engage the player during the course of gameplay” and can be updated “without a major revision of the source code of the video game.” Ex. 1004, 1:26-37. Ellis’s provides a similar teaching about using dynamic advertisements that are incorporated “into individual behaviors of objects within the

game,” so that they are “non-intrusive”—that is, they do not interfere with the game experience by “reducing the viewing area” or “forcing the user to wait while ads are downloaded before game play begins.” Ex. 1007, 1:66-2:3, 2:24-41. Ellis also offers a similar discussion of how dynamic advertisements improve on conventional static game (“‘burned into’ the game code”) because the ads can be changed, particularly if a third-party advertiser is not pleased with their placement or effectiveness. *Id.*, 2:5-10.

147. In my opinion, a POSITA would also have been specifically motivated to incorporate Ellis’s teachings regarding advertisement tracking and billing to Ho’s video game and video game system because Ellis describes well-known techniques that are useful for monetizing ads in video games. Ho already recognizes that monetization of ads is beneficial—for example, it describes counting the “incidence” of user interaction with interactive information elements and storing that count at a network location. Ex. 1004, 2:27-29. Ho’s counts of “incidence” may be used to “ascertain a value for placing interactive information elements in a particular video game”—*i.e.*, to determine ad value to monetize the ads. *Id.*, 9:3-5. Ellis provides additional techniques and more detail regarding ad monetization by describing how to track information about ad placement and delivery, and use the tracked information to bill advertisers. Ex. 1007, 13:61-14:65. A POSITA would have been motivated to apply Ellis’s well-known techniques to improve Ho’s in-game

advertisements because Ho already recognizes the value of monetizing ads, as described above.

148. In fact, Ho expressly recognizes that companies “embrace[] opportunities offered by in-game advertising” and “invest substantial sums of money to have their marks, logos, digital representations of their products, and brands included in video games.” Ex. 1004, 1:19-24. Thus, Ho acknowledges the well-known fact that in-game advertising is an effective way to monetize video games, and that advertisers are willing to pay money to include their products and brands in video games. A POSITA would understand that monetization necessarily requires a way to charge advertisers for including their ads in a game, and would be motivated to incorporate teachings from other references (such as Ellis) that describe well-known techniques for doing so.

149. A POSITA would have reasonably expected the proposed combination of Ho, Jiau, Choi, and Ellis to succeed. Like Choi, Ellis describes a simple method for collecting and logging ad information, so that advertisers can be charged based on the number of users that their ad is displayed to. A POSITA would have readily understood how to implement these logging and billing features using basic software functions on a standard computer (reading/writing data, sending/receiving data over a network). Thus, incorporating Ellis’s teachings into Ho would be well within the capabilities of a POSITA, because such modifications would be straightforward to

implement. Indeed, Ho already provides systems and methods for tracking ad-related information “incidence,” as I note above.

2. Claim 4: The method of claim 1, further comprising the step of tracking the hot spot information that has been downloaded to the mobile communication device.

150. In my opinion, Ho renders this limitation obvious in view of Ellis.

151. As I note above, Ho describes tracking the incidence of interactive information elements to assist with determining the value of in-game advertising, but does not specifically describe tracking the interactive information elements (*i.e.*, hot spot information) downloaded to a mobile device.

152. Ellis’s advertisement server, on the other hand, logs information about “which ads were sent to the game client systems,” and that information is then used “for billing the advertiser, in that each time an ad is inserted into a video game, it is known by the advertiser that it appeared on the game player’s screen.” Ex. 1008, 19:45-60. “At a minimum, the data about the ad insertion ... includes an identification of the user” and “the ad that was inserted.” *Id.*, 14:30-37. A POSITA would understand that this information corresponds to an identification of the hot spot information downloaded to a mobile communication device because it identifies the hot spot information (a particular ad) and the user’s device to which it was downloaded. A POSITA would have understood that Ellis’s teachings provide an improvement to Ho’s interactive information elements by providing a specific and

simple mechanism to charge third-party advertisers for displaying their ads based on the frequency of delivery/presentation to users.

3. Claim 5: The method of claim 4, wherein the tracked hot spot information is used for billing a third party associated with the hot spot information.

153. In my opinion, Ho renders this limitation obvious in view of Ellis. As I discussed above for claim 5, Ellis describes that information logged about advertisement delivery is used “for billing the [third-party] advertiser” associated with the advertisement. Ex. 1008, 13:61-67, 19:45-60.

4. Claims 9-10

154. Claims 9 and 10 mirror claims 4 and 5, and would have been obvious for the reasons I provide above.

C. Ground 3: Sturman in view of Ho Renders Obvious Claims 1-10

155. For the reasons set forth in detail below, and based on my review of the '089 Patent, file history, and the prior art references cited in my analysis, a POSITA would have readily understood that the teachings of Sturman in view of Ho render obvious all elements of claims 1-10.

1. Rationale to Combine Sturman and Ho

156. In my opinion, a POSITA would have found it obvious to modify Sturman's advertisement delivery system to incorporating interactive ads associated

with in-game hot spots by incorporating Ho's teachings regarding interactive information elements.

157. I understand that references cannot be combined as obvious unless they are analogous art to the challenged patent, *e.g.* that they are directed to the same field of endeavor. In my opinion, Sturman and Ho are analogous art to the '089 Patent, as they all are directed to video games and dynamic in-game advertising in video games. *See* Ex. 1001, Abstract ("Systems and methods for providing hot spots for mobile video games.... The hot spots may be hidden aspects of the game and promotional in nature...."); Ex. 1004, 1:5-7 ("This invention relates to a video game incorporated with at least one interactive information element."), 2:8-9 ("Preferably, the information element may be either advertisements or public announcement services."), 2:17-18 ("It is advantageous that the at least one interactive element is able to be updated."); Ex. 1006, Abstract ("An advertisement delivery scheme and associated facility provide targeted advertisements for multiple video games without advertisers having to specify specific game titles in which they would like their advertisements placed."), ¶22 ("player's gaming device" may be a "mobile phone").

158. In my opinion, a POSITA would have been generally motivated to modify Sturman based on the teachings of Ho because both relate to similar types of improvements for video games, including their design and monetization, and a POSITA would have understood that Ho's teachings could be utilized to further

improve Sturman. In addition, both references relate to the same types of improvements in game design and monetization that the '089 Patent describes. For example, the '089 Patent explains that video games “have a popularity life span,” and users “may stop playing [a] particular game” when “game elements become increasingly familiar.” Ex. 1001, 1:28-32. The '089 Patent also explains that “in-game advertising ... is an attractive proposition” because “when a user plays a game on the mobile communication device, the user’s full attention may be directed to the screen of the mobile communication device.” 1:47-52. Sturman and Ho both describe how their inventions provide precisely those improvements in video games. For example, Sturman explains that its teachings facilitate providing “advertising opportunities” that “offer an amazing landscape for advertisers to work with” by eliminating certain barriers to effective distribution of in-game advertisements. Ex. 1006, ¶4. Sturman also describes how its advertisement delivery scheme benefits “[b]oth advertisers and game developers/game publishers” by increasing the “reach” of ads and more effectively controlling delivery of targeted ads. *Id.*, ¶ 24. Ho explains how to improve in-game advertisements by using “interactive information elements” to provide advertisements that “engage the player during the course of gameplay” and can be updated “without a major revision of the source code of the video game.” Ex. 1004, 1:26-37.

159. In my opinion, a POSITA would also have been specifically motivated to incorporate Ho's teachings regarding interactive information elements into Sturman's advertisement delivery system because Ho teaches specific improvements to the presentation of ads that would improve the effectiveness of the ads used within Sturman's system. Ho specifically teaches that static ads that are "restricted to in-game billboards, in-game signages, in-game product placements and other forms of non-interactive in-game elements" have a "major disadvantage" because "a video game player would probably gloss over all the different types of advertising when the player is engrossed by the proceedings of the game during gameplay." Ex. 1004, 1:26-32. Many of the ads used in Sturman's system, however, are precisely these types of non-interactive ads, such as "billboards, storefront signs, panel trucks, Jumbotron screens ... [and] posters on walls." Ex. 1006, ¶19. Thus, a POSITA would be motivated to improve Sturman's ads based on Ho's teachings by adding improved interactive ads designed to be more engaging to players. Ex. 1004, 2:1-33.

160. A POSITA would have reasonably expected the proposed combination of Sturman and Ho to succeed. Ho's interactive information elements can be incorporated into conventional mobile games using standard computer and network hardware and basic software functions for reading/writing data, communicating over a network, responding to user input, and displaying information on a screen. Indeed,

much of this functionality is already incorporated into Sturman's advertisement delivery system, which also requires reading, writing, communicating, and displaying ad information. Incorporating Ho's teachings into Sturman merely requires adding specific types of interactivity to Sturman's ads (some of which already may be interactive), which would be well within the capabilities of a POSITA, because such modifications would be straightforward to implement—indeed, they can be implemented using basic software logic for responding to user input within the game.

2. Claim 1

- a) Element 1[a]: A method for providing a hot spot associated with a mobile video game, the mobile video game being operable on a mobile communication device, the method comprising the steps of:*

161. To the extent the preamble is limiting, in my opinion, Sturman renders this limitation obvious in view of Ho.

162. Sturman teaches an “advertisement delivery scheme” that “allow[s] advertisers to deliver their campaign messages to specific audiences they wish to target across one or multiple game titles played across multiple platforms.” Ex. 1006, ¶18. Sturman's system can provide advertisements for games on mobile communication devices, such as “mobile phone[s].” *Id.*, ¶¶18, 22, 36. Sturman's ads are displayed within the video game, at an in-game location referred to as an “ad unit” or “inventory element”—for example, “billboards, storefront signs, panel

trucks, Jumbotron screens in a sports stadium, posters on walls, T-shirts on a game character, items used by game characters ... and so on.” *Id.*, ¶¶19, 22. However, ads can also be “interactive.” *Id.*, ¶20.

163. Sturman does not expressly describe its ads as containing “hot spots” as the ’089 Patent uses that term. Ho describes the claimed “hot spots,” however. For example, Ho describes an “interactive information element.” Ex. 1004, Abstract. Ho’s interactive information elements are consistent with the ’089 Patent’s description of a “hot spot” as “an in-game feature that includes an activation element and a content element that is triggered by the activation element.” Ex. 1001, 2:21-23. Specifically, Ho’s “interactive information elements” may be “engaged [*i.e.*, activated] in different ways” by the player, including by “fight[ing] and successfully slay[ing]” an interactive monster, “enter[ing]” an interactive vehicle, or “clicking” on an interactive icon. Ex. 1004, 5:7-14. When the player engages (activates) these interactive information elements, they display new content on the screen, such as “an on-screen presentation” either “within the courses of gameplay or in a sub-screen in the game.” *Id.*, 5:27-30. Ho’s “interactive information elements” (*i.e.*, “hot spots”) are incorporated “into a video game,” which “may be run on a device such as ... a video games console, a mobile telephone, [or] a personal digital assistant [*i.e.*, a mobile communication device].” *Id.*, Abstract, 2:20-22. A POSITA would have understood that Ho’s teachings provide an improvement to Sturman’s advertisement

delivery system by enabling interactive ads which can better capture and engage the attention of players.

b) Element 1[b]: storing hot spot information on a computer-readable medium;

164. In my opinion, Sturman discloses or renders obvious this limitation.

165. Sturman's advertisement delivery system includes a number of servers that store information about in-game ads, including an "advertisement server" that stores information about where ads may be displayed within a game ("game inventories), and a media server that stores media files containing the ads themselves. Ex. 1006, ¶¶21, 29. Sturman's servers include "data storage devices," which may "include any type of computer-readable media." *Id.*, ¶¶38, 40.

166. As I discuss above in connection with element 1[a], it would have been obvious to a POSITA to modify Sturman's advertisements to incorporate interactive information elements comprising hot spots, as described by Ho. Just as Sturman's default advertisements are stored on computer-readable media on Sturman's servers, a POSITA would understand that the interactive advertisements in the combined system could and would be stored on the same computer-readable media. This is particularly true since Sturman already contemplates "interactive" ads. *Id.*, ¶20.

c) Element 1[c]: receiving a communication from a mobile communication device;

167. In my opinion, Sturman discloses this limitation.

168. In Sturman's system, an "advertisement recipient client" (e.g., a game client such as a mobile device with a mobile game) "may request and receive advertisements from the advertisement management service system" via a "communication link, such as the Internet." Ex. 1006, ¶33, Fig. 1. The request from the "advertisement recipient client" is a communication from a mobile communication device. Sturman's advertisement server also includes an "advertising request handler" that is specifically for the purpose of receiving the communication and "enable[s] the matching of advertisement campaigns to various appropriate video game titles." *Id.*, ¶41.

d) *Element 1[d]: determining the hot spot information to provide to the mobile device based upon the communication, the hot spot information comprising:*

169. In my opinion, Sturman discloses or renders obvious this limitation.

170. Sturman teaches that its advertisement server "produces a set of one or more matched advertisements to be displayed for each available ad unit, specified within the client's request." Ex. 1006, ¶44. *Id.* The advertisements are matched in response to a request from the mobile device, which "contains a data structure that includes a unique identifier to indicate the client type, another unique identifier for the specific game player, the session ID and the list of available ad units for which advertisements are being requested." *Id.* Thus, the matching (determining) of

advertisements is based at least on the available ad units provided in the request from the mobile device.

171. Sturman also teaches additional targeting of ads “based upon specific demographic characteristics of a game player,” which may be collected based on other information associated with the communication from the mobile device, such as an IP address. *Id.*, ¶47. Ads may also be targeted based on the player’s geographic location, which would also need to be communicated by the mobile device (either by providing a GPS location, or based on IP address information). *Id.*, ¶54.

172. As I discuss above in connection with element 1[a], it would have been obvious to a POSITA to modify Sturman’s advertisements to incorporate interactive information elements comprising hot spots, as described by Ho. Just as Sturman’s default advertisements are matched based on the request from the mobile device, a POSITA would understand that the interactive advertisements in the combined system could and would be matched in the same manner. This is particularly true since Sturman already contemplates “interactive” ads. *Id.*, ¶20.

- e) *Element 1[d][i]: a location in-game associated with activating the hot spot, wherein the location in-game is represented by a non-promotional background object; and*

173. In my opinion, Sturman discloses or renders this limitation obvious.

174. Sturman’s advertisement delivery system displays ads in predetermined in-game locations, which Sturman calls “ad units” or “inventory elements.” Ex. 1004, ¶19. The in-game locations of the ad units are tracked on the advertisement server. For example, the advertisement server “may be used to track and manage large sets of available ad units from multiple game titles,” and may match ads “[b]ased on information associated with each of the available ad units.” *Id.*, ¶22. Since ads are matched to specific ad units, a POSITA would understand that Sturman’s advertisement server must provide an in-game location (ad unit) for each ad. This is particularly true because the ad server may send multiple matched ads, each corresponding to a different ad unit—thus, the mobile device would require information indicating which matched ad corresponds to which ad unit. *Id.*, ¶44 (“the advertisement recipient client 104 requests advertisements for delivery to **one or more** available ad units” and “[t]he advertising matching and weighting system processes the request and produces a set of **one or more** matched advertisements”).

175. Sturman also teaches that ads may be “interactive.” *Id.*, ¶20. A POSITA would understand that an interactive ad includes an element that is activated through user interaction, and causes something to happen in response to the interaction, like the ’089 Patent’s hot spots. Thus, for interactive ads, the location in-game would indicate the interactive location in-game, where the user may activate the “hot spot” associated with the ad.

176. Sturman's ad units may also correspond to in-game locations represented by non-promotional background objects. For example, Sturman describes a number of exemplary ad units that correspond to background elements, such as storefront signs, Jumbotron screens, posters, and t-shirts on characters. Ex. 1006, ¶19.

177. Ho also discloses this limitation, and renders it obvious when applied to Sturman's advertisement delivery system. As discussed in connection with element 1[a], Ho's interactive information elements are "hot spots" as that term is used in the '089 Patent. For example, Ho's interactive information elements may be "a character in the game or an item in the game" that is "located at a juncture in the game, such as ... a specific location in the game." Ex. 1004, 2:11-17. Ho's interactive information elements may also be represented in-game as non-promotional background objects, consistent with the description of "non-promotional background objects" stated by the applicant in the prosecution history of the '089 Patent. Specifically, the Applicant stated that "'non-promotional background objects' are not game components," *i.e.*, "featured objects that a user manipulates in order to play the game"; instead, they are "outside of the primary focus of game play" and "are not themselves needed or required in order to play the game." Ex. 1002, 85. This is true for Ho's interactive information elements. Ho's interactive information elements are displayed as non-promotional in-game

elements—they only display an advertisement when a player activates them. Ex. 1004, 2:11-12 (“Preferably the at least one interactive information element may be, for example, an icon in the game, a character in the game or an item in the game.”), 5:1-7 (examples using a “hamburger monster” and a “car”), 5:27-38 (actions such as an “on-screen presentation” are performed “[i]f the player chooses to engage any of the interactive information elements”). Ho’s interactive information elements are also consistent with the Applicant’s description of “background” objects because they are not featured objects that a user manipulates in order to play the game—to the contrary, “engagement of the at least one interactive information element may not be mandatory for the continuation of gameplay,” (not needed or required in order to play the game), and activation “does not disrupt gameplay” (is outside of the primary focus of gameplay). *Id.*, 4:26-28, 5:30-33, 5:36-38. For example, Ho describes an interactive information element that just causes “an airliner with a particular airline’s (an advertiser) paint scheme flying across the screen.” *Id.*, 8:11-16. The element is “overlaid on the game environment” so it “does not disrupt gameplay”—in other words, it is entirely optional and incidental to the focus of the game play. *Id.*, 8:13-16.

178. As I discuss above in connection with element 1[a], it would have been obvious to a POSITA to modify Sturman’s advertisements to incorporate interactive information elements comprising hot spots, as described by Ho. The in-game

location (ad unit) for these interactive information elements would be communicated to the mobile device from Sturman's advertisement server, just as in-game location is communicated for other ads in Sturman's system. This is particularly true since Sturman already contemplates "interactive" ads. Ex. 1006, ¶20.

f) Element 1[d][ii]: hidden promotional content for presenting to the user, within a gaming environment of the mobile video game, when the hot spot is activated; and

179. In my opinion, Sturman renders this limitation obvious in view of Ho. As I explain above in connection with elements 1[b] and 1[d], Sturman describes how its advertisement server stores information about in-game "ad units" that describe in-game locations for advertisements, and its media server stores media content associated with an advertisement. Ex. 1006, ¶¶19-22, 29. Sturman also teaches that ads may be "interactive." *Id.*, ¶20. But Sturman does not specifically teach that interactive ads include "hidden" content that is only displayed when they are activated.

180. As discussed above in Ground 1, as well as in element 1[a] for this Ground, Ho's interactive information elements, however, include hidden content that is only "activate[d]" when a player "engage[s]" the element. Ex. 1004, 2:22-26, 7:31-40, 8:11-21. As I discuss above in connection with element 1[a], it would have been obvious to a POSITA to modify Sturman's advertisements to incorporate

interactive information elements comprising hot spots (including hidden content), as described by Ho. The advertisements comprising this hidden content would be communicated to the mobile device from Sturman's advertisement server, just as media content is communicated from the media server for other ads in Sturman's system. This is particularly true since Sturman already contemplates "interactive" ads. Ex. 1006, ¶20.

g) *Element 1[e]: uploading the hot spot information to the mobile communication device.*

181. In my opinion, Sturman discloses or renders obvious this limitation.

182. As I discuss above in connection with element 1[d], Sturman's advertisement server "produces a set of one or more matched advertisements to be displayed for each available ad unit, specified within the client's request," which means that each advertisement sent (uploaded) from the advertisement server to the client includes the advertisement content (the "hidden content," in the combined system, as described above for element 1[d][ii]), along with the associated in-game location information (see element 1[d][i]). *See also* Ex. 1006, ¶¶30, 44, 56. These two elements comprise the claimed "hot spot information."

3. Claim 2: The method of claim 1, wherein the location in-game is associated with activating the hot spot within the gaming environment of the mobile video game.

183. In my opinion, Sturman discloses or renders this limitation obvious. As I describe above in connection with elements 1[d][i] and 1[d][ii], Sturman's

advertisement server matches ads in response to a request from a mobile device, and sends the advertisement and its associated in-game location (its associated “ad unit”) to the mobile device. Ex. 1006, ¶¶19-22, 30, 44, 56. Sturman’s system may also provide “interactive” ads. *Id.*, ¶20. In the case of interactive ads, the in-game location of the ad, sent from the advertisement server, would be a location that can be activated within the game.

184. In addition, in the combined system, where Sturman’s advertisement delivery system is modified to incorporate interactive information elements as taught by Ho, the advertisement server and media server would collectively send ads to the mobile device that identify the “ad unit” (in-game location) for the ad, as well as media content (hidden promotional content) to be displayed with the user engages with the “ad unit” location and activates the ad. *See* Ex. 1004, 2:11-17, 2:22-26, 9:27-31, 9:33-35 (describing the relevant aspects of Ho’s interactive information elements).

185. As I discuss above in connection with element 1[a], it would have been obvious to a POSITA to modify Sturman’s advertisements to incorporate interactive information elements comprising hot spots, as described by Ho. The in-game location (ad unit) and hidden promotional content (advertisement content) for these interactive information elements would be communicated to the mobile device from Sturman’s advertisement server and media server, just as that information is

communicated for other ads in Sturman's system. This is particularly true since Sturman already contemplates "interactive" ads. Ex. 1006, ¶20.

4. Claim 3: The method of claim 1, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.

186. In my opinion, Sturman discloses this limitation.

187. As described above in connection with element 1[d], Sturman teaches that ads may be matched in response to a request from a mobile device based on a player's geographic information, such as the player's location (country, region/state, city). Ex. 1006, ¶¶47, 54. A POSITA would understand that when the player's geographic information is used for matching, then ads will be selected based on the player's proximity to a physical location associated with the ad. In other words, ads whose matching criteria include a geographic location will be selected based on the proximity of the player to that location (*i.e.*, is the player in the country, region/state, or city associated with that ad).

5. Claim 4: The method of claim 1, further comprising the step of tracking the hot spot information that has been downloaded to the mobile communication device.

188. In my opinion, Sturman discloses this limitation.

189. Sturman explains that the advertisement server may "track and record all communications and data sent to and received from the advertisement recipient client." Ex. 1006, ¶42. Sturman also specifically "records the advertisements that

have been delivered to a session” in an “active session database.” *Id.*, ¶49. In the combined system, the data exchanged between the advertisement server and the advertisement recipient client, and the advertisement information itself both include the hot spot information (for the reasons I explain in my discussion of elements 1[d], 1[d][i], and 1[d][ii]). Thus, the hot spot information corresponding to ads downloaded by each mobile device would be among the information tracked and recorded by the server.

6. Claim 5: The method of claim 4, wherein the tracked hot spot information is used for billing a third party associated with the hot spot information.

190. In my opinion, Sturman discloses this limitation.

191. Sturman explains that “information collected by the advertisement server” may “be used in billing to ensure that advertisers pay only for advertisement presentations that meet specified thresholds. Ex. 1006, ¶26. The information collected by the advertisement server includes information about the hot spot information downloaded to each mobile device, as I discuss above in connection with claim 4.

7. Claim 6

192. Claim 6 is a system claim that largely tracks the method in claim 1. Specifically, elements 6[a], 6[b], 6[e][i], and 6[e][ii] are, in substance, the same as

elements 1[a], 1[b], 1[d][i], and 1[d][ii]. Thus, in my opinion, these elements are rendered obvious by Sturman and Ho for the reasons I provide above.

193. I address elements 6[c], 6[d], and 6[e] below.

a) Element 6[c]: a server in communication with the storage medium;

194. In my opinion, Sturman discloses this limitation.

195. For example, as I discuss above for element 1[b], Sturman's advertisement delivery system includes at least an "advertisement server" that stores information about where ads may be displayed within a game ("game inventories), and a media server that stores media files containing the ads themselves. Ex. 1006, ¶¶21, 29. These servers include (and are in communication with) "data storage devices" that store information about ads, such as ad units and ad content. *Id.*, ¶¶38, 40.

b) Element 6[d]: an interface coupled to the server and a network, wherein the interface receives a request for hot spot information from the mobile communication device over the network;

196. In my opinion, Sturman discloses this limitation.

197. Sturman specifically discloses that its advertisement server includes an "advertising request handler," which is the interface that receives requests for advertisements from game clients (*e.g.*, mobile devices) over the network (*e.g.*, the Internet). Ex. 1006, ¶¶41, 44, Figs. 1, 3. As I describe above in connection with

elements 1[a], 1[d], 1[d][i], and 1[d][ii], in the combined system of Sturman and Ho, Sturman's system delivers interactive ads (according to Ho's teachings), and thus requests for advertisements are, in effect, requests for hot spot information (because an interactive advertisement comprises hot spot information).

c) *Element 6[e]: wherein the server is operative to receive the request through the interface and utilize the request to determine the hot spot information for the mobile video game, and send the hot spot information to the mobile communication device, the hot spot information comprising:*

198. In my opinion, Sturman discloses this limitation.

199. As I explain above in connection with element 6[d], Sturman's "advertising request handler" is an interface in the advertisement server that receives requests for ads (including hot spot information) over a network such as the Internet. And as I explain above in connection with elements 1[d] and 1[e], in the combined system, requests from the mobile devices are used to determine hot spot information and send the selected hot spot information to the requesting device.

8. Claim 7: The method of claim 6, wherein the hidden promotional content is pre-selected based on the proximity of the mobile communication device to a physical location related to the hidden promotional content.

200. Claim 7 is identical to claim 3. Thus, I refer back to my analysis of claim 3 above.

9. Claim 8: The system of claim 6, wherein the hot spot information is pre-selected by the server based on a model

type associated with the communications device, a service subscription associated with the communications device, or a service provider for the service subscription associated with the communications device.

201. In my opinion, Sturman discloses this limitation.

202. As I discuss above in connection with claim 1[d], Sturman uses an advertising matching and weighting system to select advertisements in response to a specific request. The matching algorithm used within the system may use criteria such as “explicit inventory targeting,” where certain ads may be matched to specific ad units, which may be linked to a particular game title, or, more importantly, may be linked to specific “SKUs.” Ex. 1006, ¶52. Each SKU identifies a “client type,” which identifies a type of “game console”—in other words, a specific type of game-playing device. *Id.*, ¶44. (Sturman explains that it uses the term “game console” to refer to any game-playing device described within the reference, which includes mobile devices. *Id.*, ¶¶18, 22, 36.) The request from the mobile device, sent to the server, also includes “a unique identifier to indicate the client type.” *Id.*, ¶44. Sturman separately explains that ad targeting may take into account “[p]layer-specific information,” which includes information about the player’s device type, such as “OS or hardware versions.” *Id.*, ¶54.

10. Claims 9-10

203. Claims 9 and 10 mirror claims 4 and 5, and would have been obvious for the reasons I provide above.

D. Secondary Considerations

204. I am not aware of any evidence regarding secondary considerations of non-obviousness, and Patent Owner has not identified any such evidence in the patent specification, prosecution history, or related district court complaints. To the extent Patent Owner identifies evidence of secondary considerations at a later point in the proceeding, I reserve the right to address it at that time.

XIII. CONCLUSION

205. For the aforementioned reasons, a POSITA would have recognized that a number of predictable prior art combinations (articulated in the grounds above) would have achieved all elements of claims 1-10 of the '089 Patent, and that those claims are thus invalid in view of the prior art, for the reasons discussed above.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on the information and belief are believed to be true; I declare under penalty of perjury that the foregoing is true and correct, and understand that willful false statements and the like are punishable by fine or imprisonment, or both pursuant to 18 U.S.C. 1001.

Date: November 7, 2023

Respectfully Submitted,

A handwritten signature in blue ink, consisting of stylized, overlapping loops and strokes, positioned above a horizontal line.

Dr. José Zagal