UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NIANTIC, INC.,
Petitioner
v.
IMAGINEAR, INC. AND IMAGINE AR, INC.,
Patent Owner.

IPR2025-01273, IPR2025-01274, IPR2025-01275, IPR2025-01276
U.S. Patent Nos. 10,946,284, 11,484,797, 11,666,827, and 12,070,691

DECLARATION OF MR. STACY FRIEDMAN

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: July 12, 2025 By: _____

Stacy Friedman

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24. ’797 Patent, Ground 1A, Kolo: Claim 26: The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or

aggression in the virtual character. 276

25. ’797 Patent, Ground 1A, Kolo: Claim 27: The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element. 276

C. ’797 Patent, Ground 1B, Kolo + Zyda 276

1. ’797 Patent, Ground 1B, Kolo + Zyda: Kolo (Overview) 276
2. ’797 Patent, Ground 1B, Kolo + Zyda: Zyda (Overview) 277
3. ’797 Patent, Ground 1B, Kolo + Zyda: Motivation to Combine Kolo + Zyda 277
4. ’797 Patent, Ground 1B, Kolo + Zyda: Claim 22: The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline. 277
5. ’797 Patent, Ground 1B, Kolo + Zyda: Claim 23: The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items. 277
6. ’797 Patent, Ground 1B, Kolo + Zyda: Claim 25: The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure. 278
7. ’797 Patent, Ground 1B, Kolo + Zyda: Claim 28: The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures. 278

XIV. CONCLUSION 278

APPENDIX A – MATERIALS CONSIDERED 279

I, Stacy Friedman, hereby declare as follows:

I. INTRODUCTION

1. I have been retained on behalf of Niantic, Inc. ("Niantic" or "Petitioner") to offer technical opinions related to U.S. Patent Nos. 10,946,284 ("the '284 patent"), 11,484,797 ("the '797 patent"), 11,666,827 ("the '827 patent"), and 12,070,691 ("the '691 patent") (collectively the "Challenged Patents"). I understand that Niantic is requesting that the Patent Trial and Appeal Board ("PTAB" or "Board") institute *inter partes* review ("IPR") proceedings for each of the Challenged Patents. Specifically, I have been asked to consider the validity of claims 1-28 in each[1] of the Challenged Patents (the "Challenged Claims") in view of prior art and obviousness considerations from the perspective of a person of ordinary skill in the art ("POSITA") at the time of the invention as it relates to the Challenged Patents.

2. I am being compensated for my time at my standard consulting rate of $694/hour (one half for travel time). I am also being reimbursed for expenses that I incur during this work. My compensation is not contingent upon the results of my study, the substance of my opinions, or the outcome of any proceeding involving the Challenged Claims. I have no financial interest in the outcome of

[1] This is not a typo, each challenged patent has exactly 28 claims, many of which are identical from one patent to the next. I discuss the claim differences below.

this matter or in the pending litigation between Petitioner and Imaginear, Inc. and Imagine AR, Inc. ("Patent Owner" or "PO").

3. My analysis here is based on my years of education, research, and experience, as well as my investigation and study of relevant materials, including those cited herein.

4. I may rely upon these materials, my knowledge and experience, and/or additional materials to address arguments raised by the Patent Owner or opinions offered by other experts. Further, I may consider additional documents and information in forming any necessary opinions, including documents and information that may not yet have been provided.

5. My analysis of the materials in this proceeding is ongoing, and I will continue to review any new material as it is provided. This Declaration represents only those opinions I have formed to date. I reserve the right to revise, supplement, and/or amend my opinions herein based on new information and my continuing analysis of the materials already provided.

II. BACKGROUND AND QUALIFICATIONS

6. In this section, I summarize my educational background, work experience, and other relevant qualifications. I have over twenty-five years of professional experience in developing regulated casino games, gaming

mathematics, and professional software design. Exhibit 1007 is a true and accurate copy of my curriculum vitae.

7. I am the President of Olympian Gaming, LLC in Lake Oswego, Oregon, a position that I have held since 2001. In that capacity, I have consulted in the enterprise software and gaming industries regarding, among other things, software development, system architecture, game design and development, slot machine and table game mathematics, game software and hardware development, software patent infringement and validity and gaming patent infringement and validity. I have served as a subject matter expert in many matters related to software and associated systems, gaming machines or gaming technology, including over forty cases involving allegations of infringement or misappropriation of software or gaming-related intellectual property. Many of these cases have involved distributed software systems running on networked computers, and in several of these cases I have performed source code reviews.

8. In 1996, I earned my Bachelor of Arts degree in Computer Science, magna cum laude, from Harvard College, Harvard University, Cambridge, Massachusetts. Harvard was one of the institutions connected to ARPANET, the precursor of the Internet, and I was in college when the Internet was launched to the public. During college I was part of the technical team responsible for rolling out campus-wide Ethernet to student dormitories to enable in-room Internet access.

9. I have over twenty-five years of professional experience in developing regulated casino games, gaming mathematics, and professional software design.

10. My first job after college was at Oracle Corporation in Redwood Shores, California. I was part of the Oracle Forms team, a graphical tool for developing GUI applications to connect to Oracle databases. One of my projects involved helping transition from older network technologies to newer web technologies using Java and web servers. I wrote a debugging proxy and load-testing tool in Java to intercept protocol messages between the frontend web client and the backend web server, allowing the team to inspect messages for errors and perform scalability testing. I then traveled to an IBM testing lab in Boeblingen, Germany to scale-test the software, ultimately resulting in a $10M sale to the Netherlands tax authority.

11. My professional experience in the gaming industry started in 1998 when I joined Silicon Gaming in Palo Alto, California as a game model engineer before it was acquired by International Game Technology ("IGT").

12. In 2001, in response to the rapid rise of Internet casino websites, I started an independent casino game design and analysis consultancy, Olympian Gaming LLC. Based on my experience designing, developing, and placing dozens of games in Las Vegas, Reno, and Atlantic City casinos, I advise gaming software

vendors, new game inventors, and casino game manufacturers in the fields of wagering, gameplay design, mathematical analysis, and statistical verification.

13. The majority of the work I have done through Olympian Gaming, both in product architecture and design and as an expert witness, has related to networked gaming systems or web-based software. For example, all of my initial clients in the 2001-2003 timeframe were online casino software vendors whose products relied upon client-server architectures and various messaging protocols over the Internet. Additionally, in 2011, I was engaged by DoubleDown Interactive, a social gaming web-based software company offering free-to-play slot machine games on its Facebook app, DoubleDown Casino. As indicated on my CV, many of my expert engagements have related to networked systems or web-based software, including online games using Amazon Web Services to host servers for hundreds of thousands or millions of simultaneous users.

14. Also through Olympian Gaming, I have invented and applied for patents on over two dozen gaming methods and systems and, together with my patent attorney and frequent co-inventor, control a patent portfolio of approximately thirty issued and/or pending patents across several categories of the gaming industry. These innovations include novel table games, electronic wagering games such as slot machine and video poker games, and networked casino management or promotional systems. I have been heavily involved in patent

prosecution for many of these patents and have executed several intellectual property transactions including licenses and sales.

15. In my work as an expert in gaming-related matters, I have been involved with matters, patents, and in some cases software source code relating to Class III games, Class II games, historical horse racing games, and both electronic instant lottery games and electronic sweepstakes games where predetermined results are delivered to gaming machines from central servers to display in a manner that mimics a slot machine. I have also been engaged to perform game design and/or mathematical analyses for such games. I have also been involved as an expert in patent infringement matters relating to networked computing technologies not specifically related to gaming technology or applications. In my work as an expert in patent cases, I have provided opinions related to, among other things, the definition of a POSITA, claim construction, infringement, validity and damages. I have also performed technical analyses, including source code review, of mobile and desktop applications, software running on embedded computers in electronic gaming machines or kiosks, website code, and server or backend software. Software languages I have examined in the course of my litigation engagements, software engineering career, and education in computer science include C, C++, C#, Java, SQL, HTML, CSS, Microsoft Excel/VBA, and many others.

III. LEVEL OF ORDINARY SKILL

16. In rendering the opinions set forth in this Declaration, I was asked to consider the patent claims and the prior art through the eyes of a person having ordinary skill in the art ("POSITA") at the time of the alleged invention, which I have been asked to assume is November 19, 2012. I understand that the factors considered in determining the ordinary level of skill in a field of art include the education and experience of persons working in the field, the types of problems encountered in the field, the teachings of the prior art, and the sophistication of the technology at the time of the alleged invention. I understand that a POSITA is not a specific, real individual, but rather is a hypothetical individual having the qualities reflecting the factors above. I understand that a POSITA would also have knowledge from the teachings of the prior art, including the art cited below.

17. Taking these factors into consideration, it is my opinion that, at the relevant time, a POSITA relating to the technology of the Challenged Patents would have had at least a Bachelor's degree in Computer Science or a similar discipline, and two to three years of experience working or conducting research in the field of software development or video game design, or an equivalent combination of education and experience.

18. Before November 19, 2012, my level of skill in the art was at least that of a POSITA. I am qualified to provide opinions concerning what a POSITA

would have known and understood at that time, and my analysis and conclusions herein are from the perspective of a POSITA as of that date.

IV. MATERIALS CONSIDERED

19. In forming my opinions expressed herein, I have relied upon my education and experience, and I have considered the materials cited herein, including those itemized in the table of Materials Considered attached as **Appendix A** to this Declaration.

V. LEGAL STANDARDS

20. I am not a lawyer and do not provide any legal opinions, but I have been advised that certain legal standards are to be applied by technical experts in forming opinions regarding the meaning and validity of patent claims. I have applied the legal standards described below.

21. I understand that assessing a U.S. patent's validity based on a prior art analysis involves two steps. First, one must assess what meaning a POSITA would have given the terms. Second, after assessing the meaning of the claim terms, one may then assess validity by comparing a patent claim to the "prior art." I understand that the teaching of the prior art is viewed through the eyes of a POSITA at the time the invention was made. My analysis as to what constitutes a relevant POSITA is set forth above.

A. Priority Date

22. I understand that the "priority date" (or "earliest effective filing date") of a patent is the date on which it is filed or the date on which an earlier application was filed if the patentee properly claims the benefit of the earlier application's filing date. For my analysis in this Declaration, I have been asked to assume that the priority date of each of the Challenged Patents is November 19, 2012.

B. Obviousness

23. My understanding is that a patent claim is invalid as obvious only if the subject matter of the claimed invention "as a whole" would have been obvious to a POSITA at the time the invention was made. To determine the differences between a prior art reference (or a proposed combination of prior art references) and the claims, the question of obviousness is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious. Also, obviousness grounds cannot be sustained by mere conclusory statements. Rather, it is necessary to provide some articulated reasoning with rational underpinning to support the legal conclusion of obviousness.

24. I understand that a patent claim that comprises several elements is not proved obvious by simply showing that each of its elements was independently known in the prior art. In my evaluation of whether any claim of the Challenged

Patents would have been obvious, I considered whether a POSITA would have had a reason with a rational basis that would have motivated that POSITA to combine the elements or concepts from the prior art in the same way as in the claimed invention.

25. I 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 instance, factors such as market forces or other design incentives may be the source of what produced a change rather than true inventiveness.

26. I understand that the decision-maker evaluating the question of obviousness may consider whether the change was merely the predictable result of using prior art elements according to their known functions or whether it was the result of true inventiveness. And the decision-maker may also consider whether there is some teaching or suggestion in the prior art to make the modification or combination of elements recited in the claim at issue. Also, the decision-maker may consider whether the innovation applies a known technique that had been used to improve a similar device or method. The decision-maker 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.

27. I understand that in considering obviousness, it is important to be careful not to engage in hindsight and that many true inventions might seem obvious after the fact. I understand that obviousness is considered from the perspective of a POSITA at the time the claimed invention was made and not based on what is known today or what is learned from the teaching of the patent.

28. I understand that the following factors must be evaluated to determine whether a claim is obvious: the scope and content of the prior art; the difference or differences, if any, between the claim of the patent and the prior art; the level of ordinary skill in the art at the time the claimed invention was made; and, if available, the objective indicia of non-obviousness, also known as "secondary considerations."

29. I understand that the secondary considerations can include: commercial success of a product due to the merits of the claimed invention, a long-felt need for the solution provided by the claimed invention, unsuccessful attempts by others to find the solution provided by the claimed invention; copying of the claimed invention by others, unexpected and superior results from the claimed invention; acceptance by others of the claimed invention as shown by praise from others in the field or from the licensing of the claimed invention, teaching away

from the conventional wisdom in the art at the time of the invention, independent invention of the claimed invention by others before or at about the same time as the named inventor thought of it, and other evidence tending to show obviousness.

30. I understand that, to establish a secondary consideration, the evidence must demonstrate a nexus between that secondary consideration and the claimed invention.

VI. OVERVIEW OF THE CHALLENGED PATENTS

A. Specification/Claims

31. The Challenged Patents are related and share a common specification. I cite to the ’827 Patent in this discussion for convenience, but the discussion is equally applicable to each of the Challenged Patents.

32. The specification alleges that “existing virtual worlds lack the ability to take [a] player’s location and its various local elements into account for meaningful impact on gameplay.” ’827 Patent, 1:49-51. As shown below, this statement was incorrect as of the priority date of the Challenged Patents. The Challenged Patents purport to address the problem by describing “systems and methods whereby the storyline of a virtual world may change based on the real world local elements of a particular location.” *Id.*, 2:1-3. Example “local elements” include weather, social unrest or peaceful rallies, crime and heists, construction, and other news-related items. *Id.*, 2:5-12. According to the summary of the

invention, "a player location is detected or input at [a] computing device and…[a] local element is retrieved from a database…based on the player location." *Id.*, 2:57-61. Then, "[t]he local element is correlated to a local element script" that can be "actuated" in the video game "such that the local element script supplements or replaces the storyline." *Id.*, 2:61-65.

33. The summary of the invention provides a broad list of modifications a local element script may make to a virtual character/storyline. *E.g.*, *id.*, 3:17-58. The examples include modifying a virtual character's: "appearance[,] facial or body expression[,] or health" (*id.*, 3:18-20); "tools, weapons, equipment or clothing" (*id.*, 3:20-21); or "statistics," such as those "representing mood or aggression" (*id.*, 3:21-26). Examples further include modifying the scene or setting of a storyline (*id.*, 3:27-58), such as introducing "non-player characters" (*id.*, 3:32-33, 3:41-42, 3:50-51) or "game monsters, enemies, traps[,] or puzzles corresponding to the local element" (*id.*, 3:33-34).

34. In my opinion, the detailed description describes the "embodiments" in terms of results rather than how to implement the invention. *Id.*, 4:33-16:9. Whenever specific technology is described, the specification acknowledges that no particular technology is required to implement the invention methods and further that existing technologies capable of implementing the invention were already known to those skilled in the art. For example, the specification acknowledges that

"[v]irtual worlds can exist on game consoles for example Microsoft Xbox, and Sony Playstation, Nintendo Wii, etc., or on online servers, or on mobile devices (e.g. an iPhone or an iPad), Smartphones, portable game consoles like the Nintendo 3DS, or on a PC (personal computer) running MS Windows, or MacOS, Android, Ubuntu, Linux or another operating system. This list is not exhaustive but is exemplary of devices or computing environments where virtual worlds can exist, many other variations are available and ***known to persons skilled in the art***." *Id.*, 5:30-39, emphasis added.

35. Similarly, the specification states "many types of mobile devices e.g. Smartphones like iPhone include a built-in GPS sensor, have data coverage via mobile cellular network or WiFi, and are widely used for engaging in the gameplay of virtual worlds. Thus ***determining the player location is a well known method in the art***. There may be other methods, ***well known in the art***, to determine the player location, e.g. using the Wireless Assisted GPS (A-GPS), WiFi network, using IP address, player provided information, using billing address zip/area code, etc." *Id.*, 9:15-24, emphasis added.

36. Nothing in the specification teaches or suggests that the patentee has invented any particular technology, nor that the patentee is using any particular technology in some non-obvious or surprising manner. For instance, the

specification admits that using a smartphone's built-in GPS sensor to determine the location of the person using that smartphone was "well known in the art." *Id.*

37. Relevant to the Challenged Claims, the detailed description describes an embodiment of a "Massively Multiplayer Online Role Playing Game" in which "the local elements of the respective locations of the players engaged in the gameplay at any given time impacts the storyline" and that location information of a new player is gathered using a GPS sensor or other "well known techniques in the art." *Id.*, 14:10-35. In this embodiment, the specification discloses that "[t]he system checks to see if the local elements of above said player location are unique, i.e. if any other player from the same location is also engaged in the gameplay of the virtual world at the same time or another player from another location with similar local elements is engaged in the gameplay." *Id.*, 14:25-30. "If player location and its local elements are unique[,] then the system may load alternate/complementary set of storyline plot nodes associated with these new local elements" and gameplay continues. *Id.*, 14:30-33. Otherwise, "[i]f player location and its local elements are not unique[,] then gameplay continues with no changes." *Id.*, 14:33-35.

38. The Challenged Claims relate to the specification's disclosures regarding modifying virtual character statistics and loading alternate/complementary storyline plot nodes when a player is the only player at a

particular location. In general, the sole independent claim (claim 1) in each Challenged Patent is directed to a method of enabling virtual gameplay in which a local element script is actuated when a player's detected real-world geographic location is not represented by another player—otherwise, the script is not actuated. Challenged Patents, Claim 1. When actuated, the local element script modifies a virtual character statistic of the player's virtual character and one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters. *Id.*

39. Based on my review, the only differences in claim 1 of each Challenged Patent relates to whether the claim recites: (1) "storage memory" ('827 Patent, '797 Patent, and '691 Patent: 1[pre] and 1[b]) rather than "storage means" ('284 Patent: 1[pre] and 1[b])) for storing the player's detected location; and (2) "retrieving" a local element script from a database ('827 Patent and '691 Patent: 1[c]) rather than "creating" a local element script in a database ('284 Patent and '797 Patent: 1[c]). As to this second distinction, "retrieving" vs. "creating," certain dependent claims of the Challenged Patents conflate these method steps. For instance, claim 3 depends from claim 1 in all of the Challenged Patents and refers to "creation of the local element script," but independent claims 1 of the '827 and '691 Patents does not contain a corresponding "creating a local element script" step. In such cases, I have been asked to address how the prior art

renders possible competing interpretations of these claims without regard to which, if any, interpretation is correct.

40. Dependent claims 2-28 of each patent are substantially similar, except that in the ’284 Patent, claims 21-23 correspond to claims 26-28 in the other patents and, in the ’284 Patent, claims 24-28 correspond to claims 21-25 in the other patents. Otherwise, the extent to which the patent claims from one Challenged Patent to the next are literal copies of each other speaks for itself. *See, e.g.,* claim 5 in each Challenged Patent.

B. The Claims

41. The table below includes identifiers for the Challenged Claims, which I reference throughout the declaration.

1. ’827 Patent

Reference	Limitation
Claim 1	
1[pre]	A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage memory and a location sensor, the method comprising the steps of:
1[a]	providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters;

Reference	Limitation
1[b]	detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage memory;
1[c]	retrieving from a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and
1[d]	retrieving from the database mapping information related to the real world player geographic location of the player and actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player,
1[e]	wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.
Claim 2	
2	The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location.
Claim 3	
3	The method of claim 1, wherein the creation of the local element script takes account of an operating context within the game.

Reference	Limitation
Claim 4	
4	The method of claim 1, wherein the local element script modifies the virtual character's appearance, facial or body expression or health.
Claim 5	
5	The method of claim 1, wherein the local element script modifies the tools, weapons, equipment or clothing of the virtual character.
Claim 6	
6	The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.
Claim 7	
7	The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.
Claim 8	
8	The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.
Claim 9	
9	The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.
Claim 10	
10	The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.

Reference	Limitation
Claim 11	
11	The method of claim 1, wherein the storage memory is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.
Claim 12	
12	The method of claim 1, wherein the storage memory is selected from the group consisting of: a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.
Claim 13	
13	The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.
Claim 14	
14	The method of claim 13, wherein the game device is a mobile device.
Claim 15	
15	The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.
Claim 16	
16	The method of claim 15, wherein the player provided location information is a fantasy location.

Reference	Limitation
Claim 17	
17	The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.
Claim 18	
18	The method of claim 1, wherein the location is detected at login.
Claim 19	
19	The method of claim 1, wherein the location is detected during gameplay.
Claim 20	
20	The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.
Claim 21	
21	The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.
Claim 22	
22	The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.
Claim 23	
23	The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items.

Reference	Limitation
Claim 24	
24	The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.
Claim 25	
25	The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.
Claim 26	
26	The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.
Claim 27	
27	The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.
Claim 28	
28	The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

2. ’691 Patent

Reference	Limitation
Claim 1	
1[pre]	A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage memory and a location sensor, the method comprising the steps of:
1[a]	providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters having virtual character statistics;
1[b]	detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage memory;
1[c]	retrieving from a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and
1[d]	retrieving from the database mapping information related to the real world player geographic location of the player and actuating the local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the local element script when the player's real world player geographic location is represented by another player,
1[e]	wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players’ virtual characters.

Reference	Limitation
Claim 2	
2	The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and retrieving a second or further local element script, the second or further local element script being related to the second or subsequent location.
Claim 3	
3	The method of claim 1, wherein creation of the local element script takes account of an operating context within the game.
Claim 4	
4	The method of claim 1, wherein the local element script modifies one or more of the virtual character's appearance, facial or body expression or health.
Claim 5	
5	The method of claim 1, wherein the local element script modifies one or more of the virtual character's tools, weapons, equipment or clothing.
Claim 6	
6	The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.
Claim 7	
7	The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.

Reference	Limitation
Claim 8	
8	The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.
Claim 9	
9	The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.
Claim 10	
10	The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.
Claim 11	
11	The method of claim 1, wherein the storage memory is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.
Claim 12	
12	The method of claim 1, wherein the storage memory is one or more of a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.
Claim 13	
13	The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.

Reference	Limitation
Claim 14	
14	The method of claim 13, wherein the game device is a mobile device.
Claim 15	
15	The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.
Claim 16	
16	The method of claim 15, wherein the player provided location information is a fantasy location.
Claim 17	
17	The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.
Claim 18	
18	The method of claim 1, wherein the location is detected at login.
Claim 19	
19	The method of claim 1, wherein the location is detected during gameplay.
Claim 20	
20	The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.

Reference	Limitation
Claim 21	
21	The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.
Claim 22	
22	The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.
Claim 23	
23	The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items.
Claim 24	
24	The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.
Claim 25	
25	The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.
Claim 26	
26	The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.

Reference	Limitation
Claim 27	
27	The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.
Claim 28	
28	The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

3. ’284 Patent

Reference	Limitation
Claim 1	
1[pre]	A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage means and a location sensor, the method comprising the steps of:
1[a]	providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters;
1[b]	detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage means;
1[c]	creating in a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and

Reference	Limitation
1[d]	retrieving from the database mapping information related to the real world player geographic location of the player and actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player,
1[e]	wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.
Claim 2	
2	The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location.
Claim 3	
3	The method of claim 1, wherein the creation of the local element script takes account of an operating context within the game.
Claim 4	
4	The method of claim 1, wherein the local element script modifies the virtual character's appearance, facial or body expression or health.
Claim 5	
5	The method of claim 1, wherein the local element script modifies the tools, weapons, equipment or clothing of the virtual character.

Reference	Limitation
Claim 6	
6	The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.
Claim 7	
7	The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.
Claim 8	
8	The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.
Claim 9	
9	The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.
Claim 10	
10	The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.
Claim 11	
11	The method of claim 1, wherein the storage means is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.
Claim 12	
12	The method of claim 1, wherein the storage means is selected from the group consisting of: a local data storage of a game console, a

Reference	Limitation
	local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.
Claim 13	
13	The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.
Claim 14	
14	The method of claim 13, wherein the game device is a mobile device.
Claim 15	
15	The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.
Claim 16	
16	The method of claim 15, wherein the player provided location information is a fantasy location.
Claim 17	
17	The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.
Claim 18	
18	The method of claim 1, wherein the location is detected at login.
Claim 19	
19	The method of claim 1, wherein the location is detected during gameplay.

Reference	Limitation
Claim 20	
20	The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.
Claim 21	
21	The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.
Claim 22	
22	The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.
Claim 23	
23	The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.
Claim 24	
24	The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.
Claim 25	
25	The method of claim 24, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.

Reference	Limitation
Claim 26	
26	The method of claim 24, wherein the local element comprises a keyword extracted from a news stream of local news items.
Claim 27	
27	The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.
Claim 28	
28	The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.

4. ’797 Patent

Reference	Limitation
Claim 1	
1[pre]	A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage memory and a location sensor, the method comprising the steps of:
1[a]	providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters;
1[b]	detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage memory;
1[c]	creating in a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and
1[d]	retrieving from the database mapping information related to the real world player geographic location of the player and actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player,
1[e]	wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.

Reference	Limitation
Claim 2	
2	The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location.
Claim 3	
3	The method of claim 1, wherein the creation of the local element script takes account of an operating context within the game.
Claim 4	
4	The method of claim 1, wherein the local element script modifies the virtual character's appearance, facial or body expression or health.
Claim 5	
5	The method of claim 1, wherein the local element script modifies the tools, weapons, equipment or clothing of the virtual character.
Claim 6	
6	The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.
Claim 7	
7	The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.
Claim 8	
8	The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.

Reference	Limitation
Claim 9	
9	The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.
Claim 10	
10	The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.
Claim 11	
11	The method of claim 1, wherein the storage memory is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.
Claim 12	
12	The method of claim 1, wherein the storage memory is selected from the group consisting of: a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.
Claim 13	
13	The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.
Claim 14	
14	The method of claim 13, wherein the game device is a mobile device.
Claim 15	
15	The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-

Reference	Limitation
	GPS, WiFi, IP address, account or billing address, and player provided location information.
Claim 16	
16	The method of claim 15, wherein the player provided location information is a fantasy location.
Claim 17	
17	The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.
Claim 18	
18	The method of claim 1, wherein the location is detected at login.
Claim 19	
19	The method of claim 1, wherein the location is detected during gameplay.
Claim 20	
20	The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.
Claim 21	
21	The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.
Claim 22	
22	The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.

Reference	Limitation
Claim 23	
23	The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items.
Claim 24	
24	The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.
Claim 25	
25	The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.
Claim 26	
26	The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.
Claim 27	
27	The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.
Claim 28	
28	The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

C. Prosecution History of the Challenged Patents

42. Provisional App. 61/796,715 ("'715 Provisional") was filed November 19, 2012. U.S. Pat. App. 14/084,113 filed November 19, 2013 claims priority to the '715 Provisional but was abandoned August 11, 2016. The '284 Patent issued from U.S. Pat. App. 15/215,406 filed July 20, 2016 that was a continuation of then-pending App. 14/084,113. The '797 Patent issued from U.S. Pat. App. 17/172,623 filed February 10, 2021 that was a continuation of App. 15/215,406. EX1002, Cover. The '827 Patent issued from U.S. Pat. App. 17/952,026 filed Sept. 23, 2022 that was a continuation of App. 17/172,623. EX1003, Cover. The '691 Patent issued from U.S. Pat. App. 18/205,206 filed on June 2, 2023 that was a continuation of App. 17/952,026. EX1004, Cover.

43. I have been asked to assume that the Challenged Patents are entitled to the November 19, 2012 priority date of the '715 Provisional.

I describe the prosecution history of the Challenged Patents below.

1. App. 14/084,113

44. On January 20, 2016, the examiner rejected the pending claims of the '113 App as ineligible under section 101 and as anticipated by U.S. 2011/0183754 to Alghamdi ("Alghamdi"), finding disclosure of providing access to at least one video game in which a player is able to interact with the video game according to a storyline, detecting at the computing device a player location and

storing the location on the storage means, retrieving a local element from a database based on the player's location, correlating that local element to a local element script actuatable in the video game, and using the computing device to retrieve and actuate the local element script in the video game, the local element script supplementing or replacing the storyline. '113 App File History, January 20, 2016 Office Action at 3-4.

45. The applicant did not traverse the rejection and, despite paying for an extension on July 20, 2016, let the application go abandoned on August 11, 2016 for failure to reply to the office action.

2. '284 Patent

46. The '284 Patent issued on March 16, 2021 from App. 15/215,406 filed July 20, 2016, the same day the applicant filed the extension of time in the '113 App.

47. During prosecution of the '284 Patent, the Examiner rejected the pending claims once over U.S. 2011/0183754 ("Alghamdi") and U.S. 2012/0157197 ("Watkins") (EX1009, 64-72) and four times over Alghamdi and U.S. 2013/0079144 ("Ahmed") (EX1009, 152-157, 188-193, 247-252, 273-279).

48. The originally-filed claims of the '406 App appear to be exactly the same as the abandoned claims in the '113 App.

49. The initially-filed claims were rejected by the Examiner on October 14, 2016, in a rejection that appears to be substantively identical to the un-traversed January 20, 2016 rejection of the parent '113 App. In rejecting the claims for ineligibility under section 101, the Examiner wrote "[t]he invention is directed to the abstract idea(s) of supplementing or replacing a storyline with a local element script based on the location of the player in a game." EX1009 at 63.

50. In rejecting the claims for anticipation under section 102, the Examiner cited to U.S. 2011/0183754 ("Alghamdi"), including Alghamdi's disclosure that "a girl playing a cooking game during the morning in Paris may experience, in game play, preparing a French omelet for breakfast. In contrast, a girl playing the same game during the morning in Cairo will find herself cooking fava beans for breakfast. The same geographic associative aspects can be implemented for clothes, festivals, religions, etc. So it is not only the environment that may be affected by the user's real time and location, but also the game play itself, including 'story' or other sequence of events." Alghamdi at [0036]. The Examiner cited Alghamdi's paragraph 36 for many dependent claims.

51. Regarding the limitations in pending claims 4 and 5 that "the local element script modifies the virtual character's appearance, facial or body expression or health" and "the local element script modifies the tools, weapons, equipment or clothing of the virtual character," the Examiner cited to Alghamdi's

disclosure that "a clothing game for girls will adopt local styles and customs and will offer its players with suitable clothes at different times of the day or year, e.g. winter and summer." Alghamdi at [0034].

52. In response, on April 13, 2017 the Applicant traversed the 101 rejection by stating "'local element scripts' related to detected real world player locations are used to insert a degree of unpredictability. Such scripts, described in paragraph [0047] and [0100], are a specific part of the technical structure of the video game encoding, and have no mental or pen and paper analogue." EX1009 at 83. The referenced paragraphs [0047] and [0100] of the application recite "[a] virtual character is represented by one or more game-play statistics, which encapsulate some meaning to connect the virtual (and digital) reality of the game to the real world. Many of these statistics are not apparent to the user as such, but are instead encoded within the framework of the game or ***composed together to form a script***." *Id.* at 17, emphasis added. Also, "In one embodiment of the invention impact to the storyline may be made by loading the ***script***(s) associated with the identified local element(s). These ***scripts*** may be already imbedded in the game, but dormant till called. New ***scripts*** for changing local elements may be added to the game by the game developer or players to reflect new scenarios, thus expanding the scope of the game." *Id.* at 28, emphasis added.

53. In the same office action response, the Applicant further stated that "local element scripts" were "specifically structured functionality" that had "no pre-electronic analog." *Id.* at 83. However, the Applicant did not cite to any portion of the specification to support that statement, but in any event pre-electronic TTRPG games definitely incorporated specifically structured functionality to impact the storyline of a game in the form of spells, weapons, or other magical powers with published rules for use and formulas for evaluating their impact to the game world.

54. The applicant also added the phrase "a location sensor" to the preamble and the claimed "detecting" step, and argued "in the tabletop style RPG games to which the examiner refers,… there is also no detection of a real world player location using a location sensor." *Id.* However, the applicant did not amend original claim 25, which provides that "the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information."

55. As to the rejection in view of Alghamdi, the Applicant stated "nowhere does Alghamdi refer to 'local element scripts' (or scripts of any kind) in his gaming system. In paragraph [0036] of the reference, cited by the examiner for the local element script feature, Alghamdi merely refers to 'associa[ting] games to cultures or local events' and 'geographic associative aspects'. There is no

explanation as to how this is done or any suggestion whatsoever of scripts." *Id.* at 84.

56. The claims were also amended to change "retrieving from a database … a local element script" to "creating in a database … a local element script," and the Applicant stated "the claim amendments made herein are within the disclosure as originally filed. For instance, modification of the virtual character statistic is described in at least paragraph [0131] of the application as published; creating of scripts in paragraph [0100]." *Id.* at 84. However, paragraph [0100], quoted above, does not in fact describe how scripts are created.

57. In response, in an office action dated August 22, 2017, the Examiner maintained the eligibility rejection, asserting "that the instant application could be performed with pen and paper for a tabletop style RPG (for example including local elements in such a game).

58. The examiner also maintained the rejection in view of Alghamdi, stating "Applicant argues Alghamdi does not refer to 'local element scripts' (or scripts of any kind). Applicant has provided no explanation for what exactly applicant believes is required by 'local element scripts' which is not provided by Alghamdi. The term 'script' in computer science has the plain meaning of 'an automated series of instructions carried out in a specific order'. Script is essentially a broader term which encompasses any computer program. The prior

art is a computing system, and as such all the elements performed by the computer are performed by scripts. Examiner points to paragraph 14 which positively identifies 'processing game programs.'" *Id.* at 116-117.

59. In response, and subsequent to an Examiner interview, on February 21, 2018 the Applicant traversed the 101 eligibility rejection by stating "the claimed invention solves a problem of how to exploit a player's emotional bond with the player's real world location in making the storyline of a virtual world a more interesting and meaningful experience." *Id.* at 140. In my opinion, exploiting human emotions is not a technological problem.

60. The Applicant also stated that "this is a problem specifically arising in the realm of computer networks. To solve this computer network problem, the claimed invention uses a location sensor, retrieved mapping information, and local element scripts. Therefore the solution is rooted in computer technology." *Id.* I note that the claimed step of "detecting with the location sensor" of pending claim 1 can be performed, according to pending claim 25, by "retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information." In my opinion, a (human) player providing location information is not a technological solution to the (non-technological) problem of exploiting a player's emotions.

61. The Applicant also traversed the 102 rejection by arguing that "Alghamdi does not disclose … a local element script that also affects the other players in the other real world player locations while the player is interacting with the video game." *Id.* at 141. Contemporaneously, the Applicant amended the claims to require that "the local element script also affects the other players' virtual characters in the other real world player locations while the player is interacting with the video game." *Id.* at 132. Therefore, in my opinion, the file history reflects a change in Applicant's position, from the broader argument that Alghamdi did not disclose "local element scripts or scripts of any kind," to a narrower argument that Alghamdi does not disclose a local element script "that also affects the other players." Applicant argued that, in contrast to Alghamdi, "one of the advantages of the present method is its application in multiplayer games where player location affects multiple players and their characters." *Id.* at 141.

62. In my opinion, Applicant's abandonment of its prior argument that Alghamdi did not disclose a local element script at all, its choice not to directly explain "what exactly applicant believes is required by 'local element scripts' which is not provided by Alghamdi," and its choice not to dispute Examiner's statements about the meaning of "script" in computer science, is an admission that the Examiner's cited prior art does in fact disclose "local element scripts".

63. On May 18, 2018 the Examiner issued an office action that stated "Applicant's amendments overcome the rejection of Alghamdi, however a new grounds of rejection is made in view of Ahmed." *Id.* at 157. The Examiner also maintained the 101 eligibility rejection, noting "Applicant provided no argument as to how the abstract idea identified by examiner could not merely be performed by pen and paper such as in a tabletop RPG." *Id.*

64. The Examiner provided a new rejection based on Alghamdi in view of Ahmed, U.S. Pat. Pub 2013/0079144. As relates to the amendments made in the prior amendment, the Examiner stated that "Alghamdi does not disclose that the player interacts with other players in other real world player locations playing other virtual characters … however Ahmed discloses the player interacting with other players in other real world player locations playing other virtual characters (paragraph 33, multi player) and the local element script also affects the other players virtual characters in the other real world player locations while the player is interacting with the video game." *Id.* at 153. The Applicant did not timely respond to that rejection and the application was abandoned on December 13, 2018.

65. On June 11, 2019, the Applicant petitioned to revive the abandoned application and traversed the rejections. The only claim amendment was the addition, to the previously-amended language, that "the local element script also

affects ***one or more of a virtual character statistic and a plot node of*** the other players' virtual characters…" *Id.* at 166, emphasis added. The Applicant argued that neither applied reference showed or suggested the amended claim language, identifying paragraphs [0097] and [0099] of the specification.

66. On August 22, 2019 the Examiner issued an office action maintaining the rejection based on Alghamdi in view of Ahmed, noting that the (added) terms "'virtual character statistic' and 'plot node' have no particulars as to what they entail, or what is required. Thus, the broadest reasonable interpretation of a virtual character statistic and/or plot node would be taught by viewing other characters appearance and actions (and thus other virtual players virtual characters viewing the virtual player's virtual character)." *Id.* at 192.

67. On January 27, 2020 the Applicant initiated an interview including "the concept of identifying that a plurality of plot nodes are each related to a particular real world area, wherein when a new player joins from a real world area which was not previously represented, the plot node for that respective region is made available to all users." On February 11, 2020 the Applicant provided amended claims reciting "wherein a geographic area has a corresponding plot node that is added when a player located in that geographic area joins the video game" and arguing that the amended language is not shown nor suggested by either Alghamdi or Ahmed. *Id.* at 218.

68. On April 6, 2020, the Examiner issued an office action maintaining the prior art rejection and issuing an indefiniteness rejection, noting that the newly added limitations were extremely broad and did not correspond to the previously-claimed terms.

69. On May 11, 2020, the Applicant amended the claims and argued that the prior art does not teach "wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters while the player is interacting with the video game and the player's real world player geographic location is not represented by another player." *Id.* at 267. Applicant identified paragraphs "0054 and 00120-123" as support for the amendment, but in my opinion, nothing in those paragraphs supports the language added to the claims. Paragraph 120, for instance, states "The system checks to see if the **local elements** of above said player location are unique … If player location **and its local elements** are unique then the system may load alternate / complementary set of storyline plot nodes **associated with these new local elements**" (emphases added). However, the amended claims do not recite "local elements" at all, and the prior reference to "local element" was removed from the claims on April 13, 2017. Therefore, despite Applicant's reference to the specification – and the title of the Application ("Systems and

Methods for Capture and Use of **Local Elements** in Gameplay", emphasis added) – claim 1 as amended on May 11, 2020 did not require either the capture or use of local elements.

70. On September 4, 2020, the Examiner issued an office action maintaining the rejection based on Alghamdi in view of Ahmed, stating "the limitation of "not represented by another player" is understood to mean a "unique" location." The Examiner then noted that the specification continued to say that "if player location and its local elements are not unique then gameplay continues with no changes" and, while Alghamdi did not teach such a limitation, that limitation was not within the claims and that "the claims are silent as to what occurs when the player location is not unique." *Id.* at 277-278. The Examiner specifically stated "[a]s such, Alghamdi discloses the limitation as claimed, since Alghamdi always modifies, whether or not the player location is unique." *Id.*

71. In response, on November 23, 2020 Applicant amended the claims to add the limitation "wherein the local element script is not actuated when the player's real world player geographic location is represented by another player." November 23, 2020 Claims at 3. This amendment led to the Examiner's Notice of Allowance on January 19, 2021. Therefore, the amendment that ultimately persuaded the Examiner to allow the patent over the applied prior art was the concept that "gameplay continues with no changes … when the player location is

not unique." In my opinion, a POSITA would have known that **not** changing gameplay when player location is not unique is **inherent** in every prior art game that does not use player location as a factor in gameplay. For example, a POSITA would have known that gameplay in chess does not change based on the uniqueness of a player's location, whether the player's opponent is three feet away (on the other side of physical chessboard) or thousands of miles away (as in a game of correspondence chess or Internet chess).The Examiner ultimately allowed independent claim 1 in its current form (and dependent claims 2-28) after adding, in an Examiner's amendment on January 19, 2021, the following underlined language to 1[d]: "and actuating the corresponding local element script in the video game <u>while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player</u>" while simultaneously removing equivalent language from pending claim elements 1[e] and 1[f]. EX1009, 297-298, 312-314, emphasis added.

72. Referring to paragraph 120 of the published application (which is identical to '827 Patent, 14:25-35), the Examiner interpreted element 1[d] as "including that the game gets modified based on a player's real world geographic location by actuating an associated local element script, but only in the case that

the player's real world geographic location is not already being represented by another player." EX1009, 313.

73. Therefore, in my opinion, the prosecution history of the '284 Patent reflects a progressive narrowing of the scope of the pending claims from the broad concept that "local element scripts related to detected real world player locations are used to insert a degree of unpredictability" (*id.* at 83) or "the storyline of a virtual world may change based on the real world local elements of a particular location. Thus changes to the real world local elements may influence the gameplay of a virtual world" (*id.* at 9) to the narrow concept that "the game gets modified based on a player's real world geographic location by actuating an associated local element script, but only in the case that the player's real world geographic location is not already being represented by another player." *Id.* at 314.

74. Thus, in my opinion, the issued claims do not reflect the breadth of Applicant's purported invention of "[m]ethods and arrangements of changing storyline for gaming applications and virtual worlds based on local elements," nor do they cover the Applicant's intended scope that "the storyline of the virtual world is then changed based on local elements 104. Several exemplary methods are provided in this application for illustrative purposes. The application is not limited to these examples but in fact covers all combinations, permutations, variations etc. that may be obvious to the one skilled in the art." *Id.* at 4, 24.

Rather, in my opinion and based on the Examiner's analysis, the only aspect the Examiner found missing from the prior art was the particular combination of game features wherein "the game gets modified based on a player's real world geographic location by actuating an associated local element script, but only in the case that the player's real world geographic location is not already being represented by another player." *Id.* at 314. However, as shown below, that particular combination of game features is disclosed and/or rendered obvious by other prior art that the Examiner did not review.

3. '797 Patent

75. The '797 Patent issued on November 1, 2022 from App. 17/172,623 filed February 10, 2021. The Examiner's notice of allowability provided essentially the same reasons regarding why the '797 Patent claims were allowable as the Examiner described during prosecution of the '284 Patent. EX1010, 207-08.

4. '827 Patent

76. The '827 Patent issued, without any office actions, on June 6, 2023 from App. 17/952,026 filed Sept. 23, 2022. The Examiner's notice of allowability stated that the '827 Patent claims were "allowable for substantially the same reasons as [its] parent application(s)." EX1011, 91.

5. '691 Patent

77. The '691 Patent issued, without any office actions, on August 27, 2024 from App. 18/205,206 filed June 2, 2023. The Examiner's notice of

allowability stated that the ’691 Patent claims were “allowable for substantially the same reasons as [its] parent application(s).” EX1012, 164.

VII. CLAIM CONSTRUCTION

78. I have given all claim terms of the Challenged Claims their plain and ordinary meaning, as would have been understood by a POSITA in light of their common general knowledge and experience, and the patent’s specification, at the time of the alleged invention. Thus, in my opinion, a POSITA would have understood that a “script” in the Challenged Patents encompasses game functionality implemented by computer program code and/or data. *See also* EX1015, 308 (defining “script” as “[a] type of program that consists of a set of instructions to an application or utility program. A script usually consists of instructions expressed using the application’s or utility’s rules and syntax, combined with simple control structures such as loops and if/then expressions.”).

A. Means Plus Function

1. “Local Element Script”

79. I note that no Challenged Claim terms in the ’797, ’827, and ’691 Patents use the word “means,” and as such, I understand that there is a rebuttable presumption that they are not subject to means-plus-function interpretation.

80. I have been asked to assume that the Board may find that the presumption is overcome for the claim term “local element script” recited in element 1[c] of the Challenged Claims. The term “local element script” is also

found in element 1[d] ("actuating the local element script" or "not actuating the local element script" under certain conditions) and element 1[e] ("wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters"), as well as dependent claims 2-5, 7, 21, 22, 24, 25, 26 and 27.

81. If "local element script" were construed as a means plus function term, the structures disclosed in the specification for carrying out the functions claimed for the "local element script" (or carrying out any other processing) are the generic processor or memory computer components disclosed in the Challenged Patents. E.g., '827 Patent, 4:58-5:14, 5:40-54, 14:25-35, Fig. 1.

82. In my opinion, the prior art identified in this declaration discloses the same or equivalent structure for performing the functions of the "local element script" as disclosed in the Challenged Patents, i.e., memory for storing a control program and data and a processor (CPU) for executing the control program and for managing the data, which includes user data resident in the memory including a set of gameplay statistics, just as the prior art discloses the "local element script" according to the plain and ordinary meaning of a "local element script" that I apply in my analysis below.

2. "Storage Means"

83. I understand that if a claim term uses the word "means," a rebuttable presumption exists that the term is a means plus function term. I further understand that this presumption is overcome by recitation of the structure needed to perform the recited function. Claims 1, 11, and 12 of the '284 Patent recite a "storage means," thus triggering the presumption that the term is a means plus function term.

84. However, a POSITA would have understood that the term "storage means" in the context of a "computer implemented method" using a "computing device," as claimed, alone connotes structure, such as a computer memory.

85. I have been asked to assume that "storage means" is construed as a means plus function term. In that case, the corresponding structure is disclosed in the '284 Patent's specification at, e.g., 3:56-62 ("storage means is provided by one or a combination of: a local fixed memory, a local removable memory, and a virtual memory…a local data storage of a game console, a local inbuilt memory, a used provided memory, an online server, and a shared folder on a network."), 5:33-47, 8:28-39.

VIII. TECHNOLOGY BACKGROUND

86. This section provides a brief state of the art as of the priority date of November 19, 2012. All of the information in this section was available to the public and would have been part of a POSITA's common general knowledge.

A. Role-Playing Games

87. A "role-playing game" or RPG is a type of game "in which players assume the roles of characters, or take control of one or more avatars, in a fictional setting." EX1016. The original format, called "pen-and-paper" RPG or table-top RPG (TTRPG), involves players creating in-game characters and participating in a collaborative narrative. *Id.* The first commercially available TTRPG was "Dungeons & Dragons" or D&D, first published in 1974. EX101016; EX1017; EX1018.

1. Tabletop RPGs

88. During prosecution of the '284 Patent, the Examiner noted that "the abstract idea(s) of supplementing or replacing a storyline with a local element script based on the location of the player in a game" was "an idea of itself, as it can be performed merely mentally or with a pen and paper, such as in a ***tabletop style RPG game***." EX1009 at 63, emphasis added.

89. TTRPGs were generally distributed in the form of rulebooks that described how to create characters and how to play the game.

a. Dungeons & Dragons

90. For example, the developers of Dungeons & Dragons published several books including a Player's Handbook and Rules Compendium. *See* EX1019 ("Player's Handbook – Deluxe Edition, Wizards of the Coast, 4th Edition," hereinafter "Player's Handbook" or "PHB"), EX1020 (a complete copy of the non-deluxe edition of the Player's Handbook, the content of which is substantively identical to the deluxe edition), EX1049 ("Player's Handbook 2, Wizards of the Coast, 4th Edition," hereinafter "PHB2"), EX1021 ("Rules Compendium (4th Edition D&D), Wizards of the Coast, 4th Edition," hereinafter, "Rules Compendium").

91. The Player's Handbook and Rules Compendium describe many of the common role-playing game mechanics and concepts found in the prior art. For example, the Player's Handbook and Rules Compendium provide an overview of the D&D fantasy-adventure game and explain that D&D included creating a character, teaming up with other characters, exploring the game's world, and battling/engaging in encounters with monsters. *See, e.g.*:

> D&D is a fantasy-adventure game. You create a character, team up with other characters (your friends), explore a world, and battle monsters.

EX1019 at 6.

> Between encounters, your characters explore the world. You

> make decisions about which way your character travels and what he or she tries to do next.

EX1019 at 9.

> In the [D&D] game, each player creates a hero (also called character or an adventurer), teams up with other adventurers (played by friends), explores a magical world, and battles monsters.

EX1021 at 5-6.

> It's like a fantasy movie or novel, except that the players' group of characters (often referred to as the adventuring group, or the party) are the stars of the story. The [Dungeon Master] sets the scene, but no one knows what's going to happen until the adventurers do something, and then anything can happen!...The adventurers can solve puzzles, talk with other characters, battle all kinds of fantastic monsters, and discover fabulous magic items and other treasure.

EX1021 at 6.

> Between encounters, the adventurers explore the world—or whatever limited segment of the world the DM's adventure presents them with. The players make decisions about which way their characters travel and what they try to do next.

EX1021 at 14.

The character has personality traits, an appearance, and hit points (if the hit

points drop to 0 or lower, the character is dying). *See, e.g.*:

> Your character needs only a few personality traits that you can use as roleplaying touchstones, key traits that you can focus on and that are fun to play.

EX1019 at 19.

> Is your character tall, short, or in between? Solid and muscular, or lean and wiry? Male or female? Old or young? These decisions have no real impact on the game, but they might affect the way that nonplayer characters—and even the other players—think about your character.

EX1019 at 20.

> Over the course of a battle, you take damage from attacks. Hit points (hp) measure your ability to stand up to punishment, turn deadly strikes into glancing blows, and stay on your feet throughout a battle…**Dying:** When your current hit points drop to 0 or lower, you fall unconscious and are dying.

EX1019 at 74.

92. D&D characters had "ability scores," which are character statistics that are modified as gameplay continues. *Id.*, 16-17; EX1021 at 13-14.

93. Specifically, "[s]ix abilities provide a quick description of your character's physical and mental characteristics. … Your ability scores define these qualities—your strengths as well as your weaknesses." EX1019 at 15.

94. Those abilities include strength ("Str"), constitution ("Con"), dexterity ("Dex"), Intelligence ("Int"), Wisdom ("Wis"), and Charisma ("Cha"). *Id.*, 16-17; *see also* EX1021 ("Every Creature has powers, skills, and special features tied to one of six ability scores. The abilities are Strength, Constitution, Dexterity, Intelligence, Wisdom, and Charisma. Each creature also has **hit points**, which are reduced when the creature takes damage, most often as a result of a **damage roll**.").

95. The "ability score determines an ability modifier that you add to any attack, check, roll, or defense based on that ability" (EX1019 at 16):

ABILITY MODIFIERS

Ability Score	Ability Modifier	Ability Score	Ability Modifier
1	-5	18-19	+4
2-3	-4	20-21	+5
4-5	-3	22-23	+6
6-7	-2	24-25	+7
8-9	-1	26-27	+8
10-11	+0	28-29	+9
12-13	+1	30-31	+10
14-15	+2	32-33	+11
16-17	+3	and so on . . .	

EX1019 at 16.

96. The ability scores are modified during gameplay. For instance, ability scores increase as a character gains levels. EX1019 at 16; *see also id.*, 27-29 (describing character advancement as a player gains experience points and levels).

97. In D&D, combat takes place on a square grid:

> When a combat encounter starts, it's time to turn your attention to the battle grid. The combat rules assume that you use D&D Dungeon Tiles, a poster map, a gridded white board, or an erasable, gridded mat to show the area where a battle takes place. The rules also assume that you use D&D Miniatures to represent the adventurers and the enemies they face.
>
> A combat encounter can be played without such visual representations, but there are good reasons to use them.
>
> **Position is everything**. With a battle grid, you can easily determine whether your character can see a monster, whether the monster has cover, and whether you can flank the monster.
>
> **Combat can be complex**. With five player characters and a bunch of monsters involved, having miniatures on the table helps everyone remember which monsters are down, who's attacking whom, and where everyone is.
>
> **Terrain matters**. An exciting combat encounter includes terrain features and hazards that make the environment an important part of the encounter. If you want to claim the magic circle or avoid the cursed stone, you need to know where they are.

> **Imagination sometimes needs help**. Your DM might describe a room with bubbling lava, a narrow stone bridge, overlooking ledges, and acid pits. It's a great scene, but sometimes it's a little hard to imagine how all those pieces fit together. The battle grid helps by showing you exactly where all the elements of the scene are in relation to one another.
>
> A 1-inch square on the battle grid represents a 5-foot square in the game world. So a dungeon room that is 40 feet by 50 feet would be 8 squares by 10 squares, which is a huge room but a good size for a busy combat encounter.

EX1019 at 47.

98. Many aspects of D&D combat relate to the positioning of players and their proximity to each other, to monsters, or to obstacles. For instance, different types of attacks have different ranges, and "the first step in choosing targets for an attack is to check the attack's range. Range is the distance from you to a target (or to the attack's origin square." *Id.* at 54. "If you want to use a power against an enemy, the enemy must be within the range of your power, and you have to be able to target the enemy." *Id.* at 53.

> A ranged attack power that has a range of "weapon" allows you to attack a target within your weapon's range (see the table on page 219). If the target is farther away than normal range but within long range, you take a -2 penalty to attack rolls.

> *Example*: If you use a "Ranged weapon" power with a shortbow (normal range 15, long range 30), you take a -2 penalty when attacking targets 16-30 squares away, and you can't attack creatures farther away than 30 squares.

Id. at 26.

99. Combat in D&D involves attack rolls (for attacking enemies) and defense scores (for avoiding damage from enemies). *Id.* at 55-56. Defense scores can be altered based on proximity to other players:

> Your defenses can change temporarily in certain circumstances—for instance, if you're affected by a power or condition that increases or lowers your defense scores, or if a feat or magic item gives you a bonus under certain circumstances.
>
> *Example*: Brandis, a 23rd-level human fighter has the following defenses. … When Brandis's warlord ally uses her *hallowed ground* power, he gains a +2 power bonus to all defenses when he stands within the power's zone.

EX1019 at 56.

100. Other aspects of D&D also relate to the proximity of one player to another character (ally or enemy). Examples include:

101. A racial trait of the half-elf race is "Group Diplomacy: You grant allies within 10 squares of you a +1 racial bonus to Diplomacy checks." *Id.* at 25. An example of a proximity relationship that affects player characters' statistics.

102. "Within x Squares of You: When this language appears in a power description, treat the effect it refers to as a close burst for the purpose of determining line of effect." *Id.* at 28.

103. "Righteous Brand: one ally within 5 squares of you gains a power bonus to melee attack rolls against the target equal to your Strength modifier until the end of your next turn." *Id.* at 29. An example of a proximity relationship that affects a single player character's statistics.

104. "Holy Lantern: You conjure a lantern that appears in 1 square within range and sheds light 5 squares in all directions. You and allies in the light gain a +2 power bonus to Perception and Insight checks." *Id.* at 30. An example of proximity to an object that affects a player's statistics.

105. "Seal of Protection: The burst creates a protected zone until the end of your next turn. You and each ally within the zone gain a +2 bonus to AC. Enemies that enter the zone end their current movement." *Id.* at 31. An example of a proximity relationship that affects both players and enemies (NPCs).

106. "One Stands Alone: You cannot use this power if any allies are within 5 squares of you." *Id.* at 33. An example of a proximity relationship requiring that no other players are near the player's location.

107. "Warlord Class Features, Combat Leader: You and each ally within 10 squares who can see and hear you gain a +2 power bonus to initiative." *Id.* at 34. An example of a proximity relationship that affects the player's own character and nearby player characters.

108. "Warlord's Gambit: … When the target attacks you, an ally of your choice within a number of squares equal to your Intelligence modifier can make a basic attack." *Id.* at 35. An example of a proximity relationship where the proximity varies based on a player statistic.

109. Dungeons & Dragons was originally published in 1974, and the Player's Handbook and Rules Compendium cited herein were published in 2008 and 2010, respectively. EX1017; EX1019; EX1021.

b. Rolemaster

110. Another TTRPG named Rolemaster was first published in the 1980s by Iron Crown Enterprises, also in the form of several rulebooks. These included:

111. Rolemaster Arms Law & Claw Law, Iron Crown Enterprises Inc., 2nd Edition (Sep. 1989) (EX1022, hereinafter "Arms Law"),

112. Rolemaster Character Law, Iron Crown Enterprises, 2nd Edition (Aug. 1999) (EX1023, hereinafter "Character Law"),

113. Rolemaster Standard Rules, Iron Crown Enterprises, 1st Edition (1995) (EX1024, hereinafter "Rolemaster Standard Rules"),

114. Spell Law, Iron Crown Enterprises, 2nd Edition (1989) (EX1025, hereinafter "Spell Law"),

115. Character Law & Campaign Law, Iron Crown Enterprises, 2nd Edition (1989) (EX1026),

116. Rolemaster Fantasy Role Playing, Iron Crown Enterprises, 2nd Edition (1999) (EX1037, hereinafter "FRP"),

117. Arms Law covers "armed and unarmed combat in[] a fantasy role playing environment. It is designed as one of the three cornerstones of the *Rolemaster*^{TM} system." EX1022, 4. Arms Law illustrates how location impacts gameplay. For example, Table 8.1.4 (the "Large Creature Critical Strike Table") indicates that magic strikes with a dice roll of 176-200 result in adding +20 to the swings of all "nearby" allies for the next round. *Id.* at 83. Similarly, slaying strike with a dice roll of 201-250 involves the action carrying onto any "nearby" opponent. *Id.*

118. Character Law provides rules for character development and explains that "[t]he most important aspect of any *Rolemaster* campaign has to be the

characters. Everything revolves around what they do, how they do it, and most importantly why they do it…The Gamemaster can spend hours planning intricate plots and sub plots, but if the characters themselves are nothing better than mediocre, all the Gamemaster's planning could be for naught." EX1023 at 3.

119. Rolemaster Standard Rules explains that "[i]n a role playing game, the author (called the Gamemaster) determines the setting and some of the basic elements of the plot. The actions of the characters (and thus part of the plot) are determined during the game by the game 'players' and the Gamemaster." EX1024 at 9. "A fantasy role playing game is a 'living' novel where interaction between the actors (characters) creates a constantly evolving plot." *Id.*

120. Regarding the characters, Rolemaster Standard Rules explains that "[e]ach player develops and creates a character using the rules of the game and the help of the Gamemaster (for the character's background and history). Each player character has certain numerical ratings for his attributes, capabilities[,] and skills." *Id.* Rolemaster Standard Rules further describes the character's "Personal Characteristics (Stats)." *Id.* at 10. These "statistics…define a character's physical and mental attributes (i.e., stats)." *Id.* "[T]here are 10 stats, each represented by a number between 1 and 100 (1-100)." *Id.* "The stats include 4 physical characteristics: Strength, Constitution, Quickness, Agility." *Id.* "They also include 4 mental characteristics: Intuition, Empathy, Memory, Reasoning." *Id.* There are

also "two stats included that represent characteristics partially mental and partially physical: Presence, Self Discipline." *Id.* "Each stat may affect the ability of the character to perform specific actions." *Id.*

121. Rolemaster Standard Rules further explains that "[e]ach stat has two values. The potential ('ultimate') value (genetically) that the character's stat can obtain. The temporary value represents the value of the characteristics current level. The temporary stats can rise (due to character advancement and other factors) and fall (due to injury, old age, etc.). However, the potentials rarely change." *Id.*

122. Rolemaster Standard Rules also explains that "[e]ach character while adventuring will reach stages of development called experience levels (or just 'levels'). At each new level the character becomes more powerful and skillful in his chosen areas of expertise." *Id.* at 11. Further to this, "[e]xperience is represented in play by experience points (EPs) which the Gamemaster awards to characters for certain experiences, activities, and achievements." *Id.* at 15. The character normally "starts play as a 1st level character and his level increases as he acquires experience points from his adventures." *Id.* The text provides a table (Table T-2.6) that explains the amount of experience points required to achieve a new level. *Id.* Further, "[u]pon reaching a new experience level, your character must make stat gain rolls to determine if his temporary stats change." *Id.* at 16.

123. Rolemaster Fantasy Role Playing explains that characters can gain experience points during combat: "[a] character receives one experience point for each hit he received during the battle **and** one EP for each hit he delivered during the battle." EX1037, 72. Further, "Critical EPs … are awarded for any criticals inflicted on a foe regardless of their effect," and if the character is alone in melee combat with the foe, the character receives a 2.0x multiplier. *Id.*

124. Rolemaster Character Law & Campaign Law is another text providing a relevant overview of Rolemaster "fantasy role-playing." EX1026 at 6. It explains that a "fantasy role playing game is a 'living' novel where interaction between the actors (characters) creates a constantly evolving plot." *Id.* A "fantasy role playing (FRP) game is set in a fantasy world whose reality is not defined solely by our world, but instead is defined by a set of game rules. The creation of the plot of a FRP game is an on-going process which both the Gamemaster and players may affect, but which neither controls. The plot is partially determined along with the setting, but it is heavily influenced by the interaction of the characters with one another and and [sic] random events." *Id.* As described in Rolemaster Standard Rules, each "player character has certain numerical ratings for his attributes, capabilities and skills." *Id.* Basic concepts like interacting with NPCs are at play. *Id.* at 33-35.

125. Rolemaster Character & Campaign Law also describes aspects of gameplay being altered depending on the presence/absence of other players. For example, certain "euphoric" drugs allow for "shared dreams" when a certain other player is within a certain range of the player (*id.* at 30), some spellcasting takes cooperation of multiple party members (*id.* at 56), and "[c]ritical points" that result in experience points are multiplied by 2x "if the character is alone in melee combat with the foe(s)." (*id.* at 93) (emphasis added). In the melee combat example, this means that if there is another player character nearby and fighting with the player, the first character does not get the 2x critical point bonus.

126. As the other texts describe, Rolemaster Character & Campaign Law explains that characters have "attributes, capabilities, and skills. These ratings depend upon how the player develops his character using the rules of the game. Ratings determine how much of a chance the character has of accomplishing certain actions." *Id.* at 6. In other words, these statistics may be modified based on gameplay.

127. Rolemaster Character & Campaign Law also explains that "[a]s in most FRP system[s], each character's physical and mental capabilities are described by a set of characteristics called 'Stats.'" *Id.* at 32. The stats include four physical characteristics (Strength, Constitution, Quickness, Agility), four mental characteristics (Intuition, Empathy, Memory, Reasoning), and two hybrid

characteristics (Presence, Self Discipline). *Id.* Each stat has a "potential" or maximum value that a character's stat can attain as well as a "temporary" value representing the stat's current level. *Id.* The temporary value fluctuates during came play—the "temporary stats can rise (due to character advancement and other factors) and fall (due to injury, old age, etc.)"—but does not exceed the potential. *Id*.; *see also id.*, 36-37 (providing a more detailed explanation of modifying character statistics during the course of gameplay).

128. Rolemaster Character & Campaign Law additionally explains that the fantasy environment may impact gameplay. *Id.* at 108 ("Climatic forces shape the land and its inhabitants, and may go as far as to dictate activity."); *see also id.*, 108-109 (further detailing how climate and weather depend on virtual location). Types of in-game plants (*id.*, 110), animals (*id.*, 111), and monsters (*id.*, 112) also adjust from game-to-game depending on location.

129. Spell Law describes how the players' locations relative to each other within the game may impact gameplay. For example, magical spells have a "spell range." EX1025, 35 ("Several types of codes may follow the spell names in the spell descriptions:…spell range (R:)…distance R — Effect is felt in an area with a radius equal to *distance*."). One example of a spell that has results dependent upon location is a "Lightning Bolt" style spell. When a magician casting a Lightning Bolt spell is closer to the intended target, he is less likely to have an unfavorable

range modification hampering his spell and is in turn more likely to have a favorable result. *Id.* at 143. Various types of light-based spells—and their accompanying ranges—are discussed further at page 83. *Id.* at 83.

130. Spell Law also describes how magicians can create and manipulate weather in the game, and how the location of weather effects in the game may impact gameplay. *Id.* at 39, 41.

2. Computer RPGs

131. RPGs were also implemented as video games on early computing systems, including Unix-based systems typically at universities, early home video game consoles, and personal computers. EX1027 (Wikipedia, Role-Playing Video Game). For example, prior to the priority date, the Wikipedia article on Role-Playing Video Games attached as EX1027 listed several early RPG video games, including *Rogue, Pool of Radiance, The Bard's Tale, Wasteland,* and *the Ultima series*. *Id*. I had personal experience playing all of those computer games in the 1980s.

132. As computing technology matured and became more capable, so too did the computer RPG games (sometimes called CRPGs) that were developed for such newer computing platforms. *Id*. The advent of network-connected computers gave rise to multiplayer gaming and "massively multiplayer online role-playing games" or MMORPGs. EX1028 (Wikipedia, MMORPG). An MMORPG is "a

genre of computer-role playing game in which a very large number of players interact with one another within a virtual game world." *Id.* Sony's *EverQuest* launched in 1999, and by 2008 Blizzard's *World of Warcraft* had over 11.5 million subscribers. *Id.*

133. The development of smartphones in the mid-2000s naturally gave rise to mobile gaming, including mobile RPGs. For instance, Spacetime Studios' Pocket Legends launched in 2010 for iOS and Android mobile devices and features "a RPG Player vs Environment system" in which "[p]layers (avatars) form cooperative teams involving the primary objectives of clearing levels of AI-controlled monsters, collecting item drops and finding treasure chests for gold coins." EX1029 at 1. "Players can advance their skill abilities and equipment to aid them in exploring the world of Arterra" and "players can talk to Notable Non-Player Characters (NPC's) and accept Quests to follow the game's story." *Id.* Pocket Legends also features several different Player vs Player (PvP) modes in which players compete against each other. As with other RPGs, Pocket Legends features different character classes, each with skills that can be upgraded using skill points gained by leveling up, as well as "character statistics such as health, strength, percentage chance to dodge or hit an enemy." *Id.* at 2.

B. Virtual Worlds

134. The background of the ’827 Patent describes a virtual world as follows:

> A virtual world is a computer simulated environment. A virtual world may resemble the real world, with real world rules such as physical rules of gravity, geography, topography, and locomotion. A virtual world may also incorporate rules for social and economic interactions between virtual characters. Player (users) may be represented as avatars, two or three-dimensional graphical representations. Virtual worlds may be used for massively multiple online role-playing games, for social or business networking, or for participation in imaginary social universes. ’827 Patent, 1:28-37.

135. The ’827 Patent also admits that “[p]rior art virtual worlds have storylines.” ’827 Patent, 1:38. A POSITA would recognize this description of a virtual world to be consistent with (and apparently adapted from) the Wikipedia entry for “virtual world” more than a year prior to the priority date. For example, in September 2011 the Wikipedia entry for “virtual world” contained the following content:

> A virtual world is an online community that often takes the form of a ***computer-based simulated environment*** through which users can interact with one another and use

> and create objects. The term has become largely synonymous with interactive 3D virtual environments, where the ***users take the form of avatars*** visible to others. These avatars usually appear as textual, ***two-dimensional, or three-dimensional representations***, although other forms are possible (auditory and touch sensations for example). Some, but not all, virtual worlds allow for multiple users.
>
> The computer accesses a computer-simulated world and presents perceptual stimuli to the user, who in turn can manipulate elements of the modeled world and thus experience a degree of telepresence. Such modeled worlds and their rules may draw from the reality or fantasy worlds. Example ***rules are gravity, topography, locomotion***, real-time actions, and communication.
>
> ***Massively multiplayer online games*** depict a wide range of worlds, including those based on fantasy, science fiction, ***the real world***, super heroes, sports, horror, and historical milieus.

EX1030, emphasizing passages similar to the patent specification.

136. The ’827 Patent also teaches that “a ‘virtual world’ as used herein need not be a ‘game’” while the Wikipedia article states “Virtual worlds are not limited to games.” ’827 Patent, 5:21; EX1030. A POSITA would have agreed and would have been aware of other virtual worlds not specifically limited to gaming

entertainment. For example, *Second Life* "is an online virtual world developed by Linden Lab which was launched on June 23, 2003. A number of free client programs called Viewers enable Second Life users, called Residents, to interact with each other through avatars. Residents can explore the world (known as the grid), meet other residents, socialize, participate in individual and group activities, and create and trade virtual property and services with one another." Ex (Wikipedia: Second Life). A virtual world called the *Metaverse* also featured prominently in the 1992 book *Snow Crash* by Neal Stephenson.

C. Geolocation

137. Geolocation or geo-location is the process of identifying the geographical location of a user accessing a website or other Internet resource. EX1032 ("Svantenson"), 102. Geolocation technologies may be used for fraud detection, authentication, content targeting, security and network efficiency, and conditioning access and legal compliance. *Id.* As of 2004, "the only form of geo-location technology that can be called sophisticated is geo-location technologies that use the translation of IP addresses into geographical locations, based on information stored by the provider of the geo-location service." *Id.* at 109 (footnote omitted).

138. The development of smartphones in the mid-2000s also gave rise to much more accurate geolocation functionality based on the satellite-based GPS

system, since many mobile phones (including the Apple iPhone 3G, launched in 2008, and the Samsung Galaxy, launched in 2009) contained embedded GPS sensor and had mobile data transmission capabilities. In other words, by the late 2000s, rather than using a computer's IP address and a database of stored geolocation information, geolocation could be accomplished by using the GPS sensor in the device itself. The '827 patent acknowledges that "today many types of mobile devices e.g. Smartphones like iPhone include a built-in GPS sensor, have data coverage via mobile cellular network or WiFi, and are widely used for engaging in the gameplay of virtual worlds. Thus determining the player location is a well known method in the art." '827 Patent, 9:15-20. I agree that a POSITA would have already known about geolocation using several techniques, including determining the real-world location of a smartphone (and therefore the location of a player playing a game on that smartphone) using the smartphone's GPS sensor.

D. Geolocation in Gaming

139. Use of geolocation in games was also known to a POSITA prior to the priority date. For example, the earliest Internet casinos in the mid-1990s predated government regulation and therefore had no restriction on the location from which gamblers could access the online casino services. However, as regulatory schemes were developed, some jurisdictions began "geofencing" or restricting users located in certain physical geolocations from accessing Internet services. For example,

after a U.S. Department of Justice investigation into PartyGaming, a real-money online casino operator that illegally offered Internet gaming to U.S. players from 1997 through 2006, PartyGaming agreed to "maintain a permanent restriction preventing Internet gambling services from being provided to customers in the U.S." EX1033 at 2. That permanent restriction was implemented using IP-based geolocation technology to block U.S.-based customers from being able to access PartyPoker games. EX1048 at 58 n.101.

140. Several prior art mobile games incorporated GPS-based geolocation as well, including Grey Area's *Shadow Cities,* a location-based MMO game launched in 2010 for the iPhone mobile computing device. EX1034. In Shadow Cities, players "take up the role of a techno-mage as you protect your city from roaming spirits. Claim territory and fight enemy magic-users as you wander real world streets." EX1035. Players create a character with stats including Endurance, Intelligence, Vitality and Willpower. *Id.* The character can cast magic spells using a pool of mana points, progress through the game and unlock missions to complete, earning XP to level up the character and become stronger. *Id.*

141. Another prior art mobile game using GPS-based geolocation was *Ingress,* developed by Niantic Labs when it was still a wholly-owned subsidiary of Google. Launched on November 15, 2012, Ingress is a "mobile app and alternate reality game made by Google" that "aims to get people out in the physical world,

both for physical activity and to see their surroundings in a new way." EX1036 at 2.

142. There are additionally many published prior art patent references relating to the use of geolocation in gaming, including the applied prior art discussed herein. Therefore, in my opinion and as further demonstrated herein, long before the priority date of the Challenged Patents, prior art computer games had incorporated the fundamental concepts of a location-based role-playing game that the Challenged Patents purport to have invented. In short, the concept of a virtual world with "the ability to take the player's location and its various local elements into account for meaningful impact on gameplay" ('827 Patent, 1:49-51) was known in the art prior to the priority date of the Challenged Patents.

IX. SUMMARY OF APPLIED PRIOR ART

A. Kolo (U.S. Patent Application Publication No. 2012/0244945)

143. In my opinion, Kolo is analogous art to the Challenged Patents because, like the Challenged Patents, it relates to systems and methods for implementing an online game with multiple players (i.e., as I describe below, an "MMO") and incorporating the player's location into the game.

144. Kolo, entitled "Methods and systems for utilizing global positioning information with an online game[,]" discloses "incorporating geolocation information into an online game to enhance the enjoyment of the online game."

Kolo, Abstract. In Kolo, "[t]he geolocation of a player is communicated to the online game servers which modify the gaming environment of the player based on the player's current geolocation." *Id.*

145. Kolo discloses that the disclosed methods/systems of the "invention may be incorporated with any type of online game from single player turn based games to MMOs [Massively Multiplayer Online games]." *Id.*, ¶110. I rely on Kolo's teachings regarding an online MMO. The majority of the Kolo's specification, including Figures 4-31, describes different aspects of the online game.

146. Kolo discloses that a "gaming environment is any part of the extended set of computing devices that are playing or supporting an online or local game," including the "central server" which is "one or more computers working together that provide an online game by running one or more software programs," as well as at least one "local device" which has "an embedded computer chip that runs one or more programs providing a player access to an online or local game." Kolo, ¶76. Kolo characterizes games that provide gameplay over a computer network as either "local" or "online" depending on how many players the game is capable of hosting. *Id.*

147. Kolo teaches that a "geolocation is a point or region on or near the surface of the Earth" and "may be represented as: a latitude and longitude (for a

point), a set of latitudes and longitudes that define a region, a set of latitude and longitude that define the boundary of a region, postal codes, census grid numbers, state, city, country, or any other geographic reference that may be used to designate a point or region on or near the surface of the Earth. Geolocations may be extended to include a height coordinate in addition to a latitude and longitude." Kolo, ¶76.

148. Kolo teaches that "two geolocations are in geoproximity of each other when the minimum distance between the geolocations is less than some threshold. The threshold may be a fixed, predetermined value, or the threshold may be computed based on the geolocations and the properties of one or more objects associated with the geolocation." *Id.*

149. Kolo teaches that "a player's geolocation is a geolocation associated with the player. The Player's Geolocation is not necessarily the physical location of the player." *id.*

150. Kolo teaches that "an avatar is often representation of a player used in an online or local game. A single player may have a plurality of avatars. Alternatively, an avatar may be any in-game character, even characters that are played by computers rather than characters played by physical players. Any in-game character may be considered an avatar." *Id.*

151. Kolo teaches that a "virtual location is the location of an avatar within a virtual environment" and that "two virtual locations are in virtual proximity of each other when the minimum distance between the virtual locations is less than some threshold. The threshold may be a fixed, predetermined value, or the threshold may be computed based on the virtual locations and the properties of one or more objects associated with the virtual location." *Id.*

152. Therefore, Kolo discloses the concept of proximity based on both physical, real-world locations (geoproximity) and in-game locations (virtual proximity).

153. Kolo also discloses that a virtual environment may be mapped to a physical environment, and that virtual proximity and/or geoproximity may be factors in gameplay. Kolo, ¶245.

154. Kolo discloses that a player's geolocation may be used in gameplay, that the player's geolocation may be updated manually or passively, and that the player's geolocation information may be entered by (specified by) the player. Kolo, ¶¶342-345.

155. I describe relevant aspects of gameplay in the MMO of Kolo in more detail below and in the following claim analysis.

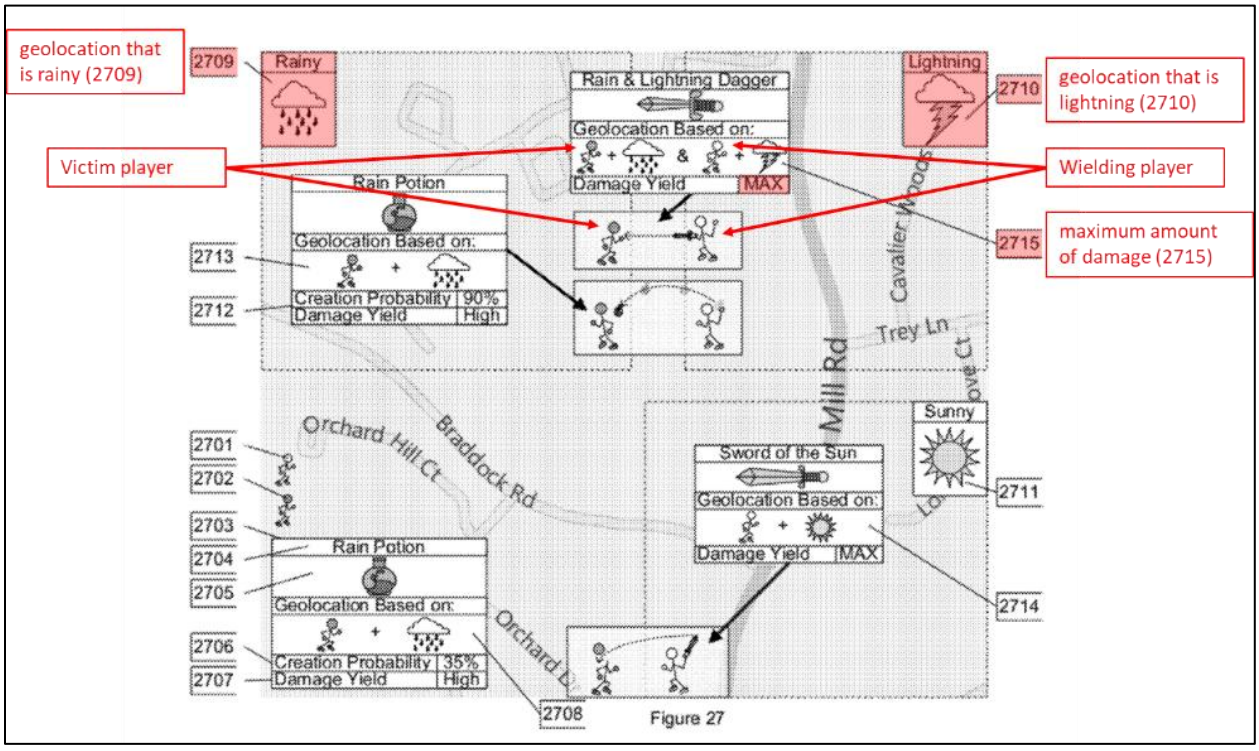
156. Geoproximity effects. Kolo discloses that players may receive benefits or detriments when in geoproximity of another player or players. Kolo

¶¶84, 148-150, 314-315, Fig. 8 (illustrating "a group of players that receive benefits due to their geoproximity of each other while an opposing player receives a detriment from being within geoproximity to one of the group members", ¶315). Examples of benefits include an increase in health, combat or healing advantages, increased damage, increased combat attributes, the ability to sense other players, and a coupon to a store associated with a physical corporation. Kolo, ¶¶131, 133, 135, 153, 314, claim 17. Examples of detriments (also called "negative benefit") include combat disadvantage, reduced abilities, or the ability to be sensed by other players. Kolo, ¶¶134, 150, 154, 314.

157. Battle. Kolo discloses an aspect of gameplay where a wielding player may only use a weapon to its maximum effectiveness when the player is at one geolocation with certain weather and the victim player is at a different geolocation with certain (different) weather. Kolo, ¶¶208-15, 352-355, Fig. 27. "For example, one player may have a sword whose damage is dependent on the weather at the geolocation of the victim of the sword blows and the weather at the geolocation of sword wielder." Kolo, ¶214. Kolo also discloses "a Rain & Lightning Dagger that requires the wielding player to be at a geolocation that is lightning (2710) and the victim player to be at a geolocation that is raining (27[09])[2] in order for the dagger

[2] The original text refers to the rainy geolocation as 2710. Kolo, ¶355. In my

to yield the maximum amount of damage (2715). This example shows the limitations of using an item based on a geolocation of the wielding player as well as the geolocation of the victim player." Kolo, ¶355. Kolo illustrates this in Fig. 27.

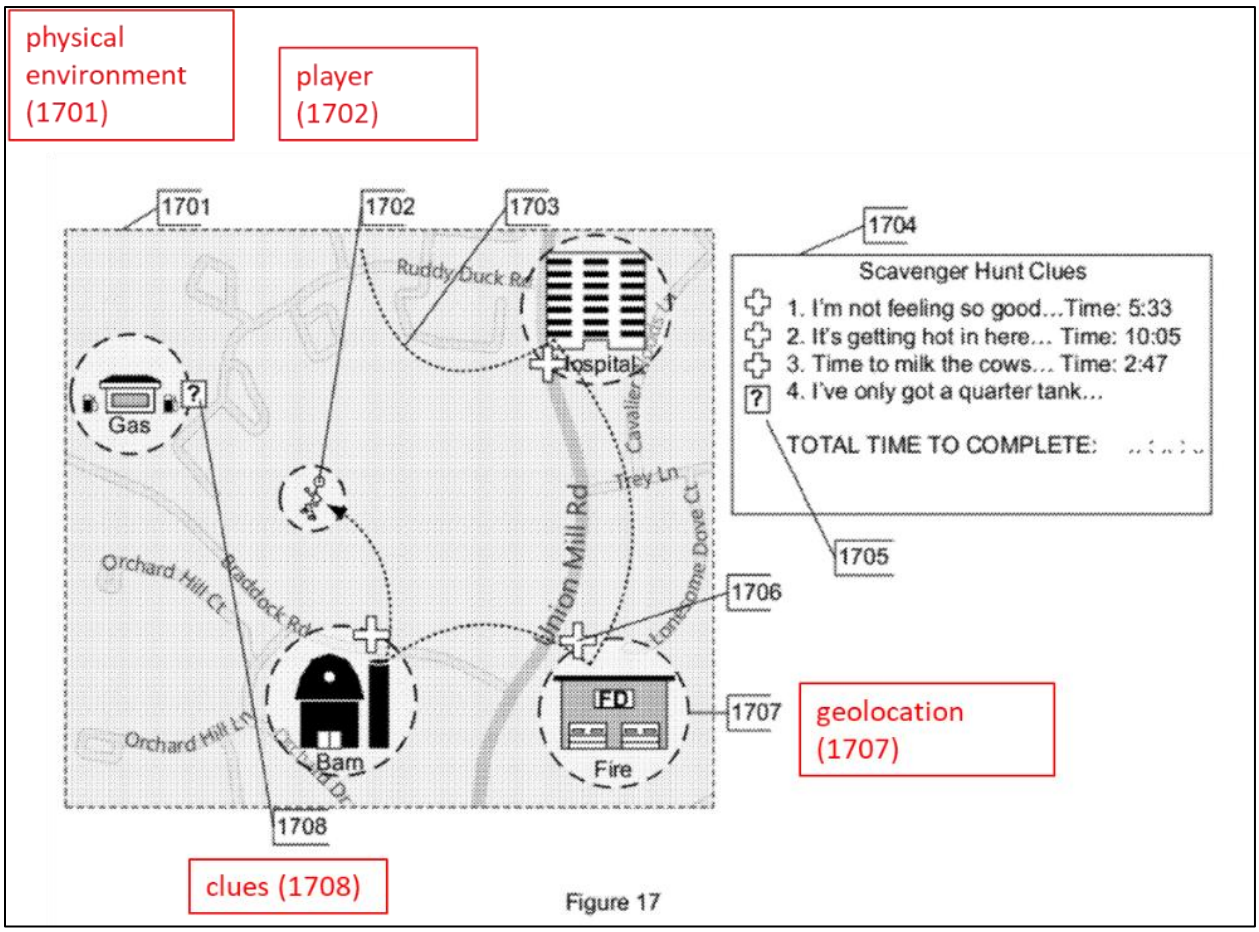


Kolo, Fig. 27.

158. Scavenger Hunt. Kolo discloses an aspect of gameplay where players engage in a scavenger hunt game. Kolo, ¶¶181-84, 271-74, 333, Fig. 17. "Players in the scavenger hunt game may work together as a team whereby a player moves to a geolocation, logs into the game, the team is marked as collecting an item, then

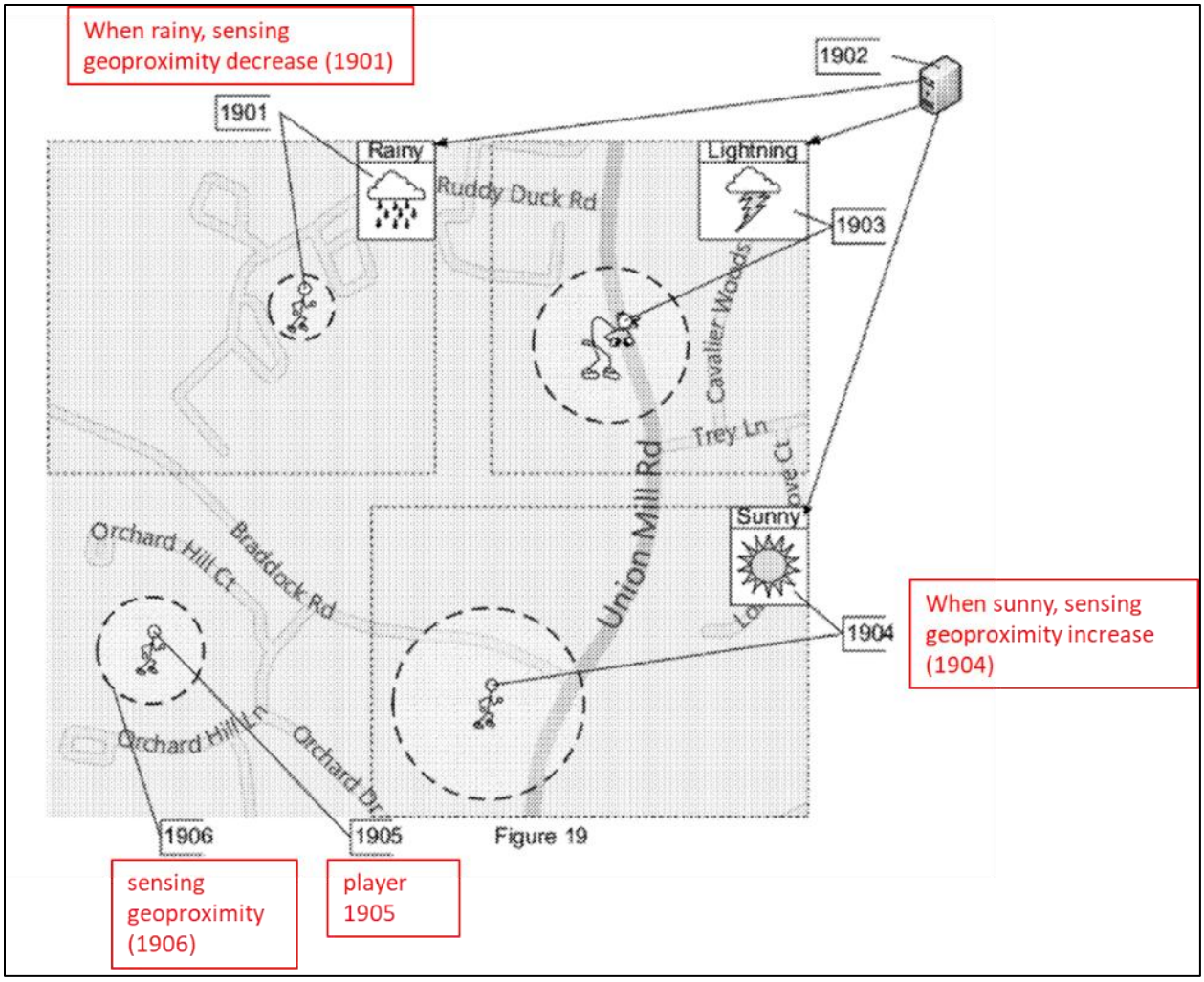
opinion, a POSITA would have understood that this is a typo and the reference should be to 2709.

logs out, allowing another player to log in at a different geolocation and allowing the team to collect another item." *Id.*, ¶183. As illustrated in Fig. 17, "[i]n the physical environment [1701], there are geolocations that the player (1702) must visit based on clues (1708) given to him in the scavenger hunt game." *Id.*, ¶333. "When the player is within the geoproximity of a geolocation (1707), the player will complete or find an answer (1706) to the clue that the geolocation responds to." *Id.*



Kolo, Fig. 17.

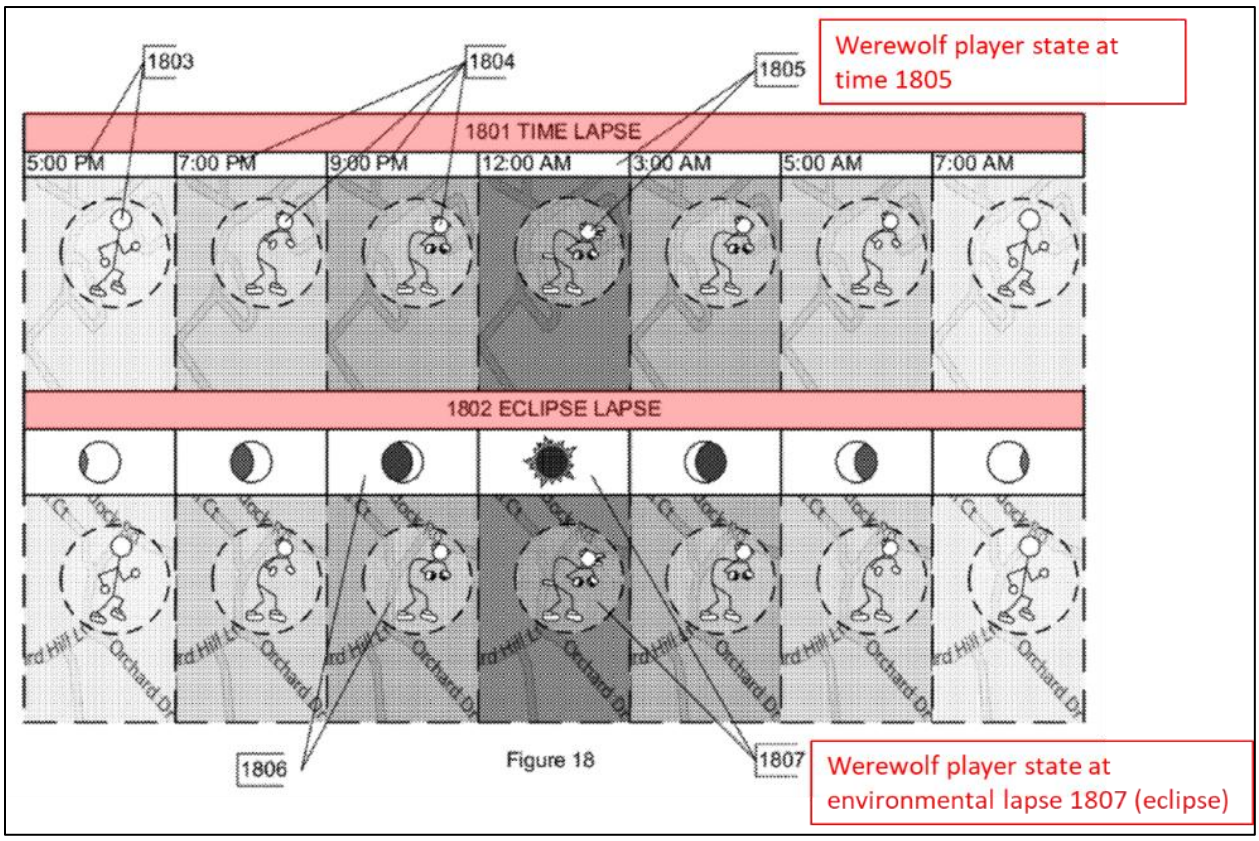
159. Weather. Kolo discloses an aspect of gameplay where a player's in-game experience is affected by the weather. Kolo, ¶¶189-92, 338-40, Fig. 19. As specific examples, "[w]hen the weather is sunny at the player's geolocation, their sensing geoproximity may increase (1904), whereas when the weather is rainy at the player's geolocation their sensing geoproximity may decrease (1901)." *Id.*, ¶339. "Different changes may take effect on the player's in-game experience due to the weather conditions as well. For example, a player may transform into a monster when it is lightning outside (1903)." *Id.*, ¶340. Kolo illustrates this in Fig. 19.



Kolo, Fig. 19.

160. Werewolf. Kolo discloses an aspect of gameplay where the players' in-game experience is modified based on the time and environmental events (e.g., a full moon or eclipse) at the player's geolocation. Kolo, ¶¶185-88, 267-68, 282-83, 334-37, Fig. 18. "For example, in a werewolf game, players may become werewolves when the player is in geoproximity to a geolocation and during a full moon." *Id.*, ¶188. When based on time, "a player may have one in-game experience at one point in time at their geolocation (1803), in this case a normal

player state, and a different in-game experience at another point in time at their geolocation (1805), in this case, a werewolf player state." *Id.*, ¶335. When based on environmental events, "a player may have one in-game experience at one point during the environmental lapse (1806), and a different in-game experience at another point in the environmental lapse at their geolocation (1807). In this scenario, the normal player transitions to a werewolf during an eclipse." *Id.*, ¶336. This is illustrated in Fig. 18.



Kolo, Fig. 18.

161. In my opinion, a POSITA would have understood and found it obvious that these and other teachings regarding different aspects gameplay were

complementary and intended to be combined when implementing the MMO. Kolo, ¶115 ("[T]hese methods may be combined together in a wide variety of ways to create different embodiments of the invention.").

162. Additionally, Kolo incorporates by reference the entirety of the contents of dozens of rulebooks from both Dungeons & Dragons and Rolemaster TTRPGs. Kolo, ¶¶1-67. As described in the Technology Background section, many of these references disclose proximity-based relationships between a player and other characters, including other allies or enemies. Examples include player powers that can impact the abilities or statistics of other players (EX1019 at 25) ("[y]ou grant allies within 10 squares of you a +1 racial bonus to Diplomacy checks"), powers that can only be triggered when the player is alone (*Id.* at 33) ("you cannot use this power if any allies are within 5 squares of you"), powers that give the player a benefit when the player is alone (EX1037 at 72) ("character is alone in melee combat with the foe" yields 2x experience points), powers that affect both player characters and non-player characters (EX1019 at 31) ("you and each ally within the zone gain a +2 bonus to AC. Enemies that enter the zone end their current movement"), and powers whose proximity distance is based on a player's statistic (EX1019 at 35) ("an ally of your choice within a number of squares equal to your Intelligence modifier can make a basic attack.")

163. When considering the other teachings of Kolo, a POSITA would have found it obvious to adapt any one or combination of the virtual proximity-based powers disclosed in Kolo (including those disclosed by reference in the prior art TTRPG rulebooks) into a geoproximity-based power, because Kolo expressly teaches that games may incorporate both virtual proximity and geoproximity and that both may impact gameplay. Kolo, ¶¶243-245. Aside from the express disclosure that Kolo's methods may be combined, the TTRPG rulebooks and the main specification of Kolo share a number of concepts disclosed as being alterable in (or being able to alter) gameplay.

164. Magical item creation. Kolo discloses embodiments in which that a player is allowed to create magical spells or items, such as a magic potion, and that a player's geoproximity to a geolocation, as well as the "particular characteristics" of the geolocation, can affect the creation of such items or spells. Kolo, ¶¶209-211, 227-234, 352-355, Fig. 27. D&D discloses that a player can craft magic wands, brew potions, and create ritual scrolls or books that create magical spells or items. EX1019 (D&D PHB), 39-42, 77-96. Rolemaster likewise discloses that a player can create magic wands, potions, and other items. EX1025, 23-27.

165. Weather. As above, Kolo discloses using real-world weather (e.g., snow, rain, lightning) as factors in gameplay. *See, e.g.,* Kolo, ¶¶210-211, 340, 353, 355. Both D&D and Rolemaster disclose magical spells to create, manipulate, or

endure weather. EX1019 at 32, 37, 85, EX1025 at 39, 41; EX1037 at 154, 160, 173, 184.

166. Battle (Combat). Combat forms a central role in many role playing games, including the games described in Kolo, D&D, and Rolemaster. Kolo, ¶¶132-134, 153, 213-219, 249-262, 270; EX1019 at 45-76; EX1037 at 39-46.

167. Werewolf (Shapeshifting). Characters with the power to transform into fantasy or mythological creatures like werewolves or zombies is also a feature of Kolo as well as prior art TTRPGs, as are the creatures themselves. Kolo, ¶¶188, 268, 275-279, 283; EX1038 at 264 (Dire Wolf), 274 (Zombie); EX1025 at 77, 113, 132. The D&D Shifter race has "lycanthropic blood[3] in their veins", and the Druid class has the ability to transform into a wolf. EX1049 at 2, 6, 24, 82, 89 ("Primal Wolf: You transform into a dire wolf.") Druids also have many powers related to creating weather effects like wind, hail, or thunder. *Id.*, 83-95.

B. Zyda (U.S. Patent Application Publication No. 2011/0214071)

168. In my opinion, Zyda is analogous art to the Challenged Patents because, like the Challenged Patents, it relates to systems and methods for

[3] Lycanthropy is an ancient fictional mythological ability of a human to transform into a wolf.

implementing an online game with multiple players and incorporating the player's location into the game.

169. Zyda, entitled "Information Channels in [Massively Multi-Player Online Games]," discloses a game receiving real-world news in real time, extracting a real-world occurrence from the news, and modifying an attribute of a virtual world based on the real-world occurrence. *E.g.*, Zyda, Abstract, ¶7.

170. For example, Zyda discloses that "[a] database may be maintained containing regional mappings of real-world weather conditions. This database may be referenced, for example, when a player character visits different virtual regions that simulate these real-world regions." Zyda, ¶39. This map database may be used to "trigger different graphic renderings in the virtual world," for example "different sky boxes, environment maps, lighting, and particle effects may be used to simulate different weather conditions." *Id.*

171. Zyda also teaches "modify[ing] an attribute of a virtual character in the virtual world in response to the real-world occurrence." Zyda, ¶40. For example, "[t]he attribute may be an emotion of the virtual character, clothing worn by the virtual character, an accessory associated with the virtual character, and/or action taken by the virtual character." *Id.*, ¶43. Specific examples when it is raining including the virtual character carrying an umbrella, "run[ning] for cover," or "display[ing] an expression of surprise." *Id.*

172. Zyda discloses that its virtual world "may be triggered to seek news on any basis" and further discloses that the news provided to participants in the virtual world may be selected based on the user's current geographic location. Zyda, ¶¶36, 50. Zyda also explains that "[t]he real world news may be of any type," such as, for example, "a real world weather report." Zyda, ¶53.

X. '827 PATENT: DETAILED EXPLANATION OF GROUNDS

A. '827 Patent: Summary of Grounds

173. It is my opinion that the grounds below render obvious challenged claims 1-28 of the '827 Patent.

Ground		Claims	Prior Art
1A	§103	1-21, 24, 26, 27	Kolo
1B		22, 23, 25, 28	Kolo + Zyda

B. '827 Patent, Ground 1A: Kolo

1. It Would Have Been Obvious to Perform Applicable Steps of the Challenged Claims Using the "Local Computing Device" in Kolo

174. Several Challenged Claims, such as claims 1-19, do not specify whether the claimed *computing device* from the preamble of claim 1 or another device is used to perform the claimed steps while other Challenged Claims, such as claims 20-28, are explicit that the *computing device* is used to perform the step.

175. To the extent that this lack of specificity may create an ambiguity regarding what component performs a claimed step, in my opinion that ambiguity

need not be resolved because Kolo discloses that its invention may be implemented by 1) local computing devices connected to a central server, 2) an entirely "local version of the game" where "[n]o central server is required," or 3) something in between, e.g., a local version of the game that updates a central server "with the resolution of the game mechanics once the local game is complete." Kolo, ¶¶116-129.

176. Accordingly, a POSITA would have understood, or at the very least found it obvious, that as it relates to the limitations of the Challenged Claims, any disclosure in Kolo related to a central server performing a given action applies equally to the various local embodiments of Kolo's game, which are performed either partly or entirely by the "local computing device" used by the player. In other words, Kolo teaches that any function performed by its central server can also be performed by the local computing device used by the player, and vice-versa, and therefore both Kolo's central server and local computing device can each independently fulfill the claimed *computing device* in Challenged Claims.

2. ’827 Patent, Ground 1A, Kolo: Claim 1

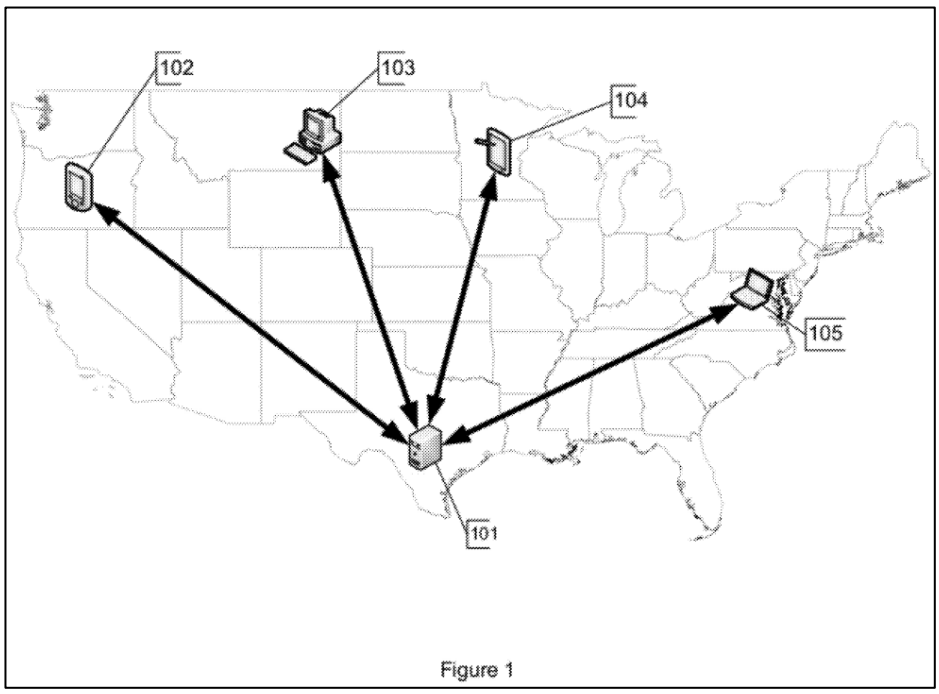
a. ’827 Patent, Ground 1A, Kolo: 1[pre]: A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage memory and a location sensor, the method comprising the steps of:

177. If the preamble is considered limiting, in my opinion Kolo renders 1[pre] obvious.

178. Kolo’s disclosure is generally directed to “methods and systems for using the Global Position System (GPS) in conjunction with online gaming.” Kolo, ¶109. Kolo discloses that the disclosed methods/systems of the “invention may be incorporated with any type of online game from single player turn based games to MMOs [Massively Multiplayer Online games].” *Id.*, ¶110. Kolo also discloses variations of a “Proximity Multiplayer Online Role Playing Game” or PMORPG, a type of MMO that incorporates geolocation into a MMORPG. *Id.*, ¶¶246-270.

179. In my opinion, Kolo discloses providing a video game in which players perform simulated activities in a virtual world using a mobile device in communication with a central server (together, a *computing device*, and individually also each a *computing device)* and a (*computer-implemented method of enabling virtual gameplay on a computing device*). E.g., Kolo, ¶¶75-79, 109 (“[t]he invention generally is to methods and systems for using the Global Positioning System (GPS) in conjunction with online gaming”), 110-111 (“players

participating in an online game provide a geolocation to the gaming environment. The gaming experience is modified in some manner based on the geolocation of the player"), 114-115, 117 ("online gaming experience that is administrated using a central server. Players use a local computing device to interact with the game and this local device transmits information on a regular basis to a central server"), 118 ("one player may be using a mobile phone device, while the second player may be using a laptop computer"), 300-302, Fig. 1, Fig. 2, Fig. 3.



Kolo, Fig. 1

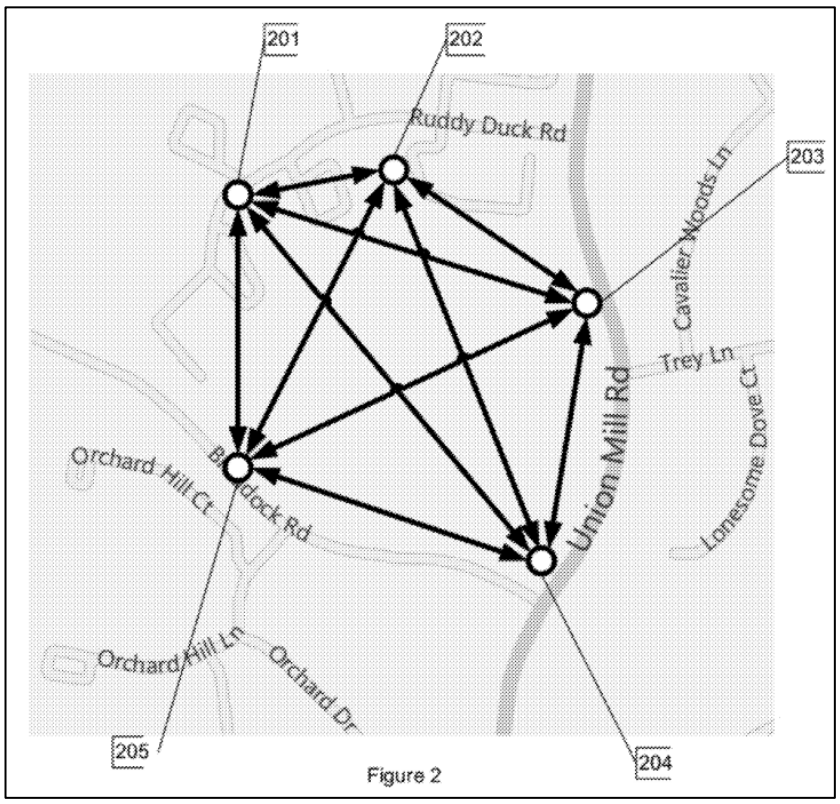


Figure 2

Kolo, Fig. 2

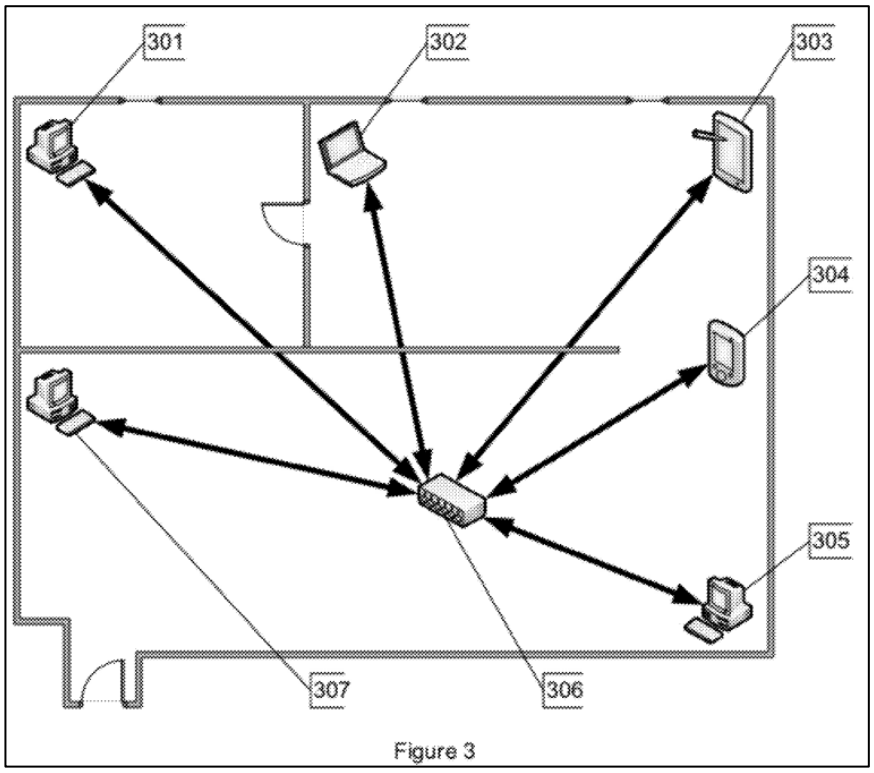
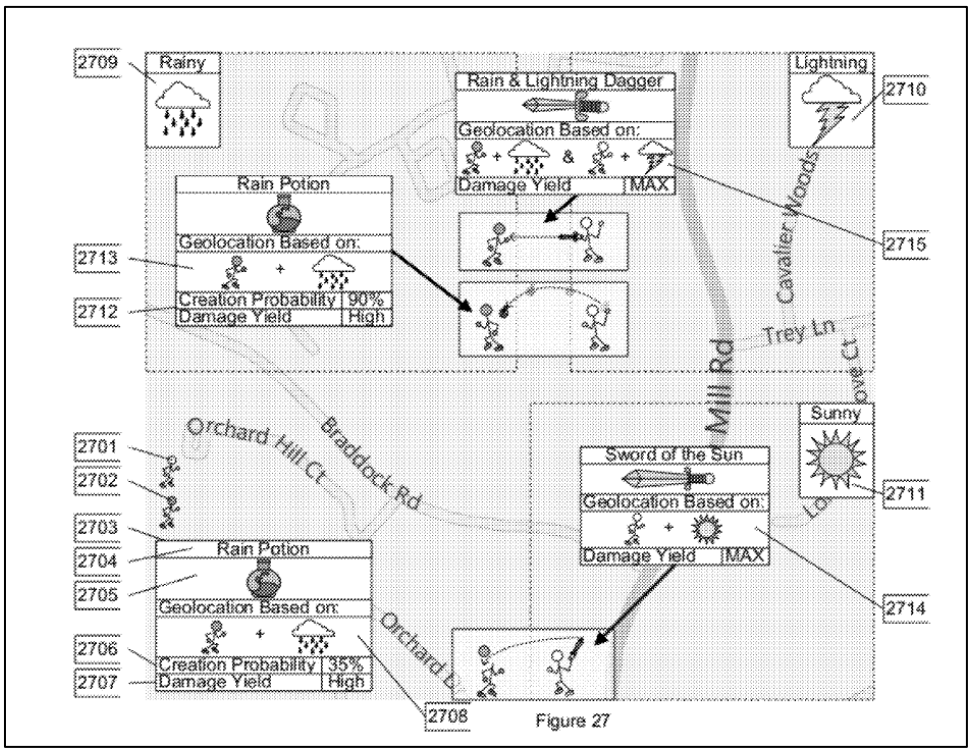


Figure 3

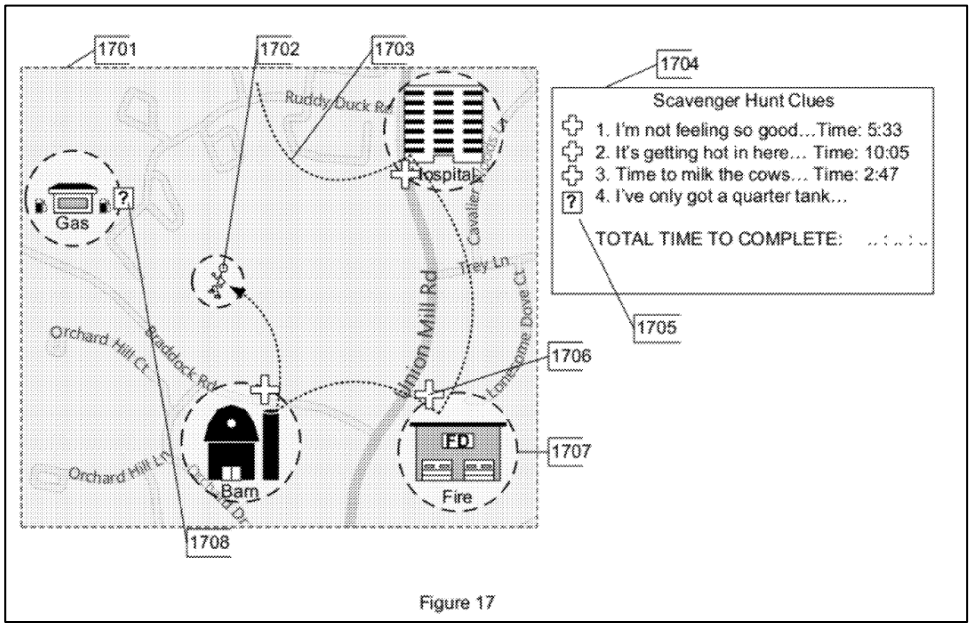
Kolo, Fig. 3

180. In my opinion, a POSITA would understand that mobile phones, laptops, and servers are all computing devices in communication with a storage memory and a location sensor (e.g., a GPS sensor or player-provided location information). It was well known that such prior art computing devices contained storage memory for the execution of software, including game software. I note that the preamble, to the extent it is limiting, does not require that the claimed computing device "contain" or "include" a storage memory and location sensor, just be "in communication with" those elements, which therefore includes not only a given computing device containing a location sensor (such as a mobile phone with an embedded GPS chip) but other devices communicating therewith (such as a central server).

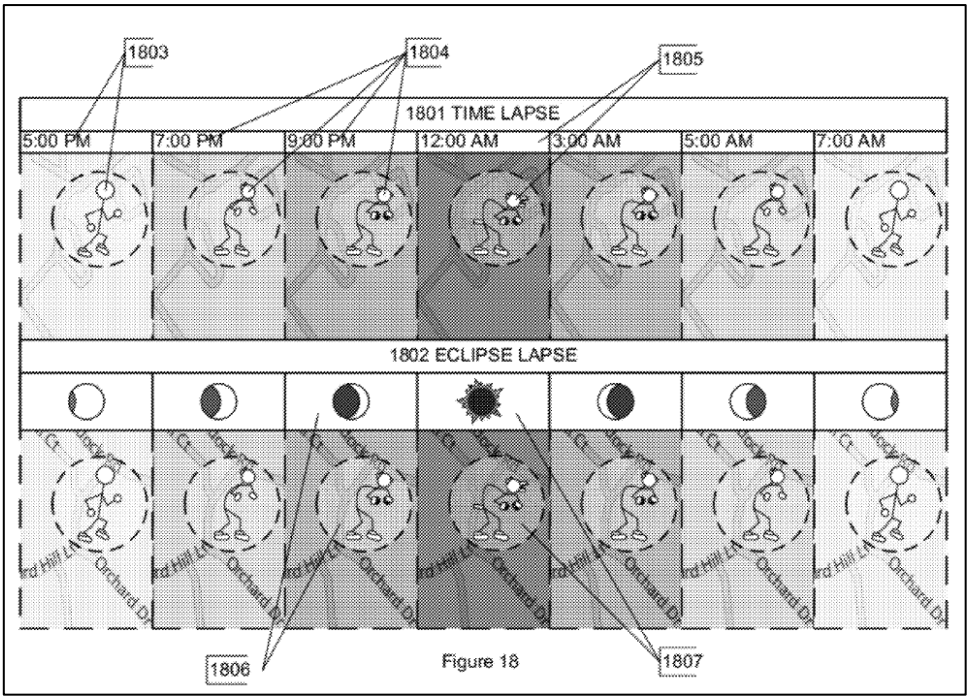
181. Examples of virtual gameplay in Kolo include battling another player in a location with different weather, a scavenger hunt, or being transformed into a monster/werewolf based on the weather/environmental conditions—E.g., Kolo, ¶¶208-215, 352-355, Fig. 27 (battling another player in a location with different weather); *id.*, ¶181-84, 271-74, 333, Fig. 17 (scavenger hunt); *id.*, ¶¶185-192, 267-268, 282-283, 334-40, Fig. 18, Fig. 19 (transforming into a monster/werewolf based on the weather/environmental conditions).



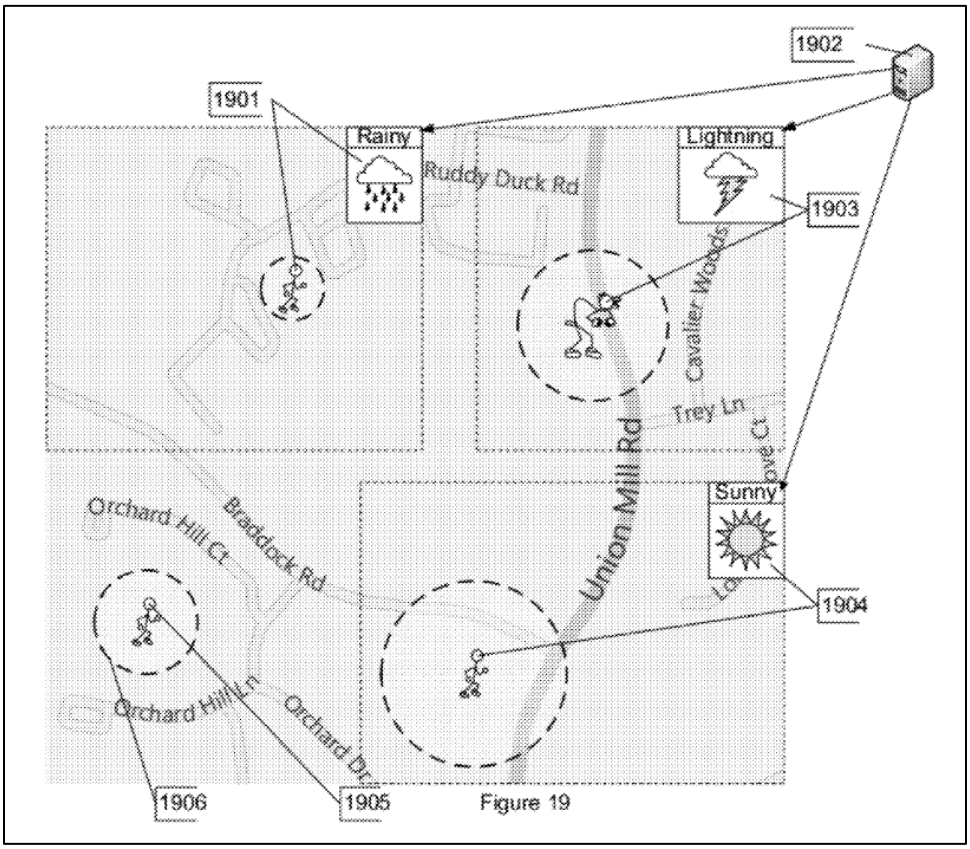
Kolo, Fig. 27.



Kolo, Fig. 17.



Kolo, Fig. 18.



Kolo, Fig. 19.

182. Kolo's disclosure of its Proximity Multiplayer Online Role Playing Game (PMORPG) discloses that "Player characters have a plurality of attributes including Strength, Dexterity, Wisdom, Intelligence, Charisma…." Kolo, ¶261. A POSITA would have recognized these as five of the six ability scores disclosed (in the same order) in the Dungeons & Dragons Player's Handbook incorporated by reference by Kolo. Kolo, ¶22, EX1019 (D&D PHB) 15-16.[4] Similarly, Kolo's disclosure of PMORPG discusses a player character's class and race, as well as armor, weapons, and spells, all of which are features of D&D as well as RoleMaster, and many books related to both games are incorporated by reference in Kolo.

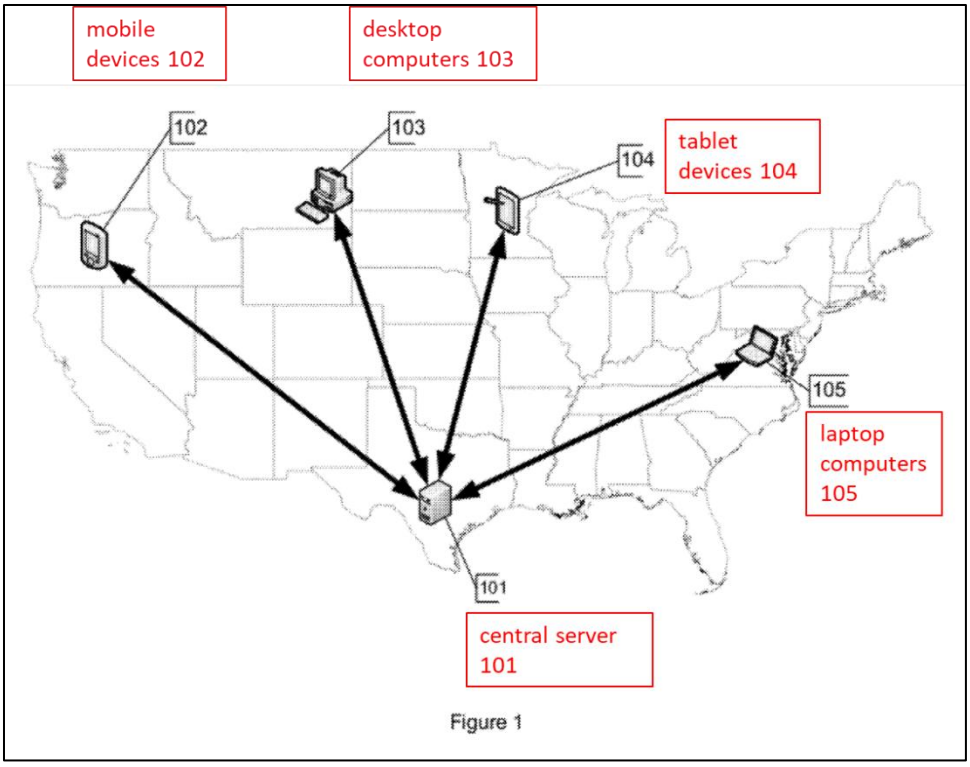
183. Kolo discloses that "PMORPGs are not limited exclusively to this example and may be enhanced using other embodiments of the instant invention not mentioned in this section, combining embodiments together to create additional features, or by employing the embodiments mentioned in this section in other ways to create alternative gaming experiences." Kolo, ¶246. In my opinion, in light of Kolo's teachings and cited/incorporated references, a POSITA would have understood that the TTRPG references incorporated by Kolo from D&D and RoleMaster were intended to inform, and be used and combined with, Kolo's other

[4] In this paragraph, Kolo omitted the sixth D&D ability score, Constitution (Con).

embodiments. For example, a POSITA would have understood that Kolo's disclosure of the "race" and "class" of the player's character (Kolo, ¶248) meant that the player's character in Kolo's PMORPG could be any of the races and classes disclosed in the D&D Player's Handbook, including races such as dragonborn, dwarves, eladrin, elves, half-elves, halflings, humans, or tieflings (each with corresponding racial traits, including proximity-based traits), and classes such as cleric, fighter, paladin, ranger, rogue, warlock, warlord, or wizard (each with corresponding class powers, including proximity-based powers), EX1019 (D&D Player's Handbook), 13-14; or characters could have any other combination of races/classes/traits/powers reflected in any of the incorporated references. Therefore, Kolo discloses that its computerized virtual gameplay can draw from well-known TTRPG gameplay mechanics and concepts that had been used in pen and paper games for decades. As noted in the background section, many prior art computer RPGs had done just that.

184. In Kolo, players may play the game on their local computing devices—e.g., "mobile devices (102)," "desktop computers (103)," "tablet devices (104)," "laptop computers (105),"[5] in communication with a server ("central server 101"). Kolo, ¶300.

[5] For simplicity, throughout this declaration I refer to Kolo's local *computing devices* as mobile devices unless otherwise noted.



Kolo, Fig. 1.

185. Kolo defines a "local device," which in my opinion POSITA would have understood to include Kolo's mobile device, as "a device with an embedded computer chip that runs one or more programs providing a player access to an online or local game." *Id.*, ¶76. Kolo also discloses that players "use their local computing devices to ***store***, process and communicate gameplay to other players in the local game." *Id.*, ¶301.[6]

[6] These disclosures are in the context of a "local game" that does not rely on communication with the central server during gameplay, only with other local computing devices. However, in my opinion a POSITA would have understood that the structure of the mobile device is the same in the server-administrated embodiment, and Kolo discloses that players can use mobile devices or laptops to connect to central servers in global-local online gaming. Kolo, ¶¶116-118.

186. Kolo defines a "central server" as "one or more computers working together that provide an online game by running one or more software programs." *Id.*, ¶76. Kolo also discloses that the central server "store[s] information." *Id.*, ¶124 ("[T]he central server is able to ***store*** information on the resolution of the local game and incorporate any modifications that occurred during the local game and update the game databases accordingly.").[7]

187. In view of Kolo's disclosures that both the mobile device and central server run gaming programs and store information, in my opinion a POSITA would have understood that Kolo's mobile device and central server are both *computing devices* that both include (and therefore communicate with) *storage memory*. Additionally, each of the mobile device and central server communicating with each other is a *computing device in communication with a storage memory* of the other computing device.

188. In my opinion, Kolo therefore discloses/suggests to a POSITA that the mobile device communicates with its memory (e.g., when retrieving information to send to the server and when storing information received from the server) and memory on the server (e.g., when sending information to the server that the server

[7] These disclosures are also in the context of the "local game." However, in my opinion a POSITA would have understood that the structure of the central server is the same in the server-administrated embodiment. Kolo, ¶¶116-118.

stores in the server's memory, and when retrieving game information from the server) (*computing device in communication with a storage memory*).

189. In my opinion, Kolo further discloses/suggests to a POSITA that the server communicates with its memory (e.g., when retrieving information to send to the mobile devices and when storing information received from the mobile devices) and memory on the mobile devices (e.g., when sending information to the mobile devices that the mobile devices store in their memory, and when retrieving game information from the mobile devices) (*computing device in communication with a storage memory).*

190. In my opinion, both of these disclosures of storage memory are consistent with the Challenged Patents' disclosure of memory, including "a gaming console may provide internal memory chips … while games played over the Internet may provide online memory." '827 Patent, 8:39-42.

191. The mobile device also includes a GPS unit for determining device position (*location sensor*). Kolo, ¶300 ("Mobile devices (102) may transmit their geolocation using built-in geopositioning mechanisms such as GPS units."), ¶195 ("[T]he player's local gaming device may have a GPS module incorporated into the device."), ¶198 ("A GPS module is located in the local gaming device used by the player.").

192. Kolo also discloses that the player's geolocation may also be detected based on the local computing device's IP address or based on user input. Kolo, ¶72, ¶112. As to these alternatives, in my opinion a POSITA would have understood that the IP address/user input is read from the mobile device's memory (*location sensor*).

193. Kolo discloses that "players using [mobile devices]…transmit geolocation and game information to a central server." *Id.*, ¶300. Further, "[t]he central server may transmit game information to the players' [mobile] devices as well." *Id.*, ¶300.

194. In my opinion, Kolo further discloses/suggests that the mobile device communicates with its GPS unit and memory when transmitting the device's "geolocation" to the server. Therefore, each of the mobile device and server is a *computing device in communication with…a location sensor*.

b. <u>'827 Patent, Ground 1A, Kolo</u>: 1[a]: providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters

195. In my opinion, Kolo renders 1[a] obvious.

196. Kolo discloses that the player plays the MMO through a "character"/"avatar" (*providing access to a video game having a virtual*

character). Kolo, ¶¶247, ¶76. Kolo discloses that its local and online games are multiplayer games "capable of allowing one or more participants to interact with each other and affect the experience of other participants" and have in-game characters that can be played by physical players or by computers. *Id.*[8]

197. The '827 Patent describes a "'statistic' (stat)" as "a datum which represents a particular aspect of a virtual character," states that "[m]ost virtual words separate statistics into several categories," and states that "[t]he set of categories actually used in a game system, as well as the precise statistics within each category may vary greatly from one virtual world to another." '827 Patent, 8:12-18. Further, "[m]any virtual worlds also use derived statistics whose values depend on other statistics, which are known as primary or basic statistics." *Id.*, 8:18-21. "Derived statistics often represent a single capability of the character such as the weight a character can lift, or the speed at which they can move." *Id.*, 8:21-23; *see also id.*, 8:27-31 (stating that "statistics" affect character behavior and describing as an example that a "well-built muscular" character "may be more powerful and able to throw certain objects farther" but "may lack dexterity"), 3:25-

[8] A player of a video game does not necessarily interact with that video game using a virtual character with a virtual character statistic, even when the game has such a virtual character. E.g., Kolo discloses that its virtual characters (with virtual character statistics) may be "played by computers rather than … players," and RPGs as far back as D&D used the concept of the Dungeon Master (DM), a person "who takes on the role of lead storyteller and game referee." EX1019 (D&D PHB), 6.

26 (disclosing that "statistics" may "represent[] mood or aggression in the virtual character"), 11:38-46 (disclosing that "personalities" of characters may be "more playful" in New Orleans and "more violent" in New York City).

198. Kolo discloses/suggests that a game character has a *virtual character statistic*. Specifically, Kolo discloses that a character in the MMO has "attributes" including "Strength, Dexterity, Wisdom, Intelligence, Charisma, Hit Points, and Mana," some of which may be computed based on other attributes. Kolo, ¶261; *see also id.*, ¶73 ("[A] player may receive a strength bonus when located near a gym.").

199. Kolo also discloses in describing other aspects of the game that the character has "health" that can be increased/decreased (*id.*, ¶¶131-132) and "speed" that can be increased/decreased (*id.*, ¶279). The player's character also may have a "different graphical model appearance in the virtual environment," and the appearance may change "based on the player's geolocation." *Id.*, ¶175. For example, Kolo discloses that a player's character's appearance may change by "transform[ing] into a monster" *(id.*, ¶340) or "transition[ing] into a werewolf" (*id.*, ¶336).

200. Kolo further discloses that game characters in the MMO have levels. For example, Kolo discloses that a player may "achieve[] a new level for their character (many online games have levels associated with each player[,] and as

players gain experience[,] they achieve new levels)." *Id*., ¶180; *see also id.*, ¶229 (disclosing that a "player's attributes" including "avatar level" and "attributes" impact the central server/local device's determination of the time required and probability of success in casting a spell); *id.*, ¶291 ("Shots may be successful based on the type of weaponry, the experience of the player (levels gained the more a player plays the game), and/or an element of randomness or 'luck.'").

201. Kolo's incorporation of TTRPG rulebooks also discloses that game characters have statistics as claimed. D&D characters have ability scores that "describe the fundamental strengths of your body and mind" and Rolemaster characters have statistics that "define a character's physical and mental attributes." EX1019 (D&D PHB), 13; EX1024 (Rolemaster Standard Rules), 10.

202. It was well-known to a POSITA as of the '827 Patent's priority date that game character "attributes" that change as the character gains game experience/advances in character "level" were primary or derived statistics related, e.g., to strength, health, speed, appearance, etc. *See, e.g.*:

- EX1039 ("A statistic (or stat) in role-playing games is a piece of data which represents a particular aspect of a fictional character…Most games divide their statistics into several categories. The set of categories actually used in a game system, as well as the precise statistics within each category, vary greatly. The most often used types of statistic include: Attributes describe to what extent a character

possesses natural, in-born characteristics common to all characters…Attributes are also called statistics, characteristics or abilities. Most [role-playing games] use attributes to describe characters' physical and mental characteristics, for example their strength or wisdom. Many games also include social characteristics as well, for example a character's natural charisma or physical appearance.").

- *Id.* ("[I]n some games[,] [attributes] can be increased by spending experience points gained during the game, or as part of the process of 'levelling up').
- EX1040 (describing a game character "attribute" as "a piece of data (a 'statistic') that describes to what extent a fictional character in a role-playing game possesses a specific natural, in-born characteristic common to all characters in the game."); *id.* (disclosing that two common attribute names are "strength" and "dexterity," and that dexterity "controls attack and movement speed").
- EX1041 (defining "level up" as "[t]o progress to the next level of player character stats and abilities" which is "[o]ften used in role-playing games when the character has a[c]quired enough experience points").
- EX1042 ("By gaining a level, a character's abilities or stats will increase.").
- EX1040 ("Attributes in common systems…[Dungeons & Dragons] uses six ability scores…Strength - physical strength…Dexterity - agility and speed…Constitution - ability to resist damage and disease…Intelligence - mental

acuity…Wisdom - intuition and sense of things around himself…Charisma - force of personality and physical attractiveness").

- EX1019, at 15-16 (describing six "ability scores" in Dungeons & Dragons, and noting that "constitution" represents, *inter alia*, "health"); *id.*, at 16 ("Ability scores increase as a character gains levels"); *id.*, at 21 ("When you earn enough [experience points], you reach a new level."); *id.*, at 44 ("Every successful encounter brings experience, measured in experience points (XP)");

- EX1043, ¶40 (disclosing role-playing game in which characters have "various character attributes or characteristics such as strength, speed, intelligence, ability, performance, equipment, perception, stamina, resistance, health, power, skill and the like"); *id.*, ¶64 (disclosing that a virtual character has a "level" and that "[l]evel advances or 'leveling up' increase[s] a user's slats [sic] (such as 'power')"); *id.*, ¶65 ("The six main character attributes are advanced as the character moves up in level—points are allocated by the player. Physical attributes include strength, speed, and stamina, while mental attributes can include intelligence, perception, and resistance.").

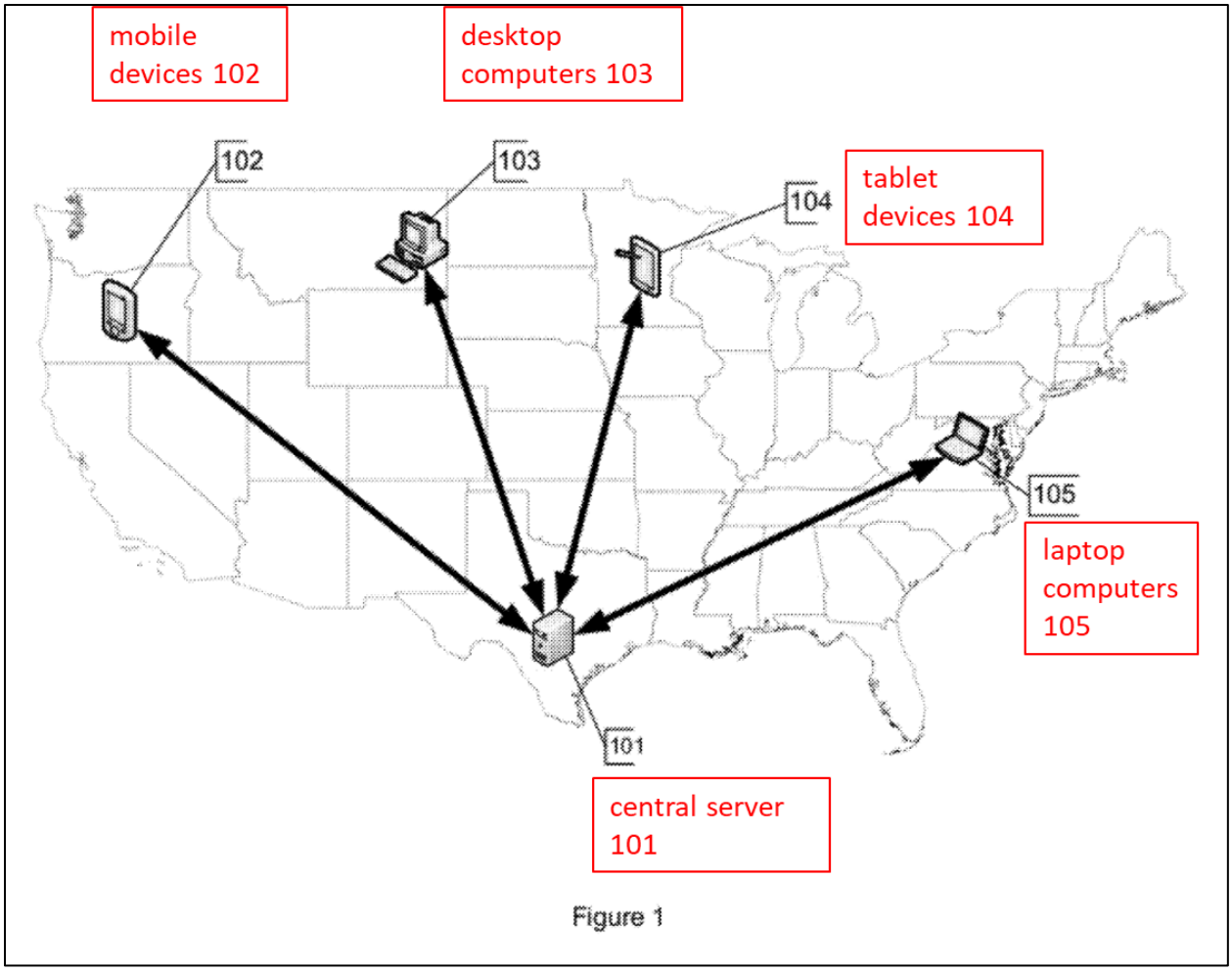
203. In my opinion a POSITA would have understood that changes in game character level are associated with changes in the datums representing game character attributes (i.e., *statistics*).

204. Thus, in my opinion Kolo discloses/suggests to a POSITA that the game character/avatar has a level and associated "attributes" that are primary/derived *statistics* represented by datums related, e.g., to the game character's health, hit points, speed, strength, dexterity, wisdom, intelligence, charisma, mana, and appearance (*virtual character with a virtual character statistic*).

205. In my opinion, Kolo discloses/suggests a player playing the game through a game character is *in a real world player geographic location*.

206. Kolo teaches that "geolocation information for a player is incorporated into a game so that the players online experience is modified based on the geolocation of the player." Kolo, ¶75. As I described regarding 1[pre] (§X.B.2.a), Kolo discloses that the players of the MMO "transmit their geolocation using built-in geopositioning mechanisms such as GPS units." Kolo, ¶300.

207. In Kolo, a "geolocation is a point or region on or near the surface of the Earth." *Id.*, ¶76. Fig. 1 illustrates the players playing the game with local *computing devices* at various geolocations within the United States.



Kolo, Fig. 1.

208. Thus, in my opinion Kolo discloses/suggests to a POSITA that a player playing the game via their game character is in the real world geographic location of the player's mobile device such (*a real world player geographic location*).

209. In my opinion, Kolo discloses/suggests that the player interacts with the video game and with other players in other real world geographic locations playing other virtual characters.

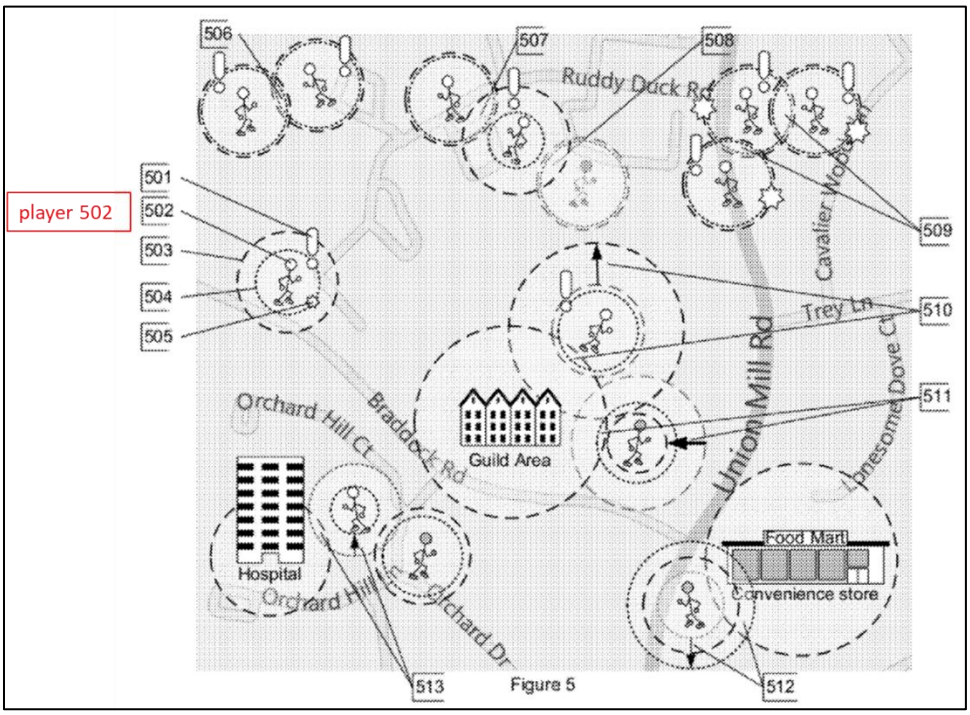
210. Kolo defines both an "online game" such as an MMO and a "local game" as allowing "participants to interact with each other and affecting the experience of other participants." Kolo, ¶76. Further, "[o]nline games are capable of hosting in excess of 128 players." *Id.* Further, "[l]ocal games are capable of hosting up to 128 players. Computer programs that utilize a computer network with one or more players are classified as either 'online games' or 'local games'." *Id.*

211. In my opinion, a POSITA would have understood that this is describing a general aspect of Kolo's MMO, and that these teachings apply when players engage in the types of gameplay described in the battle, scavenger hunt, and monster/werewolf aspects of gameplay.

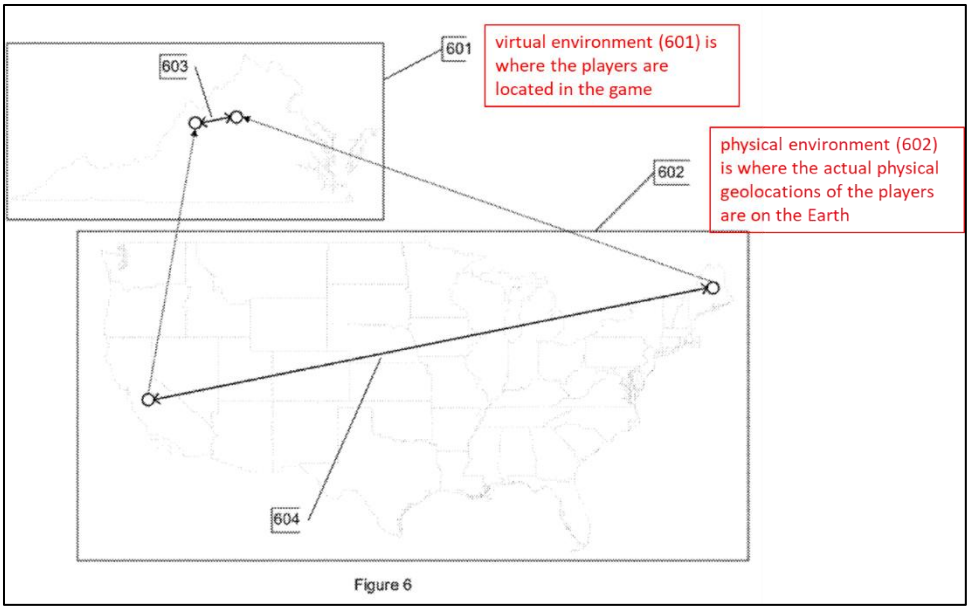
212. Further, my discussion above regarding a player being located in the *real world geographic location* of the player's mobile device applies to each of the other players in the MMO (*other players in other real world player geographic locations playing other virtual characters)*. Kolo, ¶¶300, 76, Fig. 1.

213. Figs. 5, 6, and 8, for example, show a player interact[ing] with the video game and with other players in other real world geographic locations playing other virtual characters, and in my opinion a POSITA would have understood that players engaging in the battle/scavenger hunt/monster/werewolf aspects of gameplay would also have access in the MMO to the aspects of gameplay

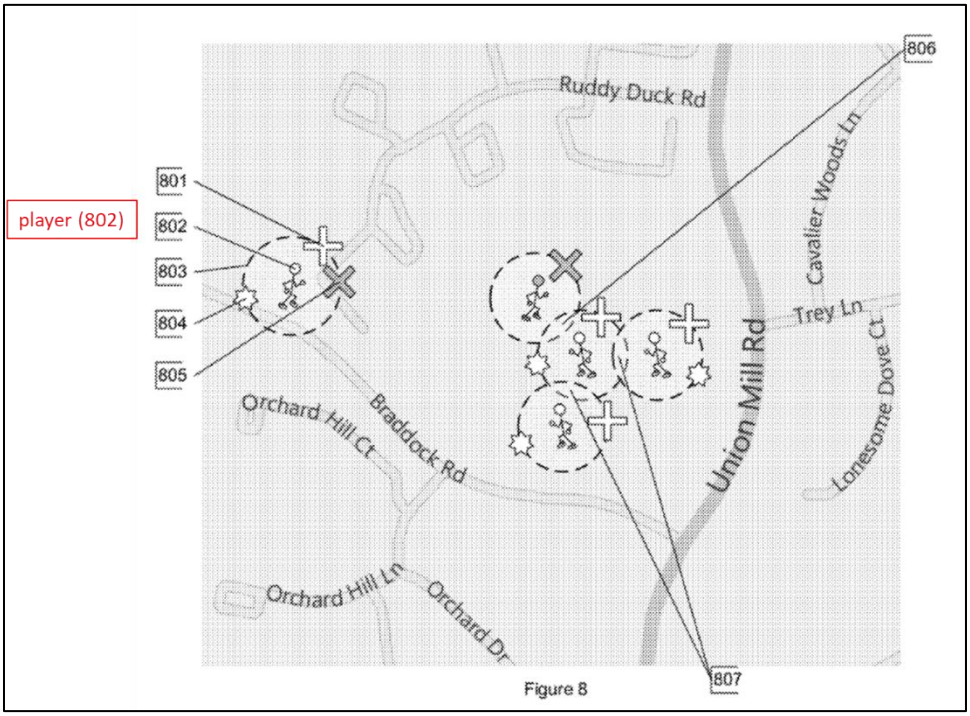
described in these figures. Kolo, ¶305 ("FIG. 5 details player notification of other players' geolocations when within a sensory range of each other."), ¶312 ("FIG. 6 details how players may be aware of other players across the virtual environment, perceiving each other as within close virtual proximity in the virtual environment while being much further distances from each other in the physical environment. The physical environment (602) is where the actual physical geolocations of the players are on the Earth. The virtual environment (601) is where the players are located in the game."), ¶314 ("FIG. 8 details how players may receive benefits or detriments when in geoproximity of another player or players."); *see also, e.g., id.*, Fig. 9, 12, 13, 14, 15, 16, 28.



Kolo, Fig. 5.



Kolo, Fig. 6.



Kolo, Fig. 8.

214. Specifically, in my opinion a POSITA would have understood that these are examples of how a player may *interact with other players in other real world geographic locations* in the same MMO that allows players to engage in a of

battle, a scavenger hunt, or transform into a monster/werewolf. Kolo, ¶115 ("[T]hese methods may be combined together in a wide variety of ways to create different embodiments of the invention.").

215. In addition, in my opinion Kolo discloses/suggests that the *player interacts with other players in other real world geographic locations* when specifically engaging in gameplay related to battle, a scavenger hunt, and transforming into a monster/werewolf during an environmental event.

216. Battle. Kolo discloses that a player in a *real world player geographic* location with certain weather (e.g., sunny or lightning) *interacts with the video game and with other players in other real world geographic locations* where there is different weather (e.g. rain). Kolo, ¶¶208-215, 352-355, Fig. 27. Specifically, "wield[ing]" player where it is sunny/lightning may only use a sword/"Rain & Lightning Dagger" to its maximum effectiveness when another "victim" player is in a different geolocation where it is raining. *Id.*, ¶214 ("[A] sword may cause maximal damage when the sword wielder is at a geolocation that is sunny, and when the victim of the sword blows is at a geolocation that is raining."), ¶355 ("The last example uses a Rain & Lightning Dagger that requires the wielding player to be at a geolocation that is lightning (2710) and the victim player to be at a

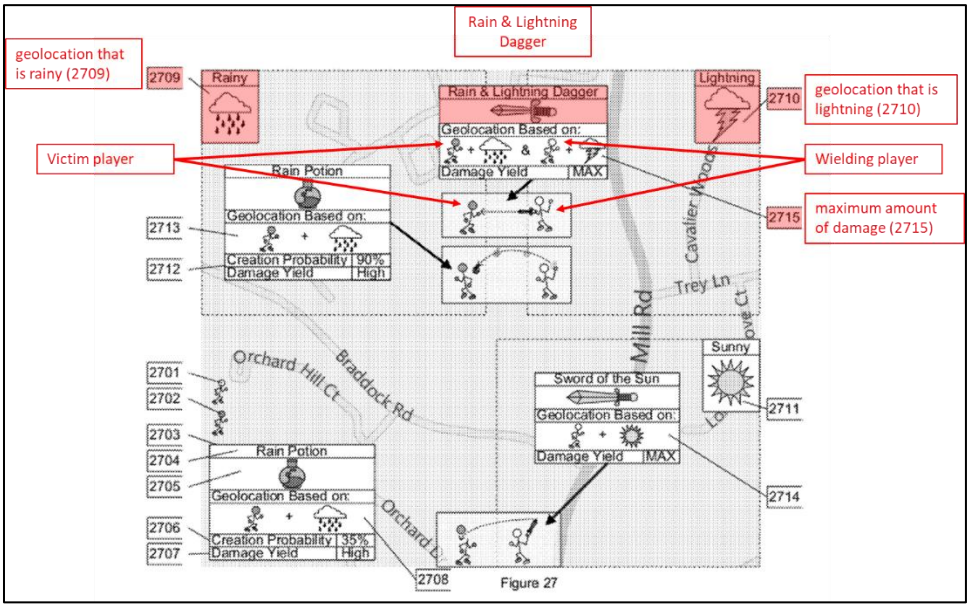
geolocation that is raining (2710)[9] in order for the dagger to yield the maximum amount of damage (2715).").

217. Via the incorporated TTRPG references, Kolo also discloses that the player can modify the weather or other environmental effects. For example, D&D discloses the "Astral Storm" spell wherein "[y]ou unleash a terrible storm upon your enemies, raining ice, fire, lightning, and thunder down upon them" and the "Winter's Wrath" spell wherein "[y]ou raise your hand and an icy blizzard rains down mercilessly upon an area you designate." EX1019 (D&D PHB, 32, 37). Similarly Rolemaster discloses several "Weather Ways" spells, including "Storm Call" wherein the "[c]aster may call forth a storm of any type with maximum wind speeds equal to twice his level, and an intensity according to his desires. … For example, a 30th lvl caster could summon a lightning storm with intense rain and constant wind speeds of up to 60 mph." EX1025 (Spell Law, at 39). Further, Rolemaster discloses the "Lightning Call" spell wherein "[c]aster can cause a lightning bolt to strike a target within his range" but "[t]here must be a storm within 1 mile that is severe enough to cause precipitation or lightning or very heavy winds." *Id.* at 41. In other words, Kolo (via incorporated references)

[9] In my opinion, a POSITA would have understood that this "2710" is a typo and the reference should be to rainy location 2709 as illustrated in the annotated Fig. 27 below.

discloses that the player may both manipulate weather and cast spells that depend on proximity to weather.

218. In my opinion a POSITA would have understood that Kolo's description focuses on these two players for illustration and the wielding player could also interact with the other players shown in the figure (e.g., using a different weapon), or as illustrated in the other figures (e.g., Fig. 8).



Kolo, Fig. 27.

219. For example, Kolo also discloses that multiple players can be on a team, and that teams can attack or battle other teams (or be safe from attack) based on their locations. Kolo, ¶321, Fig. 10. Similarly Kolo's incorporated TTRPG references disclose that multiple players may be in battle or combat against enemy monsters, and that the location of the multiple characters on the battlefield (and their proximity to one another) can impact gameplay.

220. Scavenger Hunt. A player 1702 in the scavenger hunt is *in* a *real world player geographic location*—i.e., a "geolocation" in the physical environment 1701 and walks a "path (1703) to geolocations that may correspond to the clues in the scavenger hunt game." Kolo, ¶333. In my opinion Kolo discloses that the player *interacts with the video game and with other players in other real world geographic locations* because Kolo discloses that "two or more players may participate in a scavenger hunt where clues may be given to geolocations that the players have to discover and 'collect.'" *Id, see also* Kolo, ¶¶271-274 ("players are provided a set of clues … when the central server detects that a player is in geoproximity related to a clue, the central server notifies the player and scores the player as satisfying the clue… when the designated time is up, the player or team with the most points is awarded as the winner(s)"). A POSITA would have understood that these players are not all in the same location at the same time, and rather are traveling to different locations while they play the scavenger hunt. Further, a POSITA would have understood that Kolo's general teachings regarding the MMO apply and that the player may interact with multiple other players in the MMO.

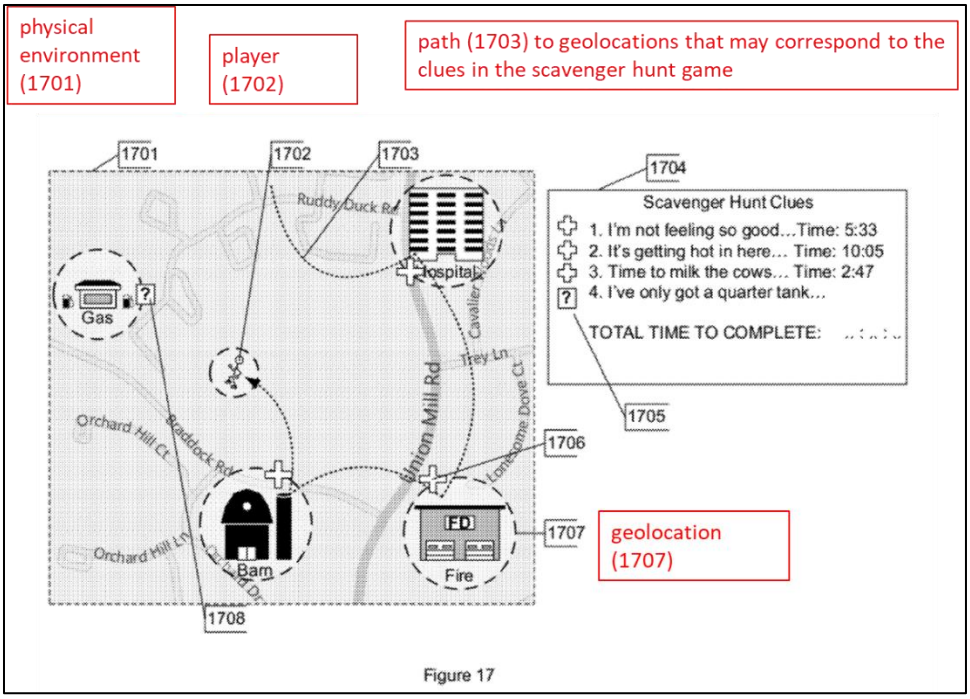


Figure 17

Kolo, Fig. 17.

221. Weather/Werewolf. As to weather, in my opinion Kolo discloses that the player is *in* a *real world player geographic location*—i.e. a "geolocation" where it is "sunny," "rainy," or there is "lightning." *Id.*, ¶339. As to werewolf, in my opinion Kolo discloses that the player is *in* a *real world player geographic location*—i.e., "in geoproximity to a geolocation and during a full moon" (*id.*, ¶188) or at a geolocation 1803 shown in Fig. 18 (*id.*, ¶ 335).

222. As described earlier in this section, Kolo also discloses (via the incorporated TTRPG references) that the player may both manipulate weather and cast spells that depend on proximity to weather.

223. As to both the weather and werewolf aspects of gameplay, in my opinion Kolo discloses that the player may *interact with the video game and with*

other players in other real world geographic locations because a POSITA would have understood that Kolo's descriptions are focusing on modifications to one player's game character for illustration and Kolo's other teachings regarding players interacting in the MMO with other players in other real world locations would apply.

224. Element 1[a] does not specify that it is necessarily performed using the "computing device" recited in the preamble (*see, e.g.,* claims 13 and 14). However, in my opinion, Kolo discloses that both its server and local devices perform the claimed "providing access to a video game" in element 1[a]. Kolo, ¶¶76, 109-129.

c. <u>'827 Patent, Ground 1A, Kolo</u>: 1[b]: detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage memory;

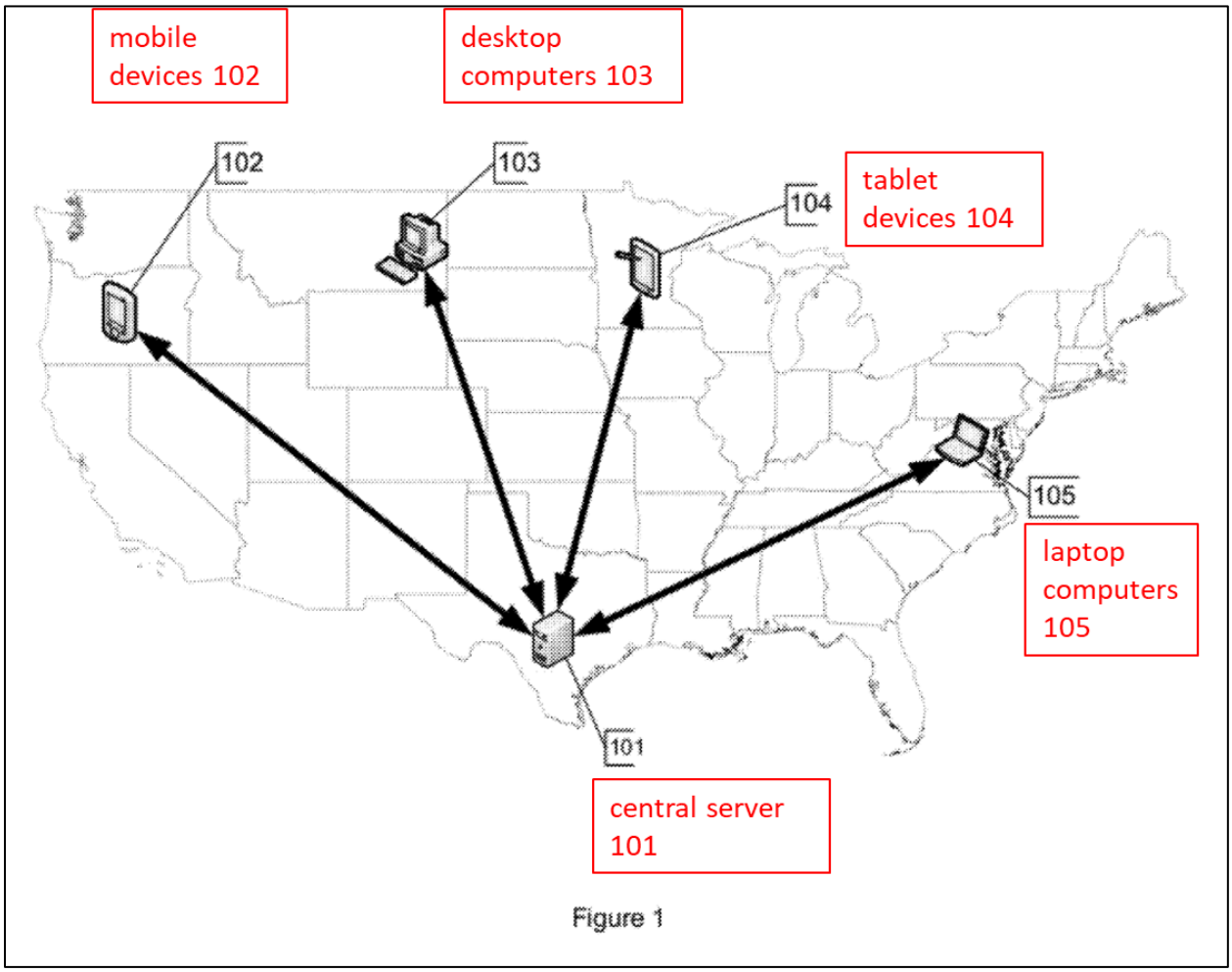
225. In my opinion, Kolo renders 1[b] obvious.

226. In my opinion, Kolo discloses detecting a player's geolocation using a GPS module/unit in the mobile device and transmitting the geolocation to the central server. Kolo, ¶300; *see also id.*, ¶198.

227. Kolo also discloses that the player's geolocation may be detected based on the local computing device's IP address or based on user input. Kolo, ¶72, ¶112. As to these alternatives, in my opinion a POSITA would have

understood that the IP address/user input is read from the local computing device's memory.

228. Figure 1 illustrates "players using local computing device[s] that transmit geolocation and game information to a central server." *Id.*, ¶300.



Kolo, Fig. 1.

229. In my opinion, Kolo's disclosures regarding detecting the player's geolocation and transmitting it to the server is a general description of location-based or proximity-based gameplay in the MMO that applies when the player engages in the battle/scavenger hunt/weather/werewolf aspects of gameplay

because Kolo discloses in these aspects of gameplay determining what game actions are allowed based on the player's geolocation. E.g., Kolo, ¶212 ("[T]he player's local device transmits the player's geolocation to the central server.") (battle), ¶214 (disclosing that "sword may cause maximal damage when the sword wielder is at a geolocation that is sunny, and when the victim of the sword blows is at a geolocation that is raining") (battle), ¶355 (disclosing that "Rain & Lightning Dagger" "yield[s]" the "maximum amount of damage" when wielding player is "at a geolocation that is lightning" and "victim player is at a geolocation that is raining") (battle), ¶182 (disclosing that "[w]hen a player enters geoproximity to a geolocation, the player is marked as collecting the item or fulfilling the clue") (scavenger hunt), ¶191 (disclosing that "when a player is in geoproximity to a specific geolocation, the player's in game experience is modified") (weather), ¶188 (disclosing that "players may become werewolves when the player is in geoproximity to a geolocation and during a full moon") (werewolf).

230. In my opinion, a POSITA would have understood and found it obvious that the player's location is stored in *storage memory* on the mobile device before transmission, and in *storage memory* on the server after transmission, so that geolocation information can be used to determine what game actions are allowed based on the player's location. Kolo, ¶¶76, 124, 301.

231. Accordingly, in my opinion Kolo discloses/suggests to a POSITA using a GPS module/unit or reading an IP address/player-provided location from memory (*location sensor*) in the mobile device or received by the server to determine the player's geolocation (*detecting with the location sensor the real world player geographic location of the player*).

232. In either case, in my opinion Kolo discloses/suggests to a POSITA transmitting the player's geolocation to the central server, and thus the geolocation can be stored in both the local computing device memory and the central server's memory (*storing the real world player geographic location in the storage memory*).

233. Element 1[b] does not specify that it is necessarily performed using the "computing device" recited in the preamble (*see, e.g.,* claims 13 and 14). However, in my opinion, Kolo discloses that both its server and local devices perform the claimed "detecting" and "storing" in element 1[b]. Kolo, ¶¶76, 109-129.

d. <u>'827 Patent, Ground 1A, Kolo</u>: 1[c]: retrieving from a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and

234. In my opinion, Kolo renders 1[c] obvious.

235. In my opinion, Kolo discloses/suggests retrieving from a database a local element script associated with the real world player geographic location.

236. The ’827 Patent describes retrieving a “local element” “from a database using the computing device based on the player location,” “correlat[ing]” the local element “to a *local element script* actuatable in the video game,” and “retriev[ing] and actuat[ing] the *local element script*.” *Id.*, 2:57-65. The *local element script* may be embedded in the game and dormant until it is called, imported or downloaded from a server, or added to the game by the game developer or players. *Id.*, 10:55-11:3, 11:26-33, 11:64-12:3.

237. Regarding a “script,” the ’827 Patent discloses that “there may be predefined scripts incorporated in the virtual world, each script may be associated with a different local element, and upon encountering such a local element the relevant script is called into play impacting the storyline of the virtual world.” ’827 Patent, 2:19-23. During the ’284 Patent’s prosecution, the Examiner stated that “[t]he term ‘script’ in computer science has the plain meaning of ‘an automated series of instructions carried out in a specific order’. Script is essentially a broader term which encompasses any computer program.” ’284FH, 116-17. Applicants did not refute the Examiner’s characterization.

238. In my opinion, a POSITA would have understood that a “script” encompasses game functionality implemented by computer code and/or data.

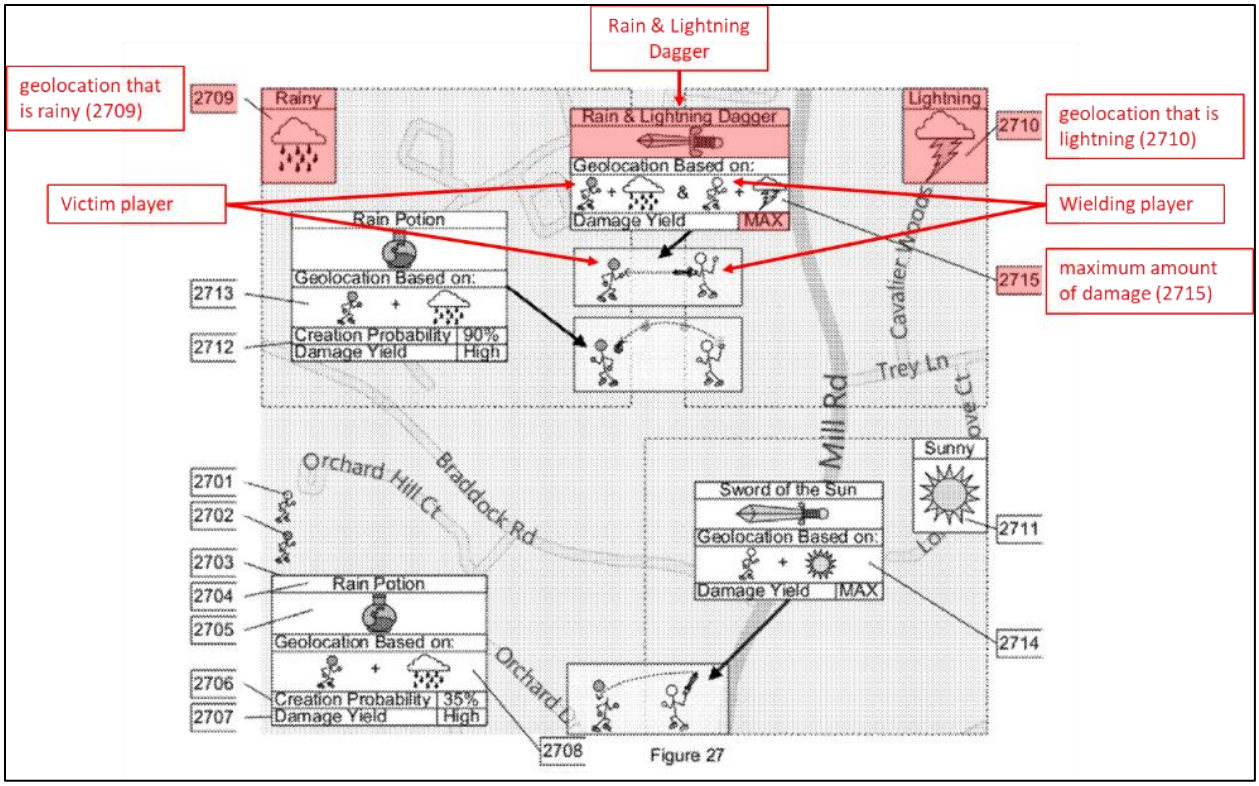
The ’827 Patent describes retrieving a “local element” “from a database using the computing device based on the player location,” “correlat[ing]” the local element “to a *local element script* actuatable in the video game,” and “retriev[ing] and actuat[ing] the *local element script*.” *Id.*, 2:57-65. Similarly, the originally-filed claims recited both a “local element” and a “local element script.” ’284 Patent File History, July 20, 2016 Claim 1 (“retrieving from a database using the computing device a *local element* based on the player location and correlating the *local element* to a *local element script* actuatable in the video game”). Issued claims 1-19 of the Challenged Patents no longer claim a “local element” (*c.f.*, issued claims 20-28, “further comprising retrieving from the database using the computing device a local element based on the real world player location”).

239. The *local element script* may be embedded in the game and dormant until it is called. *Id.*, 10:55-11:3, 11:64-12:3. Or the local element script may be “imported” or “downloaded … from a central server that acts as a repository for additional scripts.” *Id.,* 11:24-31.

240. If the Board finds that a *local element script associated with the real world player geographic location* is game functionality correlated to a “local element” related to the player’s location, Kolo’s battle/weather/werewolf aspects of gameplay disclose/suggest this. *See* ’827 Patent, 10:66-11:7, 11:64-12:3.

241. Battle. Kolo discloses using both the wielding and victim players' geolocations to determine weather at the geolocations (weather at a location is a local element, '827 Patent, 3:43-45). That information is used to affect battle by allowing the wielding player to use a weapon to its maximum effectiveness against the victim (e.g., a sword, or a Rain & Lightning Dagger). Kolo, ¶214 ("[O]ne player may have a sword whose damage is dependent on the weather at the geolocation of the victim of the sword blows and the weather at the geolocation of sword wielder. For instance, a sword may cause maximal damage when the sword wielder is at a geolocation that is sunny, and when the victim of the sword blows is at a geolocation that is raining."), ¶355 ("The last example uses a Rain & Lightning Dagger that requires the wielding player to be at a geolocation that is lightning (2710) and the victim player to be at a geolocation that is raining (2710)[10] in order for the dagger to yield the maximum amount of damage (2715).").

[10] In my opinion, a POSITA would have understood that this "2710" is a typo and the reference should be to rainy location 2709 as illustrated in the annotated Fig. 27 below.



Kolo, Fig. 27.

242. Kolo discloses that to determine weather, "the central server receives current weather information from a weather source." Kolo, ¶191. "[W]hen the weather conditions match predetermined characteristics, and when a player is in geoproximity to a specific geolocation, the player's in game experience is modified." *Id.* Kolo also discloses that the "central server has access to data sources which specify the weather at various geolocations around the world. The central server then uses this data to determine the weather at the player's present geolocation and modifies the damage dealt by the sword accordingly." *Id.*, ¶212.

243. In my opinion, a POSITA would have understood that this description of how Kolo identifies the weather at a geolocation and uses it to affect battle

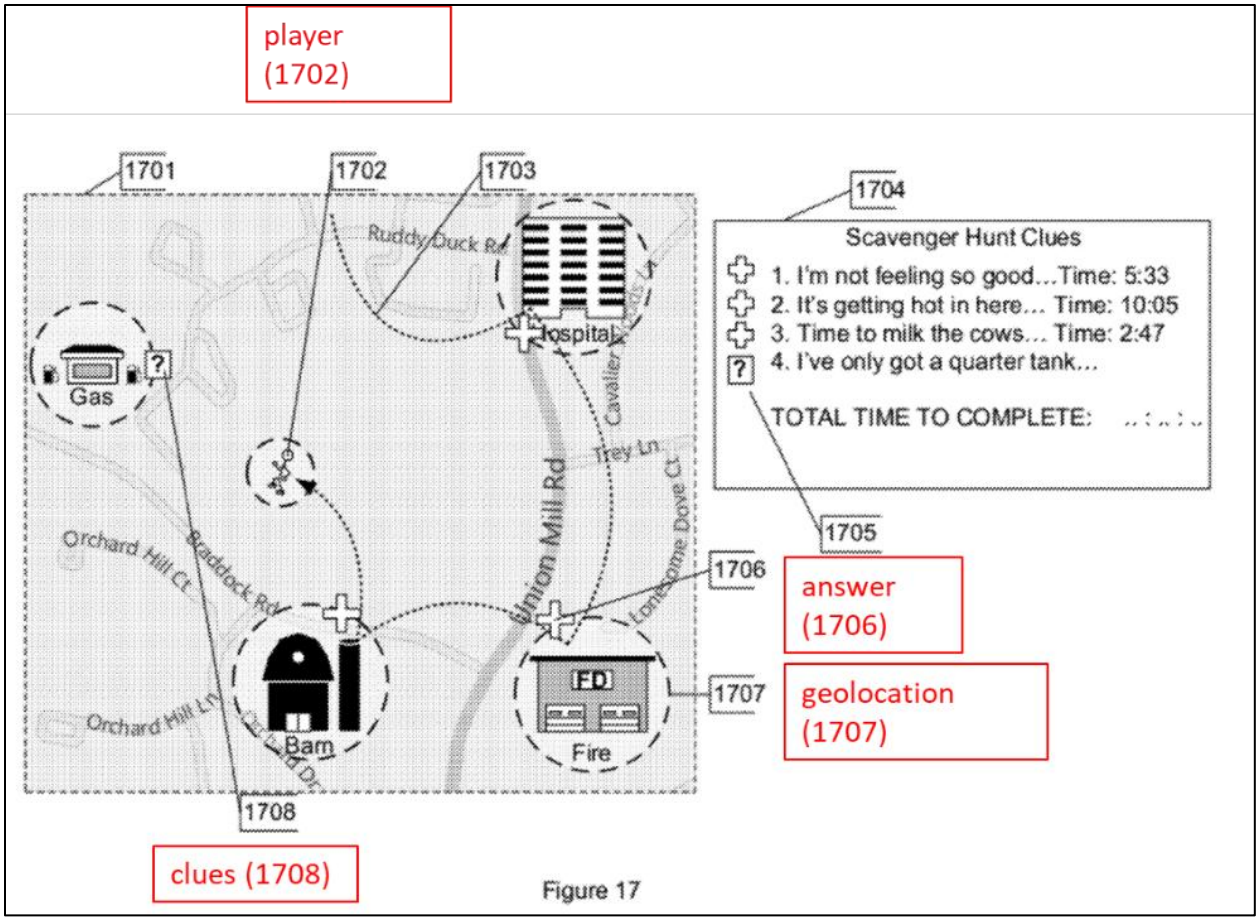
applies not only when the weapon's damage depends on the wielding player's geolocation, but also when the damage depends on both the wielding and victim players' locations. A POSITA would also have understood that the geolocation-based modifications to battle in the computer game of Kolo would be implemented by computer game program code and/or data.

244. Thus, in my opinion a POSITA would have understood and found it obvious that Kolo's game program uses the wielding and victim player's locations to identify the weather at the locations ("local element[s]"), which are then correlated with—and used to retrieve—game functionality related to using the weapon to its maximum effectiveness against the victim player (i.e., *retrieving…a local element script associated with the real world player geographic location*) (hereinafter, Kolo's battle *local element script*).

245. For the reasons described herein, a POSITA would similarly have understood and found it obvious that Kolo's game program could incorporate any one or combination of the prior art TTRPG virtual character powers into the game of Kolo, including those related to the proximity of players to each other or to enemies or to environmental effects like weather, to modify a battle encounter. Since Kolo teaches that both virtual proximity and geoproximity can be factors in gameplay, a POSITA would have understood and found it obvious that any prior art TTRPG character power or spell could be adapted to use a player's real world

player geographic location as a factor (e.g., as suggested by the numerous spells that involve real-world environmental effects like weather), such that implementing those adapted powers in the game program code and/or data of Kolo would be *a local element script associated with the real world player geographic location.*

246. Scavenger Hunt. Kolo discloses that a player finds "clues"/"answers" when arriving at geolocations, including when arriving at the location of a clue and thereby collecting a clue. Kolo, ¶333 ("When the player is within the geoproximity of a geolocation (1707), the player will complete or find an answer (1706) to the clue that the geolocation responds to."), ¶274 ("When the designated time is up, the player or team with the most points is awarded as the winner(s)."), ¶182 ("The player or team that collects the most clues is considered the winner.").

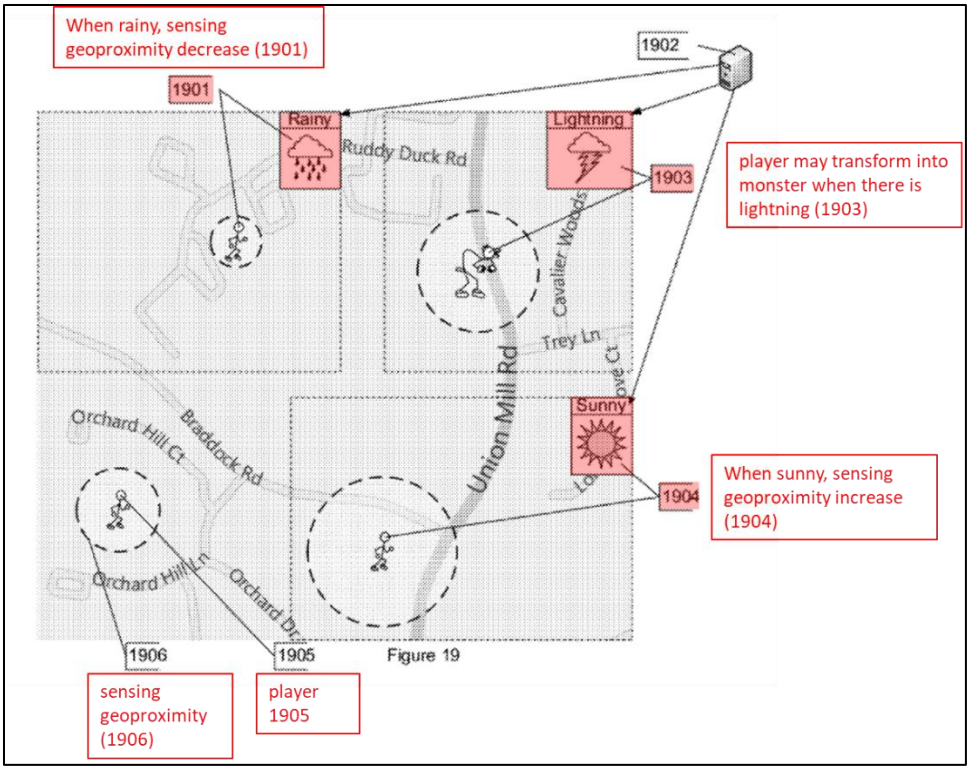


Kolo, Fig. 17.

247. Kolo also discloses that "[t]he clues relate to specific geolocations in the players general area (town or local region)." Kolo, ¶272. As shown in Fig. 17, the player may visit locations that are a barn, fire station, gas station, or hospital. *Id.*, Fig. 17. Thus, in my opinion a POSITA would have understood and found it obvious that the player's geolocation is correlated to a location category (e.g., gas station, barn, fire station, hospital) (a "local element") which is then correlated with—and used to retrieve—game functionality related to the player completing the final clue/finding the final answer that wins the game (i.e., *retrieving…a local*

element script associated with the real world player geographic location) (hereinafter, Kolo's scavenger hunt *local element script*).

248. Weather. Kolo discloses using the player's geolocation to determine the weather at the player's geolocation ("local element"), which is then correlated with—and used to retrieve—game functionality related to enhancing/reducing the player's game character's sensing abilities or turning the game character into a monster (i.e., in my opinion *retrieving…a local element script associated with the real world player geographic location*) (hereinafter, Kolo's *weather local element script*). Kolo, ¶190 ("[A] player's in game experience may be altered when the player is in geoproximity of a specific geolocation, and when the current weather is rainy."), ¶339 ("[A] player's (1905) sensing geoproximity (1906), as an example, may change based on the weather conditions. When the weather is sunny at the player's geolocation, their sensing geoproximity may increase (1904), whereas when the weather is rainy at the player's geolocation their sensing geoproximity may decrease (1901)."), ¶340 ("[A] player may transform into a monster when it is lightning outside (1903).").

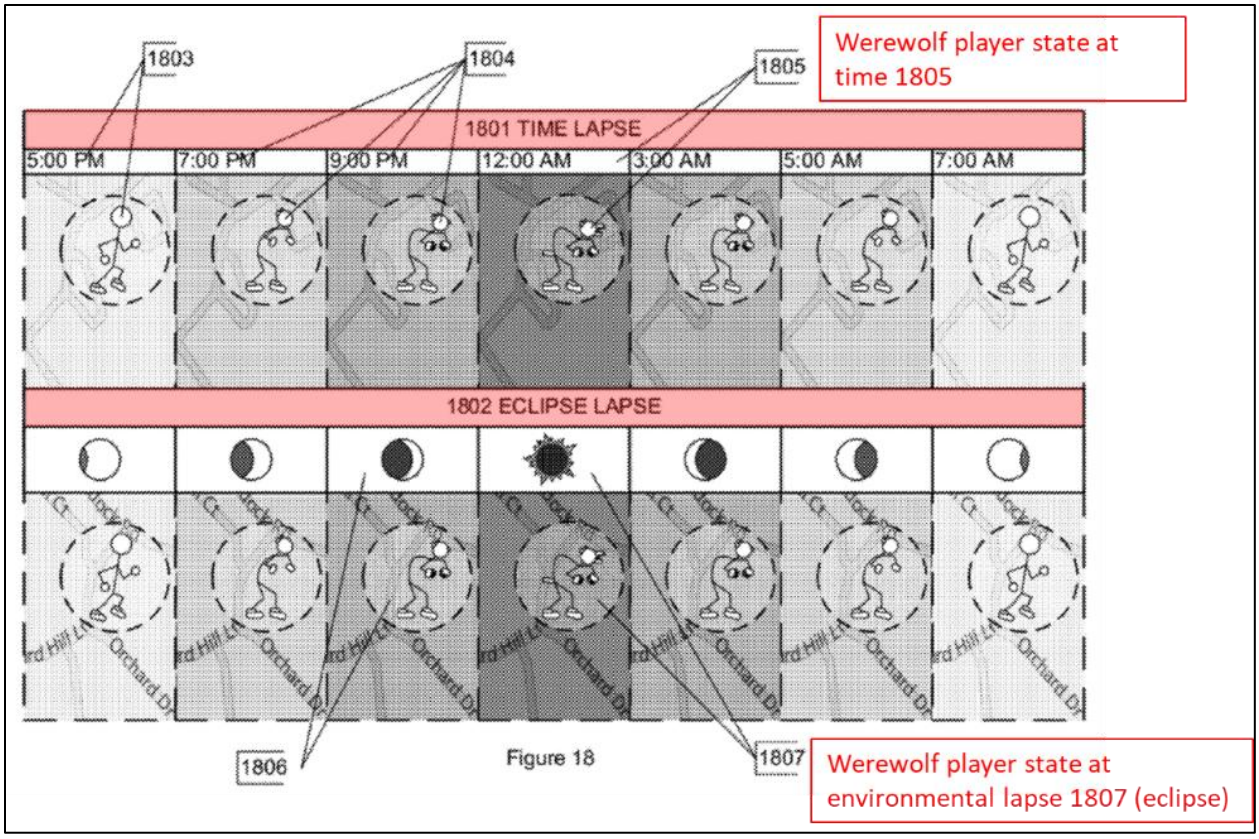


Kolo, Fig. 19.

249. In my opinion, Kolo discloses determining the weather (i.e., a "local element") in the same way as in the battle aspect of gameplay described above. Kolo ¶¶191, 338 ("The central server may collect this weather information from various weather sources such as websites or online feeds that then may be processed against the player's geolocation to determine the weather at that player's geolocation").

250. Werewolf. Kolo discloses using the player's geolocation to determine the time at the geolocation or an environmental event such as an eclipse/full moon at the geolocation, which in turn is used to retrieve/load game functionality that causes the player's game character to change state, such as by turning the player's

game character into a werewolf. Kolo, ¶188 ("[P]layers may become werewolves when the player is in geoproximity to a geolocation and during a full moon. Simply being present at a geolocation is not sufficient to transform the player into a werewolf. A specific time interval is also required, namely the time interval when the moon is full."), ¶268 ("[T]he central server may check [if] the player is in a geolocation with visibility of a full moon…[T]he player's in-game character is only allowed to transform into a werewolf when the player is in a geolocation with a full moon."), ¶335 ("[A] player may have one in-game experience at one point in time at their geolocation (1803), in this case a normal player state, and a different in-game experience at another point in time at their geolocation (1805), in this case, a werewolf player state."), ¶336 ("[A] player may have one in-game experience at one point during the environmental lapse (1806), and a different in-game experience at another point in the environmental lapse at their geolocation (1807). In this scenario, the normal player transitions to a werewolf during an eclipse.").



Kolo, Fig. 18.

251. Similar to the battle and weather aspects of gameplay, Kolo discloses that the "central server may collect this environmental information from various sources such as websites or online feeds that then may be processed against the player's geolocation to determine the environmental conditions at that player's geolocation." Kolo, ¶337.

252. Thus, in my opinion a POSITA would have understood and found it obvious that Kolo's process uses the player's location to identify an environmental event ("local element"), which is then correlated with—and used to retrieve—game functionality related to transforming the character into a werewolf (i.e.,

retrieving…a local element script associated with the real world player geographic location) (hereinafter, Kolo's werewolf *local element script*).

253. If the Board finds that game functionality implemented by program code and/or data that is correlated to the player's location is sufficient to satisfy the claimed *local element script associated with the real world player location*, Kolo also discloses/suggests this.

254. Battle/Scavenger Hunt/Weather/Werewolf. In my opinion, the battle/scavenger hunt/weather/werewolf *local element scripts* described above are each retrieved using the geolocation provided by the GPS unit/memory along with a "local element," as I described above.

255. Retrieving from a *Database*. Under either interpretation of *local element script associated with the real world player location*, in my opinion Kolo renders obvious retrieving Kolo's *local element scripts* from a *database*.

256. The Challenged Patents do not expressly describe retrieving a *local element script* from a *database*, but they do describe that local element scripts "may be downloaded … from a central server that acts as a repository for additional scripts." '827 Patent, 11:28-31. A POSITA would have understood and found it obvious that a central server acting as a repository for additional scripts could incorporate a database for storing and organizing those scripts.

257. A POSITA would have understood that the term "database" could encompass any organization of data, *see, e.g.,* EX1015, 92 ("Database… Loosely, any aggregation of data; a file consisting of a number of records (or tables), each of which is constructed of fields (columns) of a particular type, together with a collection of operations that facilitate searching, sorting, recombination, and similar activities."). However, the '827 Patent also distinguishes between data being stored in a file vs. in a database. '827 Patent, 12:27. The '827 Patent also distinguishes between local element scripts being downloaded from a central server vs. being already embedded in a game; or being already embedded in the game vs. added to the game by the game developer or players. '827 Patent, 10:55-11:10, 11:64-12:3.

258. Notwithstanding, if the Board finds that *retrieving from a database a local element script* includes calling or invoking program code/data that is already embedded in the game, a POSITA would have understood that Kolo's disclosures of modifying gameplay based on geolocation would be implemented using computer programs, including the disclosed "local game" or "online game" programs, and therefore such programs would be disclosure of *retrieving from a database a local element script*. Kolo, ¶¶76, 111. In my opinion, based on the Examiner's analysis and applied references, this understanding of "retrieving from a database" was used by the Examiner during prosecution, and the Applicant did

not refute Examiner's characterization. EX1009 (284 FH, 10/14/2016 rejection, p. 4; 8/22/2017 rejection, p. 6), EX1044 (Alghamdi ¶ 36).

259. If the Board finds that *retrieving from a database a local element script* requires a "retrieving from a database" step that is distinct from calling or invoking program code/data that is already embedded in the game, in my opinion Kolo renders this obvious. Specifically, in my opinion, Kolo discloses/suggests *retrieving from a database a local element script* in the same way as the '827 Patent. For example, Kolo discloses several embodiments in which each player's geolocation is updated to a central server, and that a central server used "game databases". Kolo, Abstract, ¶¶117-119, 124, 138, 147.

260. Kolo further discloses "modifying the gaming experience in some manner based on the geolocation of the player" and that "players participating in an online game provide a geolocation to the gaming environment. The gaming experience is modified in some manner based on the geolocation of the player." *id.*, Abstract, ¶¶111, 127. Kolo's "gaming environment" is "any part of the extended set of computing devices that are playing or supporting an online or local game," including the "central server" which is "one or more computers working together that provide an online game by running one or more software programs." Kolo, ¶76. Databases prior to the priority date were known to provide not just data storage and retrieval but "stored procedures," programs that are stored within a

database and that can be loaded into the processing memory of the database and executed by the database itself. Therefore, a POSITA would have understood and found it obvious that Kolo's server could implement the disclosed changes to the gaming experience by calling a stored procedure in a database and/or retrieving data from that database, which therefore renders obvious *retrieving from a database a local element script*.

261. Kolo likewise discloses that new spells or magical items can be added to the game by players. Kolo, ¶¶227-234. Kolo further discloses that the spells or items are created in conjunction with the central server, where the probability of creation success may be affected by geolocation or geoproximity. *Id.* Kolo also discloses several player actions using exactly the same terminology found in D&D (e.g., "cast a spell, perform a ritual") that additionally incorporate geolocation/geoproximity effects. *Id.,* ¶266. A POSITA would have found it obvious that such player-created items or spells, created in conjunction with a central server, could be stored in a database by that central server (or by any other computing device in Kolo's system) for ease of organization and retrieval. Since player-created items or spells satisfy the plain and ordinary meaning of "local element script," a POSITA would have found it obvious to *retrieve* those *local element scripts from a database* as well as *create* those *local element scripts in a database*.

262. If the Board finds that *retrieving from a database a local element script* requires retrieving from a database local element information and then correlating the retrieved local element with a local element script (as originally claimed in the Challenged Patents), in my opinion Kolo discloses/suggests both functions.

263. Regarding retrieving the "local element," the Challenged Patents disclose that "weather information and local news are…readily available over the Internet," and "[t]hese news streams may be used for gathering the local elements of a location." *Id.*, 9:30-32; *see also id.*, 10:14-18 ("In a preferred embodiment of the invention, once the location of the player is determined, gathering information about local elements may involve going to local news website to obtain local information on events and happenings."). A POSITA would have understood and found it obvious that websites or other sources of information "available over the Internet" frequently used databases to store the information being served from those websites.

264. Kolo's disclosures of obtaining real-world information like news or weather are equivalent. In the battle/weather/werewolf aspects of gameplay, Kolo discloses using geolocation to retrieve weather/environmental information from "data sources," "web sites," or "online feeds." Kolo, ¶212 (central server has "access to data sources which specify the weather at various geolocations around

the world") (describing battle), ¶338 (central server has access to "various weather sources such as websites or online feeds that then may be processed against the player's geolocation to determine the weather at that player's geolocation") (describing weather aspect of gameplay), ¶337 (central server has access to "various sources such as websites or online feeds that then may be processed against the player's geolocation to determine the environmental conditions at that player's geolocation weather information from a weather source") (describing werewolf aspect of gameplay).

265. In other words, in my opinion Kolo discloses using the player's location to retrieve weather/environment information (i.e., a "local element") from "data sources"/"web sites"/"news feeds," and the weather/environment information is used to retrieve the battle, weather, and werewolf *local element scripts* that can be embedded in Kolo's MMO code/data (whether that code/data is on a mobile device or the server, Kolo, ¶76), or can be created by game developers or players in conjunction with a server and stored/retrieved from a database.

266. In my opinion, Kolo's description of using a player's location to retrieve a "local element" from "data sources"/"web sites"/"news feeds" (i.e., *databases*) and then using the retrieved "local element" to retrieve and call or invoke a script already embedded in the game or retrieved from a server/database

is the same way the Challenged Patents describe this limitation. '827 Patent, 9:30-32; *see also id.*, 10:14-18, 10:51-54, 10:60-11:10, 11:24-33, 11:64-67.

267. Similarly, in the scavenger hunt aspect of gameplay, Kolo renders obvious to a POSITA that the player's location is used to retrieve information about the location category (a "local element" stored in a *database*) to then retrieve the scavenger hunt *local element script* embedded in the MMO code/data. In this regard, Kolo discloses that the central server has "databases" for storing information regarding the game, and in my opinion a POSITA would have understood and found it obvious that the "databases" would store such location categories. Kolo, ¶124 ("In a second embodiment of the local version, the players' local devices update the central server with the resolution of the game mechanics once the local game is complete. In this respect, the central server is able to store information on the resolution of the local game and incorporate any modifications that occurred during the local game and update the game databases accordingly."), ¶175 ("In many online games, graphical models may be stored in a database or plurality of databases for selection to display independently or in combination with other graphical models in a virtual environment.").

268. Regardless, in my opinion it also would have been obvious to a POSITA to retrieve Kolo's *local element scripts* themselves from a *database,* including for the reasons described above. Additionally, rather than embedding

Kolo's *local element script* in the game code such that it is dormant until it is called, in my opinion, a POSITA would have been motivated to store Kolo's *local element script* in a database for retrieval. A POSITA would have recognized that modifying Kolo in this way to store Kolo's *local element script* in a database would make the game code more modular, thereby making it easier to centrally manage and update (as Kolo's central server architecture suggests) and reducing the size of local storage required. For example, when a game can retrieve game functionality implemented with program code and/or data from a database at a central server, the game developer needs only change the functionality in the central database in order to roll out a change for all users. A POSITA would have understood that if the game code/data is instead embedded in every user's program, each user's program must be updated individually.

269. Moreover, in my opinion, a POSITA would have recognized that this would have amounted to a simple substitution of one known element (embedding Kolo's *local element script* in the game code) for another (storing Kolo's *local element script* in a database) to obtain predictable results (a game in which a Kolo's *local element script* is retrieved from a database using player location and location category). In the context of distributed computing, a POSITA would have understood the tradeoffs and benefits of code or data embedded in a game vs. modular code or data retrievable from a database.

270. In my opinion, a POSITA also would have had a reasonable expectation of success in making the modification because Kolo discloses the use of databases for storing game information and the concept of storing code/data in and retrieving code/data from a database was ubiquitously well-known as of the '827 Patent priority date.

271. In my opinion, Kolo's local element script is also actuatable in the video game to modify one or more of the virtual character statistic and a plot node.[11]

272. Battle. The battle *local element script* results in the wielding player's game character's weapon yielding maximum damage on the victim player when the geolocation and local element criteria are met. Kolo, ¶355. Kolo also discloses that weapons typically have an attack value damage range, which means that a weapon yielding maximum damage means the player has increased damage compared to any other damage in the range, and increased damage is one example used by Kolo of a benefit or increased combat attribute. Kolo, ¶¶135 ("players in geoproximity…may receive some benefit…For example, player avatars may receive increased damage"), 153 ("a player's combat attributes may be increased when the player is in the geoproximity"), 262 (disclosing that a player's

[11] The Challenged Patents describe a "plot node" as "a forking point in the storyline where the plot of the story can diverge based on the decisions a player makes, or the location of the player." '827 Patent at 7:5-8.

"[a]ttribute[s] may be altered by magic spells, armor, or weapons"). In my opinion, Kolo's disclosure of increasing a player's combat attributes discloses or renders obvious *modify[ing] … the virtual character statistic* in the Challenged Patents. *See, e.g.,* '827 Patent, 8:21-24 ("Derived statistics often represent a single capability of the character such as the weight a character can lift, or the speed at which they can move. Derived statistics are often used during combat"). A POSITA would have understood that combat damage is an example of a *virtual character statistic* just as are speed or carrying capacity, and that all three statistics (damage, speed, and carrying capacity) were disclosed in the prior art by D&D as incorporated by Kolo. EX1019 (D&D PHB), 57, 64, 38).

273. Similarly, a POSITA would have understood that Kolo's incorporation of TTRPG gameplay, including character statistics, weapons, armor, spells, and combat, renders obvious and discloses the premise that a *local element script* could modify a *virtual character statistic.* For example, as described in the Technology Background, and in the D&D Player Handbook generally, D&D features many spells or powers that increase one or more of the player's character's statistics, increase other ally characters' statistics, or decrease enemy's statistics. A POSITA would have been very familiar with attacking enemies (decreases an enemy's health), healing allies (increases an ally's health), enchanting items (increases an item's statistics which in turn increases a wielding player's statistics),

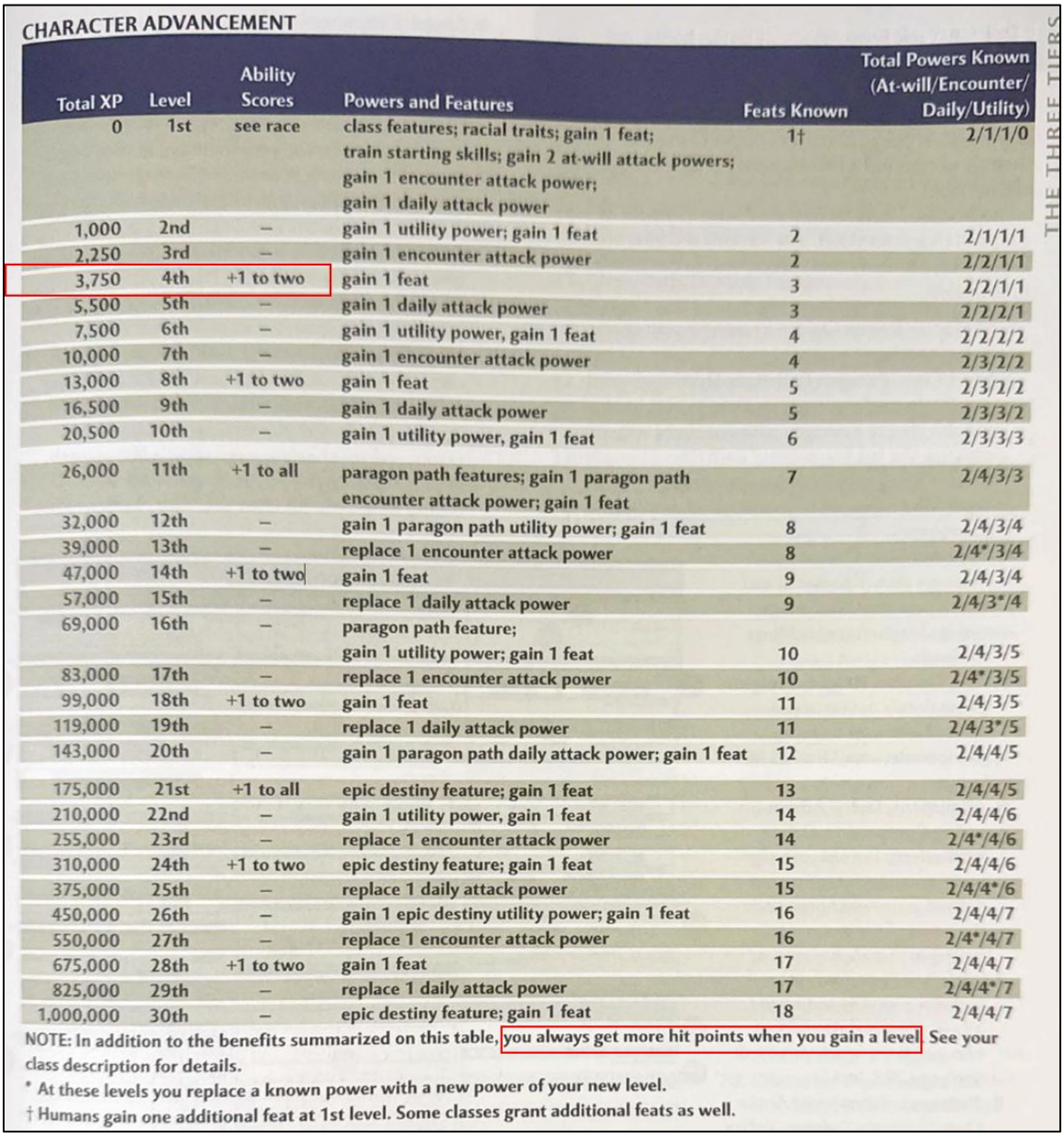
and resurrecting a deceased ally (changing a plot node from a storyline in which the ally is dead to one in which they are not).

274. For example, Kolo discloses that certain character classes or races can cast damage spells on friends or foes to alter attributes. Kolo, ¶¶257-262. One example from Dungeons & Dragons is the Wizard spell Fireball. EX1019 (D&D PHB, 36). Fireball creates an area burst of radius 3 (a 7x7 square) at any location within 20 squares of the caster and causes fire damage to (reduces the health of) all creatures within it. In my opinion, a POSITA would have found it obvious that a player's wizard character in the game of Kolo might want to cast a spell like fireball at a group of onrushing enemies and kill them all, even if the wizard takes a small amount of damage, if the alternative were certain death at the hands of the onrushing enemies. The player taking damage (a decrease in health or hit points), as well as any expenditure of mana (magical energy) to cast the spell, represents a modification of the player's *virtual character statistics*. Kolo, ¶¶228, 259-262. Further, the death of a group of enemies is a modification to a *plot node* because it creates a forking point in the storyline (e.g., whether the enemies remain alive and can continue to attack the player or not).

275. Moreover, as discussed, Kolo discloses that players have levels that change as players gain experience, which a POSITA would have understood is a general description of gameplay applicable to each embodiment and to RPGs in

general, including the TTRPG books incorporated by Kolo. *Id.*, ¶180, 291. The incorporated D&D Player's Handbook discloses that a player has "Ability Scores" (which are *statistics* in the context of the '827 Patent), that the player gains experience points through successful encounters, and that when the experience points cross certain thresholds, the player gains levels and corresponding increases in Ability Scores. EX1019, 15-16 (describing six "ability scores" in Dungeons & Dragons as "Strength," "Constitution," "Dexterity," "Intelligence," "Wisdom," and "Charisma" and noting that "constitution" represents, *inter alia*, "health"); *id.*, at 44 ("Every successful encounter brings experience, measured in experience points (XP)… As you accumulate XP, you gain levels."); *id.*, at 16 ("Ability scores increase as a character gains levels"); *id.*, at 21 ("When you earn enough [experience points], you reach a new level… Check the Ability Scores column to see if you can improve your ability scores. If you can, choose the abilities you want to increase. At 4th, 8th, 14th, 18th, 24th, and 28th levels, you increase two ability scores by 1 (you can't take both increases in the same score). At 11th and 21st levels, you increase each of your ability scores by l."); *id.*, at 21 ("Check your class description in Chapter 4 to see how many hit points you gain with your new level.").

276. For example, a character that earns 3,750 experience points achieves level 4 and a corresponding +1 to two Ability Scores. *Id.*, at 23. The player also "always" gets more hit points (i.e., health) when gaining a level. *Id.*



CHARACTER ADVANCEMENT

Total XP	Level	Ability Scores	Powers and Features	Feats Known	Total Powers Known (At-will/Encounter/ Daily/Utility)
0	1st	see race	class features; racial traits; gain 1 feat; train starting skills; gain 2 at-will attack powers; gain 1 encounter attack power; gain 1 daily attack power	1†	2/1/1/0
1,000	2nd	–	gain 1 utility power; gain 1 feat	2	2/1/1/1
2,250	3rd	–	gain 1 encounter attack power	2	2/2/1/1
3,750	4th	+1 to two	gain 1 feat	3	2/2/1/1
5,500	5th	–	gain 1 daily attack power	3	2/2/2/1
7,500	6th	–	gain 1 utility power, gain 1 feat	4	2/2/2/2
10,000	7th	–	gain 1 encounter attack power	4	2/3/2/2
13,000	8th	+1 to two	gain 1 feat	5	2/3/2/2
16,500	9th	–	gain 1 daily attack power	5	2/3/3/2
20,500	10th	–	gain 1 utility power, gain 1 feat	6	2/3/3/3
26,000	11th	+1 to all	paragon path features; gain 1 paragon path encounter attack power; gain 1 feat	7	2/4/3/3
32,000	12th	–	gain 1 paragon path utility power; gain 1 feat	8	2/4/3/4
39,000	13th	–	replace 1 encounter attack power	8	2/4*/3/4
47,000	14th	+1 to two	gain 1 feat	9	2/4/3/4
57,000	15th	–	replace 1 daily attack power	9	2/4/3*/4
69,000	16th	–	paragon path feature; gain 1 utility power; gain 1 feat	10	2/4/3/5
83,000	17th	–	replace 1 encounter attack power	10	2/4*/3/5
99,000	18th	+1 to two	gain 1 feat	11	2/4/3/5
119,000	19th	–	replace 1 daily attack power	11	2/4/3*/5
143,000	20th	–	gain 1 paragon path daily attack power; gain 1 feat	12	2/4/4/5
175,000	21st	+1 to all	epic destiny feature; gain 1 feat	13	2/4/4/5
210,000	22nd	–	gain 1 utility power, gain 1 feat	14	2/4/4/6
255,000	23rd	–	replace 1 encounter attack power	14	2/4*/4/6
310,000	24th	+1 to two	epic destiny feature; gain 1 feat	15	2/4/4/6
375,000	25th	–	replace 1 daily attack power	15	2/4/4*/6
450,000	26th	–	gain 1 epic destiny utility power; gain 1 feat	16	2/4/4/7
550,000	27th	–	replace 1 encounter attack power	16	2/4*/4/7
675,000	28th	+1 to two	gain 1 feat	17	2/4/4/7
825,000	29th	–	replace 1 daily attack power	17	2/4/4*/7
1,000,000	30th	–	epic destiny feature; gain 1 feat	18	2/4/4/7

NOTE: In addition to the benefits summarized on this table, you always get more hit points when you gain a level. See your class description for details.

* At these levels you replace a known power with a new power of your new level.

† Humans gain one additional feat at 1st level. Some classes grant additional feats as well.

THE THREE TIERS

EX1019, p. 23.

277. Accordingly, in my opinion a POSITA would have understood that when the battle *local element script* is actuated, the wielding player's game

character will gain experience points if the encounter is successful, and further that those experience points may cross a threshold such that the character's level is increased (the character "levels up") and there is a corresponding increase in the character's statistics such as strength, dexterity, wisdom, intelligence, charisma, hit points/health, mana, or speed. Similarly, if a player's character casts a spell that kills enemies and successfully ends the combat encounter, a POSITA would have understood that the player also gains XP and can level up.

278. In my opinion, Kolo's battle *local element script* also modifies a *plot node* (i.e., creates a forking point in the storyline) because, e.g., a player character whose ally (a second player character) has fallen in a combat encounter would have reduced health and/or be removed from the game. *See* Kolo, ¶262 (disclosing that player "[a]ttribute[s] may be altered by magic spells, armor, or weapons" and "[c]ertain players may be able to cast spells on friends or foes causing the attributes of the targeted player to change"), Fig. 28 (depicting two players in different geolocations fighting together against a dragon, Kolo, ¶359).

279. Scavenger Hunt. If the Board finds that a *virtual character statistic* may be a datum representing that a game play attribute is associated with a game character, the scavenger hunt *local element script* assigns a "clue" or "item" to each player's game character that enters a specific geolocation to collect a clue, and a player/team who collects the final clue first (or the most clues in a designated

time period) wins the game for the player's team (i.e., *modify[ing] a virtual character statistic* in my opinion if the Board applies this interpretation). Kolo, ¶182 ("When a player enters geoproximity to a geolocation, the player is marked as collecting the item or fulfilling the clue. The player or team that collects the most clues is considered the winner."), ¶274 ("When the designated time is up, the player or team with the most points is awarded as the winner(s).").

280. If the Board finds that a *virtual character statistic* may be a datum that represents an aspect of a game character, in my opinion a POSITA would have understood that Kolo discloses/suggests that its *local element script* is *actuatable* to *modify a virtual character statistic*. For the same reasons described regarding the battle *local element script*, a POSITA would have understood that when the scavenger hunt *local element script* is actuated, the winning player's game character will gain experience points from successfully winning the scavenger hunt, and further that those experience points may cross a threshold such that the character's level is increased and there is a corresponding increase in the character's statistics such as strength, dexterity, wisdom, intelligence, charisma, hit points/health, mana, or speed.

281. In my opinion, Kolo's scavenger hunt *local element script* also modifies a *plot node* (i.e., creates a forking point in the storyline) because when the player collects the last item that wins the game for the player's team, the player's

team is now shown as having won the game and the other teams are now shown as having lost the game.

282. Weather. The weather *local element script* changes the game character's sensing range (i.e., a *statistic*) and/or transforms the player's game character into a monster. Kolo, ¶¶339-340, Fig. 19. As to the latter example, Kolo discloses that changing the game character into a monster modifies the game character's *statistics* such as strength, speed, sensing geoproximity, flight (movement ability), or attack radius. Kolo, ¶¶279, 285 (describing a game variation involving zombies and vampires—which in my opinion a POSITA would have understood are monsters such that the teachings apply to the weather aspect of gameplay—that "[s]pecial abilities may increase sensing geoproximity to be able to sense another player before they can sense your presence, increased strength, speed, etc." and "[a] bat travelling mode may be introduced to allow a vampire player to 'fly' around town with little to no detection. A vampire game could also have a much smaller attacking radius, requiring players to get much closer to their opponents before they can 'bite' them"). As to the last modification, a POSITA would have recognized that a decreased character's attack radius is "modified" and that the claim limitation does not require "increasing" the character statistic.

283. Kolo's weather *local element script* also modifies a *plot node* (i.e., creates a forking point in the storyline) in my opinion because—in the case of

sensing abilities—the player's game character now has enhanced/reduced ability to sense other players' game characters and—in the case of changing the player into a monster—the monster is introduced into the game and may interact with other players' game characters.

284. Werewolf. The werewolf *local element script* transforms the player into a werewolf, which a POSITA would understand is a type of monster. Kolo, ¶¶188, 335, 336, Fig. 18. As described for the weather *local element script* above, a POSITA would have understood that changing the game character into a werewolf or other monster modifies the game character's *statistics* such as strength, speed, sensing geoproximity, flight (movement ability), or attack radius.

285. In my opinion, Kolo's werewolf *local element script* also modifies a *plot node* (i.e., creates a forking point in the storyline) because the werewolf is introduced into the game and may interact with other players' game characters, including by killing them (as werewolves were known to do in prior art lore).

286. Accordingly, in my opinion Kolo discloses/suggests that the server uses the player's location and a "local element" to retrieve battle/scavenger hunt/weather/werewolf *local element scripts* that are either already embedded but dormant in Kolo's MMO or retrieved from a database (*retrieving from a database a local element script associated with the real world player geographic location*). Further, in my opinion Kolo discloses/suggests that such *local element scripts* may

be actuated to modify the character's *statistics* and/or a datum associated with a gameplay attribute (as to the scavenger hunt) as described above (*the local element script actuatable in the video game to modify one or more of a virtual character statistic*). In my opinion, Kolo also discloses/suggests that such actuation changes the storyline as I described above (*the local element script actuatable in the video game to modify one or more of…a plot node*).

287. Element 1[c] does not specify that it is necessarily performed using the "computing device" recited in the preamble (*see, e.g.,* claims 13 and 14). However, in my opinion, Kolo renders obvious the premise that both its server and local devices (or both together) could perform the claimed "retrieving from a database a local element script" in element 1[c]. Kolo, ¶¶76, 109-129, 138, 147, 175, 212, 227-234, 266, 337-338. For example, when a local device is connected to a central server, and an act performed by the player using the local device causes the server to retrieve the claimed local element script from a database, then both the local device and server can be said to have retrieved that script. Similarly, if "retrieving from a database" can be satisfied by invoking already-embedded code/data, Kolo discloses that its game code runs across both local devices and servers in a "gaming environment" and therefore it would have been obvious to a POSITA that either or both local devices and servers could perform the claimed retrieving. *Id.*

e. <u>'827 Patent, Ground 1A, Kolo</u>: 1[d]: retrieving from the database mapping information related to the real world player geographic location of the player and actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player,

288. In my opinion, Kolo renders 1[d] obvious.

289. I have been asked to assume that "the corresponding local element script" in element 1[d] is the same as the "local element script" retrieved in element 1[c], §X.B.2.d.

290. In my opinion, Kolo discloses/suggests retrieving from the database mapping information related to the real world player geographic location of the player.

291. As I described regarding 1[a] (§X.B.2.b) and further explain below, Kolo's battle/scavenger hunt/weather/werewolf aspects of gameplay disclose using a player's character's geolocation (or multiple players' geolocations) in order to determine what *local element script* to retrieve.

292. In view of these disclosures, in my opinion a POSITA would have understood that Kolo's central server uses the real world location provided by the player's mobile device (*see* 1[b], §X.B.2.c) to *retrieve mapping information related to the player's real world location* (e.g., information sufficient to display a

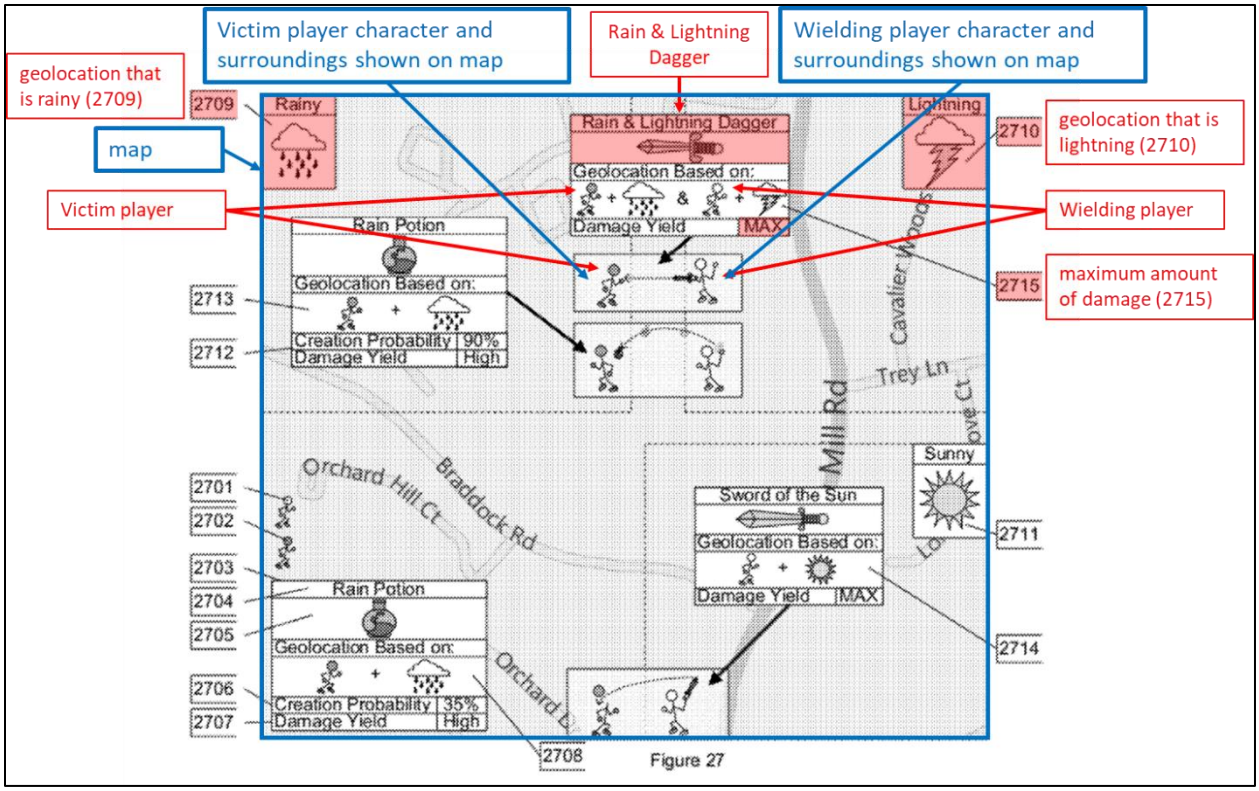
map for the player that depicts the player at the player's real world location in the game and shows the surrounding area).

293. Kolo explicitly discloses that a map is rendered in certain aspects of gameplay, which in my opinion requires retrieving map information related to the player's geolocation. Kolo, ¶¶147, 281, Figs. 1, 2, 17, 27, 19 (as annotated below).

294. Further, in my opinion a POSITA would have understood and found it obvious that Kolo's server could store or cache such map information in the server's "databases" (Kolo, ¶¶124, 175) or retrieve the information from third-party map database such as Google Maps or Bing Maps (and subsequently store or cache that information on the same server's database that also stores the *local element scripts* for retrieval). In my opinion, retrieving map information from a third-party map database was conventional as of the '827 Patent priority date. *See, e.g.*, EX1045, 2:58-65 (disclosing that Google Maps "allows third parties to access the data used in the Google Maps service via an API, or application programming interface.") (filed 1/31/2011); EX1046, ¶41 (disclosing rendering map "by including logic configured to interact with the [API] of a map software/application" such as Google Maps or Bing maps) (published 10/4/2012); *see also* '827 Patent, 9:25-30 (acknowledging that third-party mapping services were "readily available"). A POSITA would have found it obvious to cache frequently-used map information that was retrieved from a third party map service

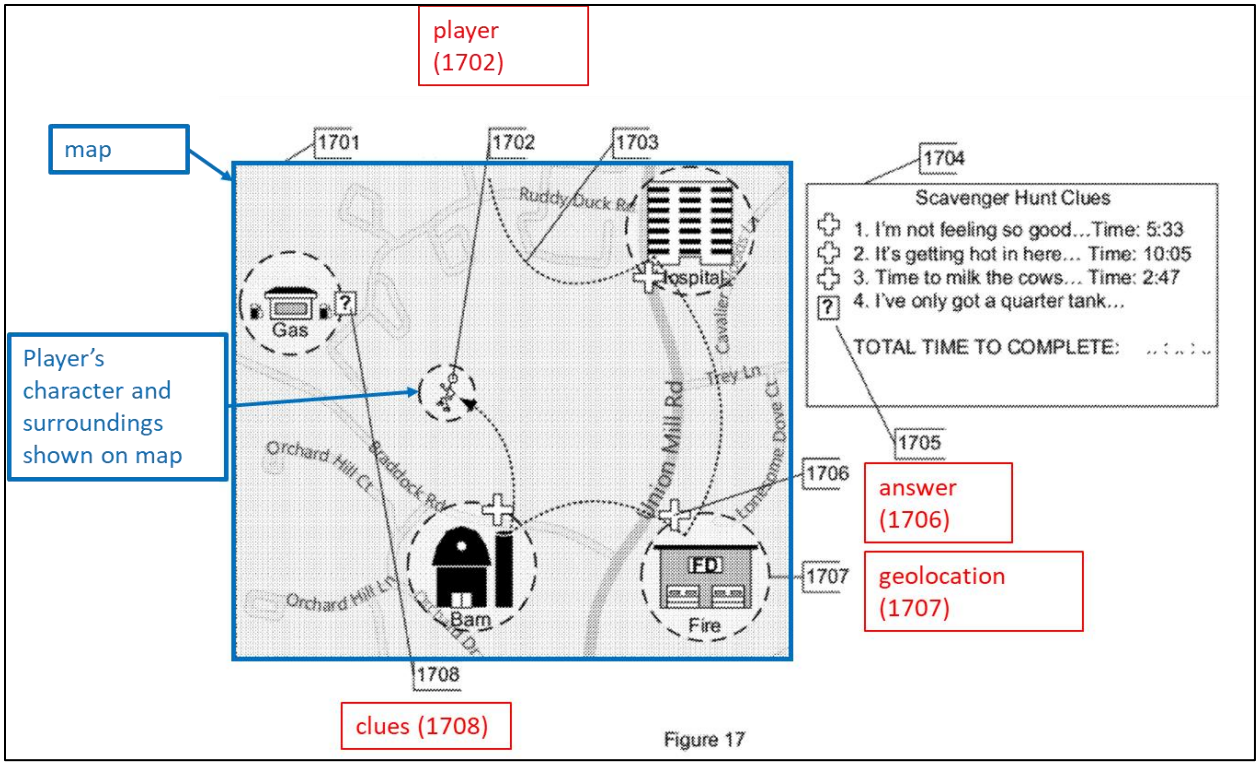
in the game database (the same "database" that stores the local element scripts in element 1[c]) and serve that mapping information to the gaming environment from the cache, at least because doing so would (a) eliminate repeated queries to a mapping service not under the game operator's control, (b) ensure the mapping data does not inadvertently change unexpectedly, and (c) ensure that the mapping information is equivalently available (from a system-uptime perspective) as the rest of the game server and information in the database. In other words, a POSITA would have understood the time vs. space tradeoffs between relying on a third-party mapping service and caching mapping data in the database.

295. Battle. Kolo discloses rendering a map of the wielding and victim player's geolocations. Kolo, ¶355, Fig. 27. In my opinion, this requires using the players' geolocations to retrieve mapping information from the database related to the geolocations as described above.



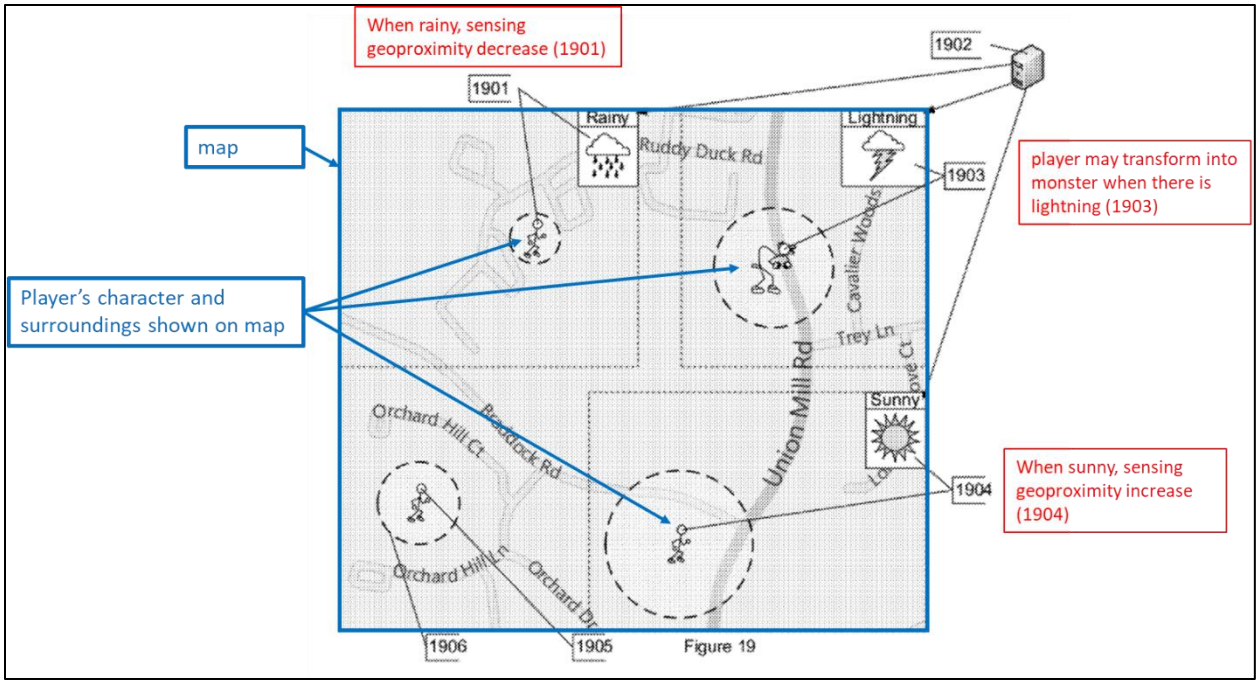
Kolo, Fig. 27.

296. Scavenger Hunt. Kolo discloses that a map is rendered showing the player and the player's surroundings while a player walks around to find answers (Kolo, ¶333, Fig. 17). In my opinion, this requires using the player's geolocation to retrieve mapping information from the database related to the geolocation as I described above.



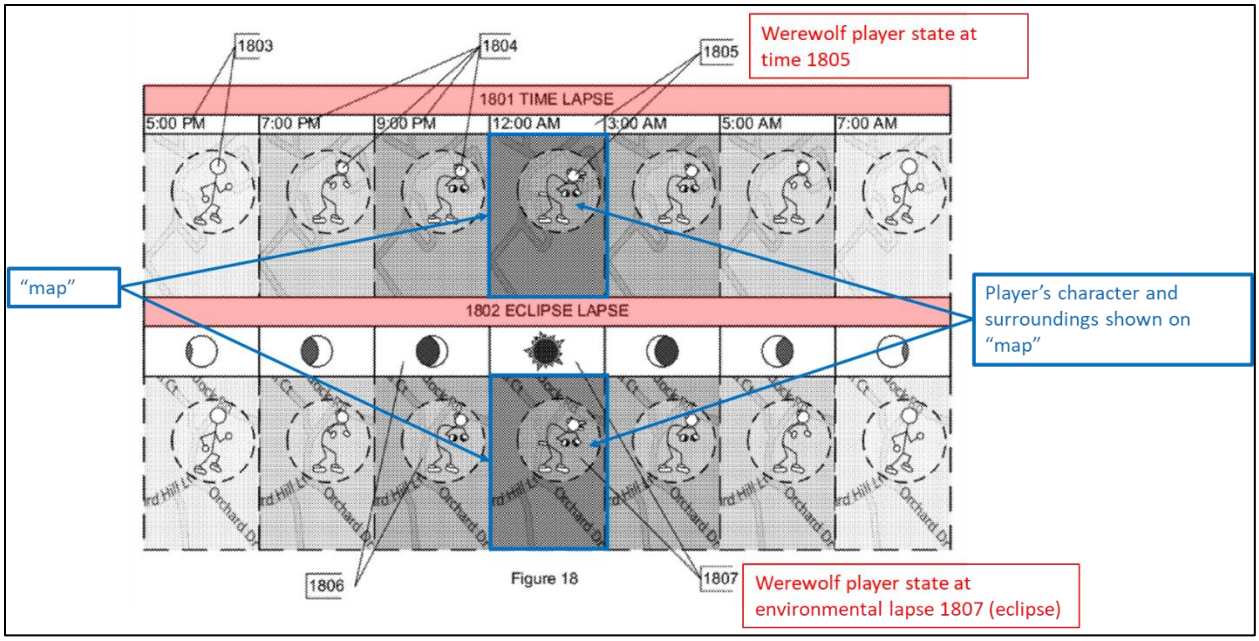
Kolo, Fig. 17.

297. Weather. Kolo discloses rendering a map showing the player and the player's surroundings at the player's geolocation. Kolo, ¶¶339-340, Fig. 19. In my opinion, this requires using the player's geolocation to retrieve mapping information from the database related to the geolocation as I described above.



Kolo, Fig. 19.

298. Werewolf. Kolo discloses rendering a map showing the player and the player's surroundings at the player's geolocation. Kolo, ¶¶334-37, Fig. 18. In my opinion, this requires using the player's geolocation to retrieve mapping information from the database related to the geolocation as I described above.



Kolo, Fig. 18.

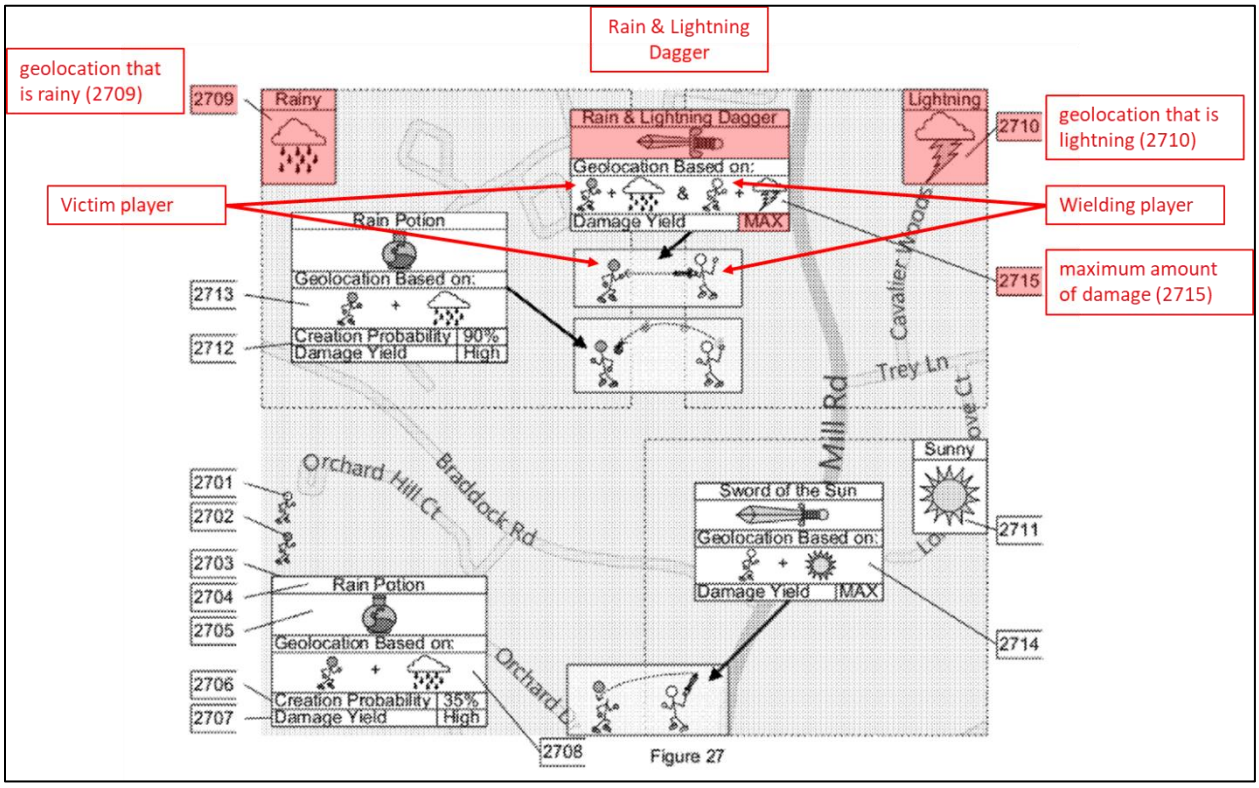
299. Accordingly, in my opinion Kolo discloses/suggests that Kolo's gaming environment (including the server and mobile device) uses the player's real world location to retrieve mapping information from the same database storing the *local element scripts* and that the mapping information corresponds to the player's real world location (*retrieving from the database mapping information related to the real world player geographic location of the player*). In my opinion, this allows the gaming environment to provide information for displaying a map on the player's mobile device in the battle/scavenger hunt/weather/werewolf aspects of gameplay. A POSITA would understand that if mapping information were stored in the game database, and that information were displayed on the player's mobile device, that both the player's mobile device and the game server retrieved that mapping data from the database.

300. In my opinion, Kolo discloses/suggests actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player.

301. Battle. If the Board finds that this limitation encompasses only actuating game functionality implemented by program code/data when it is determined that a second player is not at a first player's real world geolocation at the same time (and does not require a determination that the player's geolocation is unique/occupied by no other player), in my opinion the battle *local element script* discloses this limitation.

302. In my opinion, Kolo discloses/suggests to a POSITA that the battle *local element script* (for maximizing damage) is only actuated when the wielding player is at a first location with certain weather and a victim player is at a second location with different weather (*actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player*). Otherwise, in my opinion Kolo discloses/suggests to a POSITA that the weapon cannot be used to its maximum effectiveness and thus the *local element script* is not actuated (*not actuating the corresponding local element script when*

the player's real world player geographic location is represented by another player). Kolo, ¶355.



Kolo, Fig. 27.

303. Otherwise, if the Board finds this limitation requires a determination that a wielding player's real world location is unique (i.e., the game program checks that no other player is at the geolocation), in my opinion Kolo renders this limitation obvious. In my opinion, a POSITA would have recognized that it would drive enhanced game engagement to test for location uniqueness and only actuate the battle *local element script* when the wielding player's location is unique (*actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player*

geographic location is not represented by another player). Otherwise, if the player's location is determined not to be unique, the battle *local element script* is not actuated (*not actuating the corresponding local element script when the player's real world player geographic location is represented by another player*). In my opinion, a POSITA would have recognized that this restriction would encourage players to expand locations from which they play the game (e.g., seek out locations where other players are not currently playing) so they can be the only player at a particular time at the particular location and thereby use the weapon to its maximum effectiveness and thereby have better expected combat results (which is a strong motivation for players). In my opinion, the MMO developers could also achieve additional advertising revenue from businesses in those locations. *See, e.g.*, Kolo, ¶74 ("By accepting such advertising, an online game may increase its revenue. In fact, an online game may choose to allow players to play for free and support itself financially based on advertising revenue."). Thus, a POSITA would have been motivated by both player desires (better in-game results) and operator desires (increased game revenues).

304. Additionally, a POSITA would have found Kolo's incorporation of D&D materials to render this element obvious. For example, D&D discloses a power, "One Stands Alone," that cannot be used (*actuated*) if there are any other players within 5 squares (*when the player's location is represented by another*

player). EX1019 (D&D PHB), 33. In other words, a POSITA would have understood that D&D discloses the same location restriction test (that the player must be alone in order to use certain game functionality) identified by the Examiner in the Reasons for Allowance (*not actuating the corresponding local element script when the player's real world geographic location is represented by another player*.) Since Kolo teaches that gameplay of its virtual world games including the PMORPG can incorporate both virtual (in-game) proximity and geoproximity as factors in gameplay, and also both expressly discloses and incorporates prior art TTRPG rules involving virtual proximity, a POSITA would have found it obvious to adapt such prior art game mechanics to incorporate geoproximity instead or as well. Therefore, a POSITA would have found it obvious to incorporate a game rule in which game functionality implemented by code or data, such as a particular power, spell, or weapon, cannot be cast or used (*actuated*) unless the player is alone (*when the player's real world geographic location is not represented by another player)*.

305. Moreover, it is inherent that if a local element script is not actuated, its effects are not realized in the game. A POSITA would have found it obvious *not* to actuate game functionality if a location-uniqueness test fails since *not* actuating functionality is the default behavior of all software systems. To wit: if there is no software instruction to invoke or call a particular function, that function

will not execute. Therefore, a POSITA would have understood the claimed steps of actuating and not actuating are simply a conditional expression based on the player's geoproximity to other players, and that if the conditional check for uniqueness (e.g., "if(player.isAlone)") showed the player was *not* alone, then any game functionality within the conditional block for the scenario when the player *was* alone (namely, *actuating the local element script*) would not execute.

306. If the Board finds that not actuating the corresponding local element script when the player's real world player geographic location is represented by another player can include a player's choice to cast a spell when they are alone and not cast a spell when they are not alone, then in my opinion Kolo renders this obvious as well. For example, Kolo discloses that certain character classes or races can cast damage spells on friends or foes to alter attributes. Kolo, ¶¶257-262. One example from Dungeons & Dragons is the Wizard spell Fireball. EX1019 (D&D PHB), 36. Fireball creates an area burst of radius 3 (a 7x7 square) at any location within 20 squares of the caster and causes fire damage to (reduces the health of) all creatures within it. In my opinion, a POSITA would have found it obvious that a player's wizard character in the game of Kolo might want to cast a spell like fireball at a group of onrushing enemies and kill them all, even if the wizard takes a small amount of damage, but not when the wizard's allies are within the blast radius and would also die. For example, with reference to Kolo, Fig. 8, if the

wizard is numeral 802 on the lefthand side of the image, and the four characters in the center represent one ally player (facing rightward) and three enemy NPCs (facing left) then the wizard may not want to cast a fireball spell on that group of characters and kill their ally along with the enemies. However, if the ally were absent and the wizard were geographically alone, the player could choose to cast the fireball spell even if he or she would be harmed, if the alternative were certain death at the hands of the onrushing enemies. In my opinion, that player choice would reflect the claimed actuating and not actuating steps under this interpretation.

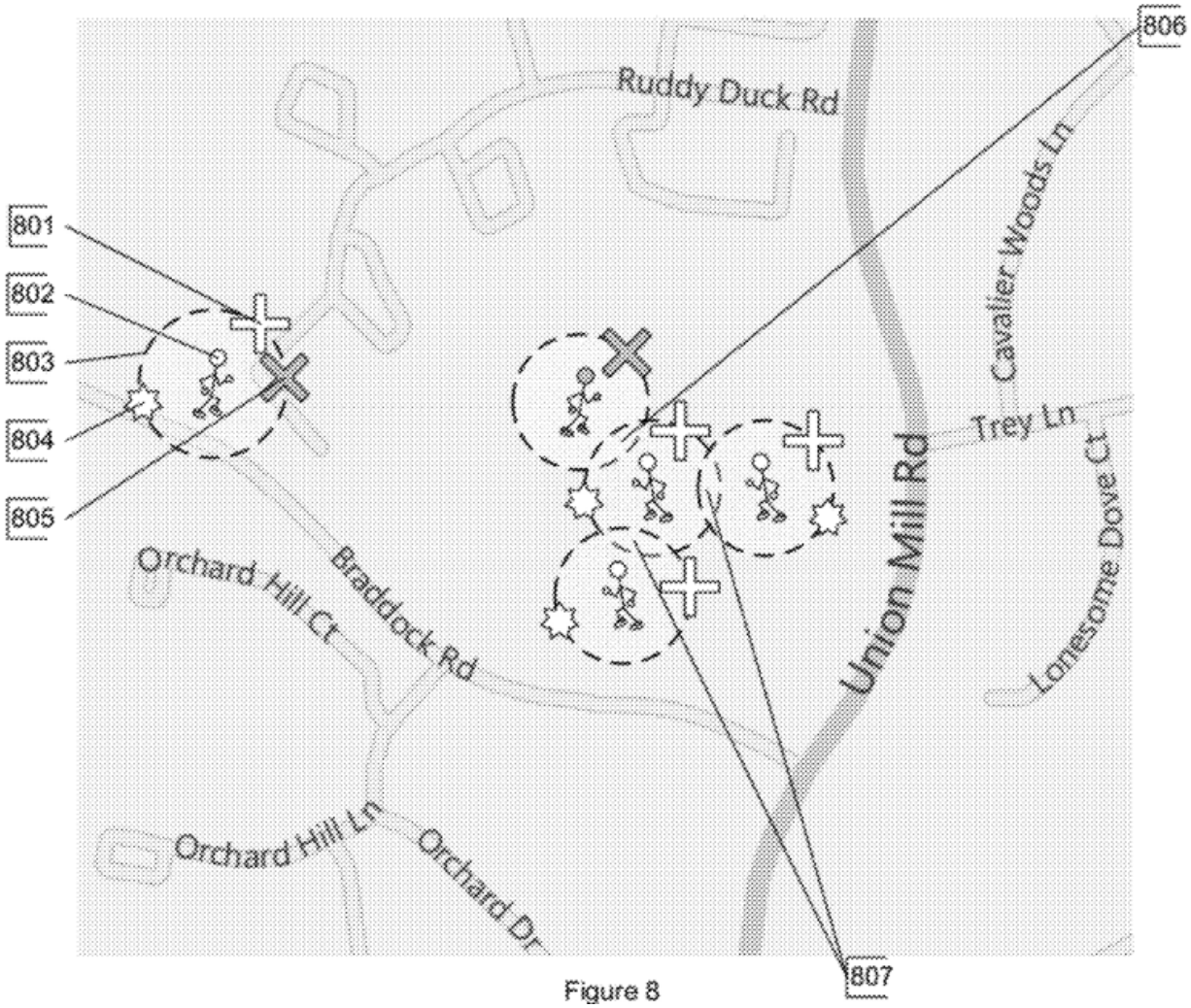


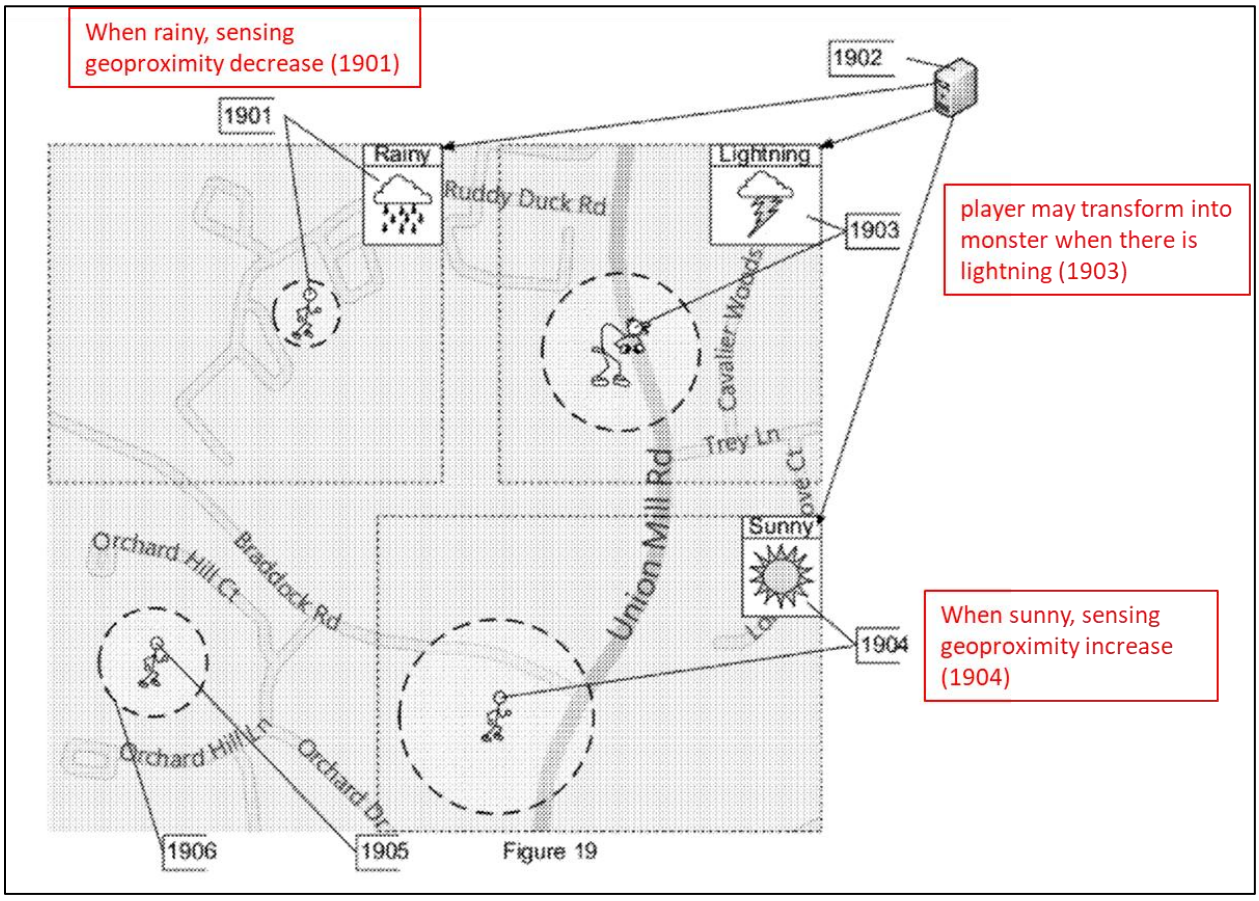
Figure 8

307. Scavenger Hunt. In my opinion, a POSITA would have understood that when a player's game character arrives at the geolocation of the final clue/answer in the scavenger hunt, the scavenger hunt *local element script* is only actuated to collect the final clue/answer when the player's location is unique (*actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player*). Kolo, ¶333. Otherwise,

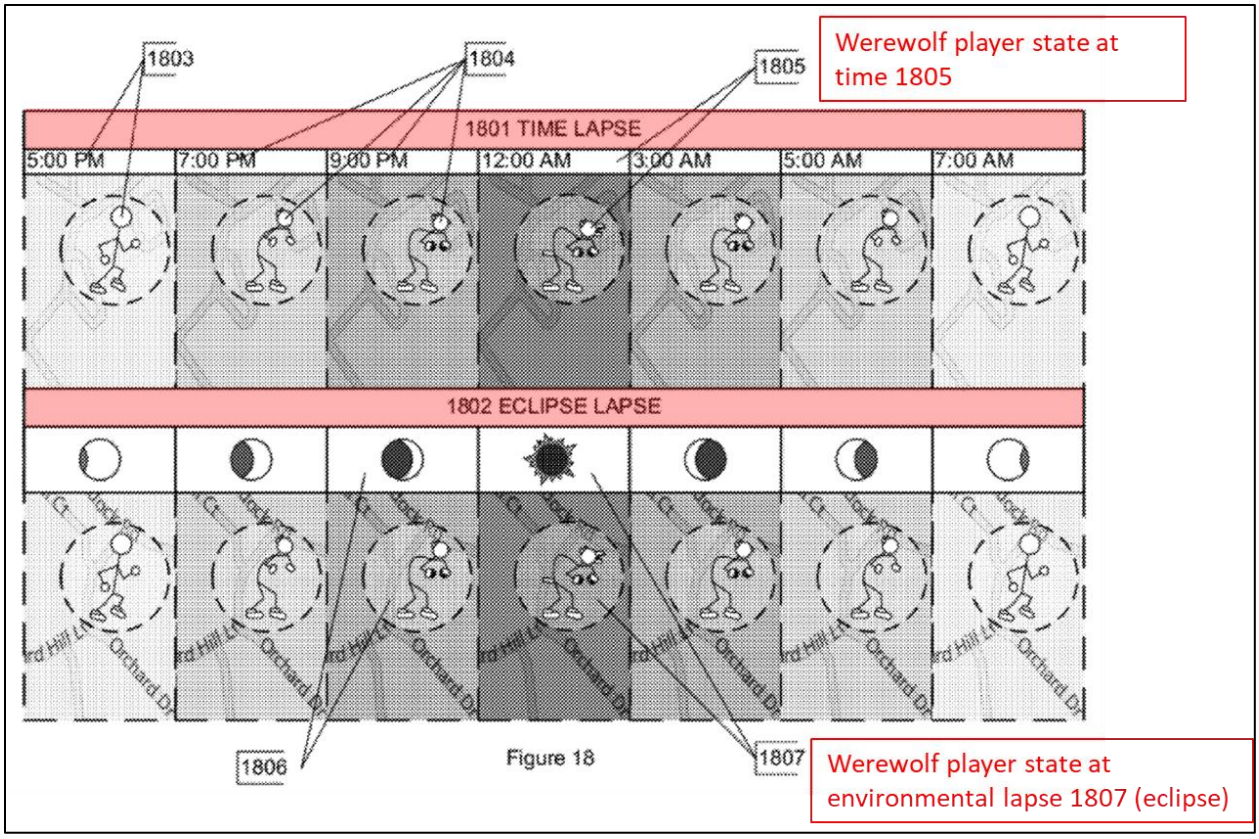
if another player is currently at the player's geolocation, in my opinion the *local element script* would not be actuated because that other player had already arrived first to collect the final clue/answer and won the game, thereby ending it, which means the player cannot do so (*not actuating the corresponding local element script when the player's real world player geographic location is represented by another player*).

308. Weather/Werewolf. In my opinion, A POSITA would have found it obvious that the weather and werewolf *local element scripts* should be actuated only when the player's real world location is unique because this would mean that no other player is currently at the location and the game functionality (e.g., for turning players into monsters) has not yet been called into action (*actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player*). However, if another player is already at the geolocation (and had already been turned into a monster) when the player arrives, in my opinion a POSITA would have recognized that the *local element script* would not be actuated again—because it is already running/looping while the first player is there; instead, in my opinion a POSITA would have recognized that the *local element script* should simply continue to run and affect all players currently at the location and playing the game (*not actuating the*

corresponding local element script when the player's real world player geographic location is represented by another player). *See* '827 Patent, 14:33-35 ("If player location and its local elements are not unique then gameplay continues with no changes."), EX1015, 7 (defining a "script" as "usually consist[ing] of instructions" and "simple control structures such as loops and if/then expressions").



Kolo, Fig. 19.



Kolo, Fig. 18.

309. In the alternative, a POSITA would have found it obvious that the weather and werewolf *local element scripts* should be actuated only when the player's real world location is unique in view of the incorporated disclosures from prior art TTRPGs. For instance, D&D or Rolemaster disclose powers or scenarios that provide benefits to players who are alone and/or restrict powers from being cast (*actuated*) when the player is not alone, and Kolo also discloses applying a detriment to a player who is *not* alone (which is equivalent to a relative benefit for moving to a unique location). EX1019 (D&D PHB), 33; EX1037 (Rolemaster FRP), 72; Kolo, ¶150, Fig. 8. Players experiencing Kolo's weather and werewolf

local element scripts would thus be encouraged by greater in-game benefits to maintain geographic separation, which can be additionally beneficial for the operator in terms of ad revenue as described above.

310. Element 1[d] does not specify that it is necessarily performed using the "computing device" recited in the preamble (*see, e.g.*, claims 13 and 14). However, in my opinion, Kolo renders obvious the premise that both its server and local devices (or both together) could perform the claimed "retrieving from a database mapping information" and "actuating the corresponding local element script" in element 1[d]. Kolo, ¶¶76, 109-129, 138, 147, 175, 212, 227-234, 266, 281, 333-340, 355. For example, when a local device is connected to a central server, and an act performed by the player using the local device causes the server to retrieve the claimed mapping information from the database, then both the local device and server can be said to have retrieved that mapping information. Similarly, Kolo discloses that its game code runs across both local devices and servers in a "gaming environment" and therefore it would have been obvious to a POSITA that either or both local devices and servers could perform the claimed "actuating the local element script. *Id.*

f. <u>'827 Patent, Ground 1A, Kolo</u>: 1[e]: wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.

311. In my opinion, Kolo renders 1[e] obvious.

312. I have been asked to assume that "the virtual character statistic of the player's virtual character" in element 1[e] is the same as the "virtual character statistic" introduced in element 1[a].

313. In my opinion, when Kolo's battle/scavenger hunt/weather/werewolf *local element script*s are *actuated* as I described regarding 1[d] (§X.B.2.e), Kolo discloses/suggests that this *comprises modifying the virtual character statistic of the player's virtual character* for the reasons I described regarding 1[c] (§X.B.2.d).

314. In my opinion, Kolo discloses/suggests that actuating the local element script comprises…modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters. Specifically, to the extent this claim requires modifying both a virtual character statistic and a plot node of at least one other player's virtual character, in my opinion, Kolo discloses/suggests this.

315. <u>Battle</u>. In my opinion, when actuated, the battle *local element script* results in the wielding player's game character's weapon having maximum damage on the victim player's game character. Kolo, ¶355. In my opinion, POSITA would

have understood that the victim player's innate health/hit points *statistic* would be modified by either being reduced or going to 0 (*actuating the local element script comprises… modifying…a virtual character statistic…of at least one of the other players' virtual characters*). *See* Kolo, ¶262 (disclosing that player "[a]ttribute[s] may be altered by magic spells, armor, or weapons" and "[c]ertain players may be able to cast spells on friends or foes causing the attributes of the targeted player to change").

316. In my opinion, Kolo's battle *local element script* also modifies a *plot node* (i.e., creates a forking point in the storyline) for the victim player because, e.g., when the wielding player's game character wins the encounter, the victim player's game character would have reduced health (e.g., be grievously wounded) and/or be killed / removed from the game (*actuating the local element script comprises…modifying…a plot node of at least one of the other players' virtual characters*). A POSITA would understand that being grievously wounded or killed is "a forking point in the storyline where the plot of the story can diverge based on the decisions a player makes," since the victim player may not have been killed or wounded if they had decided not to battle the wielding player (e.g., they had fled instead). For instance, a POSITA would understand that a player who is killed or wounded would, in the context of prior art TTRPGs, need medical attention or magical resurrection, while a player who is not wounded may continue

gameplay without such attention, and therefore the plot of the story can diverge based on whether the player is or is not wounded/killed. Additionally, a defeated character may not gain experience points (XP) and therefore would not level up and gain the accompanying benefits as described above. Such a defeat can also constitute a *plot node* insofar as the defeated character does not have access to higher-level spells or abilities that would have been unlocked upon leveling up had they been victorious.

317. Scavenger Hunt. In my opinion, when actuated, the scavenger hunt *local element script* assigns the last clue to the player's game character and win the game for the player's team. Kolo, ¶182 ("When a player enters geoproximity to a geolocation, the player is marked as collecting the item or fulfilling the clue. The player or team that collects the most clues is considered the winner."), ¶274 ("When the designated time is up, the player or team with the most points is awarded as the winner(s).").

318. For the same reasons I described regarding 1[c], §X.B.2.d, in my opinion a POSITA would have understood that another player on the winning player's team will gain experience points from successfully winning the scavenger hunt, and further that those experience points may cross a threshold such that the character's level is increased and there is a corresponding increase in the character's innate statistics such as strength, dexterity, wisdom, intelligence,

charisma, hit points/health, mana, or speed (*actuating the local element script comprises… modifying…a virtual character statistic…of at least one of the other players' virtual characters*).

319. In my opinion, Kolo's scavenger hunt *local element script* also modifies a *plot node* (i.e., creates a forking point in the storyline) for the other players on the winning team because when the claimed player collects the last item that wins the game for the player/the player's team, the other players on that team are now shown as having won the game, and the other players on other teams are now shown as having lost the game (*actuating the local element script comprises…modifying…a plot node of at least one of the other players' virtual characters*). The player's decision to collect or not collect the last item and win the game for the player's team therefore creates a diverging storyline, since if they did not collect the item and win the game, another team may have won, therefore the plot of the story can diverge based on that decision. The plot nodes of many other players' virtual characters, both on the winning team and the losing teams, are modified when the scavenger hunt has completed.

320. Weather/Werewolf. Because Kolo discloses an MMO, in my opinion a POSITA would have understood and expected that after the weather/werewolf *local element scripts* had been actuated, a second player may arrive at the player's location while the player that arrived first (which actuated the *local element script*)

is still there. In this case, in my opinion the weather/werewolf *local element scripts* that were previously actuated would also modify the second player's character's sensing abilities/transform the second character into a monster/werewolf, which would modify the second player's game character's *statistics* for the same reasons described regarding 1[c] (*actuating the local element script comprises… modifying…a virtual character statistic…of at least one of the other players' virtual characters*). *See* §X.B.2.d; Kolo, ¶¶339-340, Fig. 19, ¶188, ¶335, ¶336, Fig. 18.

321. In the alternative, a POSITA would have found it obvious that after the weather/werewolf *local element scripts* are actuated by a first player in a unique geolocation, thereby modifying a first player's *virtual character statistic*, a second player character may arrive at the first player's virtual (in-game) location, be affected by the same script, and likewise have a modified statistic for the same reasons described regarding 1[d]. *See* §X.B.2.e; Kolo, ¶¶339-340, Fig. 19, ¶188, ¶335, ¶336, Fig. 18, ¶312 ("[i]n this example, the players are physically located on opposite sides of the country while in the virtual environment they are playing in geolocations within a single state"), Fig. 6, ¶346 ("although the player maintains a constant geolocation, the player may freely move their avatar's virtual location in-game").

322. In my opinion, Kolo's weather/werewolf *local element scripts* also modify a *plot node* (i.e., create a forking point in the storyline) for the second player that arrives because—in the case of sensing abilities—the second player's game character now has enhanced/reduced ability to sense other players' game characters (which increases/decreases the information available to the player to make gameplay decisions, which means the plot may diverge) and—in the case of changing the player into a monster/werewolf—the monster is introduced into the game and may differently interact with other players' game characters than a non-monster would (*actuating the local element script comprises…modifying…a plot node of at least one of the other players' virtual characters*).

323. In sum, Claim 1 combines proximity-based restrictions on when game functionality such as a weapon, item, or power (e.g., magic spell) may be used, with the effects of that weapon, item or power, in the context of a well-known MMO. A POSITA would have already known about both proximity-based restrictions and game-modifying weapon/item/power effects and, in view of the ubiquity of MMOs and Kolo's disclosures (including incorporated references), would have found it obvious to combine the particularly-claimed restriction on game functionality (actuating a power when the player is alone but not otherwise) with the particularly-claimed effects of that game functionality (changing the

player's character stats, and changing another player's character stats and/or plot node).

324. A POSITA would further have understood that the purported invention in the Challenged Patents ("use of local elements to impact gameplay," '827 Patent, 1:24) was literally anticipated by Kolo as described herein (e.g., "a player's in game experience may be altered when the player is in geoproximity of a specific geolocation, and when the current weather is rainy," Kolo, ¶190), and that the particularly-claimed subset of that purported invention would have been obvious in view of the equivalent and/or similar game functionality already disclosed by Kolo and prior art TTRPGs. In my opinion, a POSITA would not have thought the particularly-claimed game rules (relating to which gameplay elements may be modified or when) were surprising, nor would the results of those particular game rules have been unpredictable. Moreover, the specification of the Challenged Patents does not teach or suggest that its particular game rules and game functionalities are independently inventive beyond the basic premise of "the use of local elements to impact gameplay."

325. Rather, in my opinion, a POSITA would have understood that all of the specific details in the Challenged Patents for how a player's location and various local elements can impact gameplay (at the disclosed level of detail) are obvious game design choices, derived from prior art TTRPGs, that flow naturally

from the basic premise that a player's geolocation and its various local elements may be used to impact gameplay, and would also have understood that premise was earlier disclosed by Kolo. In short, the Challenged Patents' assertion that "existing virtual worlds lack the ability to take the player's location and its various local elements into account for meaningful impact on gameplay" ('827 Patent, 1:49-51) was incorrect, since Kolo had previously disclosed exactly that.

3. '827 Patent, Ground 1A, Kolo: Claim 2: The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location.

326. In my opinion, Kolo renders claim 2 obvious.

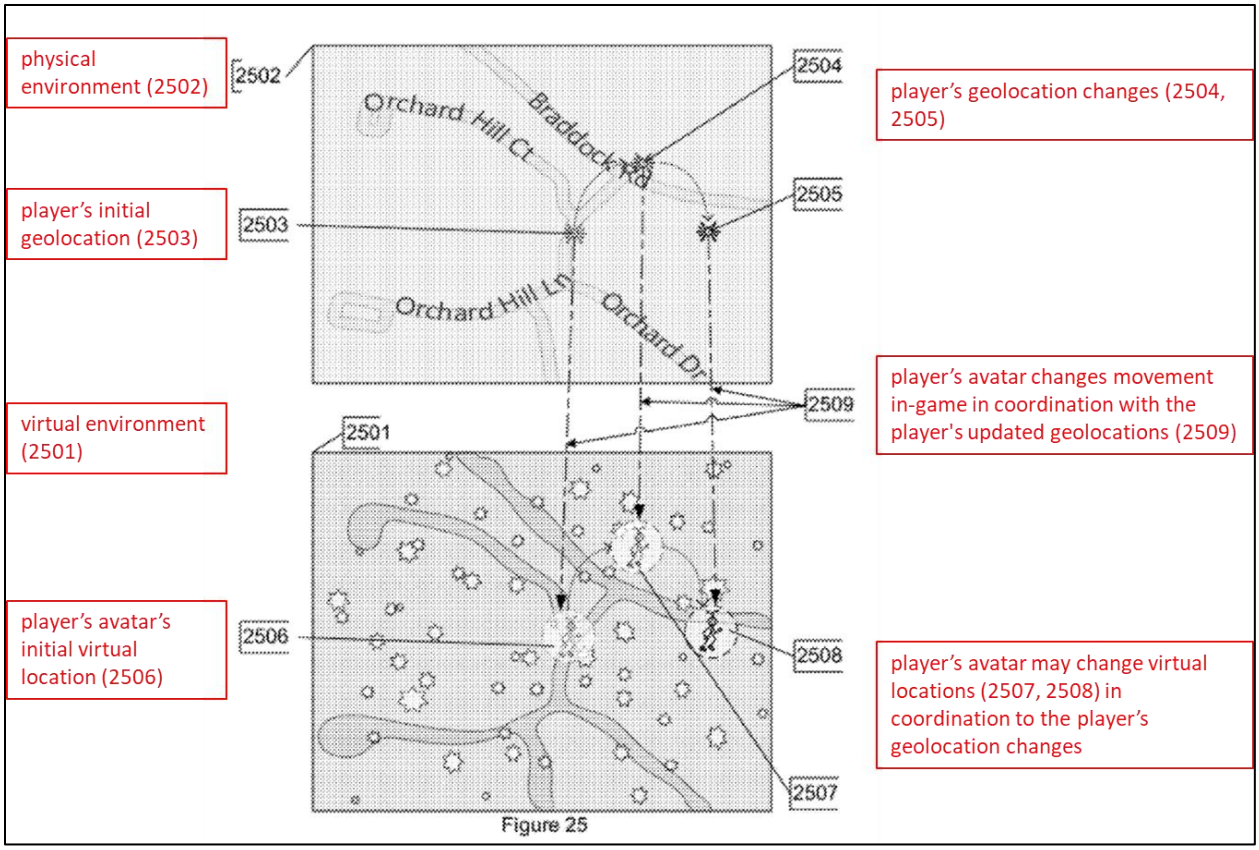
327. If the Board finds that *creating* a *local element script* in response to detecting a location encompasses importing/downloading the script from a server as the '827 Patent describes, in my opinion Kolo discloses/suggests this claim for the reasons discussed for element 1[c], §X.B.2.d.

328. As to each aspect of gameplay described regarding claim 1, in my opinion a POSITA would have understood that the player's game character would be free to continue to participate in gameplay in the MMO after the steps of claim 1 are complete.

329. In that scenario, in my opinion Kolo discloses that the player's geolocation is either manually updated or "regularly" updated. Kolo, ¶194 ("There

are several approaches that may be employed to update a player's geolocation. The player may notify the game of the change in geolocation, or the game may automatically detect the change."), ¶198 ("[T]he gaming software may be used to regularly update the player's geolocation without the requirement of active involvement of the player. A GPS module is located in the local gaming device used by the player. Software may be run on this local device that regularly queries the GPS module to determine the current geolocation. The local software may transmit this information to a central server causing the players geolocation to be passively updated.").

330. Figure 25 discloses how a player's movement in the real world is used to update the player's location in the virtual world. Kolo, ¶350.



Kolo, Fig. 25.

331. When a player moves in the real world and continues to engage in gameplay in the MMO, in my opinion a player may engage in any of the activities described regarding claim 1 at a second/subsequent location, the player's location is detected using the mobile device's GPS unit as described regarding 1[b] §X.B.2.c, and the *local element scripts* would be imported/downloaded exactly as I described regarding claim 1 (§X.B.2), except that they would now be a *second or further local element script* because they are related to the player's second or subsequent location (*detecting a second or subsequent location in the course of*

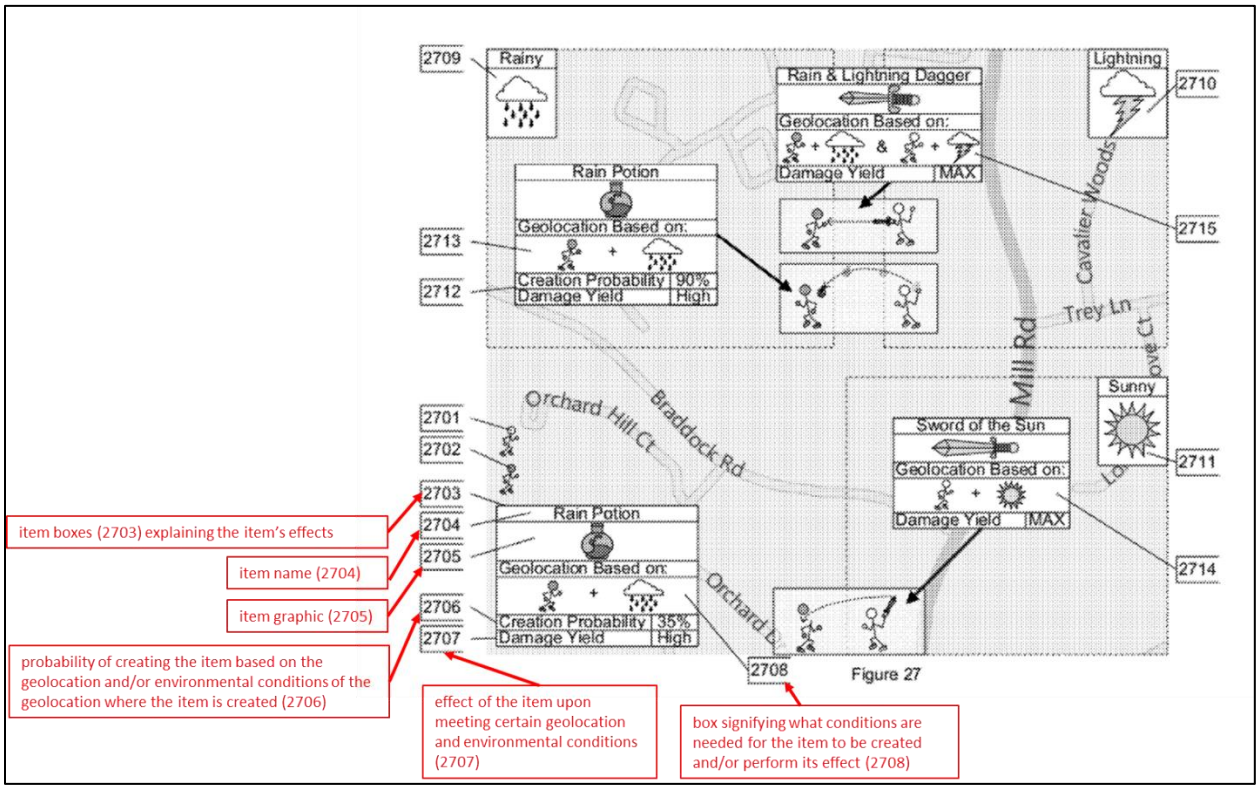
gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location).

332. Additionally, claim 2 does not require that the second detected location be "of the player" from claim 1, which means the second detected location can be the location of any other player. Since claim 1 relates to multiple players, it is inherent that those other players have locations that are detected as claimed, so any of those locations could be the claimed *second or subsequent location* for claim 2. As such, any local element script that is created for a different player at a different location (not the claimed "the player" in claim 1) is a *second or further local element script, the second or further local element script being related to the second or subsequent location.*

333. In addition, if the Board finds that *creating a…local element script* based on a detected location requires generating code/data that did not previously exist, Kolo discloses/suggests this claim.

334. In my opinion, Kolo discloses/suggests that a *second local element script* can be created at a second or further location. For example, if a player continues to move in the MMO after completing the steps of claim 1, Kolo discloses that a player could create an item (e.g., a rain potion) when there are certain environmental conditions (e.g., rain) at the second geolocation (this creates a *second local element script* that can be actuated in the game, i.e., to use the rain

potion). Kolo, ¶352 ("An item box may have an item name (2704), an item graphic (2705), a probability of creating the item based on the geolocation and/or environmental conditions of the geolocation where the item is created (2706), an effect of the item upon meeting certain geolocation and environmental conditions (2707), a box signifying what conditions are needed for the item to be created and/or perform its effect (2708)."), ¶353 ("The first example uses a rain potion that requires the player creating the potion to be at a geolocation that is rainy (2709) in order to have a higher probability of successfully creating the potion (2712).").



Kolo, Fig. 27.

335. In my opinion, the player's second/subsequent location would be detected in exactly the same way described regarding 1[d] (§X.B.2.e). Further, in

my opinion a POSITA would have understood that this player action creates code/data in the game based on information related to the player's second geolocation (i.e, the weather) (*second or further local element script*).

336. Thus, when a player moves in the real world and continues to engage in gameplay in the MMO, in my opinion the player's second location is detected using the mobile device's GPS unit as described regarding 1[b], §X.B.2.c, and the player may create a rain potion (i.e., in my opinion, creating code/data based on information related to the player's second location that is a *second local element script* associated with the rain potion item) (*detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location*).

337. Alternatively, since Kolo discloses/suggests that a *local element script* can be created for one player based on a detected location as explained for Claim 1, Kolo inherently discloses/suggests that a *second local element script* can be created for a second player based on a second detected location.

4. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 3: The method of claim 1, wherein the creation of the local element script takes account of an operating context within the game.

338. Kolo renders claim 3 obvious.

339. "The creation of the local element script" lacks antecedent basis. Regardless, Kolo renders claim 3 invalid under any possible interpretation.

340. The Challenged Patents describe an "operating context" as "internal and/or external factors impacting a particular system, device, application, business, organization etc. For example, operating context for an application is the external environment that influences its operation. For a mobile application, the operating context may be defined by the hardware and software environment in the device, the target user, and other constraints imposed by various other stakeholders." '827 Patent, 3:4-12. The Challenged Patents further disclose that "[i]n the case of the present invention, operating context may have a bearing on, for example, the selection of the local element for the detected location (e.g. selecting a kid-appropriate local element to be introduced in a game for kids)." *Id.*, 3:12-16.

341. If claim 3 was intended to depend from claim 1 and *the creation* refers to downloading/importing *a local element script* from a server, in my opinion Kolo discloses such *creation* of the *local element script* because Kolo discloses retrieving a script from the server's database as described regarding 1[d] (§X.B.2.e). Further, if claim 3 was intended to depend from claim 1 and *the creation* refers to adding *a local element script* to the game (i.e., before 1[c]), in my opinion Kolo discloses/suggests this because Kolo discloses that a script associated with creating an item at a location (i.e., rain potion) would be added to

the game the same way a *second local element script* is added as described regarding claim 2 (§X.B.3).

342. Further, in my opinion it would have been obvious for the rain potion to be used when the battle *local element script* is retrieved/actuated as described regarding claim 1 (i.e., to its maximum effectiveness when the wielding player is at a geolocation with different weather than the weather at the victim player's geolocation).

343. If claim 3 was intended to depend from 2 and *the creation* refers to downloading/importing a *second local element script* from a server, Kolo discloses/suggests such *creation* as described regarding claim 2 (§X.B.3). Further, if claim 3 was intended to depend from claim 2 and *the creation* refers to adding a *second local element script*, in my opinion Kolo discloses/suggests this for the reasons described regarding claim 2 (§X.B.3).

344. Regardless of which interpretation of *the creation of the local element script* applies, in my opinion Kolo discloses suggests that it *takes account of an operating context within the game*.

345. Kolo discloses that a player of the MMO creates an account before playing. Kolo, ¶247 ("In this example, a player participating in a PMORPG creates an account on a gaming server."). In my opinion, a POSITA would have

understood that creation of the account would require a player to provide background information including the player's age.

346. In my opinion, it would have been obvious to take account of information about the player—e.g., the player's age—when creating/determining the appropriate battle/scavenger hunt/weather/werewolf *local element scripts* to retrieve. In my opinion, customizing aspects of gameplay based on a player's age was well-known to a POSITA as of the priority date of the Challenged Patents, and a POSITA would have recognized that an MMO gameplay should account for a player's age based on societal expectations.

347. Battle/Werewolf. In my opinion, a POSITA would have found it obvious for Kolo to *take[] account of* the player's age (*operating context*) to only download/import/add a *local element script* if the player is old enough for these aspects of gameplay because the gameplay may be frightening for younger players (*creation of the local element script takes account of an operating context within the game*).

348. Scavenger Hunt. In my opinion, a POSITA would have found it obvious for Kolo to *take[] account of* the player's age (*operating context*) to only download/import/add a *local element script* that includes clues/answers that are age-appropriate for the player (e.g., if the player is below a certain age, making the clue/answer appropriate for children, and if the player is above a certain age,

allowing other types of clues/answers) (*creation of the local element script takes account of an operating context within the game*).

349. Weather. In my opinion, a POSITA would have found it obvious for Kolo to *take[] account of* the player's age (*operating context*) when downloading/importing/adding the *local element script*. For example, for players below a certain age, it would have been obvious for the downloaded/imported/added script to allow enhanced/decremented sensing abilities but not turn the player into a monster because turning into a monster is an aspect of gameplay that may be frightening for player's below the age (*creation of the local element script takes account of an operating context within the game*).

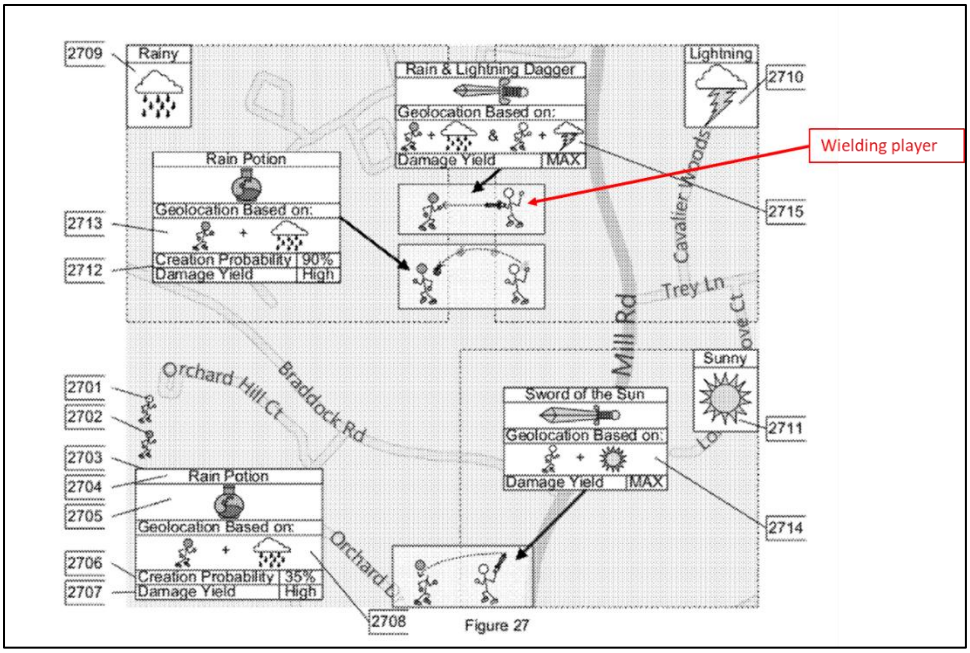
350. In addition, the weather *local element script* may be downloaded/imported/added based on the time. Kolo, ¶335 ("[I]n this case the player transitions to a werewolf from 5:00 PM to 12:00 AM in the player's geolocation"). Thus, in my opinion Kolo discloses/suggests that time at a location is a factor in the "external environment" (*see* '827 Patent, 3:4-16) (i.e., an *operating context*), and whether the *local element script* is downloaded/imported/added takes account of the time (*creation of the local element script takes account of an operating context within the game*).

5. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 4: The method of claim 1, wherein the local element script modifies the virtual character's appearance, facial or body expression or health.

351. In my opinion, Kolo renders claim 4 obvious.

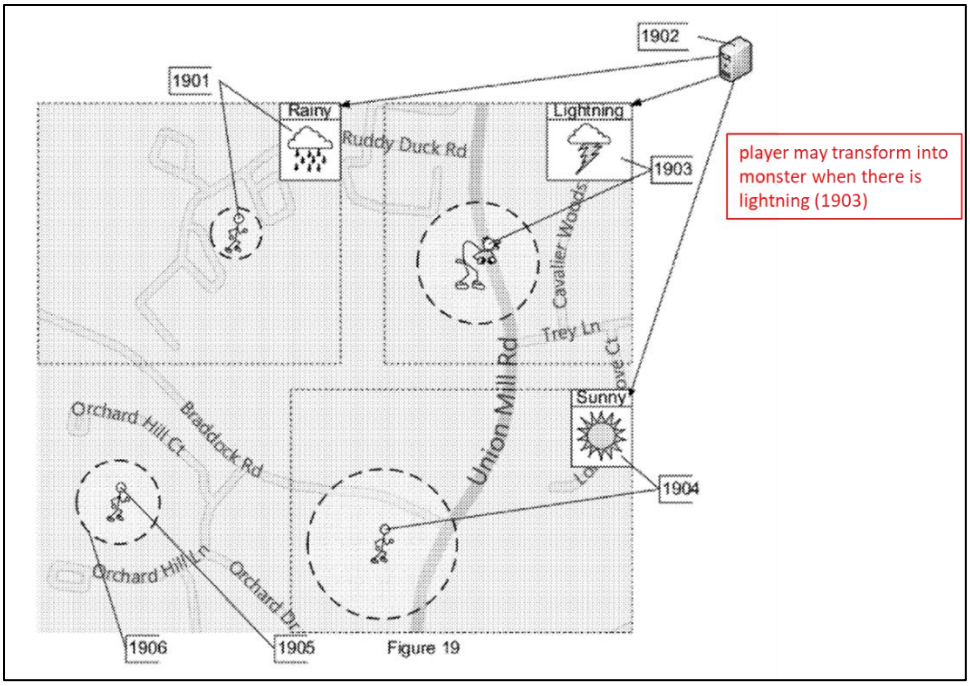
352. In my opinion, the battle/scavenger hunt/weather/werewolf *local element script*s render obvious that the *local element script modifies the virtual character's…health* because, if the player successfully completes the game objective/encounter, it would have been obvious for the player to receive experience points in the game at the end of the objective/encounter and to "level up"—which changes the player's statistics, including health—if those experience points cross a certain threshold.

353. <u>Battle</u>. In my opinion and in addition, the battle *local element script modifies the virtual character's appearance/body expression* because the wielding player is shown wielding the weapon.

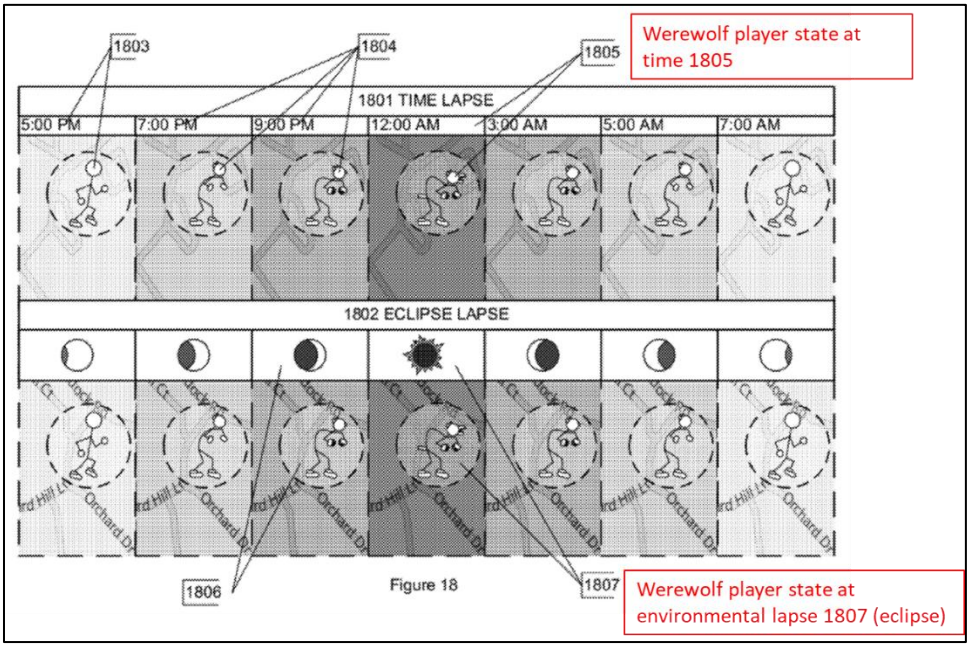


Kolo, Fig. 27.

354. Weather/Werewolf. In my opinion and in addition, the weather/werewolf *local element scripts modif[y] the virtual character's appearance, facial or body expression* because the player turns into a monster/werewolf and is depicted in Kolo's images as having a hunched appearance relative to the upright posture of the untransformed character, as shown in Figs. 18 and 19.



Kolo, Fig. 19.



Kolo, Fig. 18.

6. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 5: The method of claim 1, wherein the local element script modifies the tools, weapons, equipment or clothing of the virtual character.

355. In my opinion, Kolo renders claim 5 obvious.

356. Battle. In my opinion, the battle *local element script modifies the…weapons…of the virtual character* because the character's weapon has its maximum effectiveness. Kolo, ¶¶214, 355; Additionally, any spell cast by the player that creates or enchants an item or weapon would be a *local element script* that *modifies the tools, weapons … of the virtual character.* Kolo, ¶¶227-234.

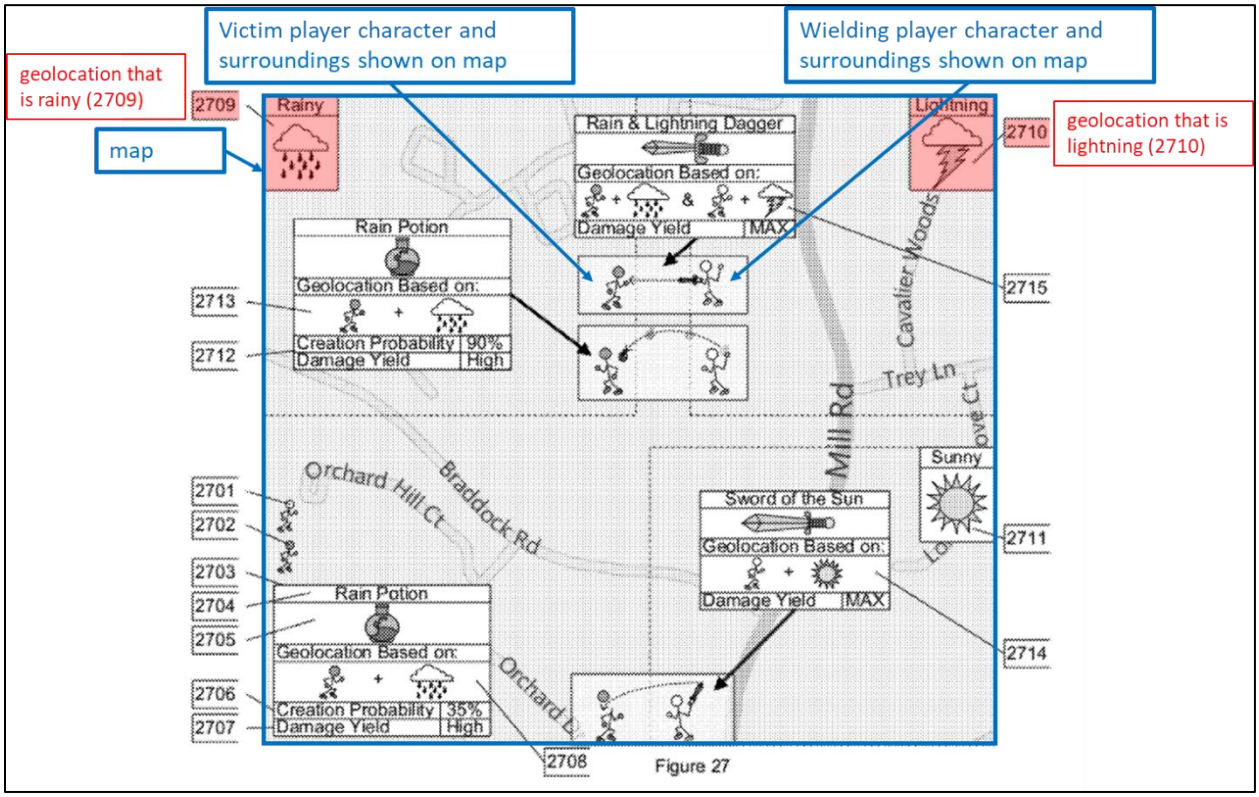
357. Weather/Werewolf. In my opinion, the weather/werewolf *local element scripts* render obvious that the *local element script modifies the…clothing of the virtual character* because the player turns into a monster/werewolf (Kolo, ¶¶340, 335), and a POSITA would have understood that the player's character would change size as a result of the transformation and the character's clothing needed to be modified accordingly (or would be torn into shreds as the player's character grew into a werewolf and burst through their clothing).

7. '827 Patent, Ground 1A, Kolo: Claim 6: The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.

358. In my opinion, Kolo renders claim 6 obvious.

359. Battle. In my opinion, the wielding player *interacts with the video game according to a storyline* that involves the player's character battling another player and wielding a weapon (i.e., the *storyline* includes a battle *theme* and a *plot* that involves the players' characters battling (*character interactions/encounters*)).

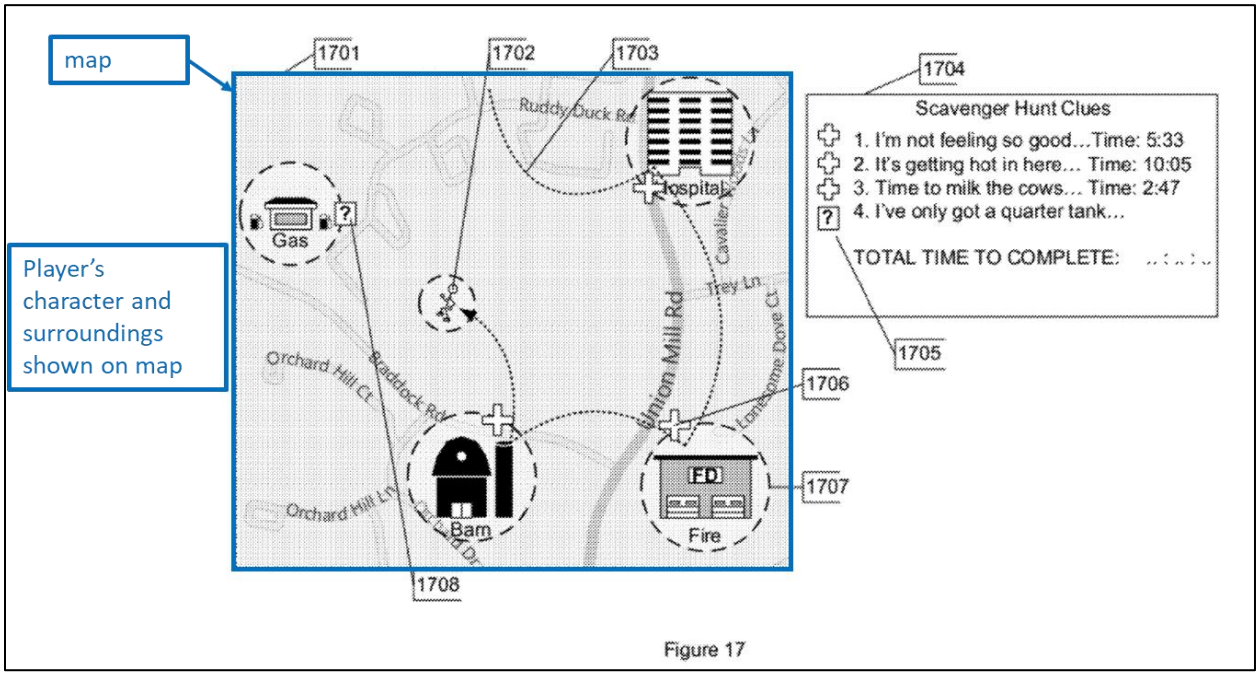
Kolo, ¶¶214, 355. In my opinion, there are also changes to the *plot* because a successful battle allows the winning player to gain experience/character levels in the game while the victim player has reduced health and/or is removed from the game (*plot node*). In my opinion, the game also has a *scene/setting/aesthetics* because the characters' locations are shown on a map along with the weather conditions at their respective locations.



Kolo, Fig. 27.

360. Scavenger Hunt. In my opinion, the player *interacts with the video game according to a storyline* that involves the player's character working on a team with other players (i.e., the *storyline* includes a scavenger hunt *theme* and a *plot* that involves the players' characters working together to win the scavenger

hunt (*character interactions/encounters*)). Kolo, ¶¶181-184, 271-274, 333. In my opinion, there are also changes to the plot because a successful scavenger hunt shows the winning/losing teams and allows the winning players to gain experience/character levels in the game (*plot node*). In my opinion, the game also has a *scene/setting/aesthetics* because the player's character is shown on a map at locations within the game.

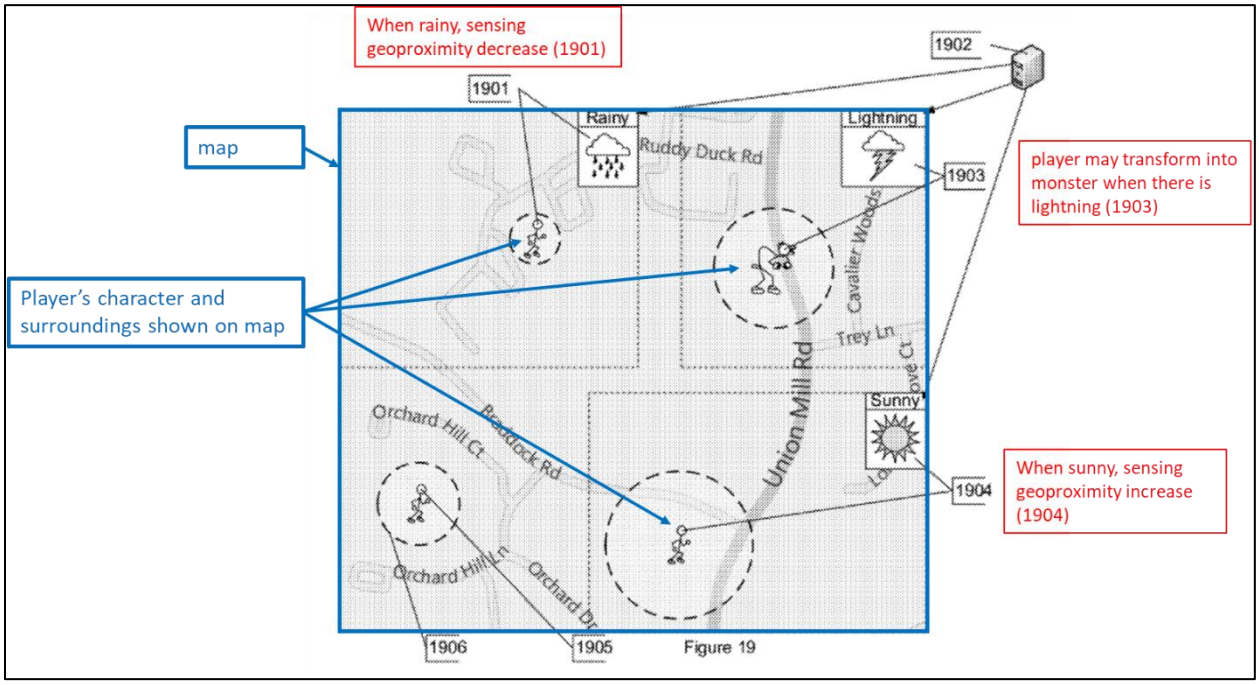


Kolo, Fig. 17.

361. Weather. In my opinion, the player *interacts with the video game according to a storyline* that involves the player's character receiving enhanced/decremented sensing abilities or turning into a monster (i.e., the *storyline* includes a competition *theme*—whether through sensing other players or engaging

with other players as a monster—and a *plot* that involves the players' characters' engaging in encounters (*character interactions/encounters*)). Kolo, ¶¶339-340.

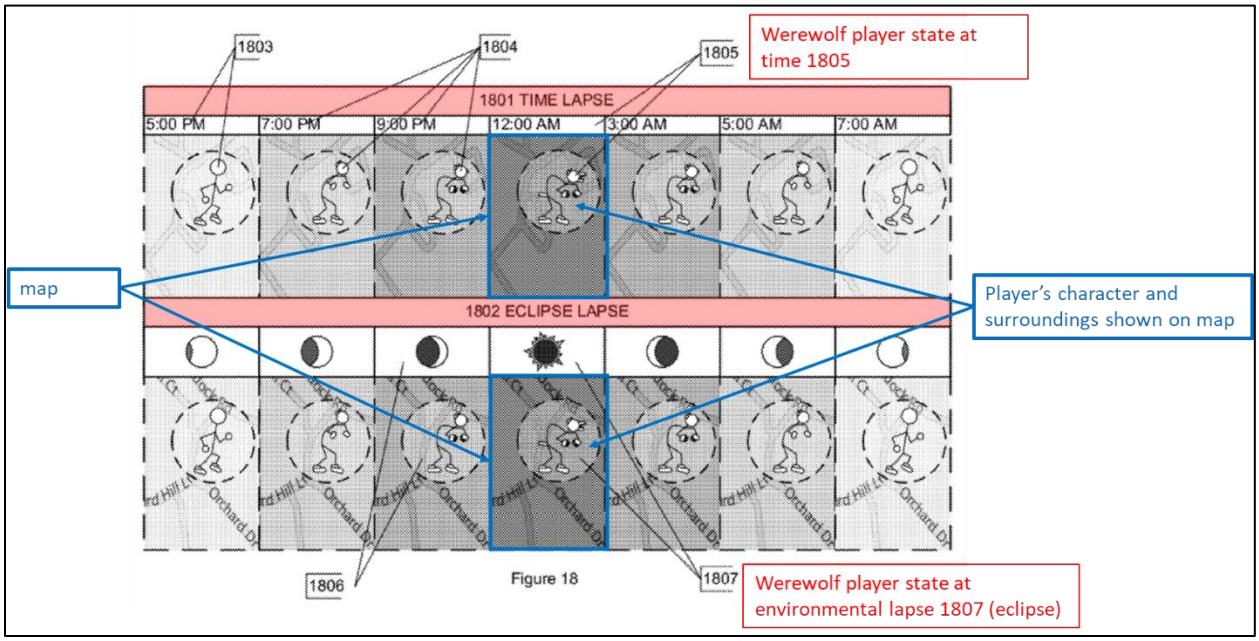
362. There are also changes to the plot because the character now has new/different abilities that impact further gameplay (*plot node*). In my opinion, the game also has a *scene/setting/aesthetics* because the characters are shown on a map along with the weather conditions at their respective locations.



Kolo, Fig. 19.

363. Werewolf. In my opinion, the player *interacts with the video game according to a storyline* that involves the player's character transforming into a werewolf (i.e., the *storyline* includes a role-playing game *theme* and a *plot* that allows the player's character to engage in further encounters as a werewolf (*character interactions/encounters*)). Kolo, ¶¶188, 267-268, 283, 334-337. In my

opinion, there are also changes to the plot because the character is now a werewolf in the game (*plot node*). In my opinion, the game also has a *scene/setting/aesthetics* because the character is shown on a map along with the character's surroundings.



Kolo, Fig. 18.

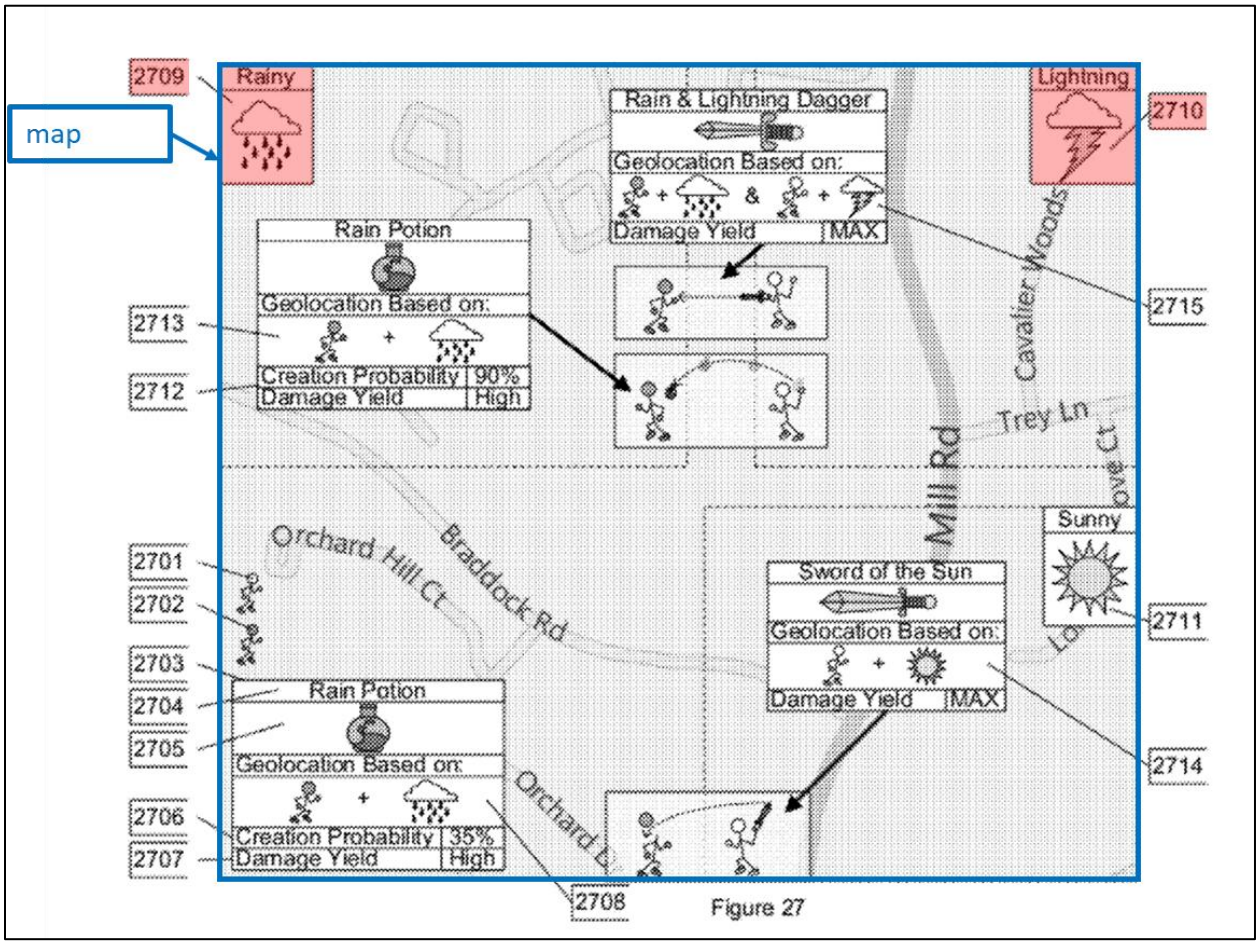
364. Further, in my opinion, a POSITA would have understood that it is inherent that every video game has a *premise*. Therefore, to the extent this claim can be satisfied by a *storyline which comprises* only a *premise,* the scope of claim 6 is coextensive with claim 1 and is therefore obvious for the same reasons.

8. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 7: The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.

365. In my opinion, Kolo renders claim 7 obvious.

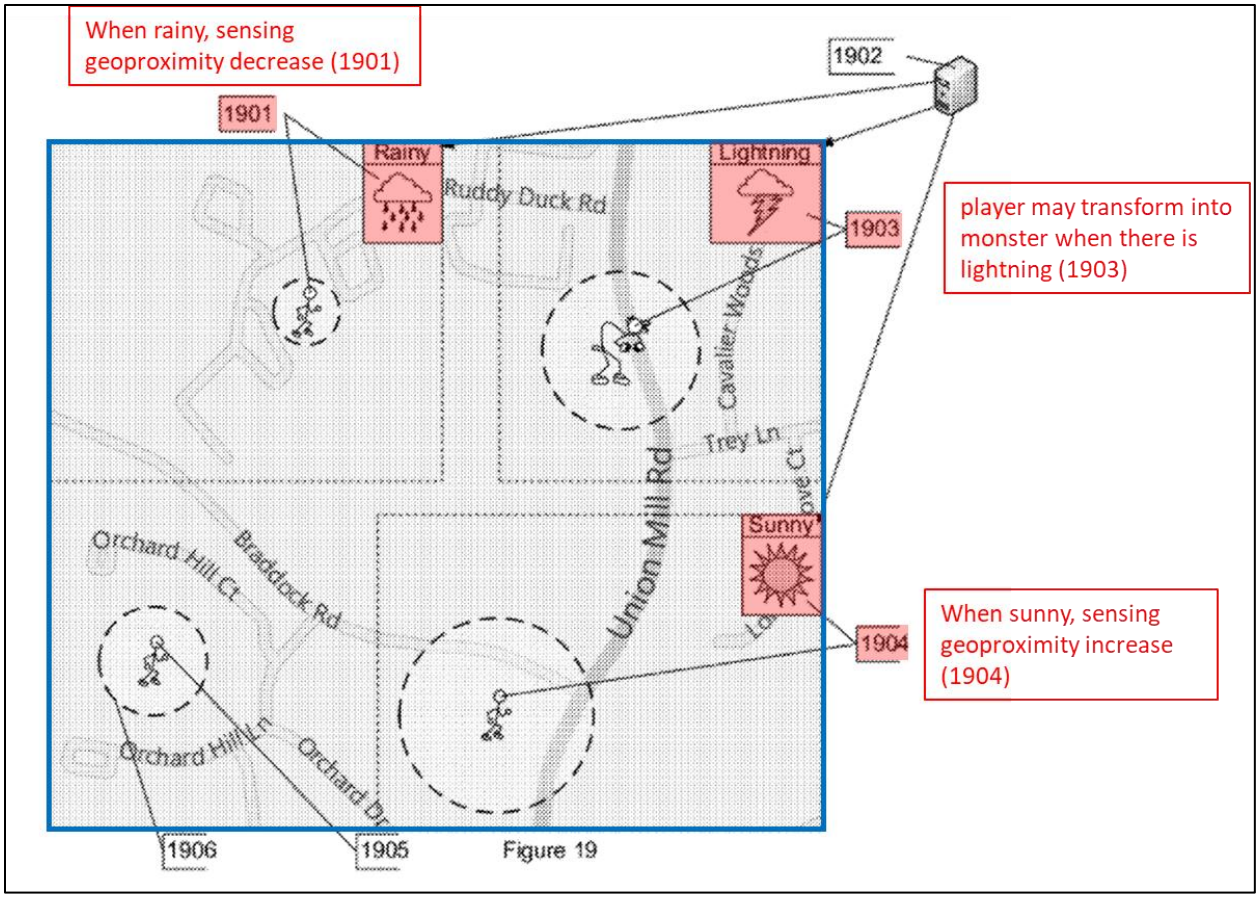
366. <u>Battle</u>. In my opinion, the battle *local element script* allows the wielding player character to use a weapon to its maximum effectiveness and

displays the weather at the wielding/victim player characters' respective locations, which *modifies the scene or setting of the storyline*. Kolo, ¶¶214, 355.



Kolo, Fig. 27.

367. Weather. In my opinion, the weather *local element script* changes the player's character's sensing abilities/transforms the character into a monster and displays the weather at the player's location, which *modifies the scene or setting of the storyline*. Kolo, ¶¶339-340; '827 Patent, 3:27-34 ("modify[ing] or introduc[ing] non-player characters [or] game monsters" are examples of "modify[ing] the scene or setting of a storyline.").



Kolo, Fig. 19.

368. Werewolf. In my opinion, the werewolf *local element script* introduces a monster (i.e., werewolf), which *modifies the scene or setting of the storyline*. Kolo, ¶¶188, 335-336; '827 Patent, 3:29-34.

9. '827 Patent, Ground 1A, Kolo: Claim 8: The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.

369. In my opinion, Kolo renders claim 8 obvious.

370. "The location" lacks antecedent basis since claim 1 recites multiple locations. Regardless, Kolo renders claim 8 invalid under any possible interpretation.

371. This claim does not specify whether "a virtual character" is the same as any of the "virtual characters" recited in claim 1 or is a new virtual character. Regardless, Kolo discloses an MMO (Kolo, ¶110), and in my opinion its teachings apply to each of the players' game characters.

372. Kolo discloses that the player's geolocation is optionally "automatically"/"passively" updated. Kolo, ¶¶194, 198. This involves "regularly updat[ing] the player's geolocation without the requirement of active involvement of the player," which in turn involves "software [that] may be run on [the] local device that regularly queries the GPS module to determine current geolocation." *Id.*, ¶198. *See also id.*, ¶343 (describing Fig. 20 and explaining regarding item 2003 that "the player's geolocation is automatically updated to the server in order for their current geolocation to be recorded and regularly used for gameplay"), ¶350 (describing Fig. 25 and how "[a]s the player's geolocation changes (2504, 2505), the player's avatar may change virtual locations (2507, 2508) in coordination to the player's geolocation changes").

373. Kolo's "regular" detection of updates of a player's geolocation is illustrated, e.g., in Figs. 20 and 25, which show that the player's geolocation is *re-*

detected at intervals as the player moves in the real world (Fig. 20, item 2003; Fig. 25, items 2503, 2504, and 2505).

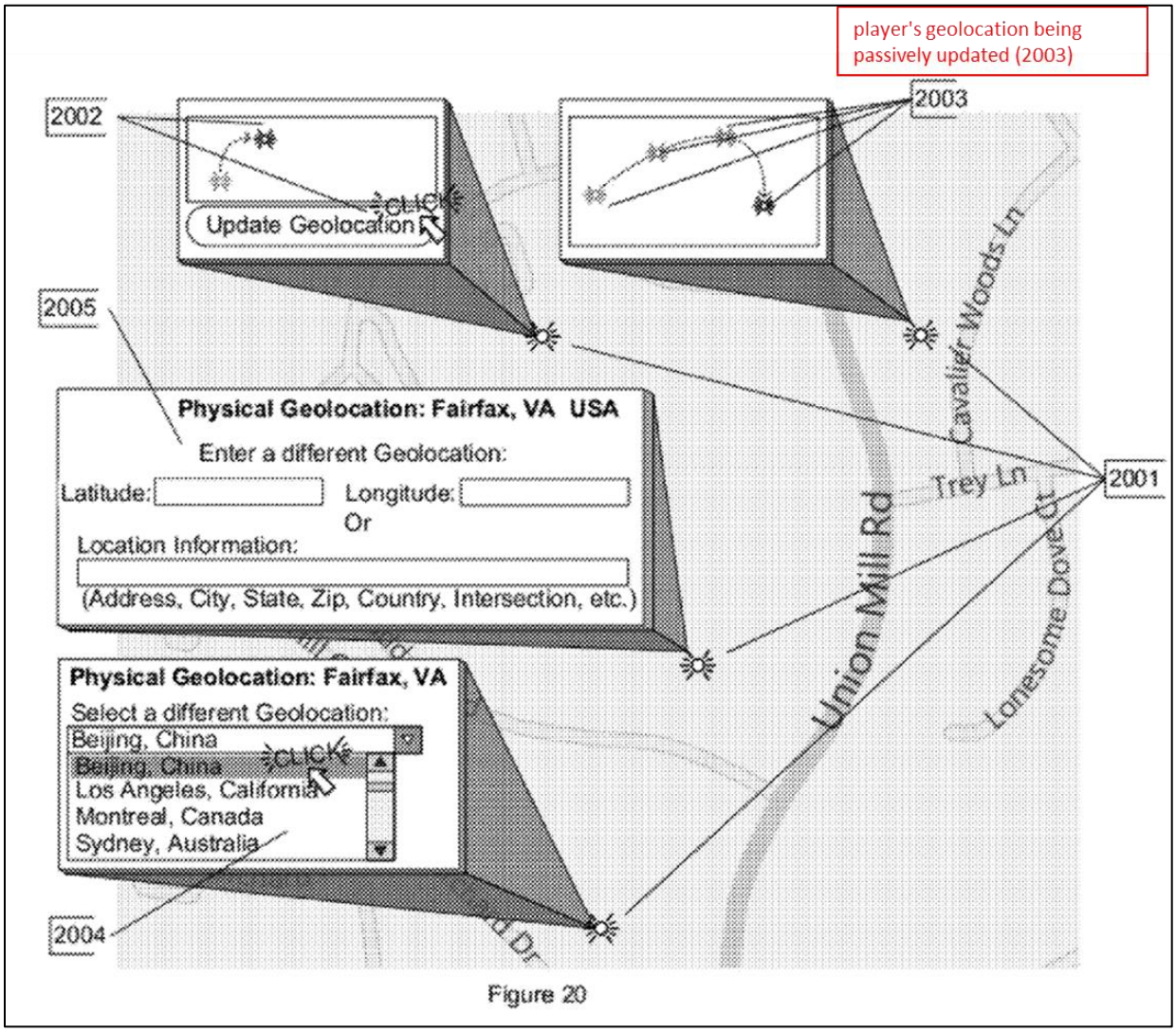
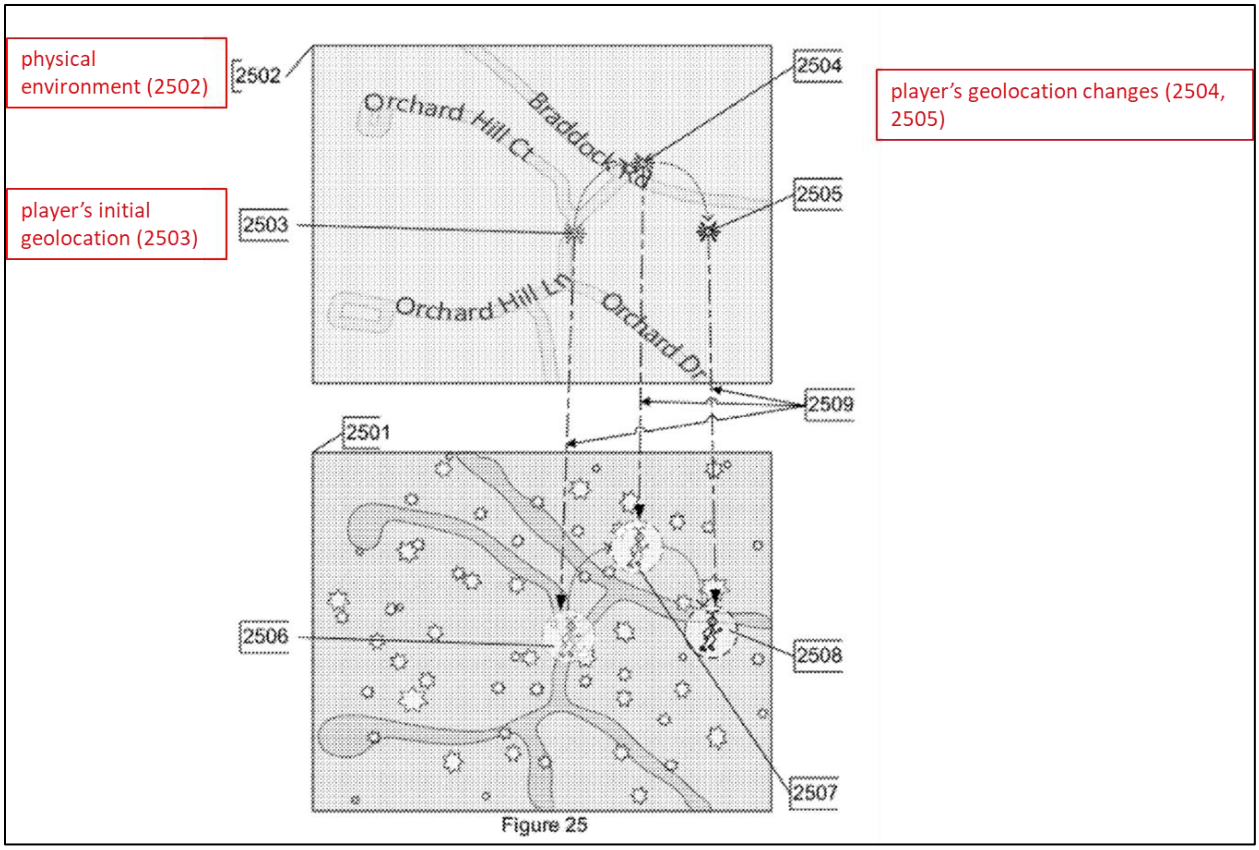


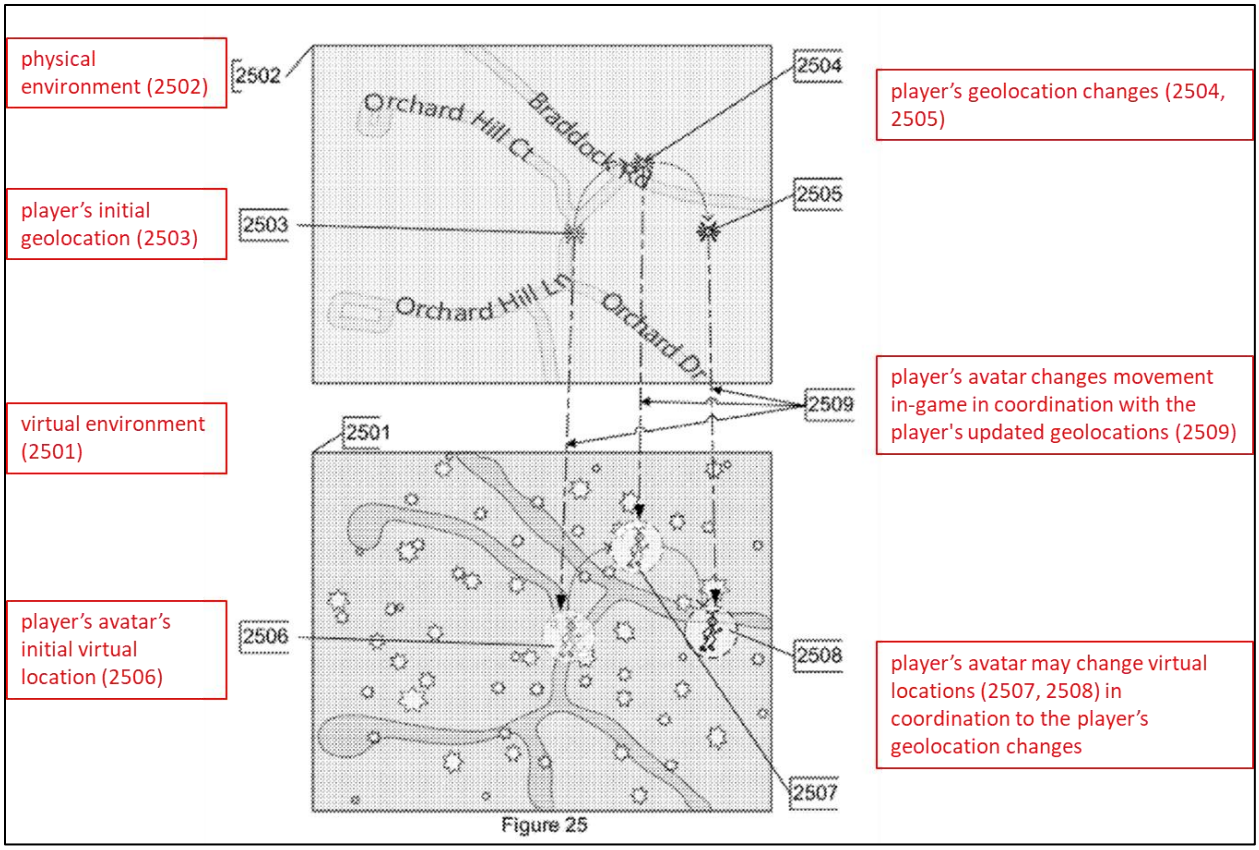
Figure 20

Kolo, Fig. 20.



Kolo, Fig. 25.

374. In my opinion, when the player moves and a new location is detected, Kolo also discloses that the player is shown moving to a *new scene in the storyline*. This is illustrated, for example, in Fig. 25, which shows how the player's movements in the physical world (from 2503 to 2504 and 2505) are coordinated with movements in the virtual world (from 2506 to 2507 and 2508) so that the player character's current surroundings are shown on the map in the virtual world. Kolo, ¶350.



Kolo, Fig. 25.

375. Thus, as the player moves, in my opinion, Kolo discloses/suggests to a POSITA that the player's *location is re-detected at intervals* (e.g., "regularly") to show the game character *moving to a new scene in the storyline* when there is a *change in the location*. Further, during this process, when the server detects that the player's location corresponds with a location at which a battle/scavenger hunt/weather/werewolf *local element script* should be retrieved/actuated, in my opinion the remaining claim limitations are performed as described regarding claim 1.

376. If the claimed step of "wherein the location is re-detected at intervals" does not limit the step of 1[b] and instead describes a new step in addition to the steps of claim 1, in my opinion Kolo discloses/suggests that a player of Kolo's MMO is free continue to move to different geolocations and participate in gameplay after the steps of claim 1 are performed. *See, e.g.*, Kolo, ¶114 ("[I]f the player is playing the game while traveling, the player's geolocation may be updated as the player's physical location changes."). In this scenario, the player's location would be *re-detected at intervals* (e.g., "regularly") as the player moves and the game character is *shown moving to a new scene in the storyline* as there are *change[s] in the location*.

10. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 9: The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.

377. In my opinion, Kolo renders claim 9 obvious.

378. In my opinion, the '827 Patent provides no insight as to the meaning of *null/unsupported* or how this claim fits in with the remaining limitations of claim 1. *See* '827 Patent, 3:59-60 (mirroring claim 9 language).

379. If the Board finds that this claim limits claim 1's *detecting* step (1[b]), the steps of 1[c]/1[d] require that the *real world player geographic location* detected in 1[b] be used to retrieve a corresponding *local element script* (1[c]) and *mapping information* (1[d]). Thus, because 1[c]/1[d] rely on the *real world player*

geographic location detected in 1[b], in my opinion the detected *null/unsupported* location must nevertheless contain data corresponding to the player's real world location—otherwise, it would be impossible to perform limitations 1[c]/1[d].

380. If the Board finds that this claim limits claim 1's *detecting* step (1[b]) and a *null/unsupported* location encompasses a location where the *local element script* cannot be actuated because the necessary conditions are not present (e.g., because the weather/environment conditions required for actuating the battle/weather/werewolf *local element scripts* are not present), in my opinion Kolo discloses/suggests this claim.

381. In my opinion, Kolo discloses that the *local element scripts* would simply not be actuated in these scenarios. Thus, it would have been obvious to a POSITA for the storyline to proceed according to the *default* (e.g., the *storyline* proceeds with the *local element script* not being actuated). In my opinion, a POSITA would have understood that this would have the benefit of allowing the player to continue to play the game based on the last properly-detected location rather than having the gameplay halt because the system cannot determine the current location of the player.

382. If the Board finds that this claim recites steps performed after or in addition to the other steps of claim 1 and a *null/unsupported* location encompasses a situation where the player continues to move within the game and there is an

error in detecting the player's location or the conditions at the player's location do not meet the criteria for actuating a *local element script* (e.g., such that the detected location is *null/unsupported*), in my opinion it would have been obvious for the storyline to continue according to the currently active storyline (i.e., the *default* storyline based on the most recent properly-detected location). In my opinion, a POSITA would have understood that this would have the benefit of allowing the player to continue to play the game based on the last properly-detected location rather than having the gameplay halt because the system cannot determine the current location of the player.

11. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 10: The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.

383. In my opinion, Kolo renders claim 10 obvious.

384. "The location" lacks antecedent basis since claim 1 recites multiple locations. Regardless, Kolo renders claim 10 invalid under any possible interpretation.

385. If the Board finds that a *local element* may be the player's geolocation used to retrieve the *local element script*, in my opinion a POSITA would have understood that GPS coordinates are expressed as a latitude, longitude, and height, and it would have been impractical (or impossible) for Kolo's database to retrieve a *local element script* based on the player's precise GPS coordinates. Kolo instead

discloses the concept of "geoproximity." Kolo, ¶76 ("Two geolocations are in geoproximity of each other when the minimum distance between the geolocations is less than some threshold. The threshold may be a fixed, predetermined value, or the threshold may be computed based on the geolocations and the properties of one or more objects associated with the geolocation.").

386. Further, Kolo discloses that the player's "geoproximity" may be used when retrieving the scavenger hunt/weather/werewolf *local element scripts*. Kolo, ¶333 ("When the player is within the geoproximity of a geolocation (1707), the player will complete or find an answer (1706) to the clue that the geolocation responds to.") (scavenger hunt), ¶191 ("[T]he central server may identify the specific weather conditions, and when the weather conditions match predetermined characteristics, and when a player is in geoproximity to a specific geolocation, the player's in game experience is modified.") (weather), ¶188 ("[I]n a werewolf game, players may become werewolves when the player is in geoproximity to a geolocation and during a full moon.") (werewolf).

387. In my opinion, a POSITA would have understood that geoproximity may be used for retrieving the battle *local element script* as well. Thus, in my opinion a POSITA would have understood—or at the very least found it obvious—that Kolo would be designed to query its database to determine whether there is a geolocation within the database that is within a threshold distance of the player's

GPS coordinates, and then would retrieve/load code/data based in part on that determination (*wherein if the location does not match a local element in the database, an approximate match is used*).

388. Thus, when retrieving the *local element scripts*, in my opinion a POSITA would have understood that Kolo's system is designed such that when the GPS location *does not match a local element in the database, an approximate match is used* (i.e., a location that is in geoproximity to the player's geolocation).

389. If the Board finds that a local element is weather or another news-related item (*see, e.g.,* '827 Patent, 2:5-12), Kolo renders this limitation obvious. The '827 Patent describes an example of an "approximate" match whereby the player is "based in Seneca Falls, N.Y." but the embodiment uses the "local elements of NY, N.Y." as "an approximation if there is no available local element data for Seneca falls." '827 Patent, 9:35-39. Under this interpretation, the claim would apparently be satisfied when the system identifies a news-related item that is associated with a location that is an approximate match to the player-provided geolocation (and retrieves code/data associated with that news item).

390. In my opinion, Kolo's battle/weather/werewolf *local element scripts* render obvious this claim under this interpretation. Each of these aspects of gameplay use the player-provided geolocation to identify a news-item associated with the geolocation when determining the *local element script* to retrieve. Kolo,

¶212 ("The central server has access to data sources which specify the weather at various geolocations around the world. The central server then uses this data to determine the weather at the player's present geolocation and modifies the damage dealt by the sword accordingly") (battle), ¶191 ("the central server may identify the specific weather conditions, and when the weather conditions match predetermined characteristics, and when a player is in geoproximity to a specific geolocation, the player's in game experience is modified") (weather), ¶338 ("A central server may collect environmental conditions such as weather to determine virtual environment changes to a player or items based on their geolocation (1902). The central server may collect this weather information from various weather sources such as websites or online feeds that then may be processed against the player's geolocation to determine the weather at that player's geolocation.") (weather), ¶337 ("A central server may collect environmental conditions such as an eclipse to determine virtual environment changes to a player or items based on their geolocation. The central server may collect this environmental information from various sources such as websites or online feeds that then may be processed against the player's geolocation to determine the environmental conditions at that player's geolocation") (werewolf).

391. When the player-provided location is GPS coordinates, in my opinion a POSITA would have understood that Kolo is designed to query databases for

news information (i.e., weather/environmental events) related to a geolocation that is within a threshold distance of the player's GPS coordinates (*wherein if the location does not match a local element in the database, an approximate match is used*), and then would retrieve/load code/data based in part on that determination.

392. Further, even if a player's location is not provided in precise GPS coordinates (and instead is input, e.g., as a city), in my opinion a POSITA would have found it obvious to design Kolo's system to use a *local element* associated with a location that is an approximate match to the player's location any time the associated *local element script* to be run is associated with conditions that apply to a large region (e.g., a state, time zone, or a country).

393. For example, for the werewolf *local element script*, in my opinion a POSITA would have found it obvious to use news associated with the location in the same time zone as the player's geolocation (i.e., *local element* associated with a location that is an *approximate match* to the player's location) to identify whether there is a full moon/eclipse and determine whether to retrieve/load the werewolf *local element script*. In my opinion, a POSITA would have been motivated to design the system this way so that players can play the game as intended even when the system is unable to resolve a local element to their exact location.

394. The '827 Patent also discloses that the player may have chosen to use the local elements of NY, N.Y. instead of their actual location of Seneca Falls,

N.Y. and characterizes that as an "approximation." '827 Patent, 9:35-39. Kolo likewise discloses that "the player may choose a geolocation" or "input a geolocation in a free-form manner" rather than use their actual, current geolocation. Kolo, ¶¶195-197. Therefore, Kolo discloses the same "approximation" or *approximate match* as disclosed in the Challenged Patents. In my opinion, a POSITA would have found it obvious to *use* such *an approximate match* (by allowing the player to enter their chosen geolocation) in any circumstance, which therefore includes scenarios when the player's *location does not match a local element in the database*.

12. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 11: The method of claim 1, wherein the storage memory is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.

395. In my opinion, Kolo renders Claim 11 obvious.

396. Kolo discloses/suggests *storage memory* on the mobile device and on the server. *See* 1[pre], 1[b] (§§X.B.2.a, X.B.2.c, respectively).

397. In my opinion, either the mobile device's memory or the central server's memory—or the combination of both—are the *storage memory* of claim 1. *See* 1[pre], 1[b] (§§X.B.2.a, X.B.2.c, respectively).

398. If the frame of reference for *local/remote* is the local computing device, in my opinion Kolo's mobile device's *storage memory* must be *local fixed*

or *local removable memory* because it is within the device and *fixed/removable* are the only two possibilities for physical memory in the device. Further, in my opinion Kolo's server's *storage memory* must be *remote fixed* or *remote removable memory* because it is remote from the device and *fixed/removable* are the only two possibilities for physical memory in the server. In my opinion, Kolo also discloses/suggests that the storage memory may be provided by the *combination* of the device/server *storage memory*.

399. If the frame of reference is the server, the references to *local/remote* in my discussion above are reversed. And if the frame of reference is something else, in my opinion both the mobile device and server *storage memory* are *remote.*

13. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 12: The method of claim 1, wherein the storage memory is selected from the group consisting of: a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.

400. In my opinion, Kolo renders claim 12 obvious.

401. In my opinion, Kolo discloses/suggests that the central server comprises *storage memory*. *See* 1[pre], 1[b] (§§X.B.2.a, X.B.2.c, respectively). In my opinion, Kolo's central server is an *online server* because it communicates with the local devices over a network. *See, e.g.*, Kolo, ¶300, Fig. 1.

402. In my opinion, Kolo also discloses/suggests that the mobile device includes *storage memory*. *See* 1[pre], 1[b], Claim 11 (§§X.B.2.a, X.B.2.c, X.B.12, respectively).

403. As I explained regarding claim 11 (§X.B.12), in my opinion the *storage memory* in Kolo's mobile device is *local* because it is within the device. Kolo does not specify whether it is *inbuilt*, but in my opinion a POSITA would have found it obvious for the mobile device *storage memory* to be *local inbuilt memory*. In my opinion, *inbuilt* and fixed had the same ordinary meaning to a POSITA; thus, in my opinion the only two options for physical memory in the mobile device were *inbuilt*/removable memory. *See* claim 11, (§X.B.12).

404. In my opinion, choosing between *inbuilt*/removable memory would have amounted to choosing from two predictable solutions (*inbuilt*/removable memory) with a reasonable expectation of success because a POSITA would have applied the same techniques for storing location data regardless of which type was used.

405. Thus, in my opinion, Kolo discloses suggests that the claimed *storage memory* may either be an *online server* or a *local inbuilt memory.*

14. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 13: The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.

406. In my opinion, Kolo renders claim 13 obvious.

407. The Challenged Patents disclose that a "gaming device" may be a mobile phone. '827 Patent, 8:53-6.

408. In my opinion, Kolo discloses/suggests that *the player is enabled to play the game using a* mobile device, which is a *game device*. Kolo, ¶300. Further, in my opinion Kolo discloses/suggests that *the player location is detected by* GPS circuitry (*id.*), which is *an on-board sensor on the game device*. *See* 1[pre] (§X.B.2.a), 1[b] (§X.B.2.c).

409. Accordingly, as I described regarding claim 1 (§X.B.2), in my opinion Kolo discloses that the player plays the game on a game device that is a mobile phone, which includes a GPS unit that detects the player's location (1[pre] (§X.B.2.a); 1[b] (§X.B.2.c)) (*wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device*).

15. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 14: The method of claim 13, wherein the game device is a mobile device.

410. In my opinion, Kolo renders claim 14 obvious.

411. In my opinion, Kolo discloses that the *game device* is a *mobile device*. *See* claim 13 (§X.B.14); Kolo, ¶300.

16. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 15: The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.

412. In my opinion, Kolo renders claim 15 obvious.

413. In my opinion, Kolo discloses that, when detecting the player's location, the location is retrieved from GPS circuitry, an IP address, or player provided location information (*wherein the detecting step includes retrieving player location from one…of GPS…IP address…player provided location information*). Kolo, ¶¶300, 193-198, 112; 1[b] (§X.B.2.c), claim 13 (§X.B.14).

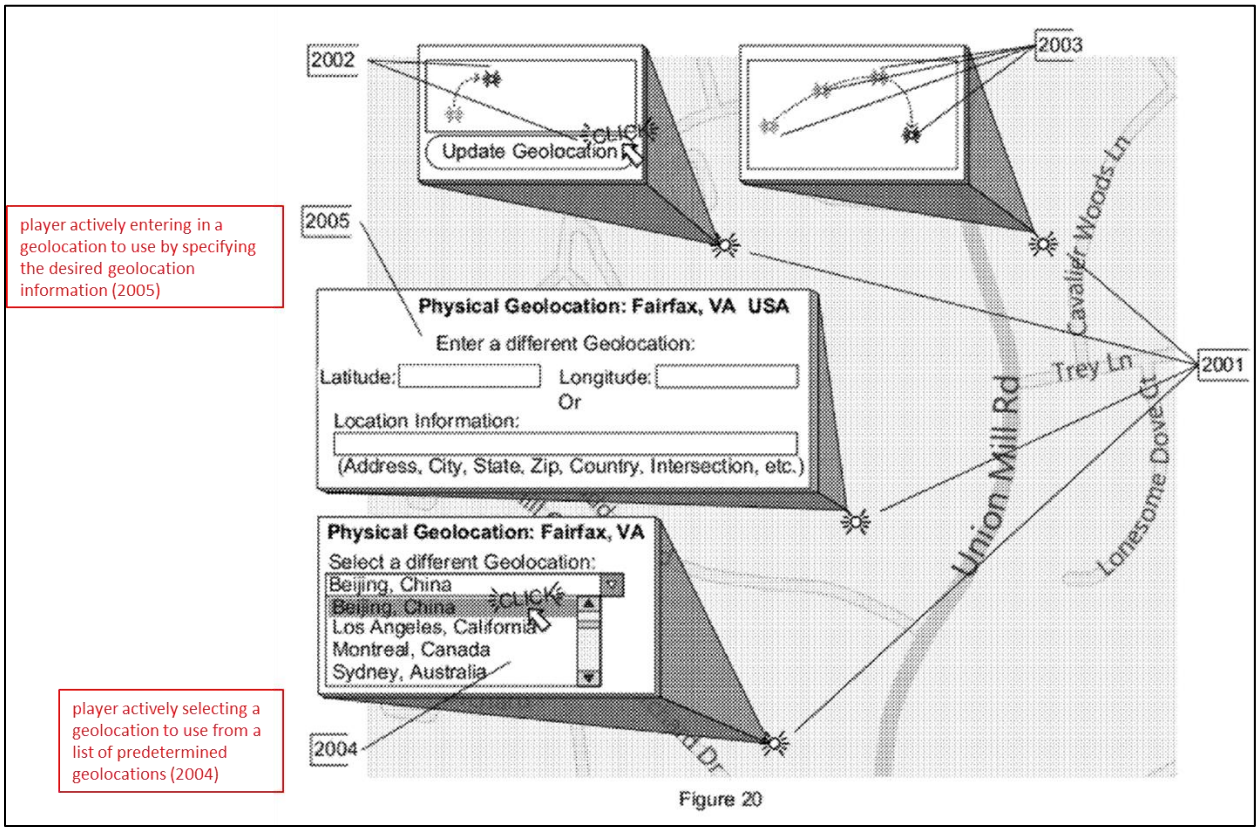
17. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 16: The method of claim 15, wherein the player provided location information is a fantasy location.

414. In my opinion, Kolo renders claim 16 obvious.

415. Because claim 1 requires detecting a *real world player geographic location*, in my opinion a POSITA would have understood that the claimed *fantasy location* must be a real location on Earth, but cannot be the player's actual real world location. Otherwise, it would not be possible to perform the claim limitations requiring the *real world player geographic location*.

416. In my opinion, Kolo discloses that a player can provide a location that is not their actual location. Kolo, ¶76 ("The Player's Geolocation is <u>not necessarily the physical location of the player</u>."), ¶¶193-198, ¶215, ¶221, ¶226, ¶344 ("The

third example shows the player actively selecting a geolocation to use from a list of predetermined geolocations (2004). In this example, the player's geolocation is selected by the player and updated to the server in order for the selected geolocation to be recorded and used for gameplay."), ¶345 ("The last example shows the player actively entering in a geolocation to use by specifying the desired geolocation information (2005). In this example, the player's geolocation is specified by the player entering the desired geolocation they would like their player to be geolocated. This specified geolocation is updated to the server to be recorded and used for gameplay.").



Kolo, Fig. 20.

417. In my opinion, Kolo discloses that a player engaging in battle gameplay may choose their location, and a POSITA would have understood that these teachings are applicable to all other aspects of gameplay, including the weather/werewolf aspects of gameplay. Kolo, ¶215 ("It should be appreciated that a geolocation mentioned in this section is not necessarily the physical geolocation of a player or the players' local device. The geolocation may be a geolocation chosen by the player and reported to the server that is a physical geolocation distinct from the physical geolocation of the player.") (describing battle).

418. Thus, In my opinion, Kolo discloses/suggests to a POSITA that the player may input a location that is not the player's actual location (*fantasy location*) and the system uses that location when performing the remaining steps of claim 1 (*the player provided location information is a fantasy location*).

18. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 17: The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.

419. In my opinion, Kolo renders claim 17 obvious.

420. As I described regarding 1[a] and 1[d] (§§X.B.2.b, X.B.2.e, respectively), Kolo discloses/suggests retrieving from the database mapping information related to the real world player geographic location of the player.

421. Accordingly, because Kolo discloses rendering a map showing the player's game character at the player's real world geographic location, in my

opinion a POSITA would have understood and found it obvious that the retrieved mapping information is a map from a map database that represents the detected real world geographic location of the player (*wherein the mapping information includes at least one map from a map database representing the detected location*).

422. In my opinion, the retrieved *mapping information includes at least one map from a map database* (Kolo's map database) that *represent[s] the detected location* because Kolo that the rendered maps show the player and the player's surroundings. Kolo, Fig. 27 (battle), Fig. 17 (scavenger hunt), Fig. 19 (weather), Fig. 18 (werewolf). Thus, in my opinion a POSITA would have understood that the retrieved *mapping information includes [a] map from a map database* and the map corresponds to the player's real world geographic location and the surrounding area (i.e., *representing the detected location*).

19. '827 Patent, Ground 1A, Kolo: Claim 18: The method of claim 1, wherein the location is detected at login.

423. In my opinion, Kolo renders claim 18 obvious.

424. Scavenger Hunt. Kolo discloses that the game may be implemented such that the players login just before they collect items/clues at a geolocation. Kolo, ¶183 ("Furthermore, players in the scavenger hunt game may work together as a team whereby a player moves to a geolocation, logs into the game, the team is marked as collecting an item, then logs out, allowing another player to log in at a different geolocation and allowing the team to collect another item.").

425. Thus, in this implementation, when a player logs in at a geolocation and there is only one clue/answer remaining to win the game, in my opinion the player's geolocation *is detected at login*, and the remaining steps of claim 1 are performed.

426. Otherwise, in my opinion it would have been obvious in the battle/scavenger hunt/weather/werewolf aspects of gameplay to detect the player's location at *login* because a POSITA would have understood that a player would, in many instances, be logging into the game (e.g., to the particular player's account on a gaming server) to engage in these aspects of gameplay. Kolo, ¶247.

20. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 19: The method of claim 1, wherein the location is detected during gameplay.

427. In my opinion, Kolo renders claim 19 obvious.

428. In my opinion, Kolo discloses detecting the player's location during the course of gameplay of the MMO. E.g., Kolo, ¶300; 1[b] (§X.B.2.c).

21. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 20: The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.

429. In my opinion, Kolo renders claim 20 obvious.

430. If the Board finds that a *local element* may be a location category used as part of a process for retrieving/loading a *local element script*, in my opinion Kolo discloses this limitation for the same reasons I described regarding claim 1[c]

(§X.B.2.d). In my opinion, it would have been obvious store the location categories in Kolo's database for the same reasons it would have been obvious to store the *local element scripts* in the database. *See* 1[c] (§X.B.2.d).

431. In addition, if the Board finds that a *local element* is weather or another news-related item (*see, e.g.,* '827 Patent, 2:5-12), in my opinion Kolo discloses/suggests this.

432. As I described regarding 1[c] (§X.B.2.d), in the battle/weather/werewolf aspects of gameplay, Kolo discloses using geolocation to retrieve weather/environmental information from "data sources," "websites," or "online feeds." Kolo, ¶212 (central server has "access to data sources which specify the weather at various geolocations around the world") (describing battle), ¶338 (central server has access to "various weather sources such as websites or online feeds that then may be processed against the player's geolocation to determine the weather at that player's geolocation") (describing weather aspect of gameplay), ¶337 (central server has access to "various sources such as websites or online feeds that then may be processed against the player's geolocation to determine the environmental conditions at that player's geolocation") (describing werewolf aspect of gameplay).

433. In other words, in my opinion Kolo discloses using the player's location to retrieve weather/environmental information (i.e., a *local element*) from

"data sources"/"websites"/"news feeds," and the weather/environmental information is used to retrieve the battle, weather, and werewolf *local element scripts* embedded in Kolo's MMO. *See* 1[c] (§X.B.2.d).

434. In my opinion, a POSITA would have found it obvious for Kolo's server's database to store these news items corresponding to the game players' locations (e.g., weather reports). Further, when the mobile device queries the server with its location as described regarding 1[b] (§X.B.2.c), in my opinion the mobile device *retrieve[s] from the database using the computing device a local element based on the real world player location* (i.e., a weather/environmental event) when determining the *local element script* to retrieve. *See* 1[c] (§X.B.2.d).

435. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

22. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 21: The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.

436. In my opinion, Kolo renders claim 21 obvious.

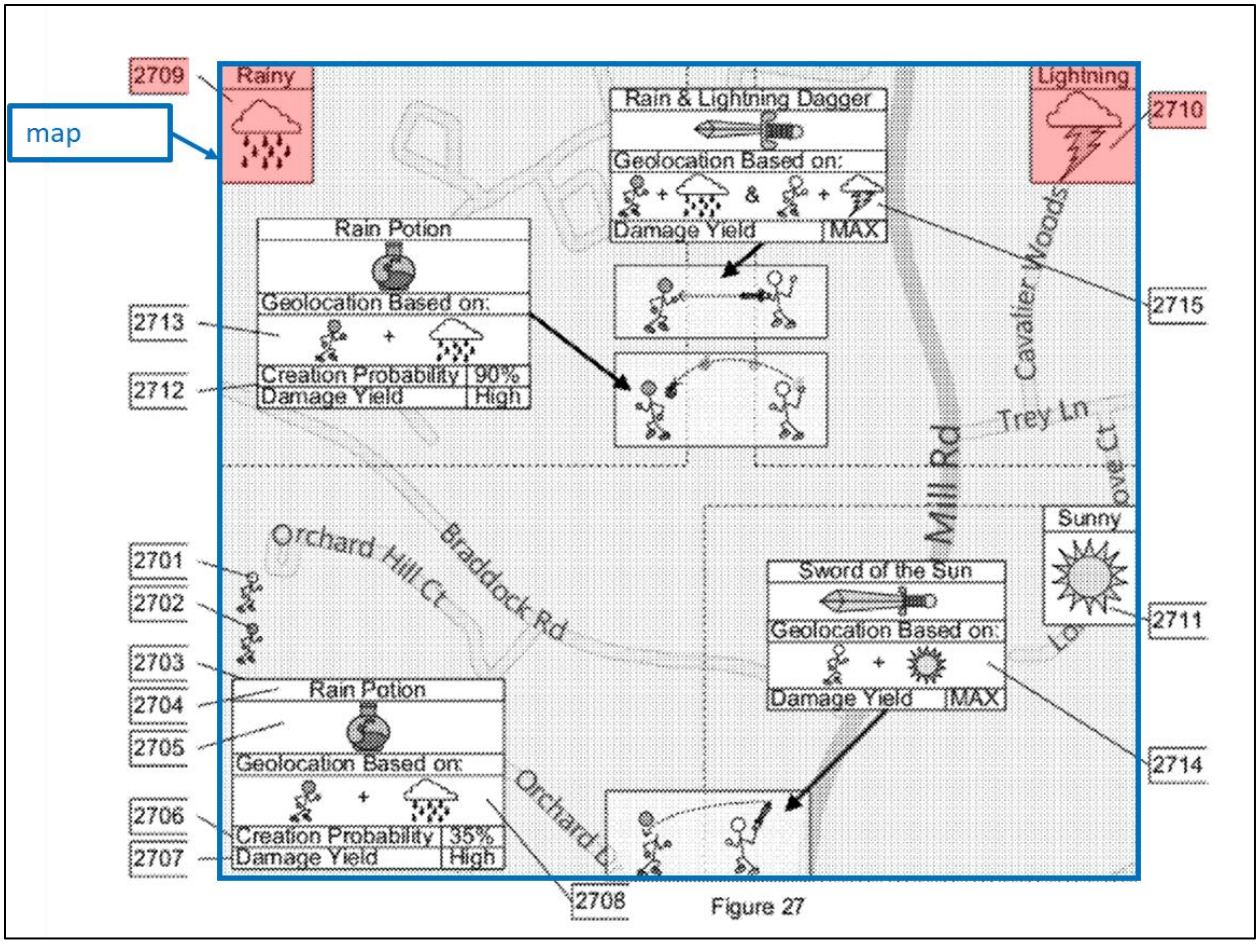
437. As I described regarding 1[c] (§X.B.2.d) and claim 20 (§X.B.21), in the battle/weather/werewolf aspects of gameplay, in my opinion Kolo discloses/suggests a *local element* that is a weather report/environmental event

report, which is a *local news item*, in order to determine that a *local element script* related to the weather/environmental event should be retrieved.

438. Also as I described regarding 1[c] (§X.B.2.d), the *local element scripts modif[y] the storyline to reflect that news item*.

439. Battle. In my opinion, the *local element script modifies the storyline to reflect that* the wielding player can use weapon to its maximum effectiveness because of the *local news item* (i.e., the weather) at the wielding player's location and at the victim player's location. Kolo, ¶¶214, 355.

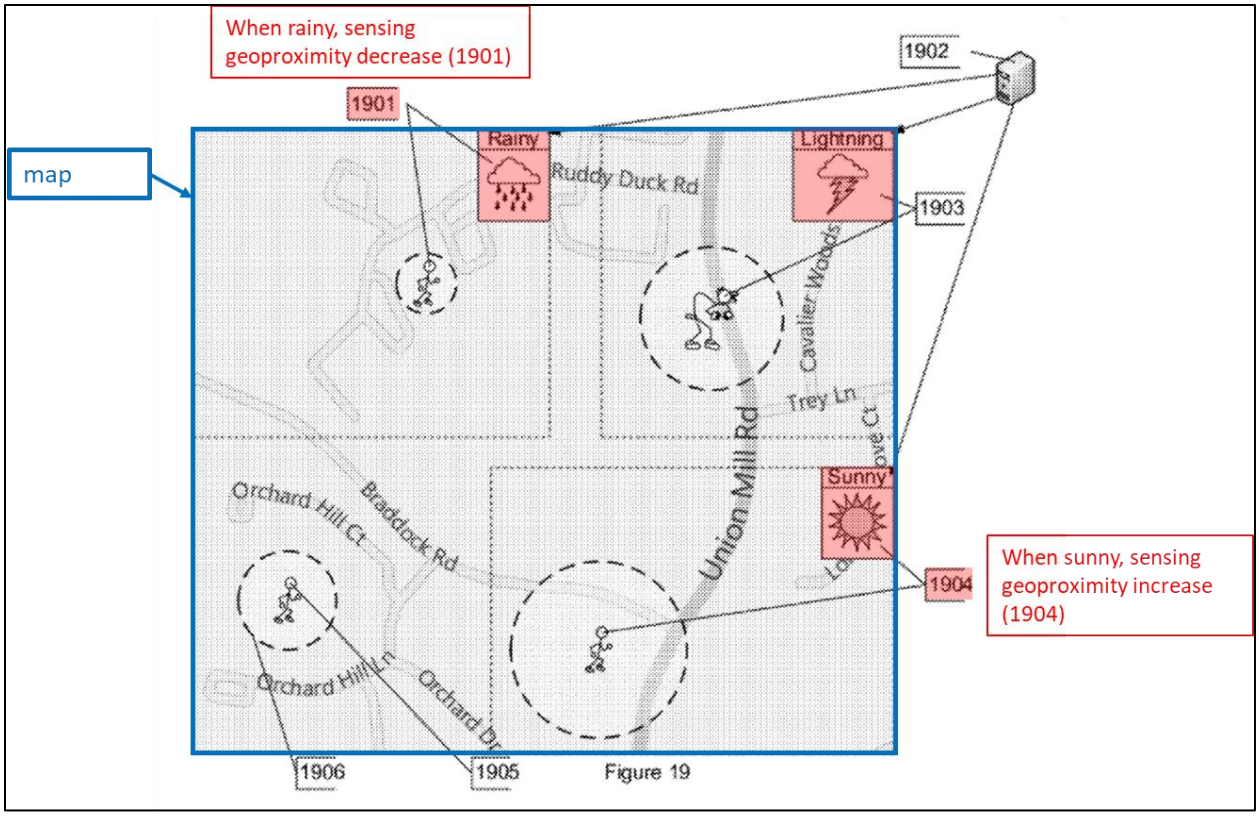
440. In my opinion, the *local element script* also *modifies the storyline* to show indicators reflecting the *local news item* (i.e., the weather) on the map.



Kolo, Fig. 27.

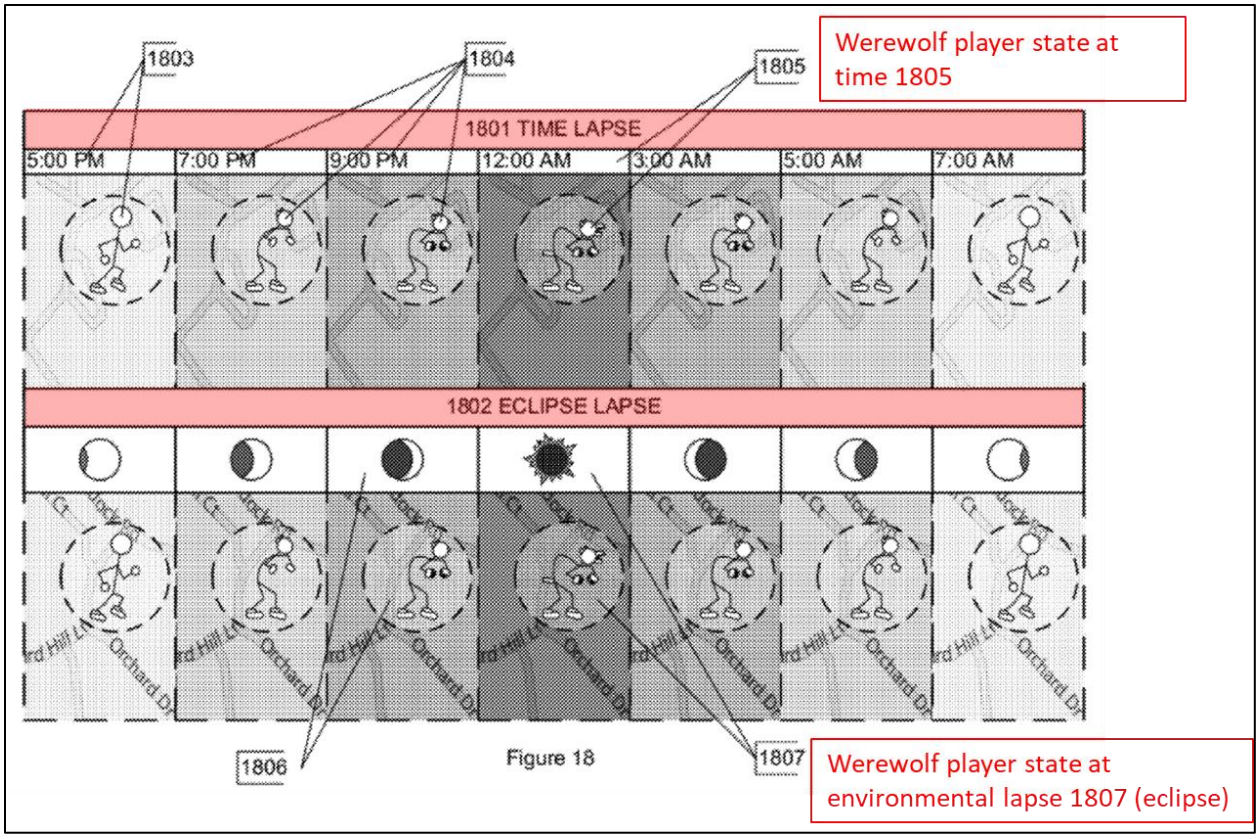
441. Weather. In my opinion, the *local element script modifies the storyline to reflect that* the current weather at the player's location is, e.g., lightning (*local news item*), which is shown on the map.

442. Further, in my opinion the *local element script modifies the storyline to reflect that* the player now has enhanced/decremented sensing abilities in the game or has turned into a monster because of the *local news item* (i.e., the weather). Kolo, ¶340.



Kolo, Fig. 19.

443. Werewolf. In my opinion, the *local element script modifies the storyline to reflect* the environmental event *local news item* (i.e., full moon or eclipse) because the player transitions to a werewolf as a result of the event. Kolo, ¶¶188, 268, 334-337.



Kolo, Fig. 18.

444. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

23. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 24: The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.

445. In my opinion, Kolo renders claim 24 obvious.

446. As I described regarding claims 20 and 21, in my opinion the battle and weather aspects of gameplay disclose/suggest that the *local element* is a

weather…indicator relevant to the location (i.e., a weather report) and the *local element script modifies the storyline to reflect that indicator*. *See* §§X.B.21, X.B.22, respectively.

447. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

24. <u>'827 Patent, Ground 1A, Kolo</u>: Claim 26: The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.

448. In my opinion, Kolo renders claim 26 obvious.

449. "The virtual character" lacks antecedent basis since claim 1 recites multiple virtual characters. Further, the claim does not specify whether "a location" is the same as any of the "real world player geographic locations" recited in claim 1 or is a new location. Regardless, Kolo renders claim 26 invalid under any possible interpretation.

450. In my opinion, Kolo's battle/weather/werewolf aspects of gameplay disclose that the *local element* is weather/a full moon/an eclipse, that this *local element* is retrieved from a database, and that this *local element* is then used to retrieve code/data that performs the relevant limitations of claim 1 and further updates the storyline to reflect the weather/full moon/eclipse.

451. As I described regarding claim 20, in my opinion the battle/weather/werewolf aspects of gameplay disclose/suggest a *local element* that is a weather/environmental event report that is used to determine that a *local element script* related to the report should be retrieved. *See* §X.B.21.

452. In my opinion, the *local element script* also updates the storyline to reflect the weather/environmental event report. *See* Claim 21 (§X.B.22).

453. Battle. In my opinion, a POSITA would have understood that a combat encounter in a game reflects an overall mood or tension that is more stressful and aggression-filled than a peaceful non-combat scenario. Additionally, when a virtual character's health is brought to zero by an enemy attack, that virtual character's aggression is also modified because they have died and cannot continue being aggressive, therefore health is a *character statistic[] representing mood or aggression in the virtual character*.

454. Weather. In my opinion, a POSITA would have understood that such weather (i.e., lightning and associated rain) was a commonly-used video game technique for changing the mood or tension at a player's location depicted in the virtual world (*local element is used to determine [the] overall mood or tension of a location*). Similarly, in my opinion a POSITA would have understood that introducing a monster into the game (Kolo, ¶340) determines the mood or tension at the location because the monster is more aggressive/menacing (*local element is*

used to determine [the] overall mood or tension of a location), and in my opinion it would have been obvious for such a monster to have modified statistics relating to the character's aggression, e.g., by modifying the charisma attribute or another attribute (*modifies character statistics representing mood or aggression in the virtual character*). Kolo, ¶261.

455. Werewolf. In my opinion, a POSITA would have understood that introducing a werewolf (which is a monster) into the game determines the mood or tension at the location because the werewolf is more aggressive/menacing (*local element is used to determine [the] overall mood or tension of a location*), and in my opinion it would have been obvious for such a werewolf to have modified statistics relating to the character's aggression, e.g., by modifying the charisma attribute or another attribute (*modifies character statistics representing mood or aggression in the virtual character*). Kolo, ¶261.

456. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

25. '827 Patent, Ground 1A, Kolo: Claim 27: The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.

457. In my opinion, Kolo renders claim 27 obvious.

458. As I have discussed, in the weather and werewolf aspects of gameplay, in my opinion Kolo discloses retrieving code/data based on a news item that introduces a monster. Further, in the battle aspect, Kolo discloses retrieving code/data based on a news item that modifies enemies.

459. As I described regarding claim 20, in my opinion Kolo discloses/suggests to a POSITA in the weather/werewolf aspects of gameplay that the *local element script…introduces a game monster* that is a monster/werewolf. *See* §X.B.21. Further, to the extent this claim requires multiple *game monsters*, in my opinion Kolo discloses/suggests that another player may subsequently enter the same area, and in my opinion the same *local element scripts* would introduce multiple *game monsters*. As I further described regarding 1[e] and claim 20, in the battle aspect, Kolo discloses/suggests to a POSITA that the *local element script…modifies…enemies*. For example, creating a rain potion and using a weapon to its maximum effectiveness modifies enemies by reducing their health/hit points.

460. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

C. ’827 Patent, Ground 1B: Kolo + Zyda

1. ’827 Patent, Ground 1B, Kolo + Zyda: Motivation to Combine Kolo + Zyda

461. As I discussed in §IX.B, Zyda discloses using news to modify a virtual world and that “real world news may be of any type.” Zyda, ¶53. In my opinion, a POSITA would have been motivated to apply Zyda’s teachings regarding incorporating news of “any type” into Kolo’s game to make Kolo’s MMO feel more immersive/interactive.

462. Doing so would have merely expanded on the teachings already in Kolo, such as receiving current weather information from a weather source such as websites or online feeds, Kolo, ¶¶191, 338, to incorporate retrieving other current information (news) from a specific type of information source (e.g., a news feed). Thus, in my opinion, a POSITA would have been motivated to make this combination because it would have merely required applying Zyda’s known technique, ready for improvement, of extracting news items from a news feed to Kolo’s known method of retrieving a *local element script* based on, e.g., weather, to yield the predictable result of a *local element script* that accounts for, e.g., news events at a location. In my opinion, this would have predictably resulted in increased interaction between players and the broader physical world because more current events would have been introduced into Kolo’s MMO.

463. A POSITA would have further had a reasonable expectation of success in making this modification because it merely applies the known technique, used by Kolo, of pulling data from an online source (e.g., a weather source), to a different online source (e.g., local news).

2. <u>'827 Patent, Ground 1B, Kolo + Zyda</u>: Claim 22: The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.

464. In my opinion, the Kolo-Zyda combination renders claim 22 obvious.

465. Zyda discloses that "real world news may be of any type." Zyda, ¶53. Thus, in my opinion a POSITA would have found it obvious that the news item (i.e., the *local element*) may refer to a crowd of people such as when there is an event at a public park. Zyda further discloses modifying non-player characters (NPCs) based on real world occurrences. *Id.*, ¶¶9, 40.

466. In my opinion, Kolo contemplates that a player may engage in gameplay at real-world locations that would likely be occupied by other people not playing the game. *See, e.g.*, Kolo, Fig. 17 (disclosing that one of the geolocations in the scavenger hunt game may be a hospital), ¶73 ("[A] player may receive additional health benefits when the player is geolocated near a hospital or health food store. Alternatively, a player may receive a strength bonus when located near a gym."), ¶74 ("[A] player playing a game from a coffee shop may receive a health benefit or even a coupon to the coffee shop."), ¶131 ("[A] player's avatar may

receive an increase in health when the player's geolocation is within a predetermined geoproximity of a hospital."), ¶175 ("a player may walk into a coffee shop and as the player is geolocated in that coffee shop, the player's avatar may have the coffee shop's logo on their armor in the virtual environment"), ¶176, ¶178 ("if the player is geolocated in a coffee shop and the player's avatar defeats a specific monster, the player may receive a free coffee from that coffee shop for successfully defeating the monster in the virtual environment"), ¶239 and ¶245 (disclosing that the player may be located in a physical shopping center).

467. Thus, in my opinion, the Kolo-Zyda combination renders obvious accounting for other types of news items when retrieving a *local element script*, particularly when a player is geolocated at a public area that may have news items associated with it (e.g., a shopping center, hospital, gym or other location likely to have a crowd).

468. In the Kolo-Zyda combination, in my opinion it would have been obvious to modify the battle/weather/werewolf aspects of gameplay—which already contemplate accounting for news items—such that Kolo's server's database stores news items corresponding to the players' locations (e.g., news items regarding events at a shopping center, hospital or a gym).

469. Further, when the mobile device queries the server to retrieve a *local element script* as I described regarding 1[b] and 1[c] and the player is at a location

with a news item associated with it, it would have been obvious to *retrieve from the database using the computing device a local element based on the real world player location* (i.e., a news item that refers to an event with a crowd at a shopping center, hospital or gym) to then determine that the *local element script* should not only perform the operations described regarding claim 1, but also *introduce[] a crowd of non-player characters into the storyline* to reflect the player's real-word surroundings (the *local element script* therefore *modifies the storyline to reflect that news item*).

470. In my opinion, a POSITA would have been motivated to do so to make the game reflect the player's real-word surroundings and feel more immersive/interactive.

471. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

3. <u>'827 Patent, Ground 1B, Kolo + Zyda</u>: Claim 23: The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items.

472. In my opinion, the Kolo-Zyda combination renders claim 23 obvious.

473. Zyda discloses "extract[ing] key words from [a news report]," e.g., rain at a "particular location" (*wherein the local element comprises a keyword extracted from a news stream of local news items*). E.g., Zyda, ¶37.

474. In my opinion, in the Kolo-Zyda combination the extracted keyword (e.g., lightning, full moon, eclipse, rainy) is then used as a *local element* when retrieving the battle/weather/werewolf *local element scripts* as described regarding claims 20 and 21(§§X.B.21, X.B.22).

475. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

4. <u>'827 Patent, Ground 1B, Kolo + Zyda</u>: Claim 25: The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.

476. The Kolo-Zyda combination renders claim 25 obvious.

477. Zyda discloses that real-world news of any type may be used to modify a video game/characters. Zyda, ¶53. Zyda further discloses modifying non-player characters (NPCs) based on real world occurrences. *Id.*, ¶¶9, 40.

478. Thus, in my opinion a POSITA would have found it obvious that the news item (i.e., the *local element*) may refer to a local celebrity or news figure such as when the figure is appearing at an event at a location that Kolo contemplates that its players may be located, e.g., at a shopping center or gym.

479. In the Kolo-Zyda combination, in my opinion it would have been obvious to modify the battle/weather/werewolf aspects of gameplay—which

already contemplate accounting for news items—such that Kolo's server's database stores news items corresponding to the players' locations (e.g., news items regarding local celebrities or news figures).

480. Further, when the mobile device queries the server to retrieve a *local element script* as I described regarding 1[b] and 1[c] and the player is at a location where the local celebrity or news figure is appearing (e.g., a shopping center or gym), in my opinion it would have been obvious to *retrieve from the database using the computing device a local element based on the real world player location* (i.e., a news item that refers to the local celebrity or news figure appearing at a shopping center or gym).

481. Further, *if the news item refers to a local celebrity or news* figure, in my opinion it would have been obvious to retrieve a *local element script* that not only performs the operations described regarding claim 1, but also introduces the local celebrity or news figure to reflect the player's real-word surroundings (the *local element script* therefore *modifies the storyline to introduce a non-player character representing that local celebrity or news figure*).

482. In my opinion, a POSITA would have been motivated to do so to make the game reflect the player's real-word surroundings and feel more immersive/interactive.

483. A POSITA would also have known that celebrities had been incorporated as NPCs in video games for many years prior to the priority date of the Challenged Patents. For example, it was common knowledge that the 1987 Nintendo Entertainment System game "Mike Tyson's Punch-Out!!" featured real-life celebrity and boxer Mike Tyson, who was then the undisputed heavyweight champion of the world, as a non-playable character opponent. By the time the Challenged Patents were filed, "Mike Tyson's Punch-Out!!" was listed as one of the greatest video games of all time. EX1047 (2007 GameSpot article).

484. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

5. <u>'827 Patent, Ground 1B, Kolo + Zyda</u>: Claim 28: The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

485. In my opinion, the Kolo-Zyda combination renders claim 28 obvious.

486. As I described regarding claims 22 and 25 (which depend from and disclose all limitations of claim 20), in my opinion the Kolo-Zyda combination discloses/suggests that the *local element* may be a public event at a shopping center or gym (claim 22) (a *local event*) and/or an event that mentions a local celebrity or news figure at those locations (claim 25) (a *local event*, a *local celebrity or news figure*, and the *combination* of the two). *See* §§X.C.2, X.C.4, respectively.

487. To the extent this claim requires that a *local element* refer to, e.g., multiple *local event, local celebrities*, or *new figures*, Zyda discloses that news items may be of any type (Zyda, ¶53), and to the extent a news item refers to multiple *local events*/*local celebrities*/*news figures*, in my opinion the same analysis described regarding claims 22/25 applies—i.e., when the *local element* instead refers to multiple *local events/local celebrities/news figures*, the Kolo-Zyda combination would use that information in the same way described regarding claims 22/25 to modify the *local element script* that is retrieved to introduce non-player characters at the player's location.

488. In addition, in my opinion a POSITA would have found it obvious for Kolo's *computing device* to perform the retrieval for the reasons I described in §X.B.1.

XI. '691 PATENT: DETAILED EXPLANATION OF GROUNDS

A. '691 Patent: Summary of Grounds

It is my opinion that the grounds below render obvious challenged claims 1-28 of the '691 Patent.

Ground		Claims	Prior Art
1A	§103	1-21, 24, 26, 27	U.S. Patent Application Publication No. 2012/0244945 ("Kolo")
1B		22, 23, 25, 28	Kolo + Zyda

B. ’691 Patent, Ground 1A: Kolo

1. ’691 Patent, Ground 1A, Kolo: Kolo (Overview)

489. I provided an overview of Kolo in §IX.A.

2. ’691 Patent, Ground 1A, Kolo: Claim 1

a. ’691 Patent, Ground 1A, Kolo: 1[pre]: A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage memory and a location sensor, the method comprising the steps of:

490. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo renders it obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[pre] (§X.B.2.a).

b. ’691 Patent, Ground 1A, Kolo: 1[a]: providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters having virtual character statistics;

491. This limitation is substantially the same as the limitation recited in the ’827 Patent, except that this limitation also recites that the *other virtual characters* have *virtual character statistics*. For the reasons I described regarding ’827 Patent, Ground 1A, 1[e] (§X.B.2.f), it is my opinion that the other characters have such *virtual statistics*.

492. Thus, Kolo renders this limitation obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[a] and 1[e] (§X.B.2.b, X.B.2.f, respectively).

c. <u>’691 Patent, Ground 1A, Kolo</u>: 1[b]: detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage memory;

493. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo renders it obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[b] (§X.B.2.c).

d. <u>’691 Patent, Ground 1A, Kolo</u>: 1[c]: retrieving from a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and

494. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo renders it obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[c] (§X.B.2.d).

e. <u>'691 Patent, Ground 1A, Kolo</u>: 1[d]: retrieving from the database mapping information related to the real world player geographic location of the player and actuating the local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the local element script when the player's real world player geographic location is represented by another player,

495. This limitation is substantially the same as the limitation in the '827 Patent, except refers to "the local element script" rather than "the corresponding local element script." Thus, Kolo renders it obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[d] (§X.B.2.e).

f. <u>'691 Patent, Ground 1A, Kolo</u>: 1[e]: wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.

496. This limitation is the same as the limitation in the '827 Patent. Thus, Kolo renders it obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[e] (§X.B.2.f).

3. ’691 Patent, Ground 1A, Kolo: Claim 2: The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and retrieving a second or further local element script, the second or further local element script being related to the second or subsequent location.

497. This claim recites a limitation that is substantially similar as the limitation recited in the ’827 Patent, except that it recites *retrieving* the *second element script* rather than *creating* it.

498. For the reasons I described regarding ’827 Patent, Ground 1A, claim 2 (§X.B.3), Kolo renders this claim obvious because a second *local element script* would be *retrieved* when the player continues to engage in gameplay.

499. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[c] and claim 2 (§§X.B.2.d, X.B.3, respectively).

4. ’691 Patent, Ground 1A, Kolo: Claim 3: The method of claim 1, wherein creation of the local element script takes account of an operating context within the game.

500. This recites a similar limitation as claim 3 in the ’827 Patent. However, where claim 3 of the ’827 Patent recites “the creation of the local element script…,” claim 3 of the ’691 Patent recites “creation of the local element script…” and thus does not suffer from the same ambiguity regarding the antecedent basis for “the creation.” In the ’827 Patent, Ground 1A, claim 2, I explain how Kolo discloses or suggests *creating a second or further local element*

script. §X.B.3. In my opinion, a POSITA would have understood that Kolo's teachings regarding creating a second *local element script*, as I discussed in '827 Patent, Ground 1A, claim 2, apply equally to creating a first *local element script* because they are not at all dependent on, e.g., the existence of a first *local element script*. Accordingly, a POSITA would have understood that Kolo discloses or suggests *creation of the local element script* as recited in claim 3 of the '691 Patent for the same reasons that Kolo discloses or suggests *creating a second or further local element script* in '827 Patent, Ground 1A. §X.B.3. And Kolo renders the remaining elements of this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 3 (§X.B.4).

5. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 4: The method of claim 1, wherein the local element script modifies <u>one or more of</u> the virtual character's appearance, facial or body expression or health.

501. This claim recites a limitation that is substantially similar to the limitation recited in claim 4 of the '827 Patent, except that this limitation recites *one or more of.*

502. For the reasons I described regarding '827 Patent, Ground 1A, claim 4, the *local element scripts modif[y] one or more* of these things.

503. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 4 (§X.B.5).

6. ’691 Patent, Ground 1A, Kolo: Claim 5: The method of claim 1, wherein the local element script modifies one or more of the virtual character’s tools, weapons, equipment or clothing.

504. This claim recites a limitation that is substantially similar to the limitation recited in claim 5 of the ’827 Patent, except that the limitation recites *one or more of.*

505. For the reasons I described regarding ’827 Patent, Ground 1A, claim 4, the *local element scripts modif[y] one or more* of these things.

506. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 5 (§X.B.6).

7. ’691 Patent, Ground 1A, Kolo: Claim 6: The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.

507. This claim recites the same limitation as claim 6 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 6 (§X.B.7).

8. ’691 Patent, Ground 1A, Kolo: Claim 7: The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.

508. This claim recites the same limitation as claim 7 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 7 (§X.B.8).

9. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 8: The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.

509. This claim recites the same limitation as claim 8 in '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 8 (§X.B.9).

10. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 9: The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.

510. This claim recites the same limitation as claim 9 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 9 (§X.B.10).

11. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 10: The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.

511. This claim recites the same limitation as claim 10 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 10 (§X.B.11).

12. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 11: The method of claim 1, wherein the storage memory is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.

512. This claim recites the same limitation as claim 11 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 11 (§X.B.12).

13. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 12: The method of claim 1, wherein the storage memory <u>is one or more of</u> a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.

513. This claim recites a limitation that is substantially similar to the limitation recited in claim 12 of the '827 Patent, except that this claim recites *is one or more of.*

514. For the reasons I described regarding '827 Patent, Ground 1A, claim 12, the *storage memory* may either be an *online server* or a *local inbuilt memory*.

515. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 12 (§X.B.13).

14. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 13: The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.

516. This claim recites the same limitation as claim 13 in '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 13 (§X.B.14).

15. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 14: The method of claim 13, wherein the game device is a mobile device.

517. This claim recites the same limitation as claim 14 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 14 (§X.B.15).

16. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 15: The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.

518. This claim recites the same limitation as claim 15 in'827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 15 (§X.B.16).

17. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 16: The method of claim 15, wherein the player provided location information is a fantasy location.

519. This claim recites the same limitation as claim 16 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 16(§X.B.17).

18. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 17: The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.

520. This claim recites the same limitation as claim 17 in '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 17 (§X.B.18).

19. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 18: The method of claim 1, wherein the location is detected at login.

521. This claim recites the same limitation as claim 18 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 18 (§X.B.19).

20. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 19: The method of claim 1, wherein the location is detected during gameplay.

522. This claim recites the same limitation as claim 19 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 19 (§X.B.20).

21. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 20: The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.

523. This claim recites the same limitation as claim 20 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 20 (§X.B.21).

22. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 21: The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.

524. This claim recites the same limitation as claim 21 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 21 (§X.B.22).

23. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 24: The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.

525. This claim recites the same limitation as claim 24 in'827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 24 (§X.B.23).

24. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 26: The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.

526. This claim recites the same limitation as claim 26 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 26 (§X.B.24).

25. <u>'691 Patent, Ground 1A, Kolo</u>: Claim 27: The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.

527. This claim recites the same limitation as claim 27 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 27 (§X.B.25).

C. '691 Patent, Ground 1B: Kolo + Zyda

1. <u>'691 Patent, Ground 1B, Kolo + Zyda</u>: Kolo (Overview)

528. I provided an overview of Kolo in '827 Patent, §IX.A.

2. <u>'691 Patent, Ground 1B, Kolo + Zyda</u>: Zyda (Overview)

529. I provided an overview of Zyda in '827 Patent, §IX.B.

3. <u>'691 Patent, Ground 1B, Kolo + Zyda</u>: Motivation to Combine Kolo + Zyda

530. I provided an overview of the motivation to combine Kolo and Zyda in '827 Patent, Ground 1B (§X.C.1).

4. <u>'691 Patent, Ground 1B, Kolo + Zyda</u>: Claim 22: The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.

531. This claim recites the same limitation as claim 22 in '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1B, claim 22 (§X.C.2).

5. ’691 Patent, Ground 1B, Kolo + Zyda: Claim 23: The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items.

532. This claim recites the same limitation as claim 23 in ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1B, claim 23 (§X.C.3).

6. ’691 Patent, Ground 1B, Kolo + Zyda: Claim 25: The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.

533. This claim recites the same limitation as claim 25 in ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1B, claim 25 (§X.C.4).

7. ’691 Patent, Ground 1B, Kolo + Zyda: Claim 28: The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

534. This claim recites the same limitation as claim 28 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1B, claim 28 (§X.C.5).

XII. ’284 PATENT: DETAILED EXPLANATION OF GROUNDS

A. ’284 Patent: Summary of Grounds

It is my opinion that the grounds below render obvious challenged claims 1-28 of the ’284 Patent.

Ground		Claims	Prior Art
1A	§103	1-20, 24, 27, 21, 22	U.S. Patent Application Publication No. 2012/0244945 ("Kolo")
1B		25, 26, 28, 23	Kolo + Zyda

B. '284 Patent, Ground 1A: Kolo

1. '284 Patent, Ground 1A, Kolo: Kolo (Overview)

535. I provided an overview of Kolo in '827 Patent, §IX.A.

2. '284 Patent, Ground 1A, Kolo: Claim 1

a. '284 Patent, Ground 1A, Kolo: 1[pre]: A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage means and a location sensor, the method comprising the steps of:

536. This limitation is substantially the same in the '827 Patent, except that this limitation recites a *storage means* instead of a *storage memory*. In my opinion, the same memory I identified for 1[pre] regarding the *storage memory* also are *storage means*.

537. Thus, Kolo renders this limitation obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[pre] (§X.B.2.a).

b. <u>'284 Patent, Ground 1A, Kolo</u>: 1[a]: providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters;

538. This limitation is the same as the limitation in the '827 Patent. Thus, Kolo renders this limitation obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[a] (§X.B.2.b).

c. <u>'284 Patent, Ground 1A, Kolo</u>: 1[b]: detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the <u>storage means</u>;

539. This limitation is substantially the same in the '827 Patent, except that this limitation recites a *storage means* instead of a *storage memory*. In my opinion, the same memory I identified for 1[b] regarding the *storage memory* also are *storage means*.

540. Thus, Kolo renders this limitation obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[b] (§X.B.2.c).

d. ’284 Patent, Ground 1A, Kolo: 1[c]: creating in a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and

541. This limitation is similar to the limitation in the ’827 Patent, except that this limitation recites *creating* a *local element script* rather than *retrieving it*. It is my opinion that Kolo discloses/suggests this limitation.

542. As I explained in the ’827 Patent claims 1[c], 2, and 3 (§§X.B.2.d, X.B.3, and X.B.4, respectively), Kolo discloses that new spells or magical items can be added to the game by players. Kolo, ¶¶227-234, 352-353, Fig. 27. For example, Kolo discloses that in the battle aspect of its gameplay, the probability of creating an item and the effect of an item in combat both depend on the player’s geolocation and environmental conditions, e.g., the presence of rain, at the geolocation. Kolo, ¶¶352-355, Fig. 27. While Kolo addresses creation and use of a rain potion separately from the use of the Rain & Lightning Dagger, *id.*, 353, 355, a POSITA would have understood that the concept of item creation exemplified by discussion of creating the rain potion applies equally to other items, e.g., the Rain & Lightning Dagger, *see id.*, 252; *see also id.,* ¶115 (“[T]hese methods may be combined together in a wide variety of ways to create different embodiments of the invention.”). In other words, Kolo discloses or suggests that both the creation and use/effectiveness of an item/weapon such as the Rain and

Lightning Dagger is based on, e.g., the weather at a player's geolocation. Kolo further discloses that the spells or items are created in conjunction with the central server, where the probability of creation success may be affected by geolocation or geoproximity. *Id.* Kolo also discloses several player actions using exactly the same terminology found in D&D (e.g., "cast a spell, perform a ritual") that additionally incorporate geolocation/geoproximity effects. *Id.,* ¶266. A POSITA would have found it obvious that such player-created items or spells, created in conjunction with a central server, could be stored in a database by that central server (or by any other computing device in Kolo's system) for ease of organization and retrieval. Since player-created items or spells satisfy the plain and ordinary meaning of "local element script," a POSITA would have found it obvious to *create* those *local element scripts in a database*.

543. Kolo renders the remaining elements of 1[c] for the same reasons as I described regarding '827 Patent, Ground 1A, 1[c] (§X.B.2.d).

e. <u>'284 Patent, Ground 1A, Kolo</u>: 1[d]: retrieving from the database mapping information related to the real world player geographic location of the player and actuating the corresponding local element script in the video game while the player is interacting with the video game and the player's real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player,

544. This limitation is the same as the limitation in the '827 Patent. Thus, Kolo renders this limitation obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[d] (§X.B.2.e).

f. <u>'284 Patent, Ground 1A, Kolo</u>: 1[e]: wherein actuating the local element script comprises modifying the virtual character statistic of the player's virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.

545. This limitation is the same as the limitation in the '827 Patent. Thus, Kolo renders this limitation obvious for the same reasons I described regarding '827 Patent, Ground 1A, 1[e] (§X.B.2.f).

3. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 2: The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location.

546. This claim recites the same limitation as claim 2 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 2 (§X.B.3).

4. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 3: The method of claim 1, wherein the creation of the local element script takes account of an operating context within the game.

547. This claim recites the same limitation as claim 3 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 3 (§X.B.4).

5. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 4: The method of claim 1, wherein the local element script modifies the virtual character's appearance, facial or body expression or health.

548. This claim recites the same limitation as claim 4 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 4 (§X.B.5).

6. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 5: The method of claim 1, wherein the local element script modifies the tools, weapons, equipment or clothing of the virtual character.

549. This claim recites the same limitation as claim 5 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 5 (§X.B.6).

7. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 6: The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.

550. This claim recites the same limitation as claim 6 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 6 (§X.B.7).

8. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 7: The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.

551. This claim recites the same limitation as claim 7 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 7 (§X.B.8).

9. ’284 Patent, Ground 1A, Kolo: Claim 8: The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.

552. This claim recites the same limitation as claim 8 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 8 (§X.B.9).

10. ’284 Patent, Ground 1A, Kolo: Claim 9: The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.

553. This claim recites the same limitation as claim 9 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 9 (§X.B.10).

11. ’284 Patent, Ground 1A, Kolo: Claim 10: The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.

554. This claim recites the same limitation as claim 10 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 10 (§X.B.11).

12. ’284 Patent, Ground 1A, Kolo: Claim 11: The method of claim 1, wherein the storage means is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.

555. This claim recites a limitation that is substantially the same as the limitation recited in claim 11 of the ’827 Patent, except that this claim recites a

storage means instead of a *storage memory*. In my opinion, the same memory I identified for claim 11 regarding the *storage memory* also are *storage means.* Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 11 (§X.B.12).

13. '284 Patent, Ground 1A, Kolo: Claim 12: The method of claim 1, wherein the storage means is selected from the group consisting of: a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.

556. This claim is substantially the same in the '827 Patent, except that this claim recites a *storage means* instead of a *storage memory*. In my opinion, the same memory I identified for claim 12 regarding the *storage memory* also are *storage means.* Thus, Kolo renders the claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 12 (§X.B.13).

14. '284 Patent, Ground 1A, Kolo: Claim 13: The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.

557. This claim recites the same limitation as claim 13 in the '827 Patent. Thus, Kolo renders it obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 13 (§X.B.14).

15. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 14: The method of claim 13, wherein the game device is a mobile device.

558. This claim recites the same limitation as claim 14 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 14 (§X.B.15).

16. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 15: The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.

559. This claim recites the same limitation as claim 15 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 15 (§X.B.16).

17. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 16: The method of claim 15, wherein the player provided location information is a fantasy location.

560. This claim recites the same limitation as claim 16 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 16 (§X.B.17).

18. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 17: The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.

561. This claim recites the same limitation as claim 17 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 17 (§X.B.18).

19. ’284 Patent, Ground 1A, Kolo: Claim 18: The method of claim 1, wherein the location is detected at login.

562. This claim recites the same limitation as claim 18 in the ’827 Patent. Thus, Kolo renders this obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 18 (§X.B.19).

20. ’284 Patent, Ground 1A, Kolo: Claim 19: The method of claim 1, wherein the location is detected during gameplay.

563. This claim recites the same limitation as claim 19 in the ’827 Patent. Thus, Kolo renders this obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 19 (§X.B.20).

21. ’284 Patent, Ground 1A, Kolo: Claim 20: The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.

564. This claim recites the same limitation as claim 20 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 20 (§X.B.21).

22. ’284 Patent, Ground 1A, Kolo: Claim 24 (corresponds to claim 21 in other 3 patents): The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.

565. This claim recites the same limitation as claim 21 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 21 (§X.B.22).

23. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 27 (corresponds to claim 24 in other 3 patents): The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.

566. This claim recites the same limitation as claim 24 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 24 (§X.B.23).

24. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 21 (corresponds to claim 26 in other 3 patents): The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.

567. This claim recites the same limitation as claim 26 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 26 (§X.B.24).

25. <u>'284 Patent, Ground 1A, Kolo</u>: Claim 22 corresponds to claim 27 in other 3 patents): The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.

568. This claim recites the same limitation as claim 27 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 27 (§X.B.25).

C. ’284 Patent, Ground 1B, Kolo + Zyda

1. ’284 Patent, Ground 1B, Kolo + Zyda: Kolo (Overview)

569. I provided an overview of Kolo in ’827 Patent, §IX.A.

2. ’284 Patent, Ground 1B, Kolo + Zyda: Zyda (Overview)

570. I provided an overview of Zyda in ’827 Patent, §IX.B.

3. ’284 Patent, Ground 1B, Kolo + Zyda: Motivation to Combine Kolo + Zyda

571. I provided an overview of the motivation to combine Kolo and Zyda in ’827 Patent, Ground 1B (§X.C.1).

4. ’284 Patent, Ground 1B, Kolo + Zyda: Claim 25 corresponds to claim 22 in other 3 patents): The method of claim 24, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.

572. This claim recites the same limitation as claim 22 in the ’827 Patent. Thus, Kolo-Zyda renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 22 (§X.C.2).

5. ’284 Patent, Ground 1B, Kolo + Zyda: Claim 26 (corresponds to claim 23 in other 3 patents): The method of claim 24, wherein the local element comprises a keyword extracted from a news stream of local news items.

573. This claim recites the same limitation as claim 23 in the ’827 Patent. Thus, Kolo-Zyda renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 23 (§X.C.3).

6. ’284 Patent, Ground 1B, Kolo + Zyda: Claim 28 corresponds to claim 25 in other 3 patents): The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.

574. This claim recites the same limitation as claim 25 in the ’827 Patent. Thus, Kolo-Zyda renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 25 (§X.C.4).

7. ’284 Patent, Ground 1B, Kolo + Zyda: Claim 23 corresponds to claim 28 in other 3 patents): The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

575. This claim recites the same limitation as claim 28 in the ’827 Patent Thus, Kolo-Zyda render this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 28 (§X.C.5).

XIII. ’797 PATENT: DETAILED EXPLANATION OF GROUNDS

A. ’797 Patent: Summary of Grounds

It is my opinion that the grounds below render obvious challenged claims 1-28 of the ’797 Patent.

Ground		Claims	Prior Art
1A	§103	1-21, 24, 26, 27	U.S. Patent Application Publication No. 2012/0244945 (“Kolo”)
1B		22, 23, 25, 28	Kolo + Zyda

B. ’797 Patent, Ground 1A: Kolo

1. ’797 Patent, Ground 1A, Kolo: Kolo (Overview)

576. I provided an overview of Kolo in ’827 Patent, §IX.A.

2. ’797 Patent, Ground 1A, Kolo: Claim 1

a. ’797 Patent, Ground 1A, Kolo: 1[pre]: A computer-implemented method of enabling virtual gameplay on a computing device in communication with a storage memory and a location sensor, the method comprising the steps of:

577. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo renders this limitation obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[pre] (§X.B.2.a).

b. ’797 Patent, Ground 1A, Kolo: 1[a]:providing access to a video game having a virtual character with a virtual character statistic in which a player in a real world player geographic location interacts with the video game and with other players in other real world player geographic locations playing other virtual characters;

578. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo discloses/suggests it for the same reasons I described regarding ’827 Patent, Ground 1A, 1[a] (§X.B.2.b).

c. '797 Patent, Ground 1A, Kolo: 1[b]: detecting with the location sensor the real world player geographic location of the player and storing the real world player geographic location in the storage memory;

579. This limitation is the same as the limitation in the '827 Patent. Thus, Kolo discloses/suggests it for the same reasons I described regarding '827 Patent, Ground 1A, 1[b] (§X.B.2.c).

d. '797 Patent, Ground 1A, Kolo: 1[c]: creating in a database a local element script associated with the real world player geographic location, the local element script actuatable in the video game to modify one or more of the virtual character statistic and a plot node; and

580. This limitation is similar to the limitation in the '827 Patent, except that this limitation recites *creating* a *local element script* rather than *retrieving it*. It is my opinion that Kolo discloses/suggests this limitation.

581. As I explained in the '827 Patent claims 1[c], 2, and 3 (§§X.B.2.d, X.B.3, and X.B.4), Kolo discloses that new spells or magical items can be added to the game by players. Kolo, ¶¶227-234, 352-353, Fig. 27. For example, Kolo discloses that in the battle aspect of its gameplay, the probability of creating an item and the effect of an item in combat both depend on the player's geolocation and environmental conditions, e.g., the presence of rain, at the geolocation. Kolo, ¶¶352-355, Fig. 27. While Kolo addresses creation and use of a rain potion separately from the use of the Rain & Lightning Dagger, *id.*, 353, 355, a POSITA

would have understood that the concept of item creation exemplified by discussion of creating the rain potion applies equally to other items, e.g., the Rain & Lightning Dagger, *see id.*, 252; *see also id.,* ¶115 ("[T]hese methods may be combined together in a wide variety of ways to create different embodiments of the invention."). In other words, Kolo discloses or suggests that both the creation and use/effectiveness of an item/weapon such as the Rain and Lightning Dagger is based on, e.g., the weather at a player's geolocation. Kolo further discloses that the spells or items are created in conjunction with the central server, where the probability of creation success may be affected by geolocation or geoproximity. *Id.* Kolo also discloses several player actions using exactly the same terminology found in D&D (e.g., "cast a spell, perform a ritual") that additionally incorporate geolocation/geoproximity effects. *Id.,* ¶266. A POSITA would have found it obvious that such player-created items or spells, created in conjunction with a central server, could be stored in a database by that central server (or by any other computing device in Kolo's system) for ease of organization and retrieval. Since player-created items or spells satisfy the plain and ordinary meaning of "local element script," a POSITA would have found it obvious to *create* those *local element scripts in a database*.

582. Kolo renders the remaining elements of 1[c] for the same reasons as I described regarding '827 Patent, Ground 1A, 1[c] (§X.B.2.d).

e. ’797 Patent, Ground 1A, Kolo: 1[d]: retrieving from the database mapping information related to the real world player geographic location of the player and actuating the corresponding local element script in the video game while the player is interacting with the video game and the player’s real world player geographic location is not represented by another player and not actuating the corresponding local element script when the player's real world player geographic location is represented by another player,

583. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo renders this limitation obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[d] (§X.B.2.e).

f. ’797 Patent, Ground 1A, Kolo: 1[e]: wherein actuating the local element script comprises modifying the virtual character statistic of the player’s virtual character and modifying one or more of a virtual character statistic and a plot node of at least one of the other players' virtual characters.

584. This limitation is the same as the limitation in the ’827 Patent. Thus, Kolo renders this limitation obvious for the same reasons I described regarding ’827 Patent, Ground 1A, 1[e] (§X.B.2.f).

3. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 2: The method of claim 1, further comprising detecting a second or subsequent location in the course of gameplay, and creating a second or further local element script, the second or further local element script being related to the second or subsequent location.

585. This claim recites the same limitation as claim 2 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 2 (§X.B.3).

4. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 3: The method of claim 1, wherein the creation of the local element script takes account of an operating context within the game.

586. This claim recites the same limitation as claim 3 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 3 (§X.B.4).

5. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 4: The method of claim 1, wherein the local element script modifies the virtual character's appearance, facial or body expression or health.

587. This claim recites the same limitation as claim 4 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 4 (§X.B.5).

6. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 5: The method of claim 1, wherein the local element script modifies the tools, weapons, equipment or clothing of the virtual character.

588. This claim recites the same limitation as claim 5 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 5 (§X.B.6).

7. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 6: The method of claim 1, wherein the player is able to interact with the video game according to a storyline which comprises one or a combination of plot, plot nodes, character interactions, encounters, scene, setting, aesthetics, levels, premise, or theme.

589. This claim recites the same limitation as claim 6 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 6 (§X.B.7).

8. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 7: The method of claim 6, wherein the local element script modifies the scene or setting of the storyline.

590. This claim recites the same limitation as claim 7 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 7 (§X.B.8).

9. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 8: The method of claim 1, wherein the location is re-detected at intervals, and in the event of a change in the location, a virtual character is shown moving to a new scene in the storyline.

591. This claim recites the same limitation as claim 8 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 8 (§X.B.9).

10. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 9: The method of claim 1, wherein if a null location is detected or the detected location is unsupported, a default or random storyline is provided.

592. This claim recites the same limitation as claim 9 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 9 (§X.B.10).

11. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 10: The method of claim 1, wherein if the location does not match a local element in the database, an approximate match is used.

593. This claim recites the same limitation as claim 10 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 10 (§X.B.11).

12. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 11: The method of claim 1, wherein the storage memory is provided by one or a combination of: a local fixed memory, a local removable memory, a remote fixed memory, a remote removable memory, and a virtual memory.

594. This claim recites the same limitation as claim 11 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 11 (§X.B.12).

13. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 12: The method of claim 1, wherein the storage memory is selected from the group consisting of: a local data storage of a game console, a local inbuilt memory, a user provided memory, an online server, and a shared folder on a network.

595. This claim recites the same limitation as claim 12 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 12 (§X.B.13).

14. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 13: The method of claim 1, wherein the player is enabled to play the game using a game device, and the player location is detected by an on-board sensor on the game device.

596. This claim recites the same limitation as claim 13 in the '827 Patent. Thus, Kolo renders it obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 13 (§X.B.14).

15. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 14: The method of claim 13, wherein the game device is a mobile device.

597. This claim recites the same limitation as claim 14 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 14 (§X.B.15).

16. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 15: The method of claim 1, wherein the detecting step includes retrieving player location from one or a combination of GPS, A-GPS, WiFi, IP address, account or billing address, and player provided location information.

598. This claim recites the same limitation as claim 15 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 15 (§X.B.16).

17. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 16: The method of claim 15, wherein the player provided location information is a fantasy location.

599. This claim recites the same limitation as claim 16 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 16 (§X.B.17).

18. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 17: The method of claim 1, wherein the mapping information includes at least one map from a map database representing the detected location.

600. This claim recites the same limitation as claim 17 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 17 (§X.B.18).

19. ’797 Patent, Ground 1A, Kolo: Claim 18: The method of claim 1, wherein the location is detected at login.

601. This claim recites the same limitation as claim 18 in the ’827 Patent. Thus, Kolo renders this obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 18 (§X.B.19).

20. ’797 Patent, Ground 1A, Kolo: Claim 19: The method of claim 1, wherein the location is detected during gameplay.

602. This claim recites the same limitation as claim 19 in the ’827 Patent. Thus, Kolo renders this obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 19 (§X.B.20).

21. ’797 Patent, Ground 1A, Kolo: Claim 20: The method of claim 1, further comprising retrieving from the database using the computing device a local element based on the real world player location.

603. This claim recites the same limitation as claim 20 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 20 (§X.B.21).

22. ’797 Patent, Ground 1A, Kolo: Claim 21: The method of claim 20, wherein the local element is a local news item and the local element script modifies the storyline to reflect that news item.

604. This claim recites the same limitation as claim 21 in the ’827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 21 (§X.B.22).

23. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 24: The method of claim 20, wherein the local element is a weather, social, political, economic, stock market, demographic, traffic, crime, or construction indicator relevant to the location, and the local element script modifies the storyline to reflect that indicator.

605. This claim recites the same limitation as claim 24 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 24 (§X.B.23).

24. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 26: The method of claim 20, wherein the local element is used to determine overall mood or tension of a location, and the local element script modifies character statistics representing mood or aggression in the virtual character.

606. This claim recites the same limitation as claim 26 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 26 (§X.B.24).

25. <u>'797 Patent, Ground 1A, Kolo</u>: Claim 27: The method of claim 20, wherein the local element script modifies or introduces non-player characters, game monsters, enemies, traps or puzzles corresponding to the local element.

607. This claim recites the same limitation as claim 27 in the '827 Patent. Thus, Kolo renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 27 (§X.B.25).

C. '797 Patent, Ground 1B, Kolo + Zyda

1. <u>'797 Patent, Ground 1B, Kolo + Zyda</u>: Kolo (Overview)

608. I provided an overview of Kolo in '827 Patent, §IX.A.

2. ’797 Patent, Ground 1B, Kolo + Zyda: Zyda (Overview)

609. I provided an overview of Zyda in ’827 Patent, §IX.B.

3. ’797 Patent, Ground 1B, Kolo + Zyda: Motivation to Combine Kolo + Zyda

610. I provided an overview of the motivation to combine Kolo and Zyda in ’827 Patent, §X.C.1.

4. ’797 Patent, Ground 1B, Kolo + Zyda: Claim 22: The method of claim 21, wherein, if the news item refers to a crowd of people, the local element script introduces a crowd of non-player characters into the storyline.

611. This claim recites the same limitation as claim 22 in the ’827 Patent. Thus, Kolo-Zyda renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 22 (§X.C.2).

5. ’797 Patent, Ground 1B, Kolo + Zyda: Claim 23: The method of claim 21, wherein the local element comprises a keyword extracted from a news stream of local news items.

612. This claim recites the same limitation as claim 23 in the ’827 Patent. Thus, Kolo-Zyda renders this claim obvious for the same reasons I described regarding ’827 Patent, Ground 1A, claim 23 (§X.C.3).

6. <u>'797 Patent, Ground 1B, Kolo + Zyda</u>: Claim 25: The method of claim 20, wherein the local element is a local celebrity or news figure, and the local element script modifies the storyline to introduce a non-player character representing that local celebrity or news figure.

613. This claim recites the same limitation as claim 25 in the '827 Patent. Thus, Kolo-Zyda renders this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 25 (§X.C.4).

7. <u>'797 Patent, Ground 1B, Kolo + Zyda</u>: Claim 28: The method of claim 20, wherein the local element comprises one or a combination of local events, local indicators, and local celebrities or news figures.

614. This claim recites the same limitation as claim 28 in the '827 Patent Thus, Kolo-Zyda render this claim obvious for the same reasons I described regarding '827 Patent, Ground 1A, claim 28 (§X.C.5).

XIV. CONCLUSION

I currently hold the opinions expressed in this Declaration. But my analysis may continue, and I may acquire additional information and/or attain supplemental insights that may result in added observations.

APPENDIX A – MATERIALS CONSIDERED

No.	Exhibit
1001	U.S. Patent No. 10,946,284 ("'284Pat")
1002	U.S. Patent No. 11,484,797 ("'797Pat")
1003	U.S. Patent No. 11,666,827 ("'827Pat")
1004	U.S. Patent No. 12,070,691 ("'691Pat")
1005	Complaint, *ImagineAR, Inc. and Imagine AR, Inc. v. Niantic, Inc.*, 1-24-cv-01252 (D. Del.)
1006	Declaration of Stacy Friedman ("Friedman")
1007	Curriculum Vitae of Stacy Friedman
1008	File History of U.S. Patent Application No. 14/084,113 ("'113App")
1009	File History of U.S. Patent No. 10,946,284 ("'284FH")
1010	File History of U.S. Patent No. 11,484,797 ("'797FH")
1011	File History of U.S. Patent No.11,666,827 ("'827FH")
1012	File History of U.S. Patent No. 12,070,691 ("'691FH")
1013	U.S. Patent Application Publication No. 2012/0244945 ("Kolo")
1014	U.S. Patent Application Publication No. 2011/0214071 ("Zyda")
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No.	Exhibit
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