

OKUNITED 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

U.S. Patent No. 11,666,827

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,666,827**

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EXHIBIT LIST

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, <i>ImagineAR, Inc. and Imagine AR, Inc. v. Niantic, Inc.</i> , 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”)
1015	Computer Dictionary, Microsoft Press (1st ed., 1991)
1016	Wikipedia, the free encyclopedia, Role-Playing Game, at https://web.archive.org/web/20100220021543/http://en.wikipedia.org/wiki/Role-playing_game (last visited Jun. 18, 2025)
1017	Wikipedia, the free encyclopedia, Role-playing game (pen and paper), at https://web.archive.org/web/20100111053448/http://en.wikipedia.org/wiki/Role-playing_game_(pen_and_paper) (last visited Jun. 18, 2025)
1018	Wikipedia, the free encyclopedia, Tabletop role-playing game, at https://web.archive.org/web/20111025135658/http://en.wikipedia.org/wiki/Tabletop_role-playing_game (last visited Jun. 20, 2025)

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1020	Dungeons & Dragons, Player's Handbook, Wizards of the Coast, 4th Edition (Jun. 2008)
1021	Dungeons & Dragons, Rules Compendium, Wizards of the Coast, 4th Edition (Sep. 2010)
1022	Rolemaster Arms Law & Claw Law, Iron Crown Enterprises Inc., 2nd Edition (Sep. 1989)
1023	Rolemaster Character Law, Iron Crown Enterprises, 2nd Edition (Aug. 1999)
1024	Rolemaster Standard Rules, Iron Crown Enterprises, 1st Edition (1995)
1025	Spell Law, Iron Crown Enterprises, 2nd Edition (1989)
1026	Character Law & Campaign Law, Iron Crown Enterprises, 2nd Edition (1989)
1027	Wikipedia, the free encyclopedia, Role-playing video game, at https://web.archive.org/web/20100819005654/http://en.wikipedia.org/wiki/Computer_role-playing_game (last visited Jun. 18, 2025)
1028	Wikipedia, the free encyclopedia, Massively multiplayer online role-playing game, at https://web.archive.org/web/20100716092631/http://en.wikipedia.org/wiki/Massively_multi-player_online_role-playing_game (last visited Jun. 18, 2025)
1029	Wikipedia, the free encyclopedia, Pocket Legends, at https://web.archive.org/web/20110606025458/https://en.wikipedia.org/wiki/Pocket_Legends (last visited Jun. 18, 2025)
1030	Wikipedia, the free encyclopedia, Virtual world, at https://web.archive.org/web/20110917110743/http://en.wikipedia.org/wiki/Virtual_world (last visited Jun. 18, 2025)
1031	Wikipedia, the free encyclopedia, Second Life, at https://web.archive.org/web/20110331154407/http://en.wikipedia.org/wiki/Second_Life (last visited Jun. 18, 2025)
1032	Dan Jerker B. Svantenson, <u>Geo-Location Technologies and Other Means of Placing Borders on the 'Borderless' Internet</u> , 23 J. Marshall J. Computer & Info. L. 101 (2004) ("Svantenson")
1033	"Internet Gambling Company PartyGaming PLC Enters Non-Prosecution Agreement with U.S. and will Forfeit \$105 Million," Press release, United States Attorney for the Southern District of New York, April 7, 2009

No.	Exhibit
1034	Darrel Etherington, Shadow Cities finds that mobile gaming is surprisingly stationary, Sep. 27, 2011 at https://web.archive.org/web/20110930120146/http://gigaom.com/2011/09/27/grey-area-mobilize-2011/ (last visited Jun. 18, 2025)
1035	Jim Squires, Shadow Cities Walkthrough, May 30, 2011 at https://web.archive.org/web/20110604160126/https://www.gamezebo.com/games/shadow-cities/walkthrough (last visited Jun. 18, 2025)
1036	Liz Gannes, Google Launches Ingress, a Worldwide Mobile Alternate Reality Game, November 15, 2012 at https://web.archive.org/web/20121115163246/https://allthingsd.com/20121115/google-launches-ingress-a-worldwide-mobile-alternate-reality-game/ (last visited Jun. 18, 2025)
1037	Rolemaster Fantasy Role Playing, Iron Crown Enterprises, 2nd Edition (1999)
1038	Dungeons & Dragons, Monster Manual Deluxe Edition, Wizards of the Coast, 4th Edition (Jun. 2008)
1039	Wikipedia, the free encyclopedia, Statistic (role-playing games), at https://web.archive.org/web/20100525145809/http://en.wikipedia.org:80/wiki/Statistic_%28role-playing_games%29 (last visited Jun. 4, 2025)
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1042	Wikipedia, the free encyclopedia, Experience point, at https://web.archive.org/web/20100403064932/http://en.wikipedia.org/wiki/Experience_point (last visited Jun. 4, 2025)
1043	U.S. Patent Application Publication No. 2009/0149248
1044	U.S. Patent Application Publication No. 2011/0183754 (“Alghamdi”)
1045	U.S. Patent No. 8,639,725
1046	U.S. Patent Application Publication No. 2012/0253488
1047	The Greatest Games of All Time – Punch Out – Features at GameSpot, at https://web.archive.org/web/20071007124852/http://www.gamespot.com/features/6122838/index.html (last visited Jul. 3, 2025)

No.	Exhibit
1048	Kevin F. King, <u>Geolocation and Federalism on the Internet: Cutting Internet Gambling's Gordian Knot</u> , The Columbia Science and Technology Law Review Vol. XI 2010
1049	Dungeons & Dragons, Player's Handbook 2, Wizards of the Coast, 4th Edition (Mar. 2009)

LISTING OF CHALLENGED CLAIMS

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]	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.

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

Reference	Limitation
	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 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.

Reference	Limitation
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.
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.

Reference	Limitation
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.
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.

Reference	Limitation
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.

Niantic, Inc. (“Niantic” or “Petitioner”) petitions for *inter partes* review (“IPR”) of claims 1-28 (“Challenged Claims”) of U.S. Patent No. 11,666,827 (“’827 Patent” or “’827Pat”; EX1003).

I. GROUNDS FOR STANDING

Petitioner certifies the ’827 Patent is available for IPR, and Petitioner is not barred or estopped from requesting IPR on the grounds herein. Petitioner files this Petition within one year of service of Patent Owner’s (“PO”) district court complaint. EX1005.

II. IDENTIFICATION OF CHALLENGE

A. Prior Art

Petitioner respectfully requests cancellation of the Challenged Claims over:

Prior Art	
Kolo (U.S. Patent Application Publication 2012/0244945); filed March 22, 2011; published September 27, 2012; prior art under at least 35 U.S.C. §102(a), (e) (EX1013)	
Zyda (U.S. Patent Application Publication 2011/0214071); published September 1, 2011; prior art under at least 35 U.S.C. §102(b) (EX1014)	

B. Grounds for Challenge

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

III. '827 PATENT

A. Specification/Claims

The '827Pat is related to and shares a common specification with U.S. Patents 10,946,284 ("284Pat"), 11,484,797 ("797Pat"), and 12,070,691 ("691Pat"). The specification alleges "existing virtual worlds lack the ability to take [a] player's location and its various local elements into account for meaningful impact on gameplay." '827Pat, 1:49-51. The 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." '827Pat, 2:1-3. Example "local elements" include weather 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.

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.*, 3:17-55. 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.*, 3:27-51), 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).

The detailed description describes the “embodiments” in terms of results rather than how to implement the invention. *Id.*, 4:33-16:9. The specification further relies heavily on known technologies and ideas, such as “virtual worlds” known to exist on game consoles, online servers, and mobile devices, *id.*, 5:30-39, and known methods for determining player location, *id.*, 9:15-24. Relevant to the Challenged Claims, the detailed description describes 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.” *Id.*, 14:10-35. In this embodiment, the specification discloses “check[ing] to see if the local elements of [a new player’s] 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.

The ’827Pat Challenged Claims appear to combine the specification’s disclosures regarding modifying virtual character statistics with its other disclosures regarding loading alternative/complementary plot nodes when a player is the only player at a particular location. The sole independent claim (claim 1) 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. ’827Pat, 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.*

B. Prosecution History of the ’827Pat and Parent Applications

The ’827Pat claims priority, through a series of continuation applications, to Provisional Application 61/796,715 (“’715 Provisional”) (filed November 19, 2012). For purposes of this Petition only, Petitioner assumes the ’827Pat is entitled to the November 19, 2012 priority date of the ’715 Provisional.

The ’827Pat issued, without any office actions, on 6/6/2023 from App. 17/952,026. The Examiner’s notice of allowability stated the ’827Pat claims were “allowable for substantially the same reasons as [its] parent application(s).” EX1011,

91. During prosecution of the '284Pat (a grandparent of the '827Pat), the Examiner rejected the pending claims once over U.S. 2011/0183754 ("Alghamdi") and U.S. 2012/0157197 ("Watkins") ('284FH, 64-72) and four times over Alghamdi and U.S. 2013/0079144 ("Ahmed") ('284FH, 152-157, 188-193, 247-252, 273-279). The Examiner ultimately allowed claim 1 in its current form (and dependent claims 2-28) after an Examiner's amendment added the underlined language to 1[d]: "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." '284FH, 297-298, 312-314¹. The '827Pat's element 1[d] is identical to the '284Pat's 1[d], including the underlined portion above. *Compare* '284Pat 1[d] to '827Pat 1[d].

Referring to ¶120 of the published application ('827Pat, 14:25-35), the Examiner interpreted 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." '284FH, 313-314.

¹ All emphases added unless otherwise noted.

IV. LEVEL OF ORDINARY SKILL

A person of ordinary skill in the art (“POSITA”) at the time of the ’827Pat’s alleged invention would have had at least a Bachelor’s degree in Computer Science or a similar discipline, and 2-3 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. Friedman, ¶17.

V. CLAIM CONSTRUCTION

The words of a claim are generally given their “ordinary and customary meaning” as understood by a POSITA. 37 C.F.R. §42.100(b). Petitioner has applied those meanings to the limitations in the Challenged Claims. To the extent the ’827Pat specification/prosecution history or a parent prosecution history informs certain terms’ ordinary meaning, Petitioner addresses this in the grounds below. Petitioner is unaware of any prior claim construction determination for the ’827Pat.

37 C.F.R. §42.104(b)(3) requires a petition to include, for any means-plus-function limitations, “the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” No claim terms in the Challenged Claims use the term “means,” and as such, there is a rebuttable presumption that they are not means-plus-function. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015). If the Board finds the presumption is

overcome for the term “local element script,”² Petitioner contends that the functions are as recited in the claims and the structure in the specification is identified in the table below.³ Friedman, ¶¶79-82.

Claims:	1[c], 1[d], 1[e], 2-5, 7, 21-22, 24-27
Structure:	A processor and memory in a computer, e.g., '827Pat, 4:58-5:14, 5:40-54, 14:25-35, Fig. 1, performing the recited functions.

² A means-plus-function term may be nested in a method claim. *Rain Computing v. Samsung Elecs. Am., Inc.*, 989 F.3d 1002, 1006 (Fed. Cir. 2021).

³ Because the prior art identified herein discloses the same or equivalent structure for “local element script,” “[i]ndefiniteness ‘does not necessarily preclude the Board from addressing the patentability of the claims on section 102 and 103 grounds.’” *Sony Elecs. Inc. v. Jawbone Innovations, LLC*, IPR2023-01352, Paper 7, 47 (Mar. 6, 2024) (quoting *Samsung Elecs. Am., Inc. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1353 [1355] (Fed. Cir. 2020)); *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 813 (Fed. Cir. 2021).

VI. DETAILED EXPLANATION

A. It Would Have Been Obvious to Perform Applicable Steps of the Challenged Claims Using Kolo's Local Computing Device

Several challenged claim limitations do not specify whether the claimed *computing device* or another device performs the claimed steps. Other challenged claims explicitly recite that the *computing device* performs the step (e.g., claims 20-28).

The Board need not resolve this ambiguity because Kolo discloses its invention may be implemented by local computing devices connected to an online server, an entirely “local version of the game” where “[n]o central server is required,” or a local version that updates a central server “with the resolution of the game mechanics once the local game is complete.” Kolo, ¶¶116-129. Thus, where the grounds below identify a server performing the step, POSITAs would have understood that the step could alternatively be performed by Kolo's local computing device, either without connection to a server or with occasional updates to the server. In other words, Kolo teaches 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*. Friedman, ¶¶174-176.

This is consistent with the '827Pat, which discloses “[c]omputer program code for carrying out operations of the present invention...may execute entirely on the user’s computer, partly on the user’s computer, as a stand-alone software package, partly on the user’s computer and partly on a remote computer[,], or entirely on the remote computer or server.” ’827Pat, 5:3-20.

B. Ground 1A: Kolo (Claims 1-21, 24, 26, 27)

1. Kolo

Kolo is analogous art to the '827Pat because, like the '827Pat, it relates to systems and methods for implementing an online game with multiple players (e.g. Massively Multiplayer Online games, “MMOs”) and incorporating the player’s location into the game. Friedman, ¶143.

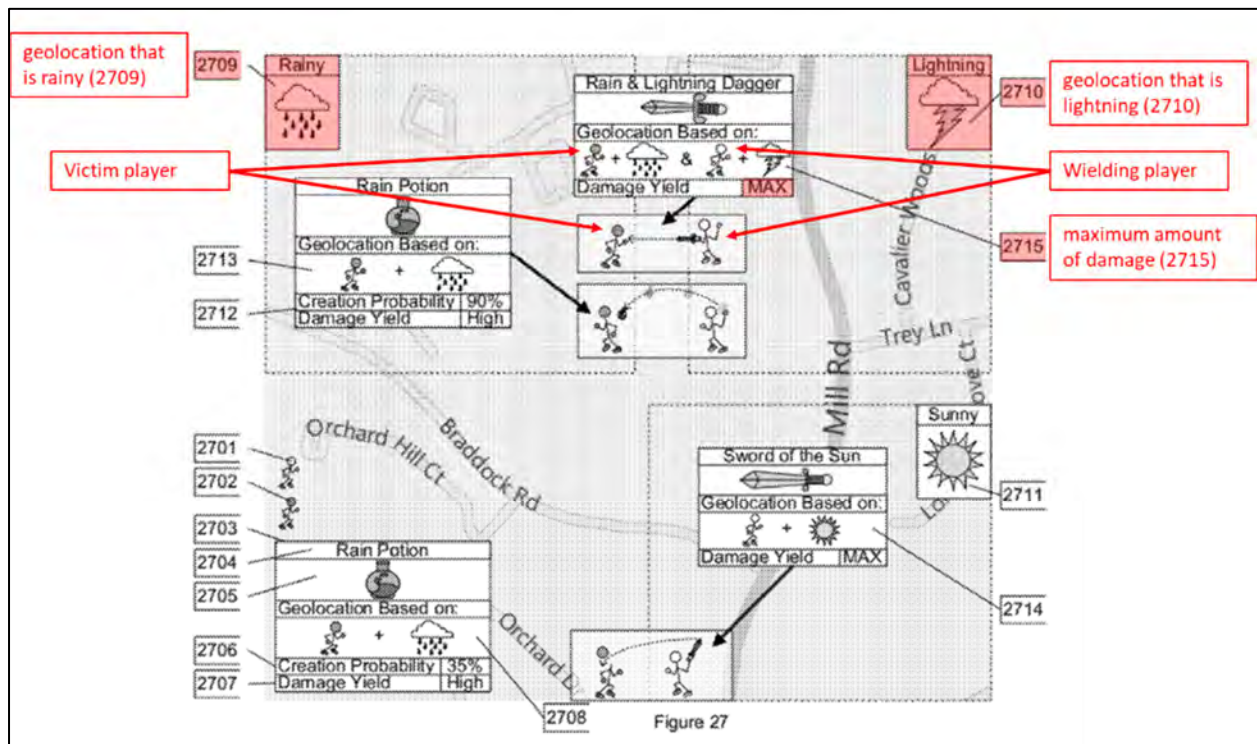
Kolo discloses “incorporating geolocation information into an online game to enhance the enjoyment of the online game.” Kolo, Abstract. In Kolo, “[t]he geolocation of a player is communicated to the online game servers which modify the gaming environment of the player based on the player’s current geolocation.” *Id.*

Kolo discloses its methods/systems “may be incorporated with any type of online game from single player turn based games to MMOs.” *Id.*, ¶110. This Petition relies on Kolo’s teachings regarding an online MMO. The majority of Kolo’s specification, including Figures 4-31, describes different aspects of the online game.

Relevant aspects of gameplay in the MMO are described in more detail below and in the following claim analysis.

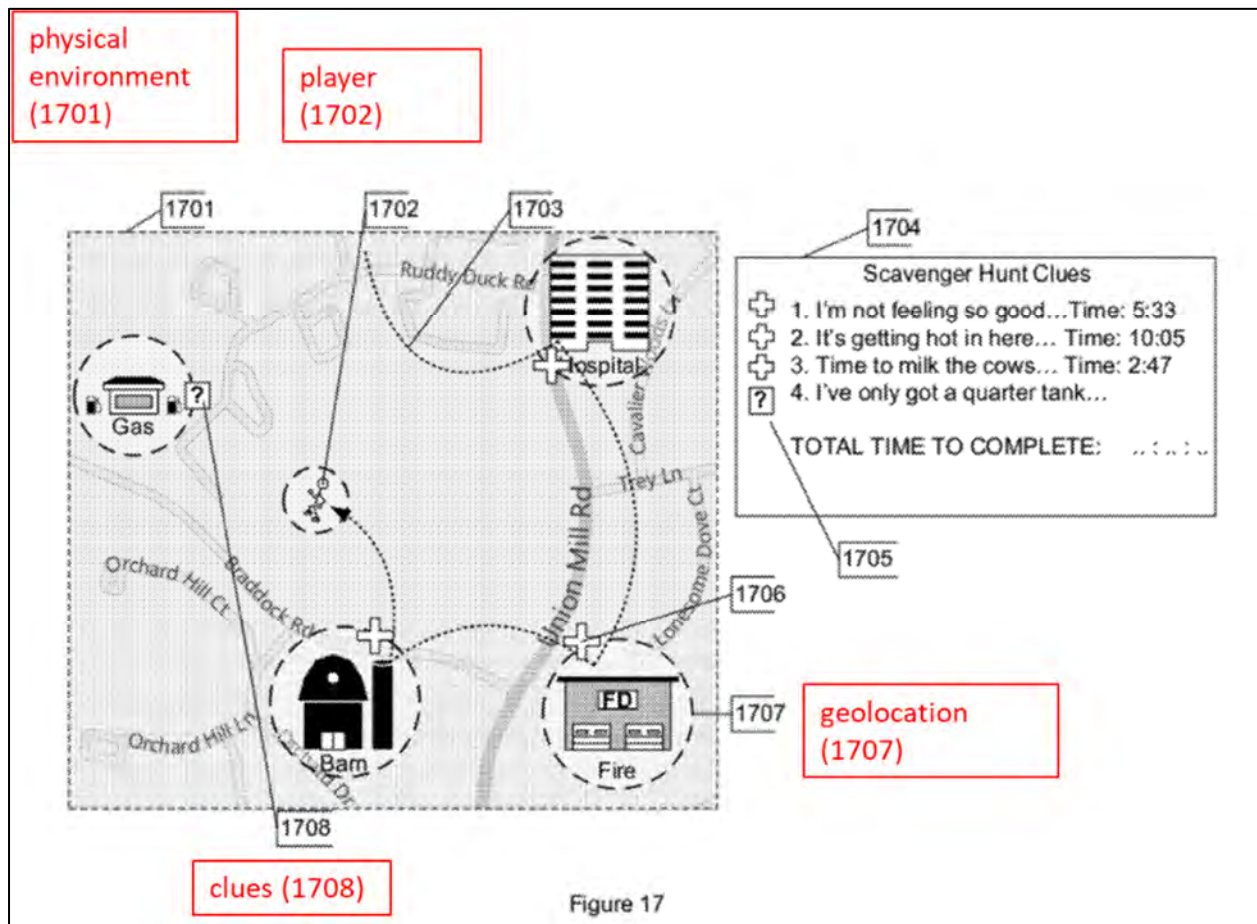
Battle. Kolo discloses an aspect of gameplay where a wielding player may only use a weapon to its maximum effectiveness when the player is at one geolocation with certain weather and the victim player is at a different geolocation with certain (different) weather. Kolo, ¶¶208-215, 352-355, Fig. 27. “For 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])⁴ in order for the dagger 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.

⁴ The original text refers to the rainy geolocation as 2710. Kolo, ¶355. A POSITA would have understood that this is a typo and the reference should be to 2709. Friedman, ¶157 n.2.



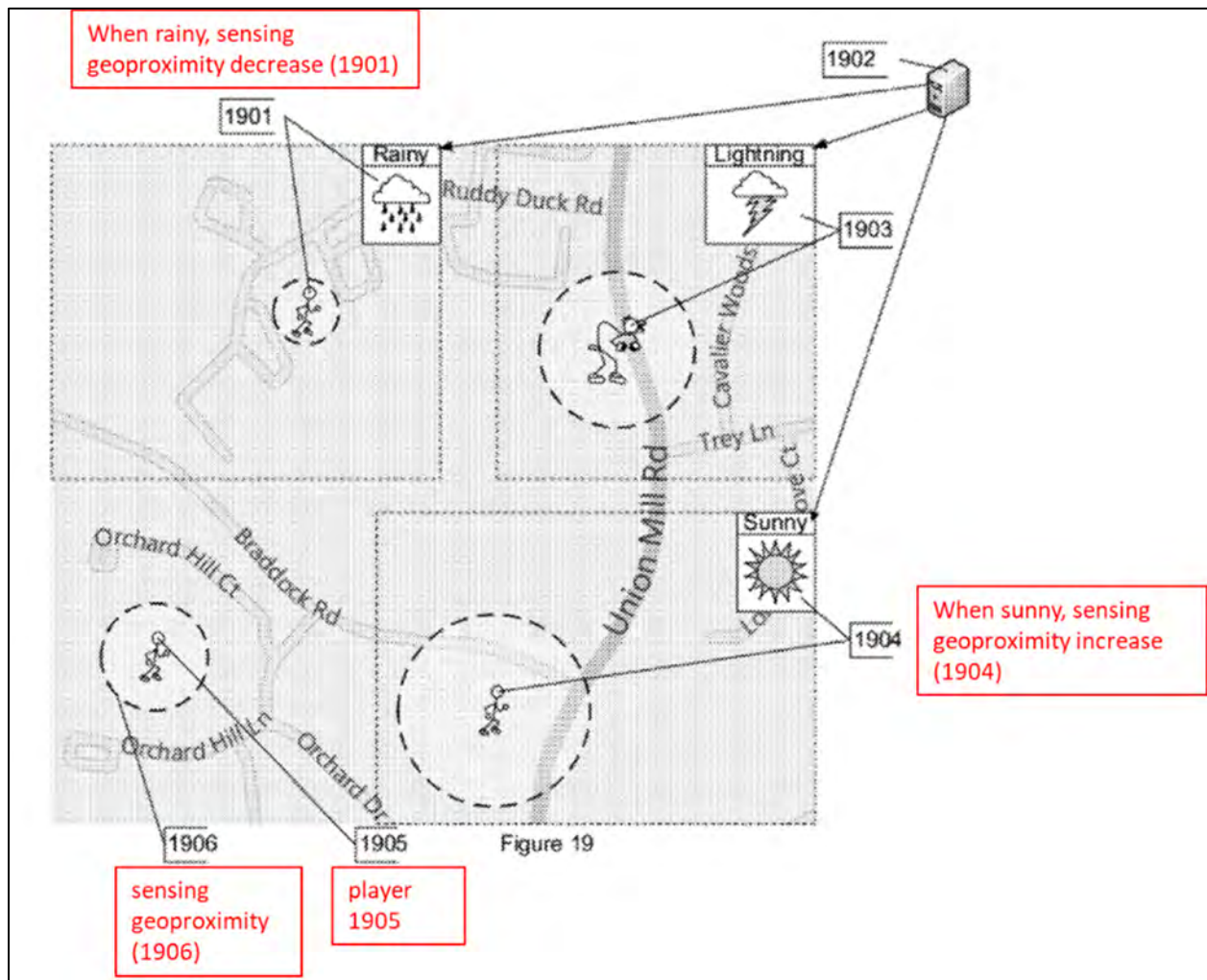
Kolo, Fig. 27 (annotated).

Scavenger Hunt. Kolo discloses an aspect of gameplay where players engage in a scavenger hunt game. Kolo, ¶¶181-84, 271-74, 333, Fig. 17. “[P]layers 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.” *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 (annotated).

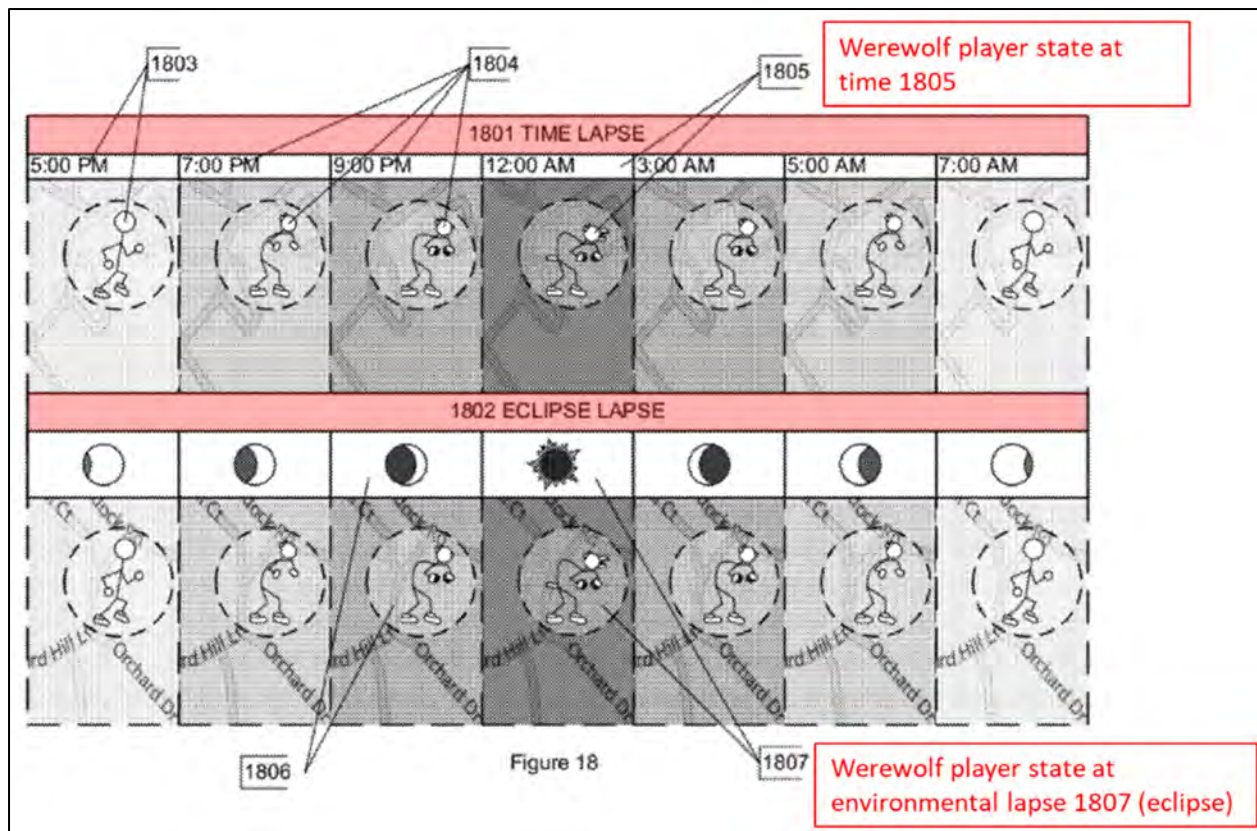
Weather. Kolo discloses an aspect of gameplay where a player's in-game experience is affected by the weather. Kolo, ¶¶189-92, 338-40, Fig. 19. As specific examples, “[w]hen the weather is sunny at the player’s geolocation, their sensing geoproximity may increase (1904), whereas when the weather is rainy 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, Fig. 19 (annotated).

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.



Kolo, Fig. 18 (annotated).

POSITAs 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

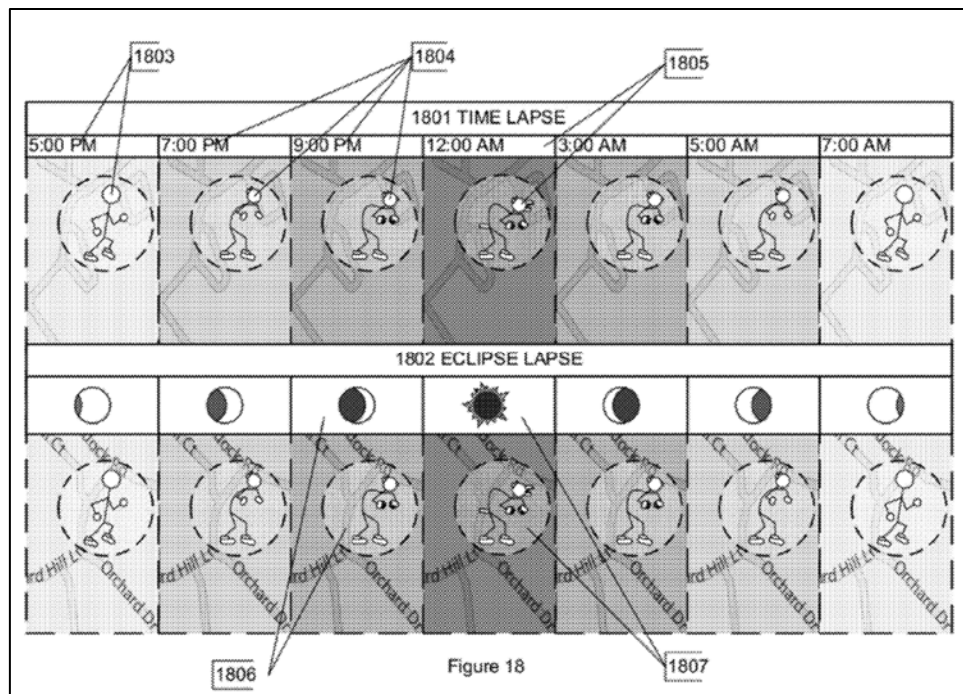
be combined together in a wide variety of ways to create different embodiments of the invention.”); Friedman, ¶161. POSITAs would have further understood that Kolo’s examples related to one player would apply to any and all players in the MMO, and any effects on said player are within the broader scope of the player interacting with other players in other real-world locations also playing the MMO. *Id.*

2. Claim 1

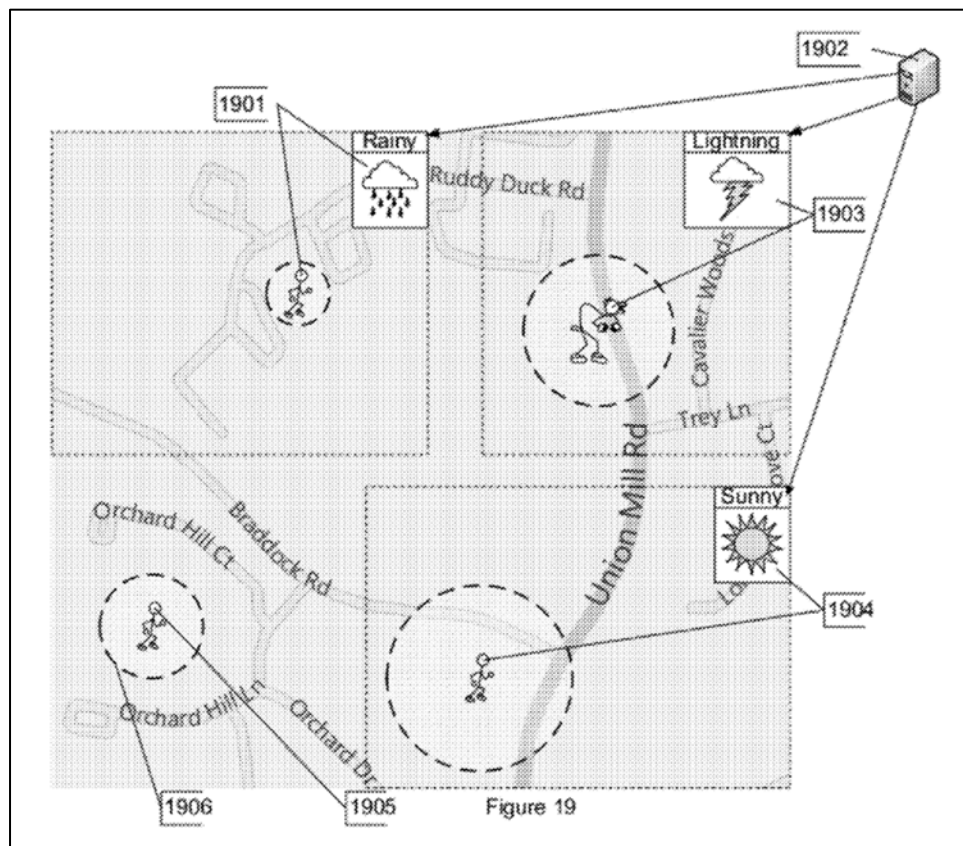
a. 1[pre]

If limiting, Kolo renders 1[pre] obvious. Friedman, ¶¶177-194.

Kolo discloses providing a video game in which players perform simulated activities in a virtual world—e.g., 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—using a mobile device (*computing device*) in communication with a central server (also a *computing device*) (*computer-implemented method of enabling virtual gameplay on a computing device*). *E.g.*, Kolo, ¶¶208-15, 352-55, Fig. 27 (battling another player); *id.*, ¶181-84, 271-74, 333, Fig. 17 (scavenger hunt); *id.*, ¶¶185-92, 267-68, 282-83, 334-40, Fig. 18, Fig. 19 (monster/werewolf transformation).

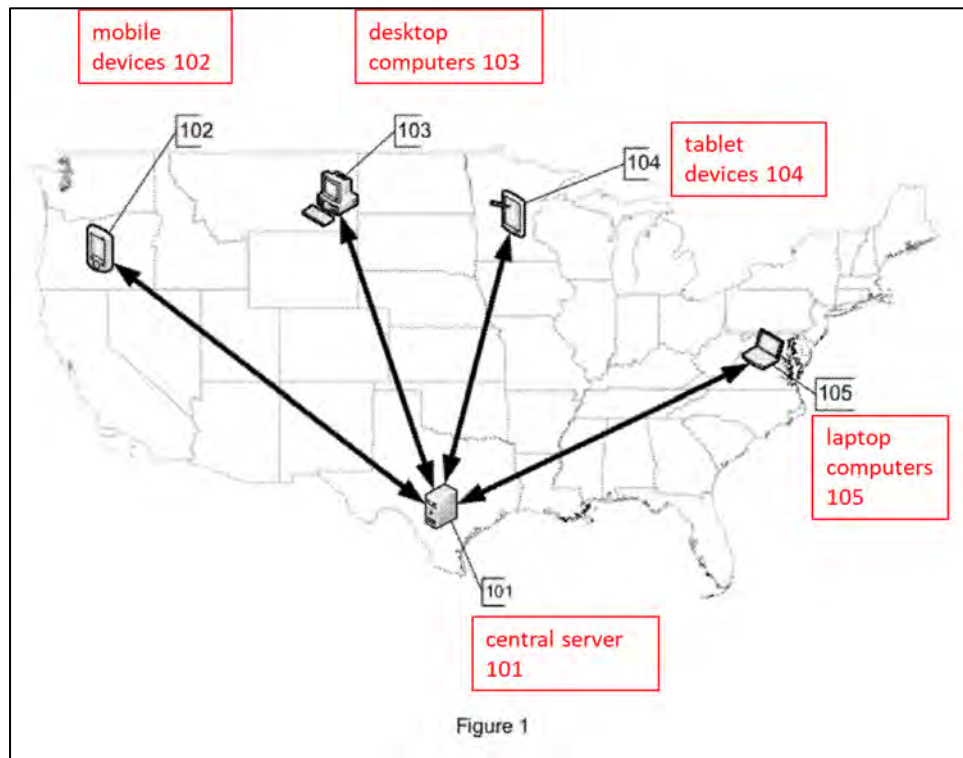


Kolo, Fig. 18.



Kolo, Fig. 19.

In Kolo, players may play the game on their local computing device in communication with a server—e.g., “mobile device 102” and “central server 101.” *Id.*, ¶300.



Kolo, Fig. 1 (annotated).

Kolo defines a “local device,” which POSITAs would have understood to refer to 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; Friedman, ¶¶180, 184-185. Kolo also discloses players “use their local

computing devices to **store**, process and communicate gameplay to other players in the local game.” Kolo, ¶301.⁵

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 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.”).⁶

In view of Kolo’s disclosures that the mobile device/central server run programs and store information, POSITAs would have understood that Kolo’s mobile device and central server both include *storage memory*. Friedman, ¶¶184-187.

The mobile device also includes a GPS unit for determining device position (*location sensor*). Kolo, ¶¶300, 195, 198. The player’s geolocation may also be detected based on either the local computing device’s IP address or user input. Kolo,

⁵ These disclosures are in the context of a “local game” not in communication with the central server, but POSITAs would have understood the structure of the mobile device is the same in the server-administrated embodiment. Friedman, ¶185 n.6.

⁶ See Friedman, ¶185 n.6.

¶¶72, 112. POSITAs would have understood that the IP address/user input is read from the mobile device's memory (*location sensor*). Friedman, ¶192. Kolo's Geolocation is transmitted between the local device and server. Kolo, ¶300.

Kolo therefore discloses/suggests the mobile device communicates with its memory and memory on the server (*computing device in communication with a storage memory*) and its GPS unit and memory when transmitting the device's "geolocation" to the server (*computing device in communication with...a location sensor*). Friedman, ¶194.

b. 1[a]

Kolo renders 1[a] obvious. Friedman, ¶¶195-224.

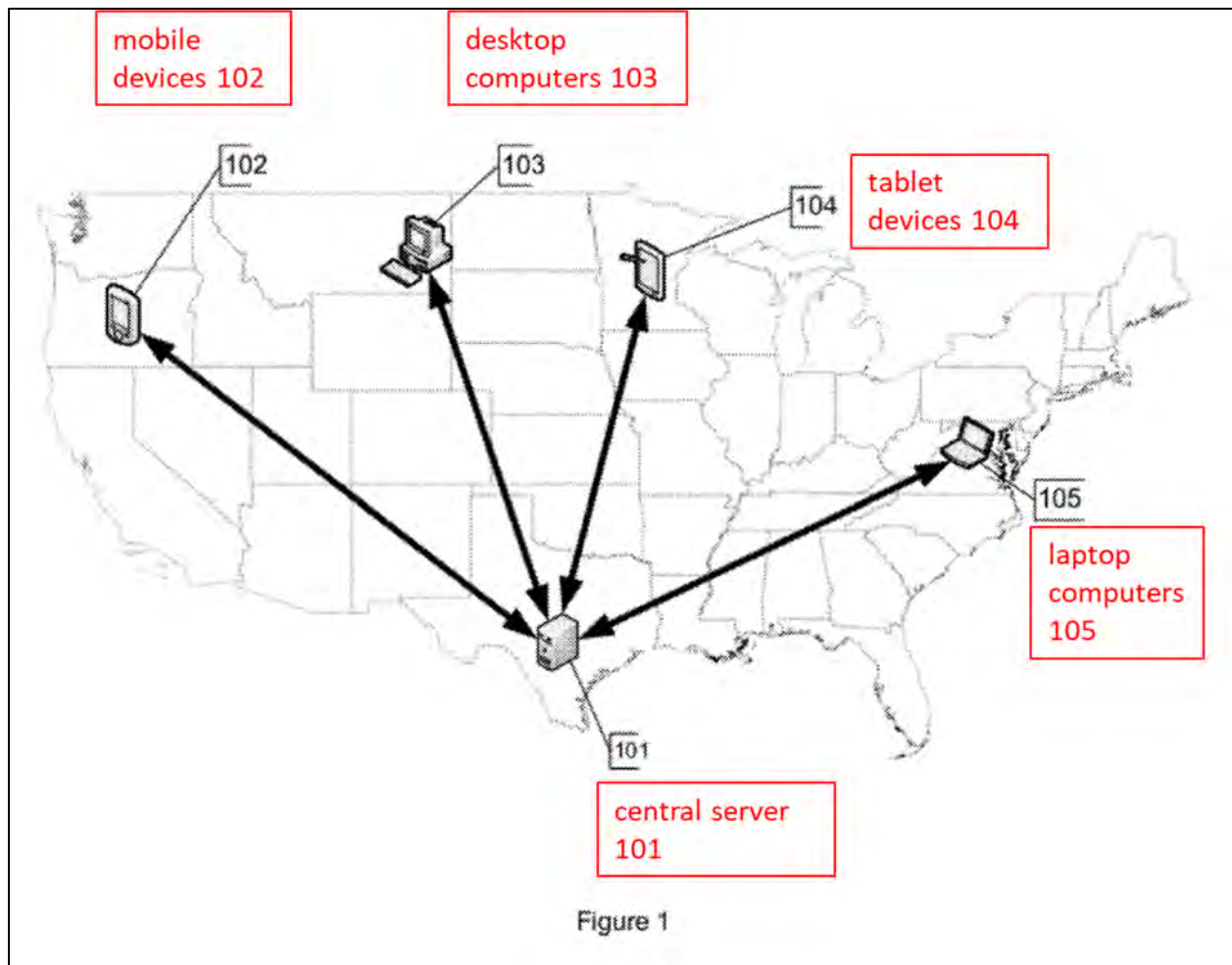
Kolo discloses the player plays the MMO through a "character"/"avatar" (*providing access to a video game having a virtual character*). Kolo, ¶¶247, 76.

The '827 Patent describes a "statistic (stat)" as "a datum which represents a particular aspect of a virtual character." '827Pat, 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, 3:25-26, 11:38-46.

Kolo discloses/suggests a game character has a *virtual character statistic*. Friedman, ¶¶198-204. Specifically, Kolo discloses 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.”). Kolo also discloses the character has “health” (*id.*, ¶¶131-32) and “speed” (*id.*, ¶279). Kolo further discloses game characters in the MMO have levels. *Id.*, ¶180; *see also id.*, ¶¶229, 291. POSITAs would have understood these disclosures are all based on table-top RPG (“TTRPG”) rules/mechanics known in the art and incorporated by reference in Kolo. Kolo, ¶¶1-67; Friedman, ¶¶201-202.

Thus, Kolo discloses/suggests the game character/avatar has a level and associated “attributes” that are primary/derived innate statistics represented by datums (*virtual character with a virtual character statistic*). Friedman, ¶¶203-204.

Kolo discloses/suggests a player playing the game through a game character is *in a real-world player geographic location*. Friedman, ¶¶205-208; 1[pre] (§VI.B.2.a); Kolo, ¶¶300, 76, Fig. 1:

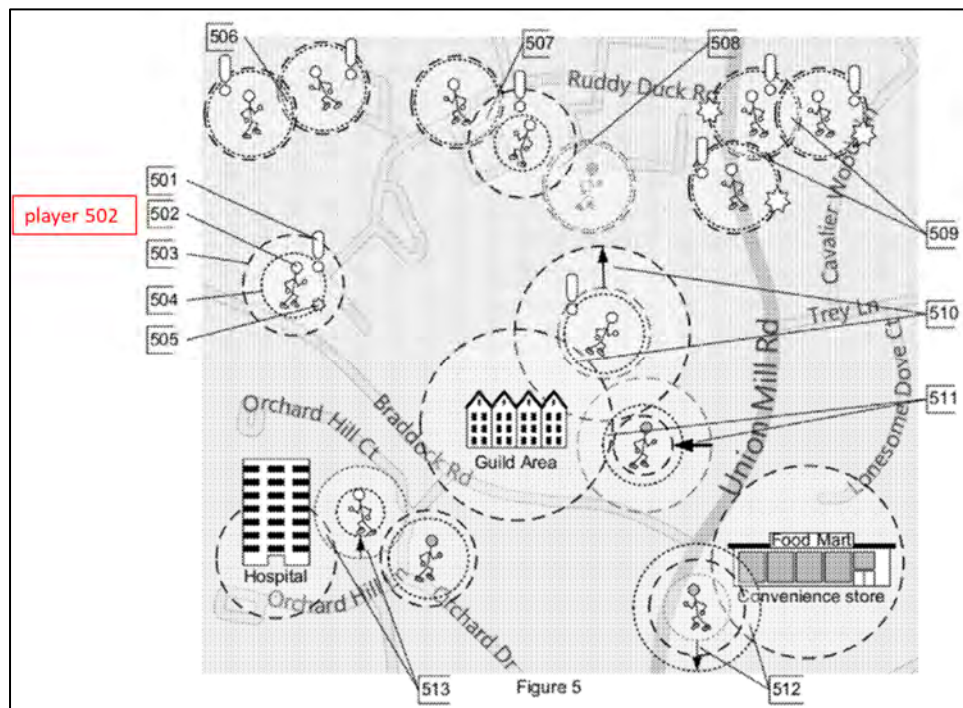


Kolo, Fig. 1 (annotated).

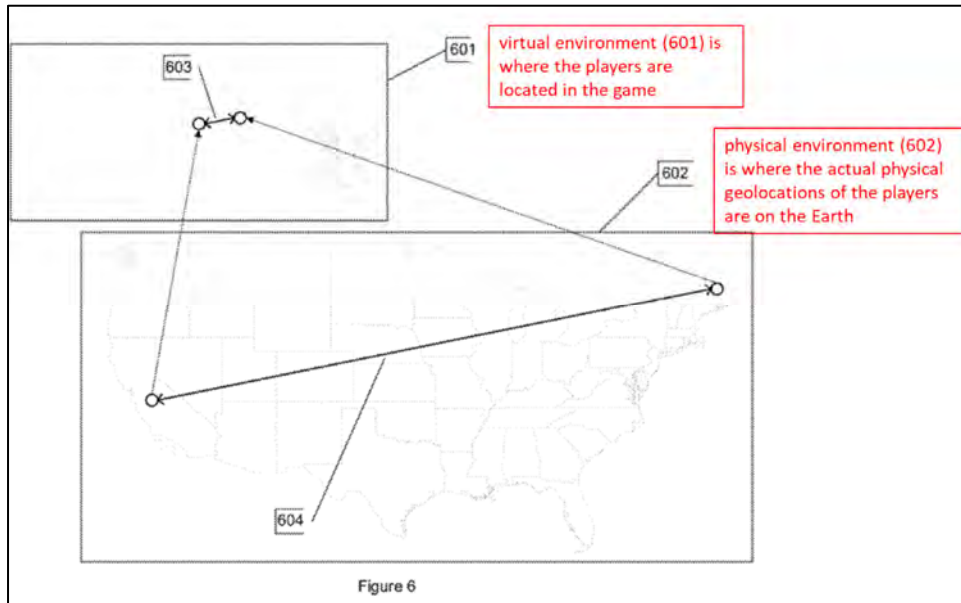
Kolo discloses/suggests the player *interacts with the video game and with other players in other real-world geographic locations playing other virtual characters*. Friedman, ¶¶209-223. Kolo’s MMO allows “participants to interact with each other and affect[] the experience of other participants.” Kolo, ¶76. POSITAs would have understood these teachings apply when players engage in the types of gameplay described in the battle/scavenger hunt/weather/monster/werewolf embodiments. Friedman, ¶¶211, 214-221.

Further, the 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. Kolo, ¶¶300, 76, Fig. 1; Friedman, ¶212.

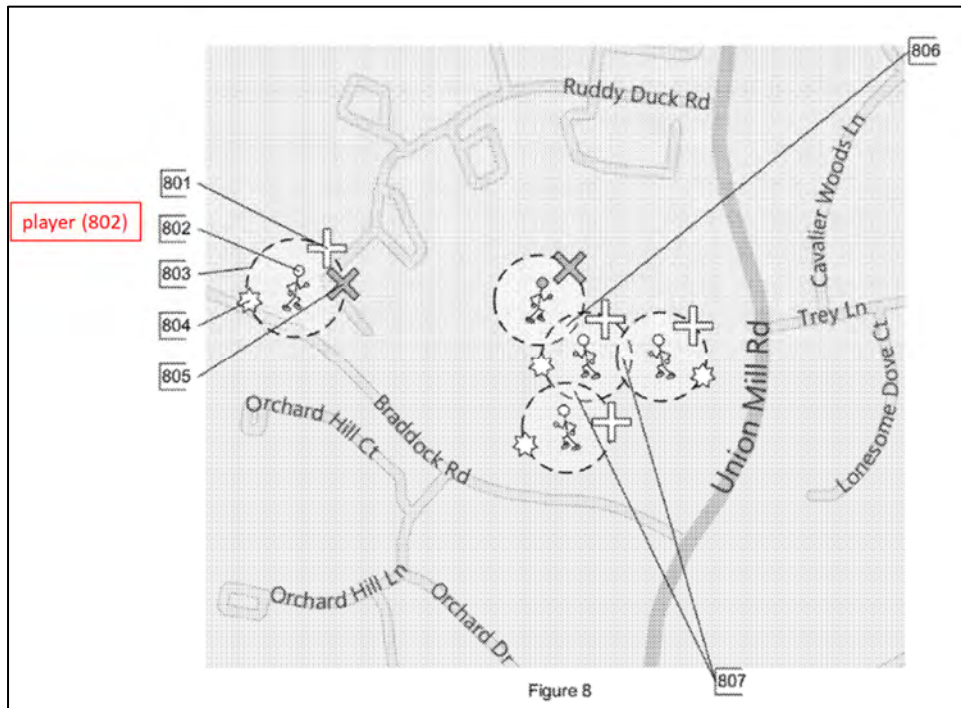
Figures 5, 6, and 8, for example, show a player *interact[ing] with the video game and with other players in other real-world geographic locations playing other virtual characters*, and a POSITA would have understood that players engaging in the battle/scavenger hunt/weather/monster/werewolf aspects of gameplay would also have access in the MMO to the aspects of gameplay described in these figures. Friedman, ¶213; Kolo, ¶¶305, 312, 314; *see also, e.g., id.*, Figs. 9, 12, 13, 14, 15, 16, 28.



Kolo, Fig. 5 (annotated).



Kolo, Fig. 6 (annotated).

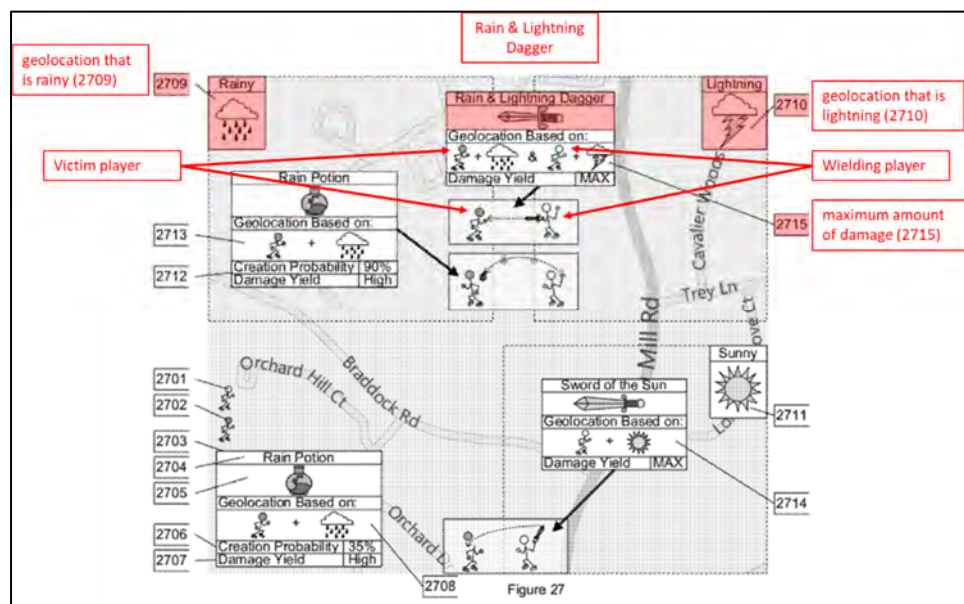


Kolo, Fig. 8 (annotated).

Specifically, POSITAs would have understood these are examples of how a player may *interact with other players in other real-world geographic locations in*

the same MMO. Friedman, ¶¶214; Kolo, ¶115 (“methods may be combined together”). Relevant examples include:

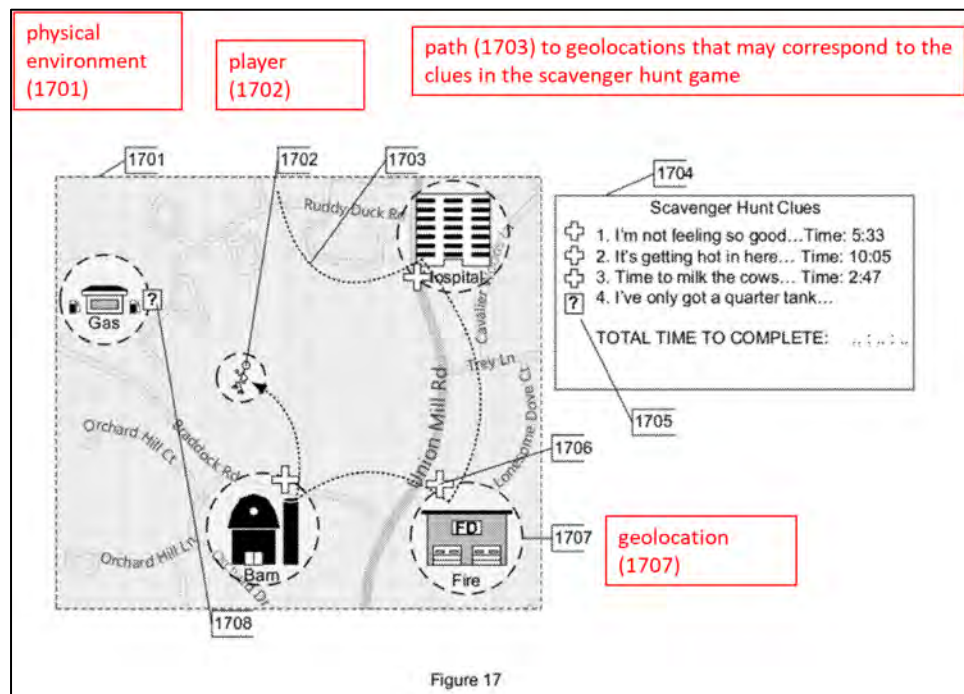
Battle. A player in a real-world player geographic location with certain weather (e.g., sunny or lightning) interacts with the video game and with other players in other real-world geographic locations where there is different weather (e.g. rain). Kolo, ¶¶208-15, 352-355, Fig. 27; Friedman, ¶¶216-219. 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, 355.



Kolo, Fig. 27 (annotated).

Scavenger Hunt. 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 “path (1703) to geolocations that may correspond to the clues in the scavenger

hunt game.” Kolo, ¶333. Although only one player is shown, 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.* POSITAs would have understood these players are traveling to different locations while they play the scavenger hunt. Friedman, ¶220. Further, POSITAs would have understood the player may interact with multiple other players in Kolo’s MMO. *Id.*



Kolo, Fig. 17 (annotated).

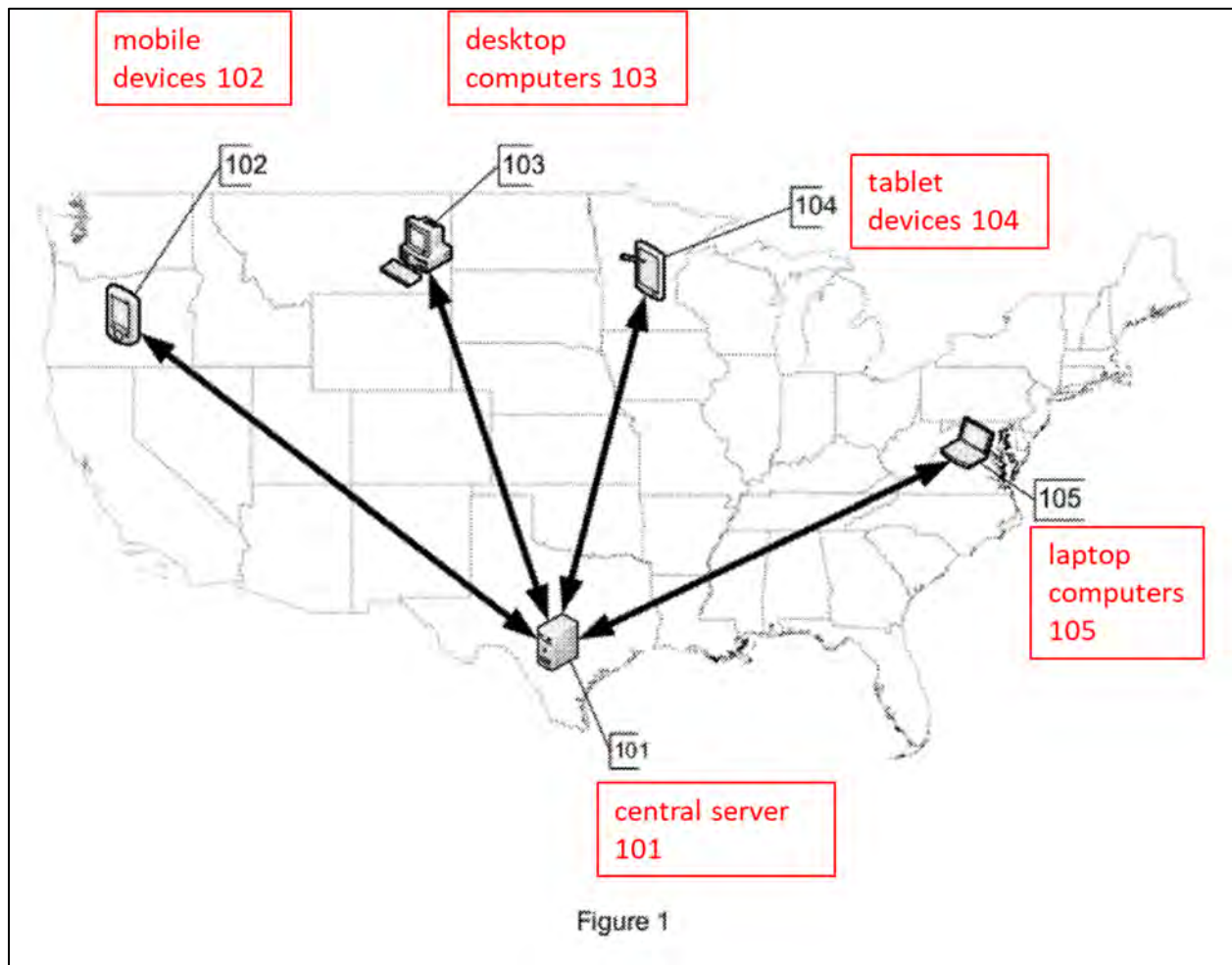
Weather/Werewolf. As to weather, the player is *in a real-world player geographic location*—i.e. a “geolocation” where it is “sunny,” “rainy,” or there is

“lightning.” *Id.*, ¶339. As to werewolf, 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).

c. 1[b]

Kolo renders 1[b] obvious. Friedman, ¶¶225-233.

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, 198, Fig. 1. Kolo also discloses the player’s geolocation may be detected based on the local computing device’s IP address or based on user input. Kolo, ¶¶72, 112. POSITAs would have understood the IP address/user input is read from the local computing device’s memory. Friedman, ¶¶227.



Kolo, Fig. 1 (annotated).

Kolo's disclosures regarding detecting the player's geolocation and transmitting it to the server apply when the player engages in the battle/scavenger hunt/weather/werewolf aspects of gameplay because these aspects of gameplay involve determining what game actions are allowed based on the player's geolocation. Friedman, ¶229; E.g., Kolo, ¶¶213, 214, 355, 182, 191, 188.

POSITAs would have understood and found it obvious that the player's location is stored in *storage memory* on the mobile device before transmission and

on the server so that it can be used to determine what game actions are allowed based on the player's location. See §VI.B.2.a (citing Kolo, ¶¶76, 124, 301); Friedman, ¶230.

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

In either case, Kolo discloses/suggests transmitting the player's geolocation to the central server, and thus the geolocation is 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*). *Id.*, ¶232.

d. 1[c]

Kolo renders 1[c] obvious. Friedman, ¶¶234-287.

Kolo discloses/suggests *retrieving from a database a local element script associated with the real-world player geographic location*. Friedman, ¶¶235-255.

The '827Pat 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*." '827Pat, 2:57-65. 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.

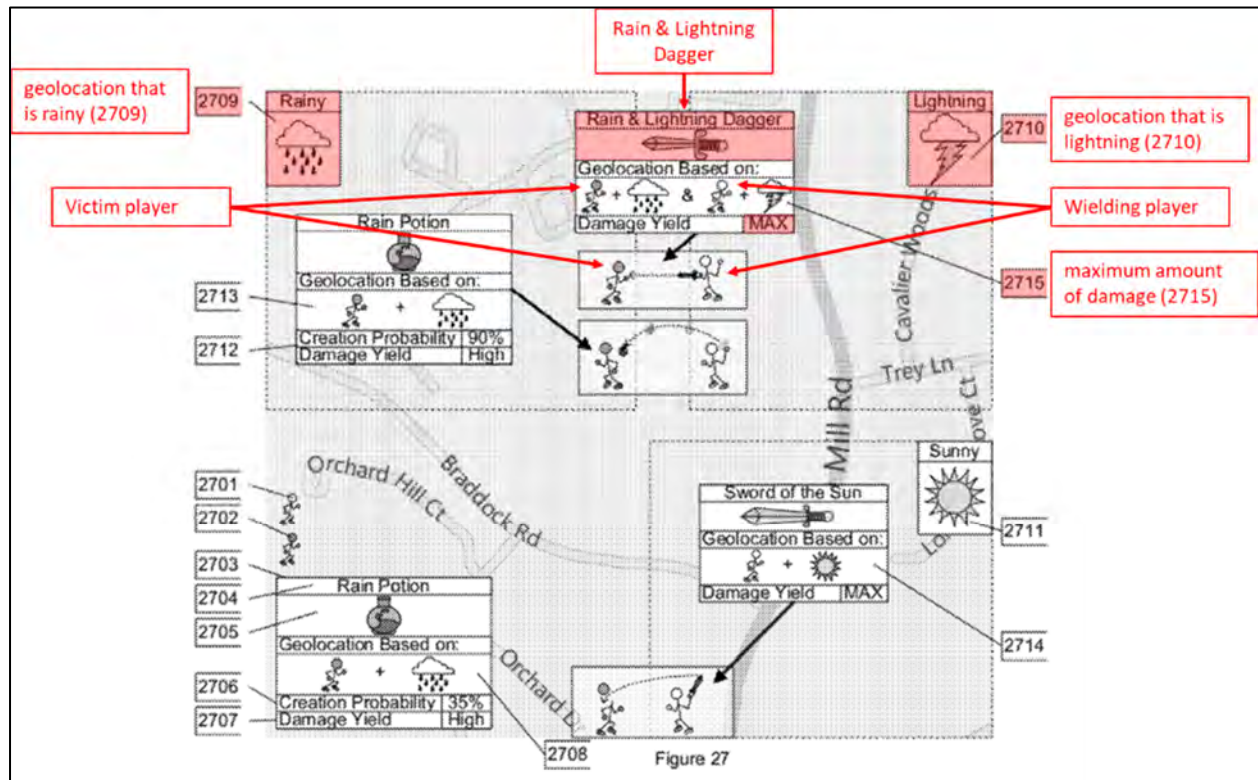
Regarding a “script,” the ’827Pat discloses that “there may be predefined scripts incorporated in the virtual world, each script may be associated with a different local element, and upon encountering such a local element the relevant script is called into play impacting the storyline of the virtual world.” ’827Pat, 2:19-23. During the ’284Pat’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.⁷ Thus, POSITAs would have understood a “script” encompasses computer code. Friedman, ¶¶237-238; *see also* EX1015, 308 (defining “script”).

If the Board finds a *local element script associated with the real-world player geographic location* is code correlated with a “local element” related to the player’s location, Kolo’s battle/scavenger hunt/weather/werewolf aspects of gameplay disclose/suggest this. Friedman, ¶¶240-255.

Battle. Kolo discloses using weather at both the wielding and victim players’ geolocations to retrieve/load code that allows the wielding player to use a weapon

⁷ The Examiner allowed the ’827Pat for substantively the same reasons as the ’284Pat. §III.B.

(e.g., a sword or Rain & Lightning Dagger) to its maximum effectiveness. Kolo, ¶¶214 ,355



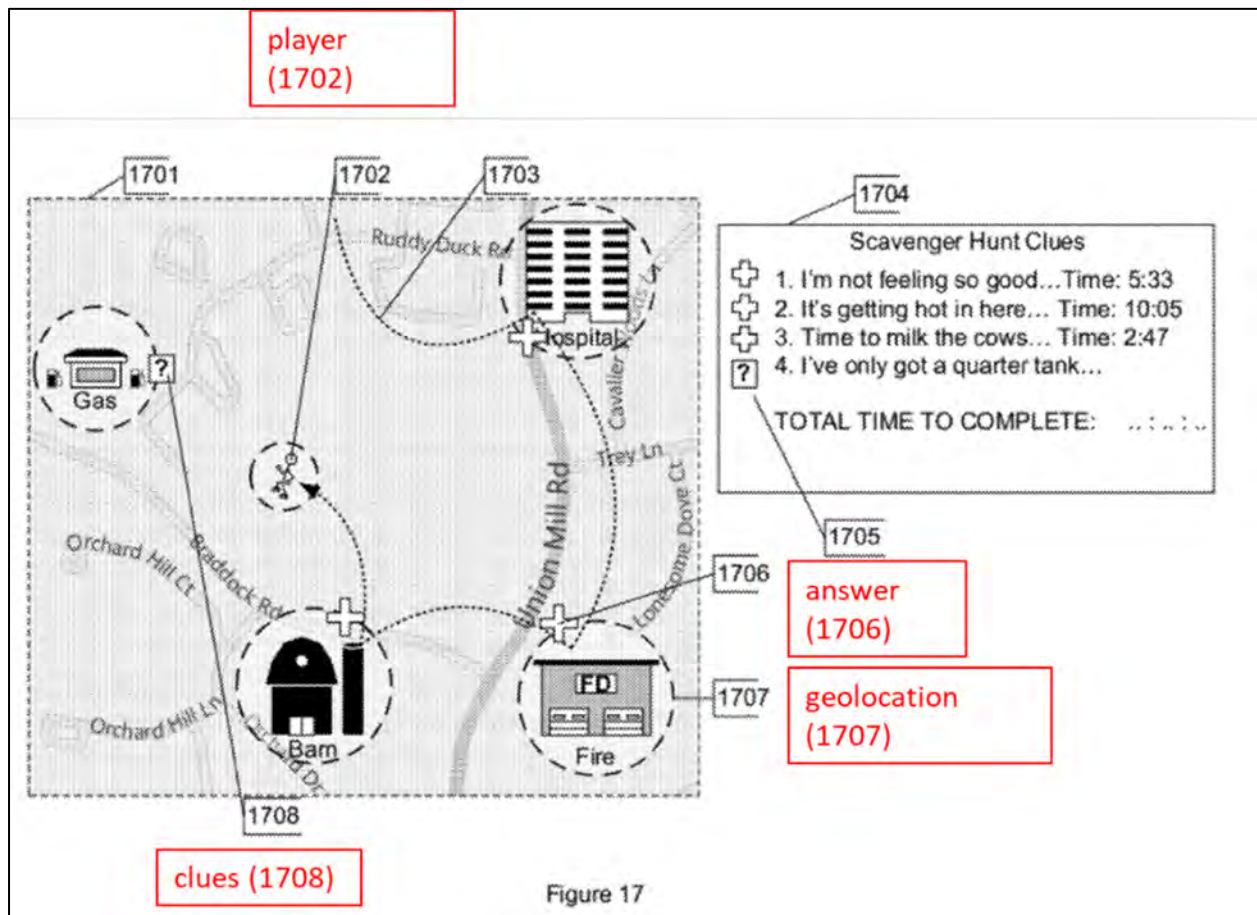
Kolo, Fig. 27 (annotated).

In describing a general aspect of the MMO, Kolo discloses that to determine weather, “the central server receives current weather information from a weather source.” Kolo, ¶191. Then 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. POSITAs would have understood this description of how Kolo identifies the weather at a geolocation applies not only when the weapon’s damage depends on the wielding player’s

geolocation, but also to the battle when the damage depends on both the wielding and victim players' locations. Friedman, ¶¶242-243.

Thus, POSITAs would have understood and found it obvious that Kolo's process 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—code related to using the weapon to its maximum effectiveness against the victim player and to enable subsequent game actions (i.e., *retrieving...a local element script associated with the real-world player geographic location*). Friedman, ¶¶244-245.

Scavenger Hunt. Kolo discloses that a player finds “clues”/“answers” when arriving at geolocations, including when arriving at the final location and collecting a clue when time is up. Kolo, ¶¶333, 274, 182.



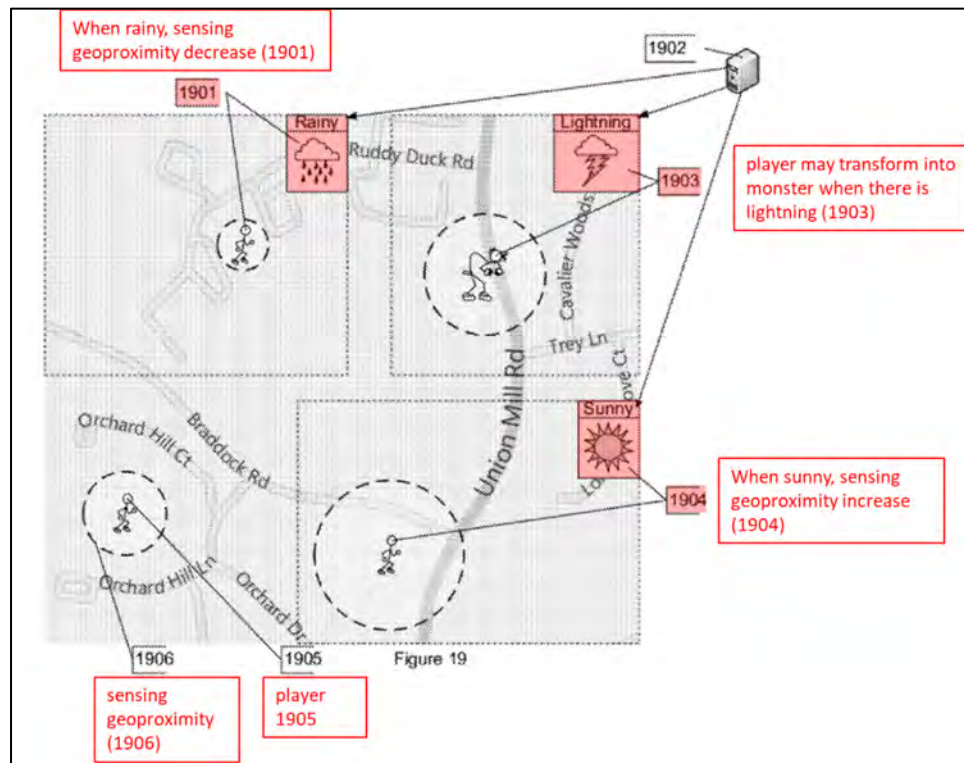
Kolo, Fig. 17 (annotated).

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, POSITAs 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) (*local element*) which is then correlated with—and used to retrieve—code related to the player completing the scavenger hunt (*retrieving...a*

local element script associated with the real-world player geographic location).

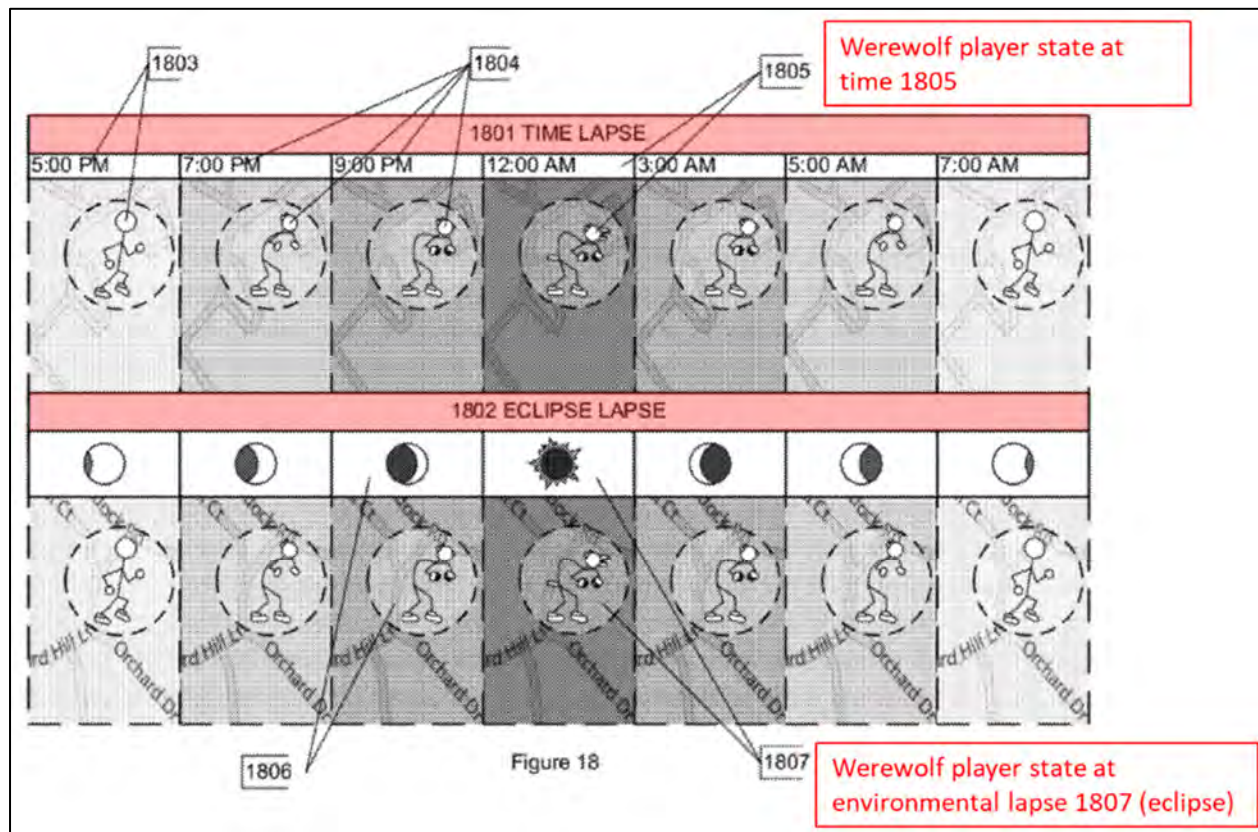
Friedman, ¶247.

Weather. Kolo discloses using the player's geolocation to determine the weather at the player's geolocation (*local element*) in the same way as in the battle example above. Kolo ¶¶191, 338. The weather is then correlated with—and used to retrieve—code related to enhancing/reducing the player's game character's sensing abilities or turning the game character into a monster (i.e., *retrieving...a local element script associated with the real-world player geographic location*). Kolo, ¶¶190, 339, 340; Friedman, ¶¶248-249.



Kolo, Fig. 19 (annotated).

Werewolf. 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. Environmental conditions are in turn is used to retrieve/load code that causes the player’s game character to change state, such as by turning the player’s game character into a werewolf. Kolo, ¶¶188, 268, 335, 336.



Kolo, Fig. 18 (annotated).

Thus, POSITAs 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—code related to transforming the character into a werewolf (i.e., *retrieving...a local element script associated with the real-world player geographic location*). Friedman, ¶¶250-252.

If the Board finds that code that is correlated with the player's location is sufficient to satisfy the claimed *local element script associated with the real-world player geographic location*, Kolo also discloses/suggests this. Friedman, ¶¶253-254.

Battle/Scavenger Hunt/Weather/Werewolf. The battle/scavenger hunt/weather/werewolf *local element scripts* are each retrieved using the geolocation provided by the GPS unit/memory along with a “local element,” as described above. *Id.*

Retrieving from a Database. Under either interpretation of *local element script associated with the real-world player geographic location*, Kolo renders obvious *retrieving Kolo's local element scripts from a database*. Friedman, ¶¶255-270.

As noted, the '827Pat does not describe retrieving a *local element script* from a database, and instead describes retrieving a “local element” from a database, which is then used to identify a script embedded in the game and dormant until it is called. '827Pat, 2:57-65, 10:55-11:10, 11:64-12:3. Regarding retrieving the “local element,” the '827Pat discloses 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.

Kolo discloses *retrieving from a database a local element script* in the same way as the '827Pat. Friedman, ¶¶257-258. 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, 337-338.

In other words, Kolo discloses using the player’s location to retrieve weather/environment information (i.e., a “local element”) from “data sources”/“websites”/“[news] feeds,” and the weather/environment information is used to retrieve the battle, weather, and werewolf *local element scripts* embedded in Kolo’s MMO code. Friedman, ¶¶263-264.

Using a player’s location to retrieve a “local element” from “data sources”/“websites”/“[news] feeds” (i.e., *databases*) and then using the retrieved “local element” to retrieve a script embedded in the game is the same way the '827Pat describes this limitation. '827Pat, 9:30-32; *see also id.*, 10:14-18; EX1015, 92 (defining “database”); Friedman, ¶¶265-266.

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 (*local element* stored in a *database*) to then retrieve the scavenger hunt

local element script embedded in the MMO code. In this regard, Kolo discloses that the central server has “databases” for storing information regarding the game, and a POSITA would have understood and found it obvious that the “databases” would store such location categories. Friedman, ¶267; Kolo, ¶¶124, 175

Alternatively, it would have been obvious to POSITAs to retrieve the code corresponding to Kolo’s *local element script* itself from a *database*. Friedman, ¶¶268-270. Rather than embedding Kolo’s *local element script* in the game code such that it is dormant until it is called, POSITAs would have been motivated to store Kolo’s *local element script* in a database for retrieval. Friedman, ¶268. POSITAs would have recognized that modifying Kolo in this way to store the *local element script* in a database would make the game code modular, thereby making it easier to identify the potential sources of errors. *Id.* Moreover, POSITAs 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). Friedman, ¶269. POSITAs 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 in/retrieving code from a database was ubiquitously well-known as of the '827Pat priority date. Friedman, ¶270.

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*.⁸ Friedman, ¶¶271-286.

Battle. The battle *local element script* results in the wielding player's game character's weapon having maximum damage on the victim player. Kolo, ¶355. A POSITA would have understood that using the weapon to its maximum effectiveness means that the wielding player's innate statistics corresponding, e.g., to strength, are increased when the battle *local element script* is actuated. Kolo, ¶262 (player "[a]ttribute[s] may be altered by magic spells, armor, or weapons"); Friedman, ¶272.

Kolo also discloses that players have levels that change as players gain experience, which POSITAs would have understood is a general description of gameplay applicable to each embodiment. *Id.*, ¶¶180, 291; Friedman, ¶¶273-277. Kolo also incorporates in their entirety several reference books regarding role playing games. See Kolo, ¶¶1-67. The incorporated Player's Handbook (*id.*, ¶22) discloses that a player has "Ability Scores" (which are innate *statistics* in the context

⁸ A "plot node" is "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." '827Pat, 7:5-8.

of the '827Pat), 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, pgs.16-17, 27-29. 259; Friedman, ¶¶273-277.

Accordingly, POSITAs 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 if character's level is consequently increased, there is a corresponding increase in the character's innate statistics. Friedman, ¶277.

Kolo's battle *local element script* also modifies a *plot node* because, e.g., when the wielding player's game character wins the encounter, the second player's game character would have reduced health and/or be removed from the game. See Kolo, ¶262; Friedman, ¶278.

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* provides a winning player's team an item/reward (i.e., *modify[ing] a virtual character statistic*). Kolo, ¶¶182, 274.

If the Board finds that a *virtual character statistic* is a datum that represents an innate aspect of a game character, POSITAs would have understood that, as with the battle *local element script*, 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, which may result in the character's level increasing with a corresponding increase in the character's innate statistics. Friedman, ¶280.

Kolo's scavenger hunt *local element script* also modifies a *plot node* because when the player wins the game for the player/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. Friedman, ¶281.

Weather. The weather *local element script* changes the game character's sensing abilities (i.e., innate *statistics*) and/or transforms the player's game character into a monster. Kolo, ¶¶339-40, Fig. 19. POSITAs would have understood that changing the game character into a monster not only modifies the game character's appearance, but also modifies the game character's innate *statistics* and gives the player other "special abilities"—i.e., modified statistics such as strength and speed. Friedman, ¶282; *see also* Kolo, ¶279.

Kolo's weather *local element script* also modifies a *plot node* 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. Friedman, ¶283.

Werewolf. POSITAs would have understood that changing the game character into a werewolf, Kolo, ¶¶188, 335, 336, Fig. 18, not only modifies the game character's appearance, but also modifies the game character's innate *statistics* and gives the player other "special abilities"—i.e., modified statistics such as strength and speed. Friedman, ¶284; *see also* Kolo, ¶279.

Kolo's werewolf *local element script* also modifies a *plot node* because the werewolf is introduced into the game and may interact with other players' game characters. Friedman, ¶285.

Accordingly, 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 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*). *Id.*, ¶286. Further, Kolo discloses/suggests that such *local element scripts* may be actuated to modify the character's innate *statistics* and/or a datum associated with a gameplay attribute (as to the scavenger hunt) or a *plot node*. *Id.*, ¶¶286-287.

e. 1[d]

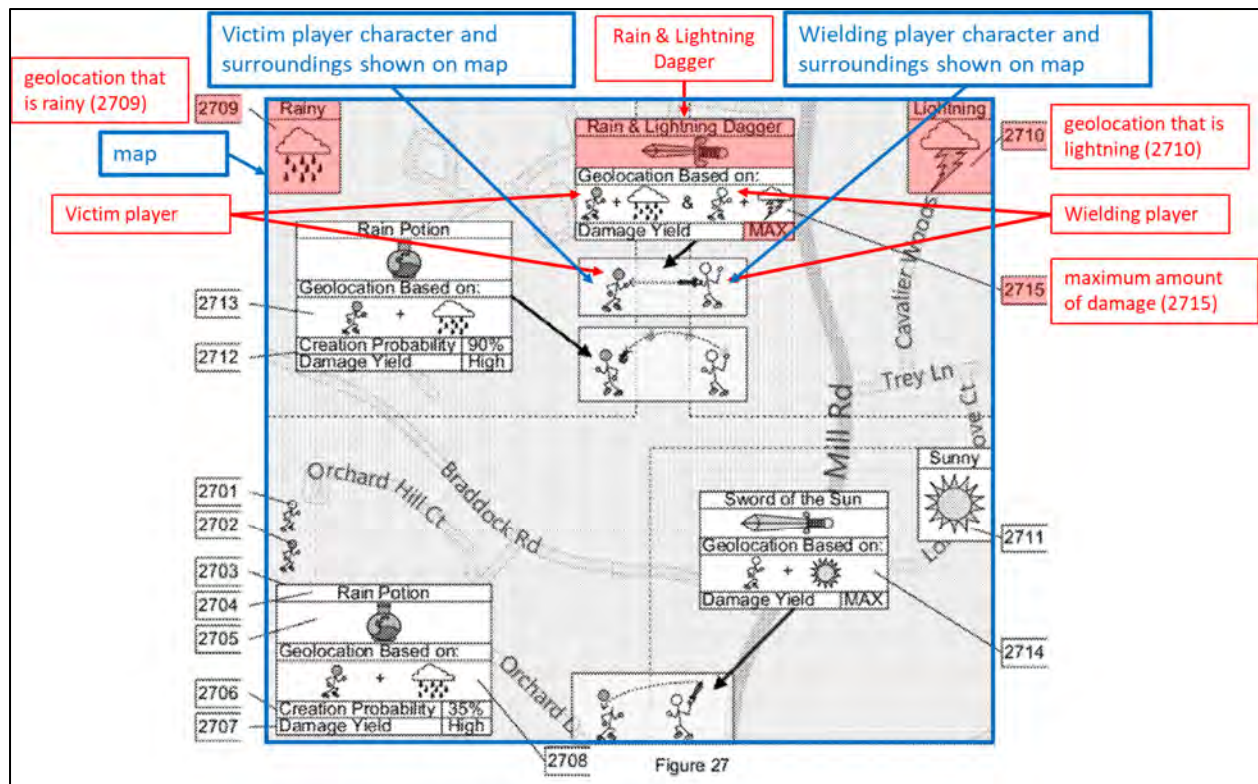
Kolo renders 1[d] obvious. Friedman, ¶¶288-310.

Kolo discloses/suggests *retrieving from the database mapping information related to the real-world player geographic location of the player*. Friedman, ¶¶290-299.

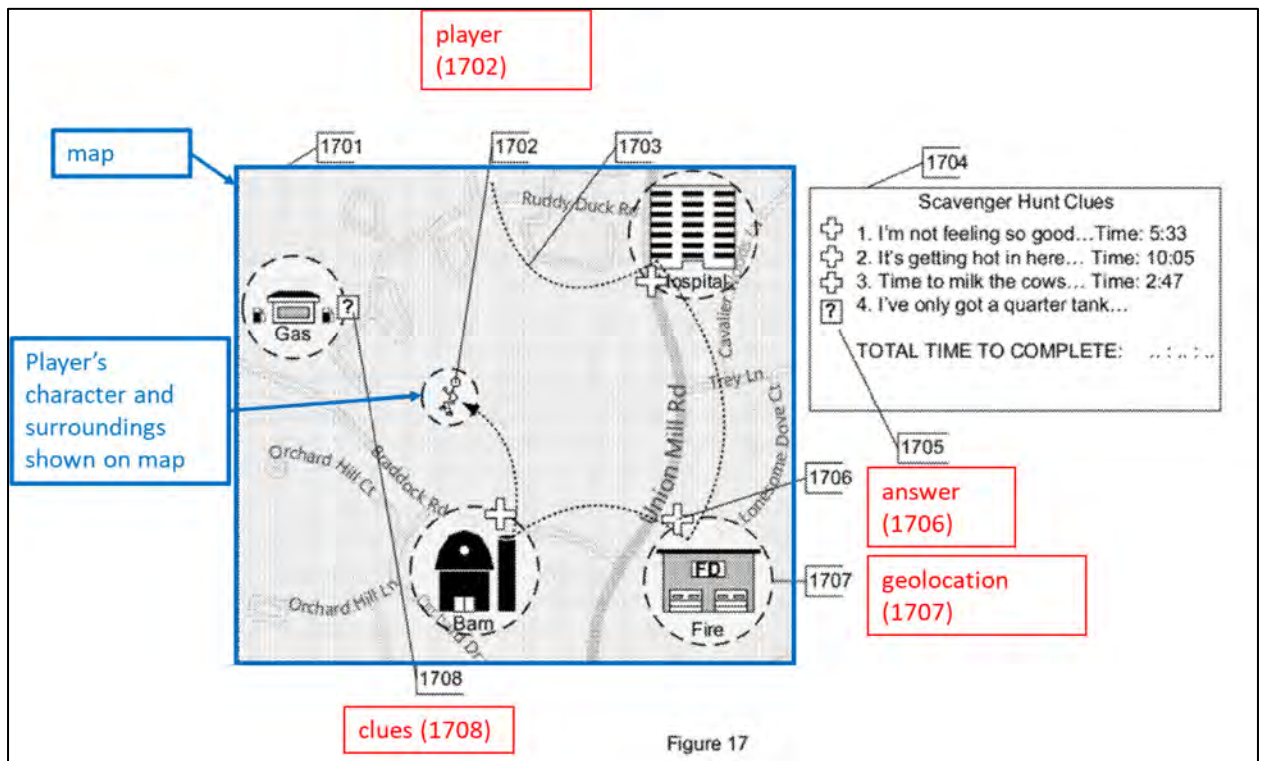
As described regarding 1[a] (§VI.B.2.b) and as further explained below, Kolo's battle/scavenger hunt/weather/werewolf aspects of gameplay disclose using a player's character's geolocation (or multiple players' geolocations) in order to determine what *local element script* to retrieve. *Id.* POSITAs would have understood that Kolo's central server uses the real-world location that the player's mobile device provides (*see* 1[b], §VI.B.2.c) to *retriev[e] ... mapping information related to the real-world player geographic location* (e.g., information sufficient to render a map for the player that depicts the player at the player's real-world location in the game and shows the surrounding area). Friedman, ¶¶292, 299.

Further, POSITAs would have understood and found it obvious that Kolo's server stores such map information in the server's "databases" (Kolo, ¶¶124, 175) or retrieves the information from third-party map database such as Google Maps or Bing Maps (and subsequently stores the information on the server's database that also stores the *local element scripts* for retrieval). Friedman, ¶294, citing EX1045, 2:58-65, EX1046, ¶41; *see also* '827Pat, 9:25-30 (third-party mapping services "readily available").

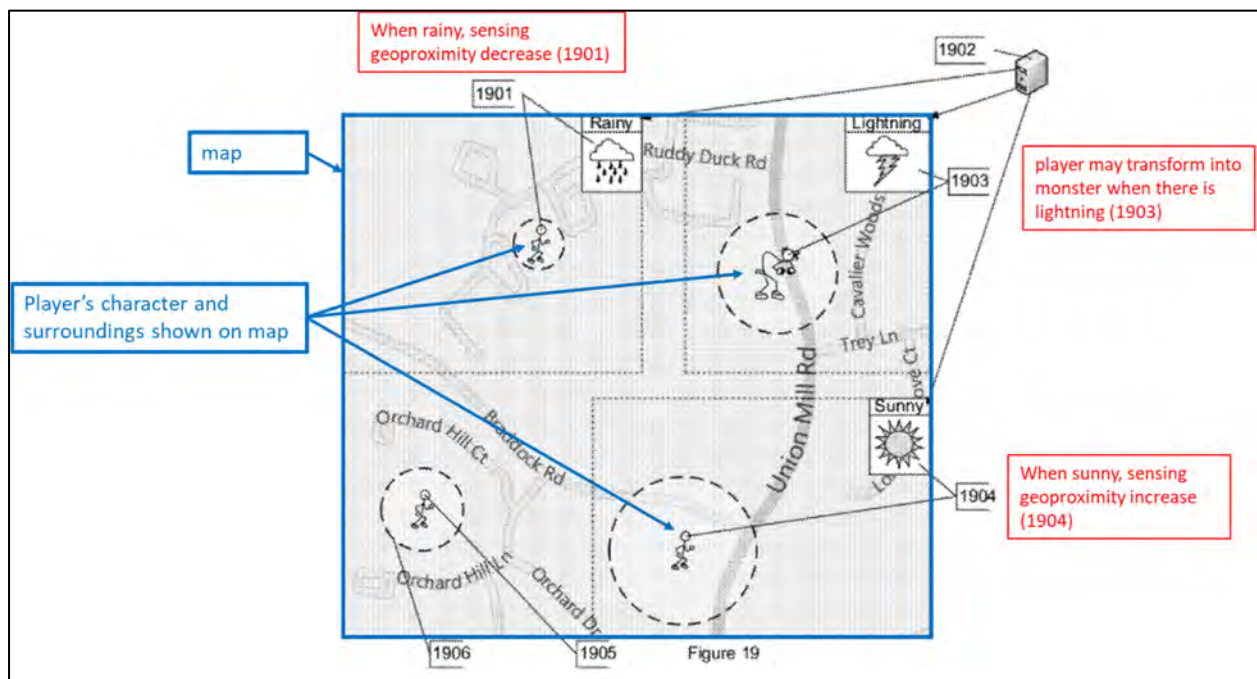
Each of Kolo's battle/scavenger hunt/weather/werewolf disclosures comprises rendering a map of the player's geolocations, which POSITAs would have understood requires using the players' geolocations to retrieve mapping information from the database related to the geolocations as described above. Friedman, ¶¶295-299; Kolo ¶ 355, Fig. 27 (battle), Kolo, ¶333, Fig. 17 (scavenger hunt), ¶¶339-340, Fig. 19 (weather), ¶¶334-37, Fig. 18 (werewolf).



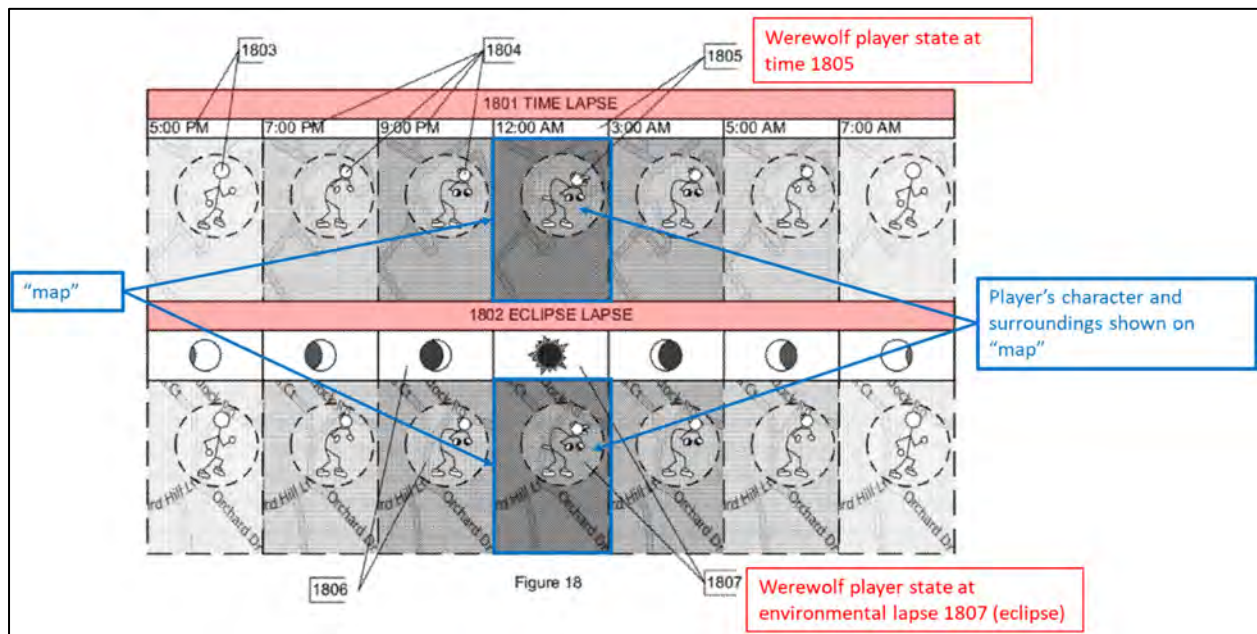
Kolo, Fig. 27 (annotated).



Kolo, Fig. 17 (annotated).



Kolo, Fig. 19 (annotated).



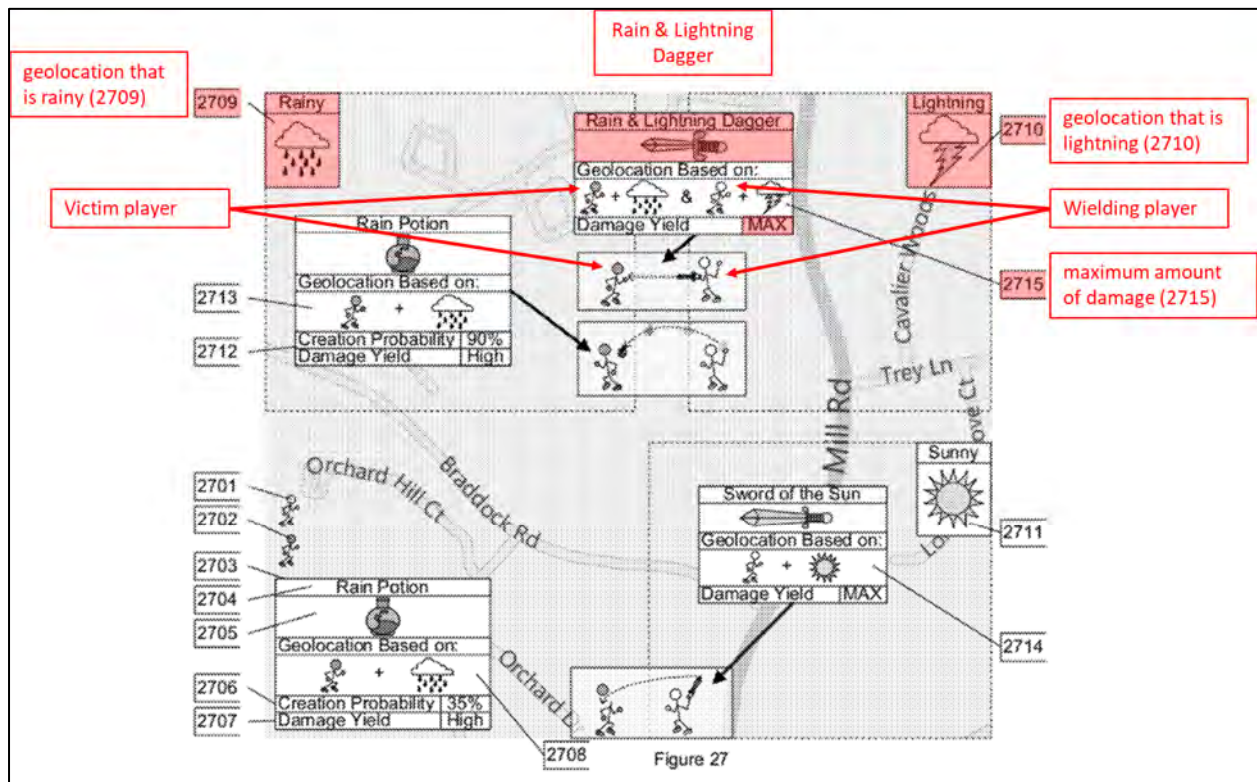
Kolo, Fig. 18 (annotated).

Accordingly, Kolo discloses/suggests that Kolo's server 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*). Friedman, ¶299. This allows the server to provide information for rendering a map on the player's mobile device in the battle/scavenger hunt/weather/werewolf aspects of gameplay.

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. Friedman, ¶¶300-309.

Battle. The battle *local element script* 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, the weapon cannot be used to its maximum effectiveness and 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; Friedman, ¶¶301-302.



Kolo, Fig. 27 (annotated).

If the Board finds this limitation requires that a wielding player's real-world location is unique (i.e., no other player is at the location), Kolo renders this limitation obvious. Friedman, ¶303. POSITAs 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. Friedman, ¶303. Otherwise, if the location is not unique, the battle *local element script* is not actuated. POSITAs would have recognized that this would encourage players to expand locations from which they play the game (e.g., seek locations without other players) so they can use the weapon to its maximum effectiveness. The MMO

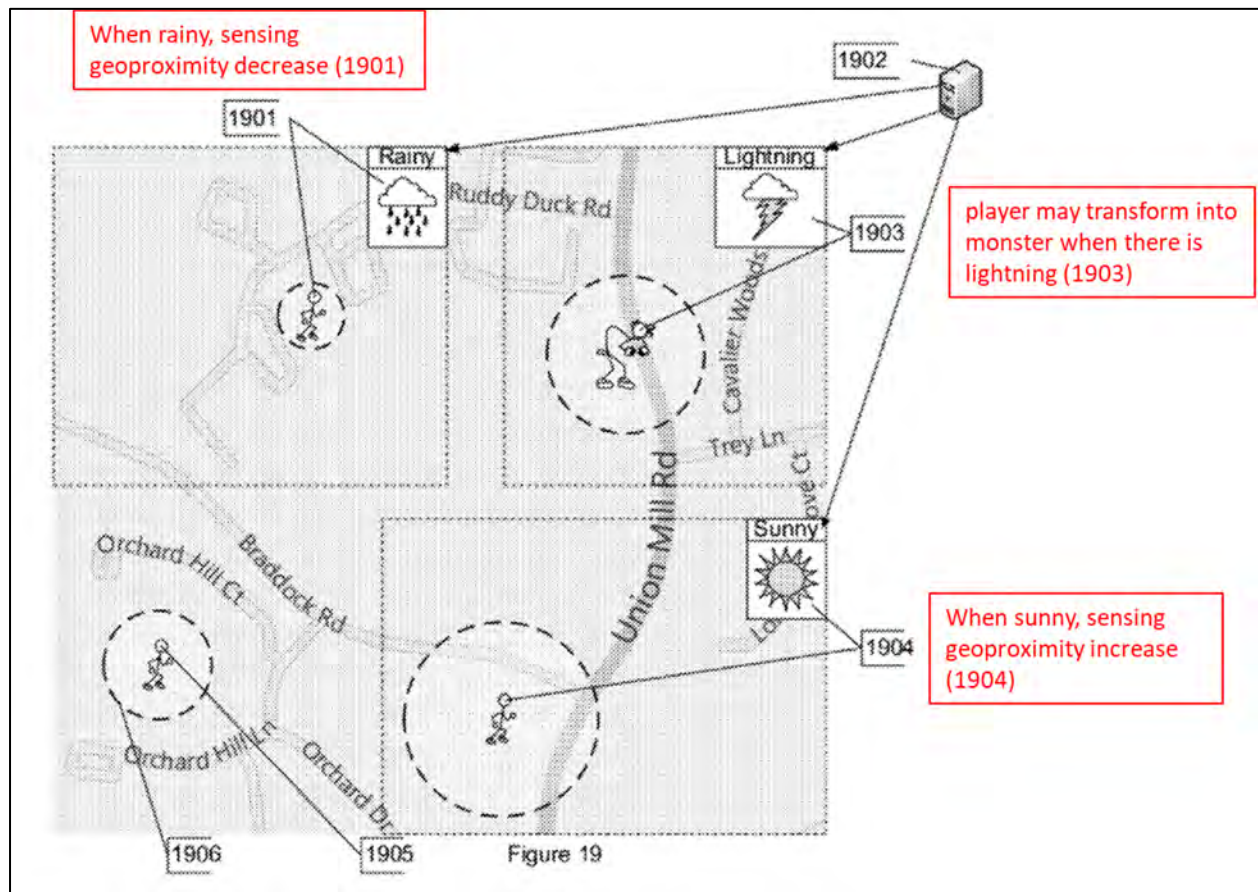
developers could then achieve additional advertising revenue from businesses in those locations. *See, e.g.,* Kolo, ¶74; Friedman, ¶303.

Kolo's incorporation of TTRPGs further renders this element obvious. Friedman, ¶¶304-306. Proximity-related battle effects were well-known in TTRPGs, e.g., EX1019, 94, 161, and it would have been obvious to implement said proximity effects into Kolo's MMO using its teachings of geoproximity. Friedman, ¶¶304-306.

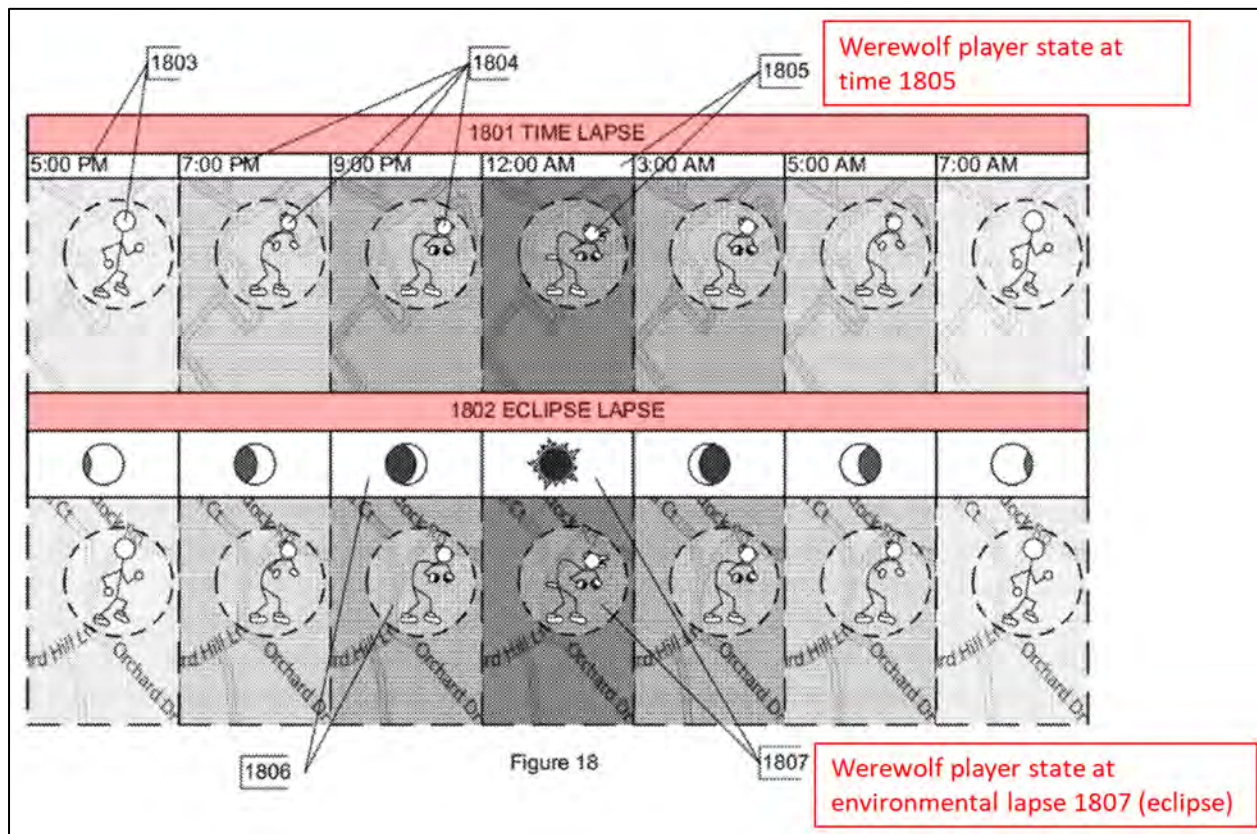
Scavenger Hunt. POSITAs would have understood that when a player's game character arrives at the geolocation of the final clue/answer in the scavenger hunt, the scavenger hunt *local element script* is only actuated to collect the final clue/answer when the player's location is unique (*actuating the 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; Friedman, ¶307. Otherwise, if another player is currently at the player's geolocation, the *local element script* would not be actuated because the other player arrived first to collect the clue/answer (*not actuating the corresponding local element script when the player's real-world player geographic location is represented by another player*). *Id.*

Weather/Werewolf. POSITAs would have found it obvious that the weather and werewolf *local element scripts* should be actuated only when the player's location is unique in the game because this would mean that no other player is

currently at the location and the code 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*). Friedman, ¶¶308-309. However, if another player is already at the geolocation when the player arrives, POSITAs would have recognized that the *local element script* should not be actuated again—because it is already running/looping while the first player is there; instead, POSITAs 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*). Friedman, ¶308; *see also* EX1015, 308 (defining a “script”).



Kolo, Fig. 19 (annotated).



Kolo, Fig. 18 (annotated).

Kolo’s TTRPG disclosures further render this element obvious in the context of the weather/werewolf gameplay because they disclose benefits to players who are alone, and detriments/restrictions for players who aren’t. EX1019, 94; EX1037, 72; Kolo, ¶150, Fig. 8. POSITAs would have been motivated to carry those concepts over to Kolo’s weather/werewolf *local element scripts* because it would have encouraged players to maintain geographic separation, thus increasing potential ad revenue. Friedman, ¶¶309, 303.

Kolo renders 1[e] obvious. Friedman, ¶¶311-325.

When Kolo's battle/scavenger hunt/weather/werewolf *local element scripts* are *actuated* as described regarding 1[d] (§VI.B.2.d), Kolo discloses/suggests that this *comprises modifying the virtual character statistic of the player's virtual character* for the reasons described regarding 1[c] (§VI.B.2.d).

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*. Friedman, ¶¶314-322.

Battle. POSITAs would have understood that the victim player's health/hit points *statistic* would be modified by either being reduced or going to 0 (*modifying...a virtual character statistic*). See Kolo, ¶262; Friedman, ¶¶315-316.

Kolo's battle *local element script* also modifies a *plot node* 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 and/or be removed from the game. *Id.*

Scavenger Hunt. When actuated, the scavenger hunt *local element script* assigns the winning player's character/team an item. Kolo, ¶¶182, 274. For the same reasons described regarding 1[c], POSITAs would have understood that another player on the winning player's team will gain experience points from successfully winning the scavenger hunt and if the experience points cross a threshold such that

the character's level is increased, there is a corresponding increase in the character's innate statistics (*modifying...a virtual character statistic*). Friedman, ¶318.

Kolo's scavenger hunt *local element script* also modifies a *plot node* for the other player on the winning team because when the player collects the last item that wins the game for the player/the player's team, the other player's team is now shown as having won the game and the other teams are now shown as having lost the game (*modifying...a plot node*). *Id.*, ¶319.

Weather/Werewolf. Because Kolo discloses an MMO, POSITAs would have understood and expected that after the weather/werewolf *local element scripts* are actuated, a second player may arrive at the player's location while the player that arrived first is still there. Friedman, ¶¶320-322. In this case, 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* and a *plot node* for the same reasons described regarding 1[c]. See §VI.B.2.d; Kolo, ¶¶188, 335-336, 339-40, Figs. 18-19; Friedman, ¶¶320-322.

3. Claim 2

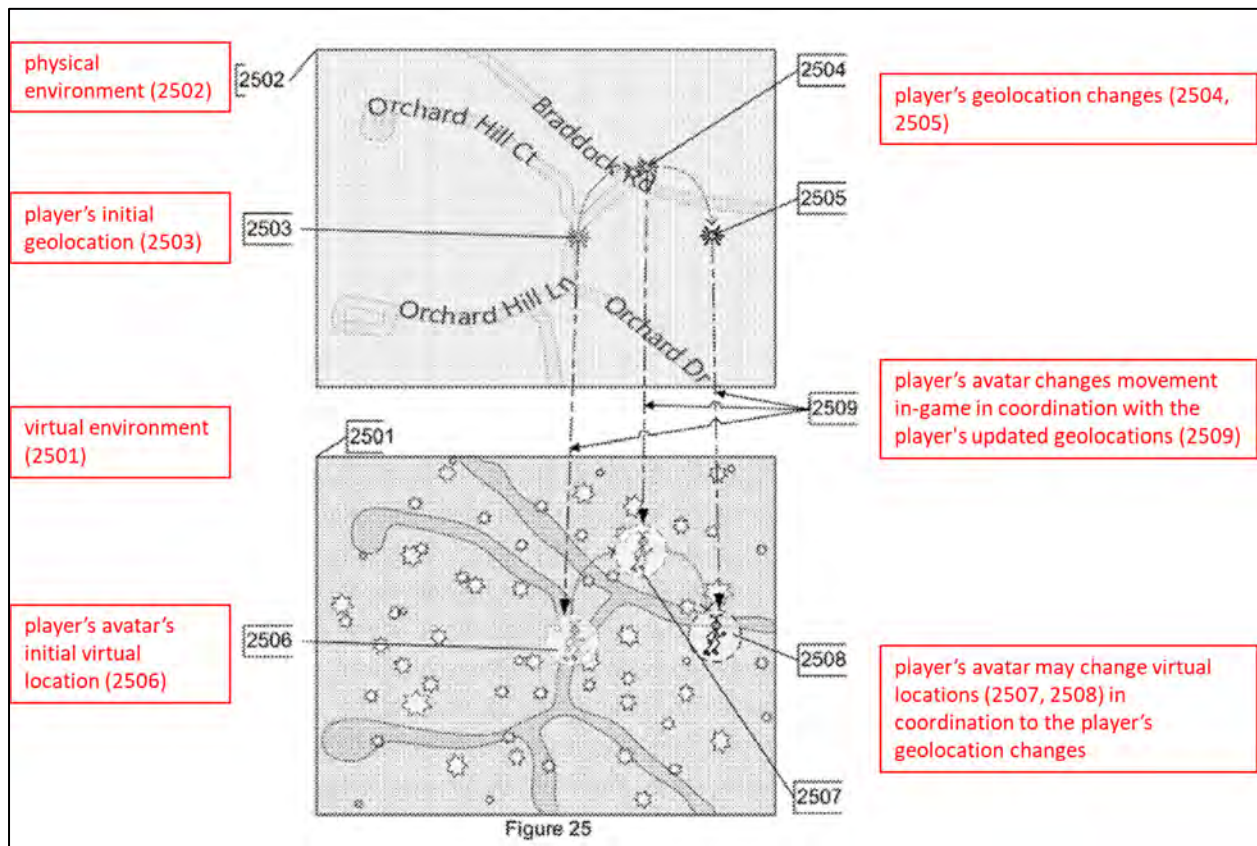
Kolo renders claim 2 obvious. Friedman, ¶¶326-337.

The '827Pat does not describe creating code for a *local element script* responsive to detecting a player's location. Instead, the '827Pat discloses that "new

scripts” can be added by players or developers. ’827Pat, 10:27-32, 11:67-12:3. In addition to the disclosures regarding loading/calling embedded scripts associated with a local element (*see* 1[c] (§VI.B.2.d)), the ’827Pat also discloses that scripts associated with a local element can be “import[ed]”/“downloaded” from a server. *Id.*, 11:24-33.

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 ’827Pat describes, Kolo discloses/suggests this claim as explained in 1[c]. Friedman, ¶327.

As to each aspect of gameplay described regarding claim 1, 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. Friedman, ¶¶329-331. In that scenario, Kolo discloses that the player’s geolocation is either manually updated or “regularly” updated. Kolo, ¶¶194, 198. 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.

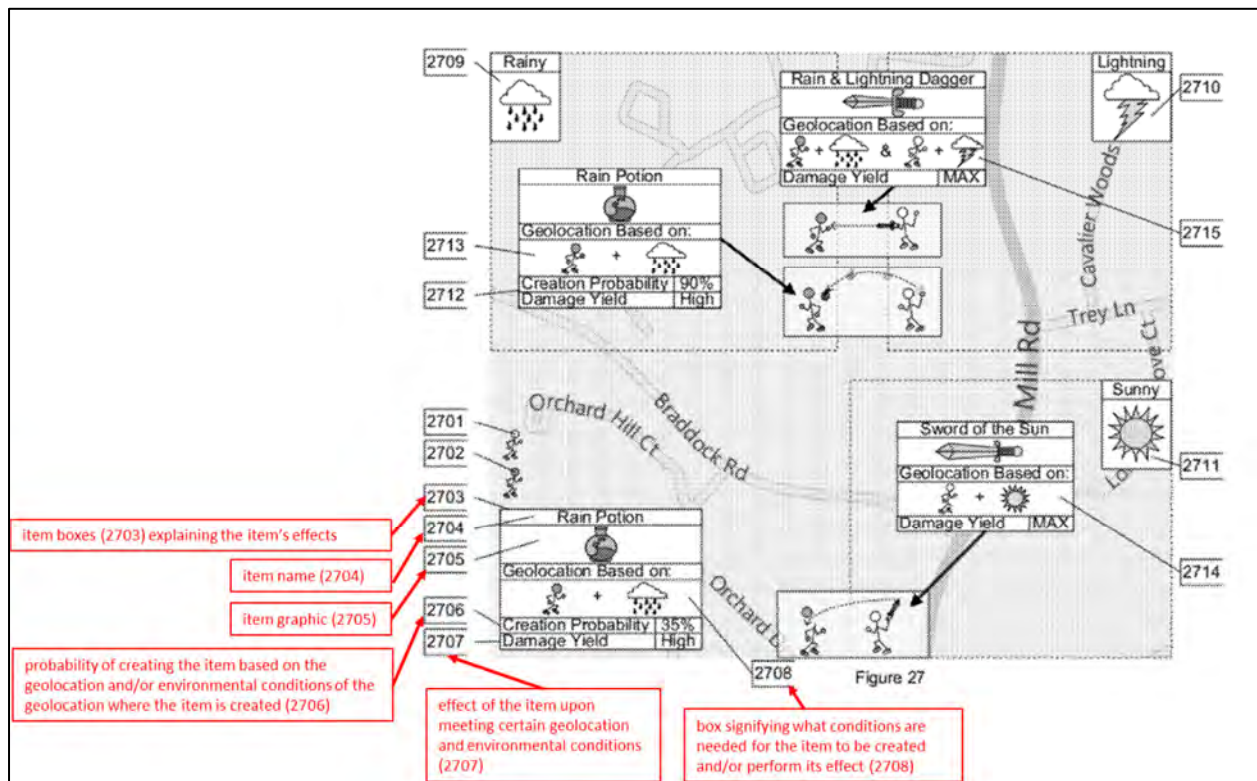


Kolo, Fig. 25 (annotated).

A player may continue to engage in any of the activities described regarding claim 1 at a second/subsequent location, so player's location is detected using the mobile device's GPS unit as described regarding 1[b], and the *local element scripts* would be imported/downloaded exactly as described regarding claim 1 (§VI.B.2). These are a *second or further local element script* because they are related to the player's second or subsequent location. Friedman, ¶331.

If the Board finds that *creating a...local element script* based on a detected location requires generating code that did not previously exist, Kolo discloses/suggests this claim. Friedman, ¶¶333-337.

Kolo discloses that a *second local element script* can be created at a second or further location. For example, a player continuing to play the MMO may create an item (e.g., a rain potion) (*second local element script*) when there are certain environmental conditions (e.g., rain) at the second geolocation. Kolo, ¶352 (“...a probability of creating the item based on the geolocation and/or environmental conditions of the geolocation where the item is created...”), ¶353 (“a rain potion [] requires the player creating the potion to be at a geolocation that is rainy...”).



Kolo, Fig. 27 (annotated).

The player's second/subsequent location would be detected as described regarding 1[d] (§VI.B.2.c). Further, a POSITA would have understood that this player action creates code in the game based on information related to the player's

second geolocation (i.e, the weather) (*second or further local element script*). Friedman, ¶336.

4. Claim 3

Kolo renders claim 3 obvious. Friedman, ¶¶338-350.

If claim 3 was intended to depend from claim 1 and *the creation* refers to downloading/importing a *local element script* from a server, 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] (§VI.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]), 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 (§VI.B.3). Friedman, ¶¶341-342.

If claim 3 was intended to depend from 2, Kolo discloses/suggests such *creation* as described regarding claim 2 (§VI.B.3) regardless of whether it refers to downloading/importing a *second local element script* from a server or adding a *second local element script*. Friedman, ¶343.

Kolo discloses/suggests that it *takes account of an operating context within the game*. Friedman, ¶¶344-350. The '827Pat describes an “operating context” as “internal and/or external factors impacting a particular system, device, application,

business, organization etc. For example, 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.” ’827Pat, 3:4-12, *see also, id.*, 3:12-16. Kolo discloses that a player of the MMO creates an account before playing. Kolo, ¶247. A POSITA would have understood that creation of the account would require a player to provide background information including the player’s age. Friedman, ¶345.

It would have been obvious to take account of information about the player, e.g., age, when creating/determining the appropriate battle/scavenger hunt/weather/werewolf *local element scripts* to retrieve. Friedman, ¶¶346-349. Customizing aspects of gameplay based on a player’s age was well-known to a POSITA as of the priority date of the ’827Pat, and a POSITA would have recognized that MMO gameplay should account for a player’s age based on societal expectations. *Id.* Thus it would have been obvious to take the player’s age (*operating context*) into account in each of the battle/scavenger hunt/weather/werewolf *local element scripts* to provide age-appropriate gameplay. *Id.*

Further, the weather *local element script* may be downloaded/imported/added based on the time. Kolo, ¶335. Thus, Kolo discloses/suggests that time at a location is a factor in the “external environment” (*operating context*) (*see* ’827Pat, 3:4-16),

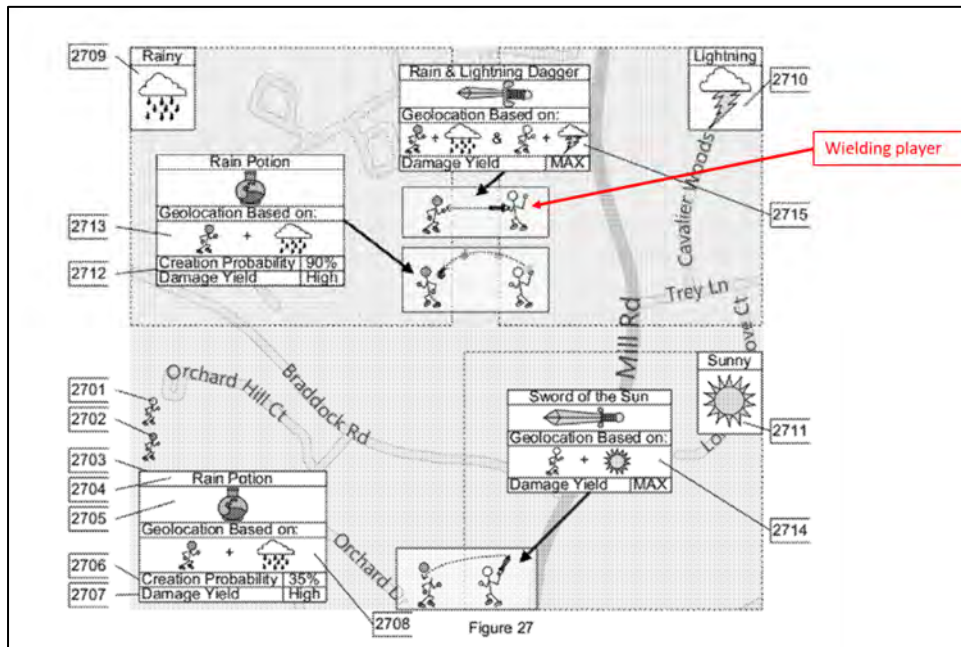
and whether the *local element script* is downloaded/imported/added takes account of the time. Friedman, ¶350.

5. Claim 4

Kolo renders claim 4 obvious. Friedman, ¶¶351-354.

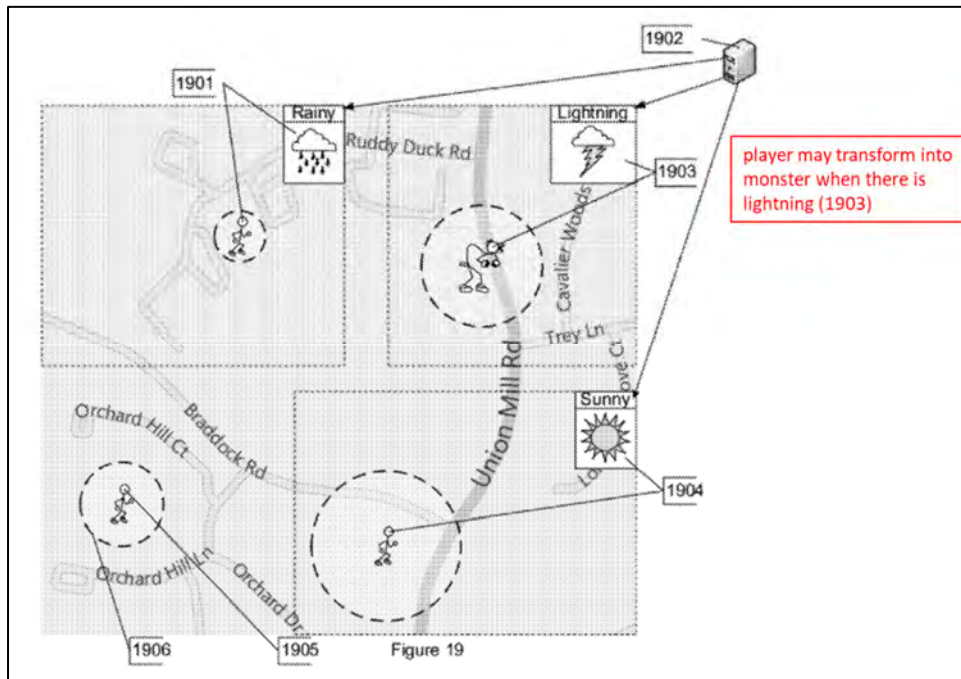
The battle/scavenger hunt/weather/werewolf *local element scripts* render obvious that the *local element script modifies the virtual character's...health* because, if the player successfully completes the game objective/encounter, it would have been obvious for the player to receive experience points 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. *Id.*

Battle. In addition, the battle *local element script modifies the virtual character's appearance/body expression* because the wielding player is shown wielding the weapon.

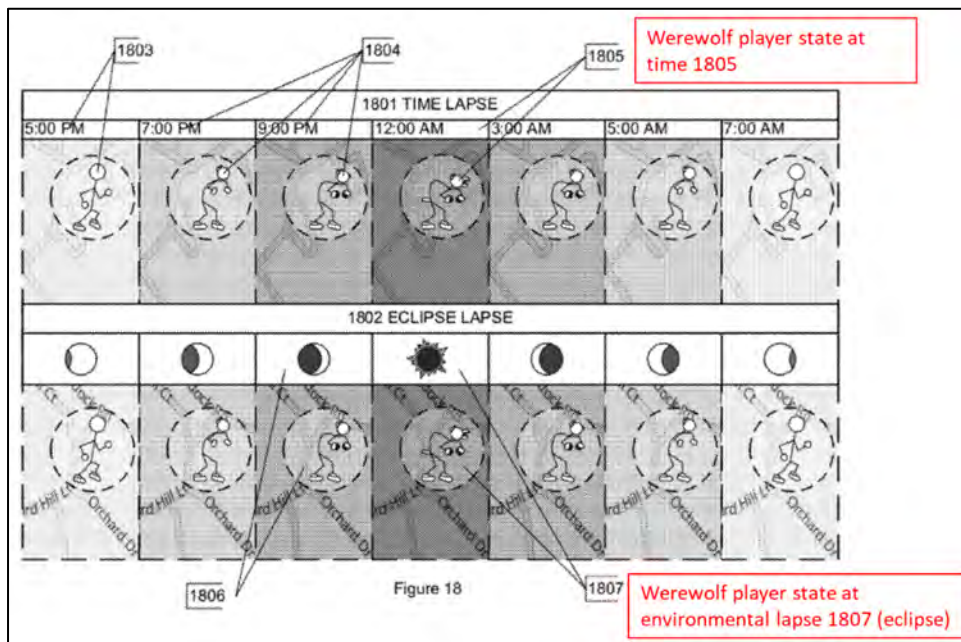


Kolo, Fig. 27 (annotated).

Weather/Werewolf. In addition, the weather/werewolf *local element scripts* *modif[y]* the virtual character's appearance because the player turns into a monster/werewolf.



Kolo, Fig. 19 (annotated).



Kolo, Fig. 18 (annotated).

6. Claim 5

Kolo renders claim 5 obvious. Friedman, ¶¶355-357.

Battle. The battle *local element script modifies the...weapons...of the virtual character* because the character creates a weapon/potion and uses them to their maximum effectiveness. Kolo, ¶¶214, 355.

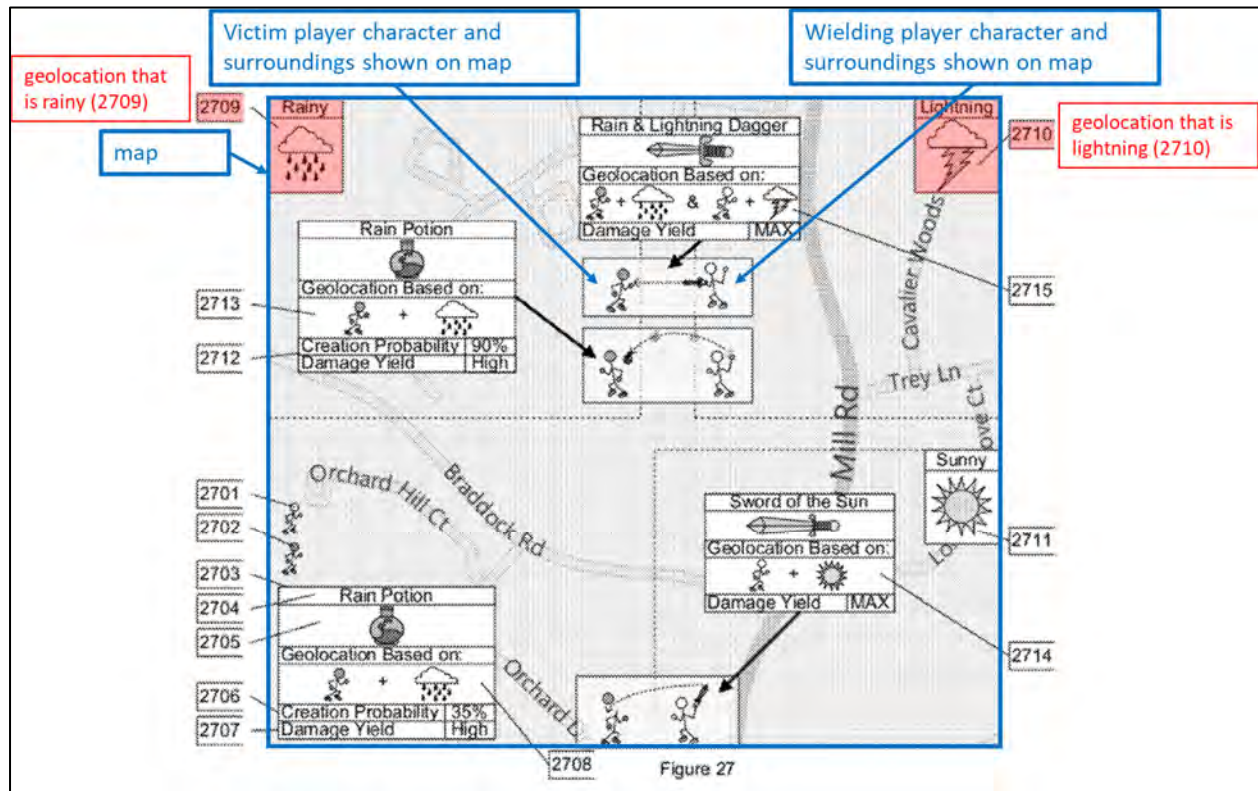
Weather/Werewolf. The weather/werewolf *local element scripts* render obvious that the *local element script modifies the...clothing of the virtual character* because the player turns into a monster/werewolf (Kolo, ¶¶340, 335), and a POSITA would have understood that the player's character would change size as a result of the transformation and the character's clothing needed to be modified accordingly. Friedman, ¶357.

7. Claim 6

Kolo renders claim 6 obvious. Friedman, ¶¶358-364.

Battle. The player *interacts with the video game according to a storyline* that involves the player's character battling another player, creating a weapon/potion and wielding them in a battle (i.e., the *storyline* includes a battle *theme* and a *plot* that involves the players' characters battling (*character interactions/encounters*)). Kolo, ¶¶214, 355; Friedman, ¶359. 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*). *Id.* The game also has a *scene/setting/aesthetics* because the characters'

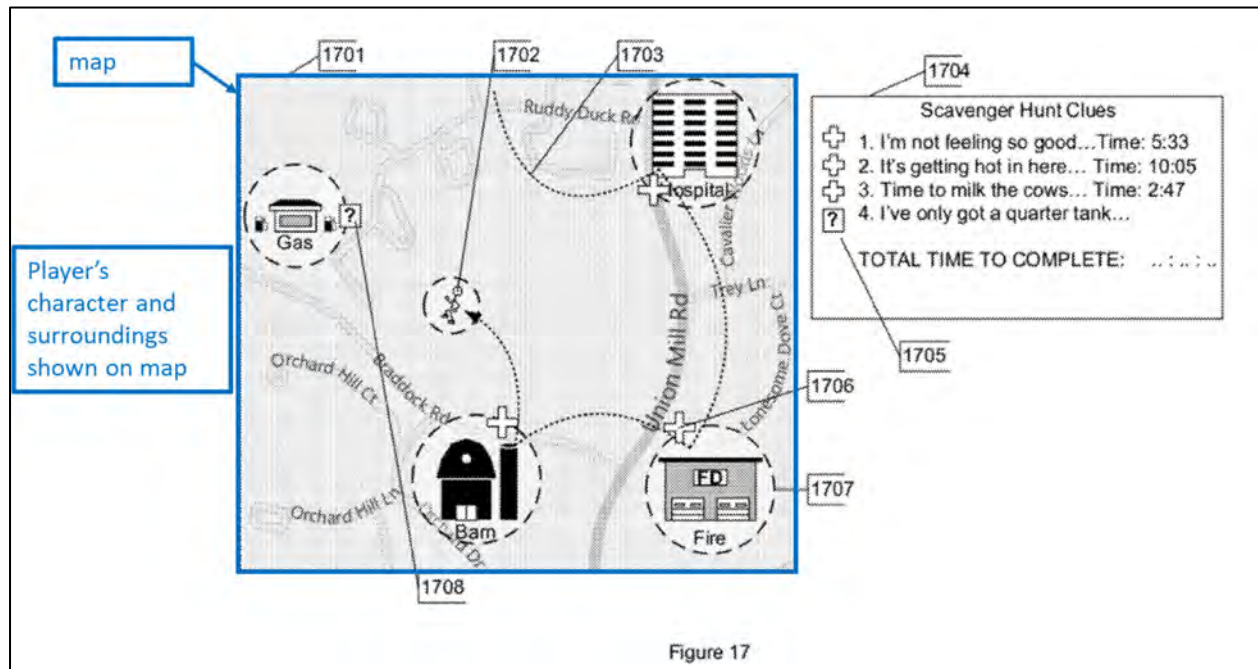
locations are shown on a map along with the weather conditions at their respective locations. *Id.*



Kolo, Fig. 27 (annotated).

Scavenger Hunt. 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, ¶¶181-84, 271-74, 333; Friedman, ¶360. 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

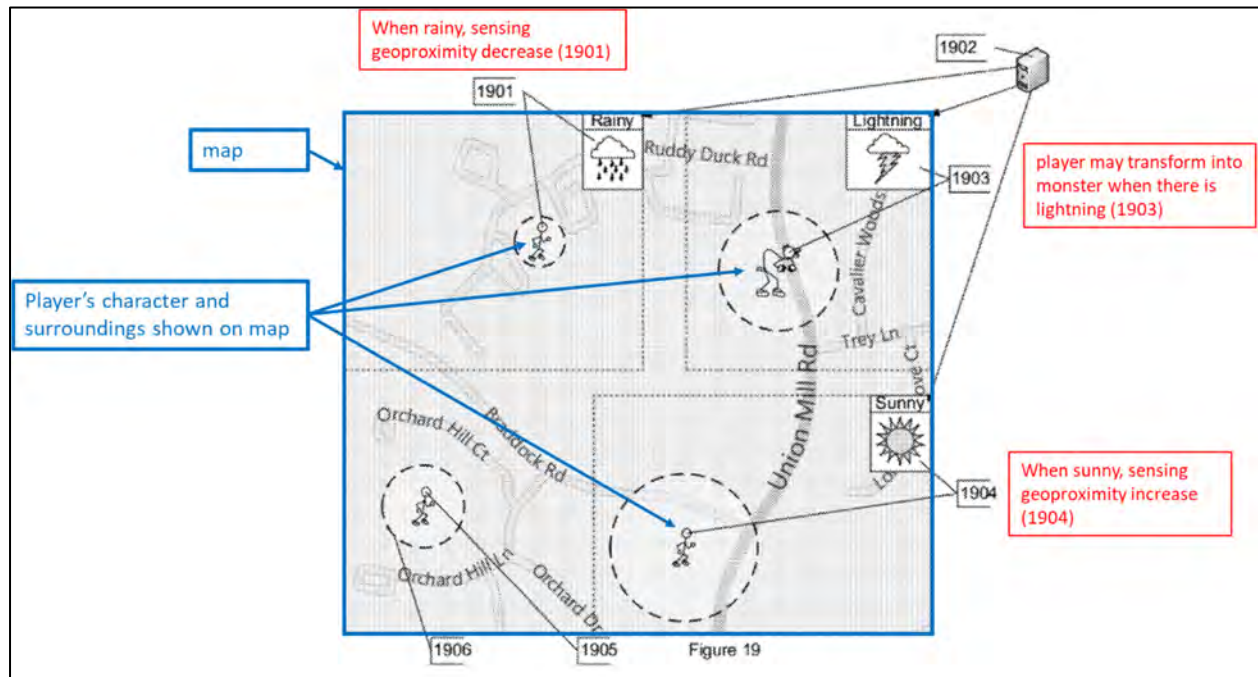
levels in the game (*plot node*). *Id.* The game also has a *scene/setting/aesthetics* because the player's character is shown on a map at locations within the game. *Id.*



Kolo, Fig. 17 (annotated).

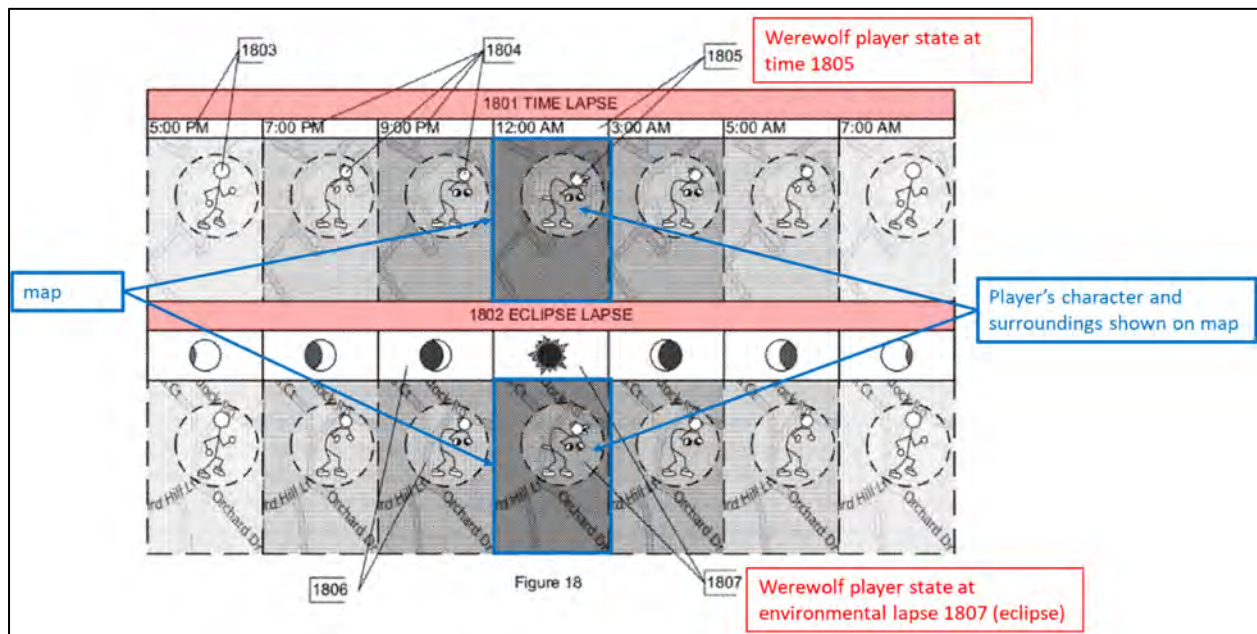
Weather. The player *interacts with the video game according to a storyline* that involves the player's character receiving enhanced/decremented sensing abilities or turning into a monster (the *storyline* includes a competition *theme*—whether through sensing other players or engaging with other players as a monster—and a *plot* that involves the players' characters' engaging in encounters (*character interactions/encounters*)). Kolo, ¶¶339-40; Friedman, ¶361. There are also changes to the plot because the character now has new/different abilities that impact further gameplay (*plot node*). *Id.* 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. Friedman, ¶362.



Kolo, Fig. 19 (annotated).

Werewolf. The player *interacts with the video game according to a storyline* that involves the player's character transforming into a werewolf (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, 267-68, 283, 334-37; Friedman, ¶363. There are also changes to the plot because the character is now a werewolf in the game (*plot node*). *Id.* The game also has a *scene/setting/aesthetics* because the character is shown on a map along with the character's surroundings. *Id.*

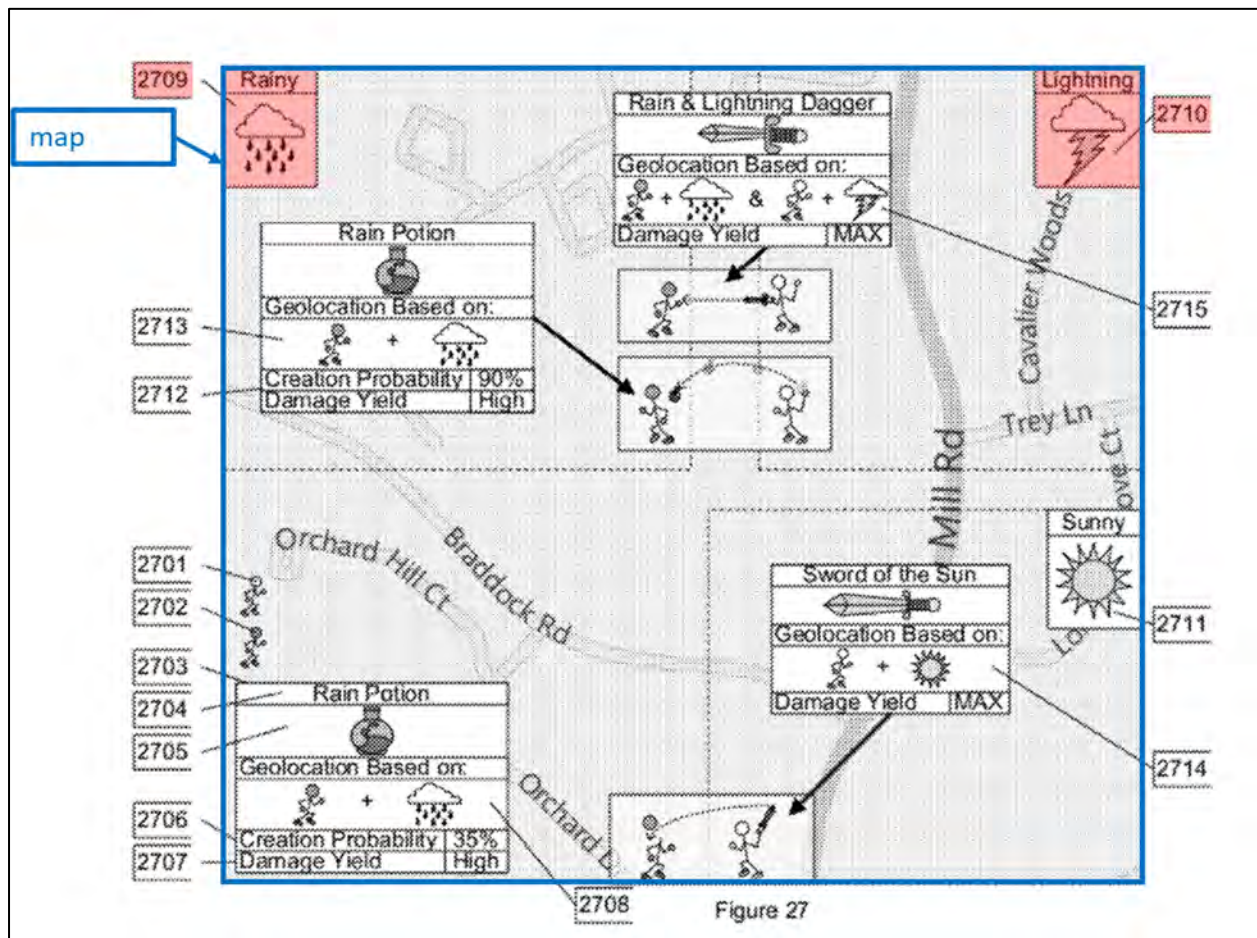


Kolo, Fig. 18 (annotated).

8. Claim 7

Kolo renders claim 7 obvious. Friedman, ¶¶365-368.

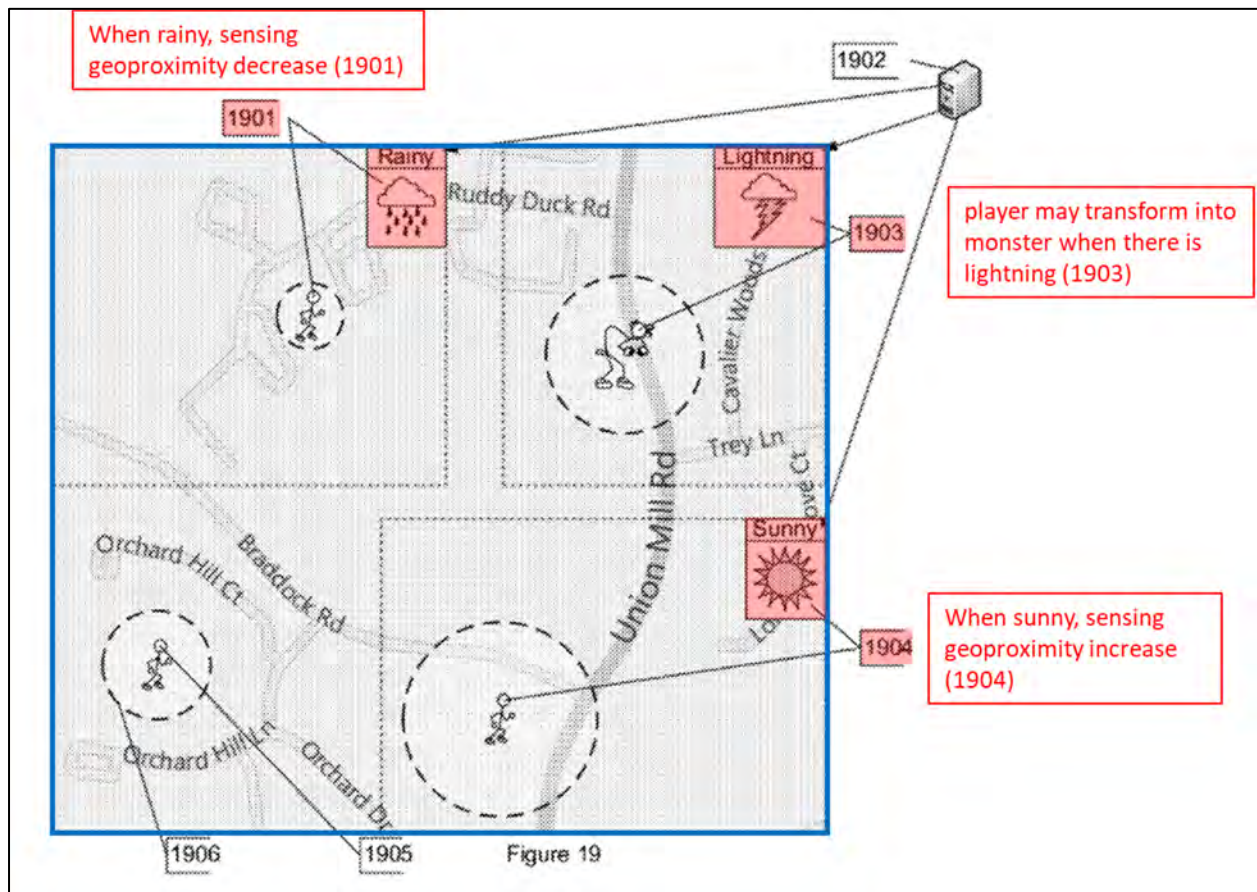
Battle. The battle *local element script* allows the wielding player character to use a weapon to its maximum effectiveness and displays the weather at the wielding/victim player characters' respective locations, which *modifies the scene or setting of the storyline*. Kolo, ¶¶214, 355; Friedman, ¶366.



Kolo, Fig. 27 (annotated).

Weather/werewolf. 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, ¶¶339-40; see '827Pat, 3:27-34; Friedman, ¶¶367-368.



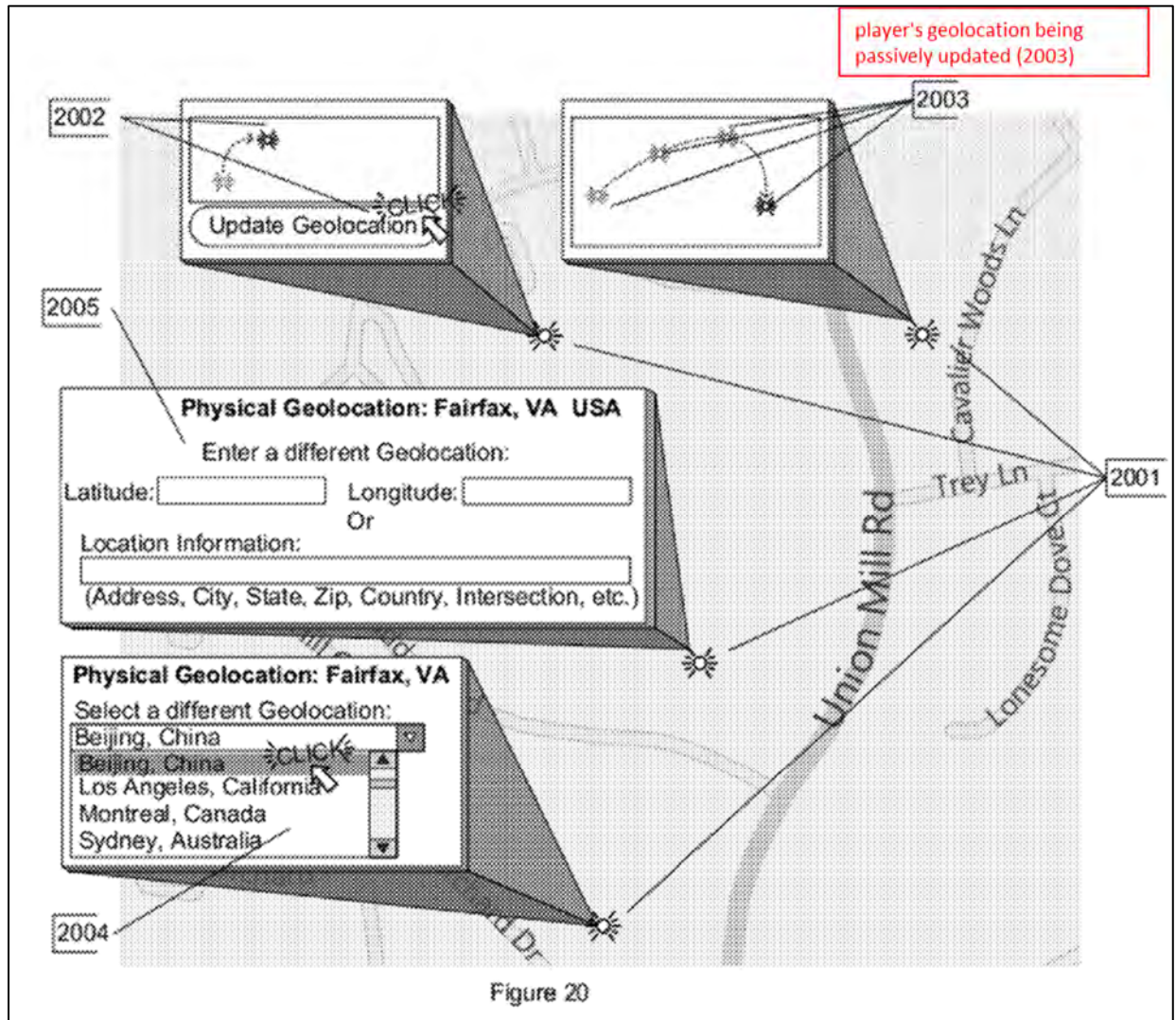
Kolo, Fig. 19 (annotated).

9. Claim 8

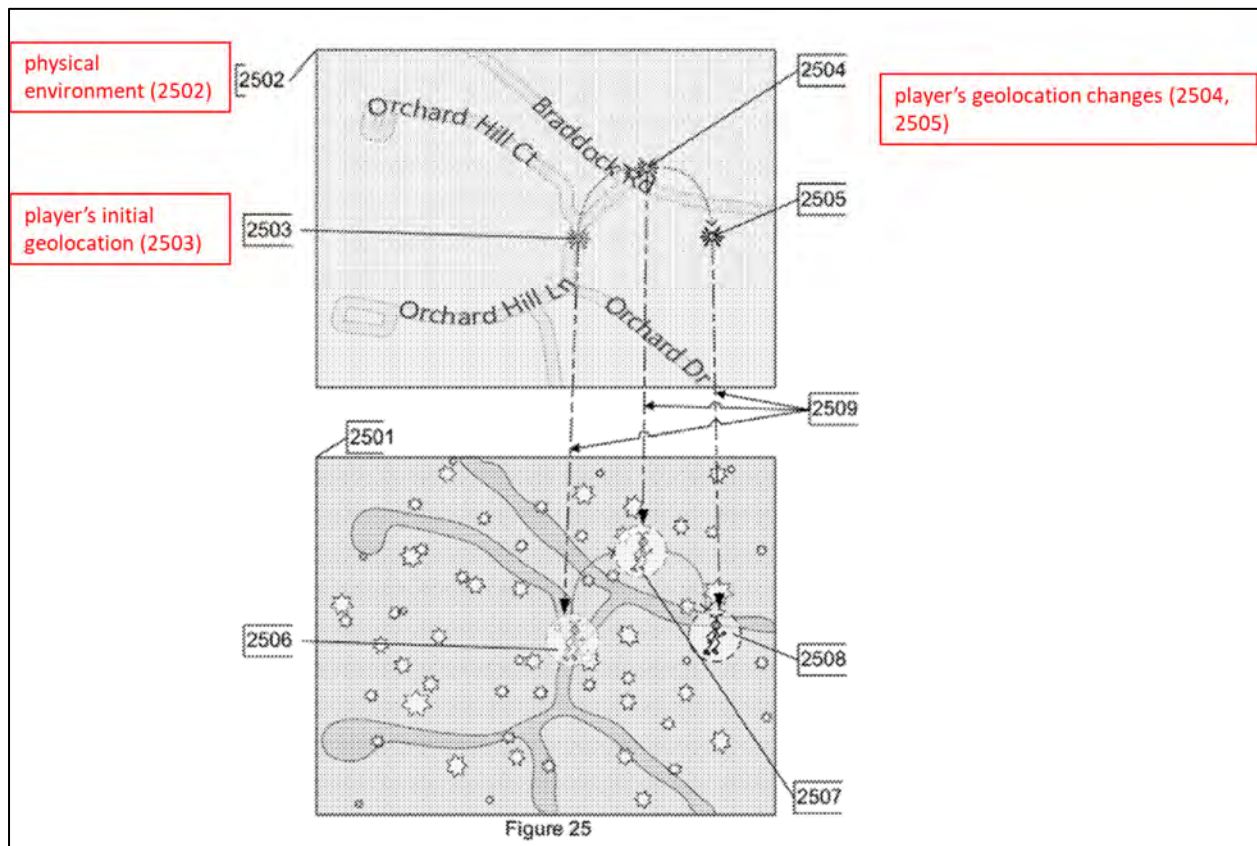
Kolo renders claim 8 obvious. Friedman, ¶¶369-376.

Kolo discloses that the player's geolocation is "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 "[s]oftware [that] may be run on [the] local device that regularly queries the GPS module to determine current geolocation." *Id.*, ¶198. *See also id.*, ¶¶343, 350.

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

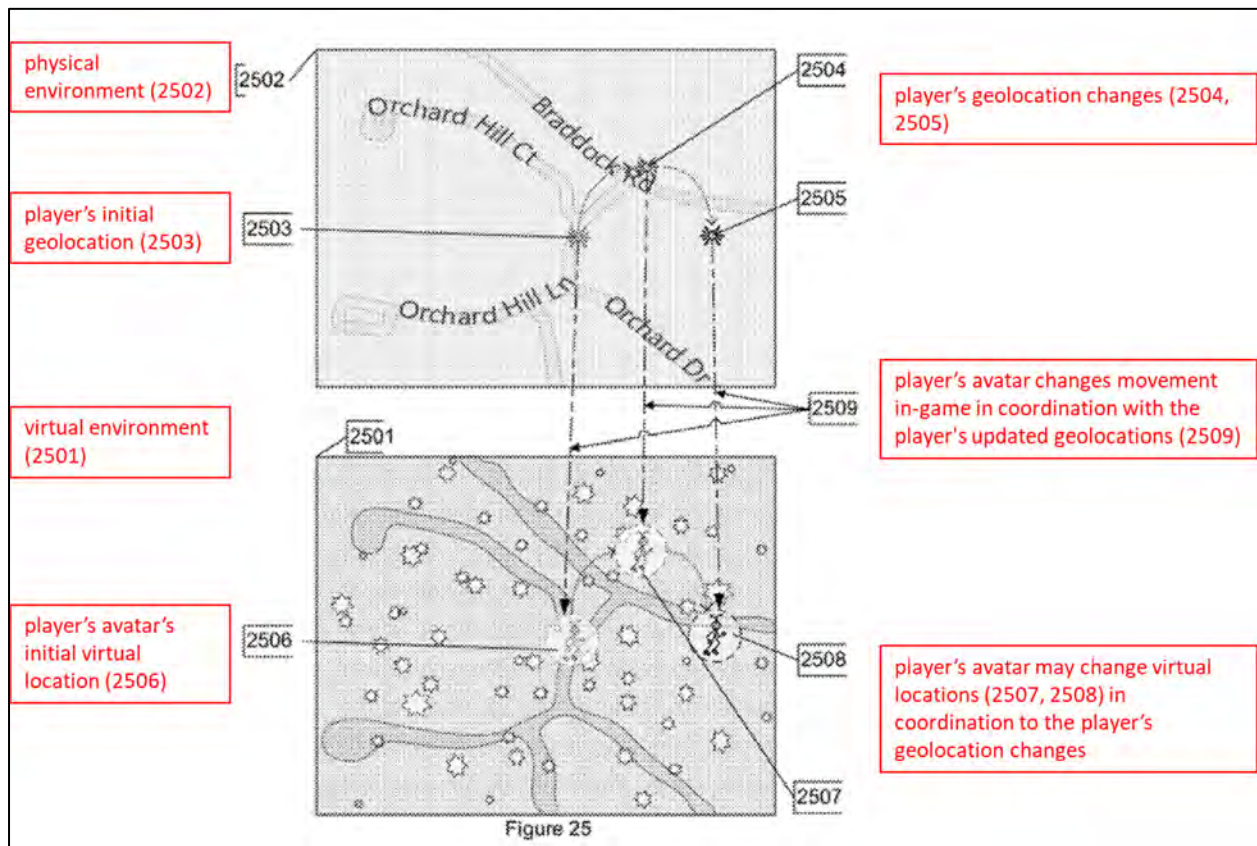


Kolo, Fig. 20 (annotated).



Kolo, Fig. 25 (annotated).

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*. E.g., Fig. 25 (showing the player's movements in the physical world coordinated with movements in the virtual world and the player character's current surroundings are shown on the map in the virtual world), ¶350.



Kolo, Fig. 25 (annotated).

Thus, as the player moves, Kolo discloses/suggests that the player's *location is re-detected at intervals* to show the game character *moving to a new scene in the storyline* when there is a *change in the location*. Friedman, ¶¶372-374. 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, the remaining claim limitations are performed as described regarding claim 1. Friedman, ¶375.

If “re-detect[ing]” location does not limit 1[b] and instead describes an additional step performed after performing claim 1's steps, Kolo discloses/suggests

that the player is free to continue to move to different geolocations and participate in gameplay after the steps of claim 1 are performed. *See, e.g.,* Kolo, ¶114; Friedman, ¶376. In this scenario, the player’s location would be *re-detected at intervals* (i.e., “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*. Friedman, ¶376.

10. Claim 9

Kolo renders claim 9 obvious. Friedman, ¶¶377-382.

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. Friedman, ¶378; *see* ’827Pat, 3:59-60 (mirroring claim 9 language).

If the Board finds that this claim limits claim 1’s *detecting* step (1[b]), limitations 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], the detected *null/unsupported* location must contain data corresponding to the player’s real-world location—otherwise, it would be impossible to perform limitations 1[c]/1[d]. Friedman, ¶379.

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), Kolo discloses/suggests this claim. Friedman, ¶¶380-381. Kolo discloses that the *local element scripts* would simply not be actuated in these scenarios. *Id.* 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). *Id.*, ¶381. 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. *Id.*

If the Board finds that this claim recites additional steps performed after 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* (such that the detected location is *null/unsupported*), it would have been obvious for the storyline to continue according to the currently active storyline (the *default* storyline based on the most recent properly-detected location). Friedman, ¶382. 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.
Id.

11. Claim 10

Kolo renders claim 10 obvious. Friedman, ¶¶383-394.

If the Board finds that a *local element* may be the player’s geolocation used to retrieve the *local element script*, 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. Friedman, ¶385. 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”).

Further, Kolo discloses that the player’s “geoproximity” may be used when retrieving the scavenger hunt/weather/werewolf *local element scripts*. Kolo, ¶¶333, 191, 188.

A POSITA would have understood that geoproximity may be used for retrieving the battle *local element script* as well. Friedman, ¶387. 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 geoproximity of GPS coordinates relevant to a battle *local*

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

Thus, when retrieving the *local element scripts*, 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* (using geoproximity). Friedman, ¶388.

If the Board finds that a local element is weather or another news-related item (see, e.g., '827Pat, 2:5-12), Kolo renders this limitation obvious. Friedman, ¶389. The '827Pat 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." '827Pat, 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 associated with that news item).

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, 191, 338, 337; Friedman, ¶390.

When the player-provided location is GPS coordinates, 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 based in part on that determination. Friedman, ¶391.

If the player's location is not based on GPS, 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). Friedman, ¶392. For example, for the werewolf *local element script*, a POSITA would have found it obvious to use news associated with the location in the same time zone as the player's geolocation (*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*. Friedman, ¶393. 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. Friedman, ¶¶393-394.

12. Claim 11

Kolo renders Claim 11 obvious. Friedman, ¶¶395-399.

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

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] (§§VI.B.2.a, VI.B.2.c).

If the frame of reference for *local/remote* is the local computing device, 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. Friedman, ¶398. Further, 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. *Id.* Kolo also discloses/suggests that the storage memory may be provided by the *combination* of the device/server *storage memory*. *Id.*

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

13. Claim 12

Kolo renders claim 12 obvious. Friedman, ¶¶400-405.

Kolo discloses/suggests that the central server comprises *storage memory*. *See* 1[pre], 1[b] (§§VI.B.2.a; VI.B.2.c). 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; Friedman, ¶401.

Kolo also discloses/suggests that the mobile device (*computing device*) includes *storage memory*. *See* 1[pre], 1[b], Claim 11 (§§VI.B.2.a; VI.B.2.c; VI.B.12). To the extent not disclosed, it would have been obvious for the mobile device's local memory to be *inbuilt*. Friedman, ¶¶402-405.

14. Claim 13

Kolo renders claim 13 obvious. Friedman, ¶¶406-409.

Kolo discloses/suggests that *the player is enabled to play the game using a* mobile device, which is a *game device*. Kolo, ¶300; *see* '827Pat, 8:53-56. Further, 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] (§VI.B.2.a), 1[b] (§VI.B.2.c).

15. Claim 14

Kolo renders claim 14 obvious. Friedman, ¶¶410-411.

Kolo discloses that the *game device* is a *mobile device*. Claim 13 (§VI.B.14); Kolo, ¶300.

16. Claim 15

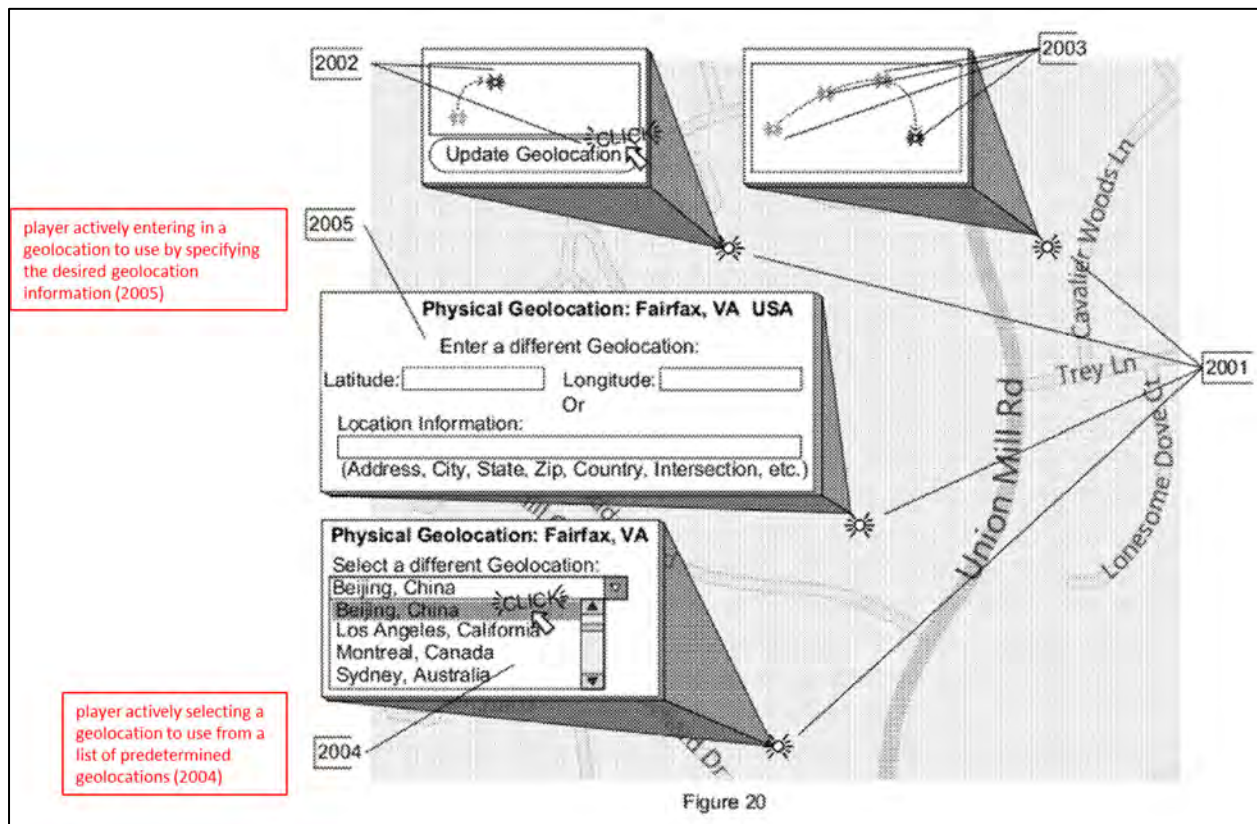
Kolo renders claim 15 obvious. Friedman, ¶¶412-413.

Kolo discloses that, when detecting the player's location, the location is retrieved from GPS circuitry, an IP address, or player provided location information. Kolo, ¶¶300, 198, 112; 1[b] (§VI.B.2.c), claim 13 (§VI.B.14).

17. Claim 16

Kolo renders claim 16 obvious. Friedman, ¶¶414-418.

Because claim 1 requires detecting a *real-world player geographic location*, 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. Friedman, ¶415. Otherwise, it would not be possible to perform the claim limitations requiring the *real-world player geographic location*. *Id.* Kolo discloses that a player can provide a location that is not their actual location. Kolo, ¶¶76, 193-198, 215, 221, 226, 344-345, Fig. 20.



Kolo, Fig. 20 (annotated).

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 the weather/werewolf aspects of gameplay. Kolo, ¶214; Friedman, ¶¶416-417.

Thus, Kolo discloses/suggests 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. Friedman, ¶418.

18. Claim 17

Kolo renders claim 17 obvious. Friedman, ¶¶419-422.

Because Kolo discloses rendering a map showing the player's game character at the player's real-world geographic location, *see* 1[a] and 1[d] (§§VI.B.2.b, VI.B.2.e), 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*). Friedman, ¶¶420-421.

The retrieved *mapping information includes at least one map from a map database* (Kolo's map database) that *represent[s] the detected location* because 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). Friedman, ¶422.

19. Claim 18

Kolo renders claim 18 obvious. Friedman, ¶¶423-426.

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. So when a player logs in at a geolocation and there is only one clue/answer remaining to win the game, the player's geolocation *is detected at login*, and the remaining steps of claim 1 are performed. Friedman, ¶¶424-425.

Further, 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 generally be logging into the game to engage in these aspects of gameplay. Friedman, ¶426.

20. Claim 19

Kolo renders claim 19 obvious. Friedman, ¶¶427-428.

Kolo discloses detecting the player's location during gameplay. E.g., Kolo, ¶300; 1[b] (§VI.B.2.c).

21. Claim 20

Kolo renders claim 20 obvious. Friedman, ¶¶429-435.

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*, Kolo discloses this limitation for the same reasons described regarding claim 1[c] (§VI.B.2.d). It would have been obvious to 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] (§VI.B.2.d). Friedman, ¶430.

In addition, if the Board finds that a *local element* is weather or another news-related item (see, e.g., '827Pat, 2:5-12), Kolo discloses/suggests this. Friedman, ¶¶431-434.

As described regarding 1[c] (§VI.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, 337-338. In other words, Kolo discloses using the player’s location to retrieve weather/environmental information (*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*. See 1[c] (§VI.B.2.d); Friedman, ¶¶432-433.

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). Friedman, ¶434. Further, when the mobile device (*computing device*) queries the server with its location as described regarding 1[b] (§VI.B.2.c), 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] (§VI.B.2.d); Friedman, ¶434.

22. Claim 21

Kolo renders claim 21 obvious. Friedman, ¶¶436-444.

As described regarding 1[c] (§VI.B.2.d) and claim 20 (§VI.B.21), in the battle/weather/werewolf aspects of gameplay, Kolo discloses/suggests a *local element* that is 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. Friedman, ¶437.

Also as described regarding 1[c] (§VI.B.2.d), these *local element scripts* *modif[y] the storyline to reflect that news item*. Friedman, ¶¶438-443.

23. Claim 24

Kolo renders claim 24 obvious. Friedman, ¶¶445-447.

As described regarding claims 20-21, the battle and weather aspects of gameplay disclose/suggest that the *local element* is a *weather...indicator relevant to the location* (weather report) and the *local element script* *modifies the storyline to reflect that indicator*. See §§VI.B.21-VI.B.22; Friedman, ¶446.

24. Claim 26

Kolo renders claim 26 obvious. Friedman, ¶¶448-456.

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 that performs the relevant limitations of claim 1 and further updates the storyline to reflect the weather/full moon/eclipse. Friedman, ¶450.

As described regarding claim 20, 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 §VI.B.21. The *local element script* also updates the storyline reflect the weather/environmental event report. See Claim 21 (§VI.B.22).

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. Friedman, ¶¶452-455. Similarly, 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, and 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. Kolo, ¶261; Friedman, ¶454. The same is true regarding introduction of a werewolf (monster). Friedman, ¶455.

25. Claim 27

Kolo renders claim 27 obvious. Friedman, ¶¶457-460.

In the weather/werewolf aspects of gameplay, Kolo discloses retrieving code based on a news item that introduces a monster. E.g., claim 20, §VI.B.21.

In the battle aspect, Kolo discloses retrieving code, based on a news item, that modifies enemies, e.g., by creating a weapon/rain potion and using them to their maximum effectiveness against an enemy. E.g., 1[e], VI.B.2.f, claim 20, §VI.B.21.

C. Ground 1B: Kolo and Zyda (Claims 22-23, 25, 28)

1. Zyda

Zyda is analogous art to the '827Pat because, like the '827Pat, it relates to systems and methods for implementing an online game with multiple players and incorporating the player's location into the game. Friedman, ¶168.

Zyda, entitled "Information Channels in MMOGs," 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.

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.*

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.*

Zyda discloses that its virtual world “may be triggered to seek this 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. *Id.*, ¶¶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.” *Id.*, ¶53.

2. Motivation to Combine

A POSITA looking to further improve interaction with the broader outside world would have been motivated to implement Zyda’s teachings receiving real-world news in real time, extracting occurrences from the news, and modifying gameplay in Kolo’s MMO based on the occurrences. Friedman. ¶¶461-463. Indeed, as discussed in e.g., 1[c] §VI.B.2.d, Kolo already discloses extracting news items such as weather and modifying gameplay based on said news items. Friedman, ¶462. A POSITA would have recognized that applying Zyda’s teachings (retrieving and rendering a map with weather information and accounting for news items at the player’s location when determining what *local element script* to retrieve) to Kolo merely expands on these concepts already taught by Kolo—thereby making the game feel even more immersive and driving player engagement. Friedman, ¶462.

A POSITA would have had a reasonable expectation of success because the combination would have merely required known modifications, such as accessing news sources based on geographic location, or extracting keywords from a document (the news) when retrieving the *local element script*. *Id.*, ¶463.

Applying Zyda’s teachings to Kolo would have been no more than applying a known technique (Zyda’s method for extracting news items from a news feed) to a known method (Kolo’s method for rendering a map and retrieving a *local element script*) ready for improvement to yield predictable results (retrieving a map from a map database and a *local element script* that accounts for category, time, and news events at a location), thereby resulting in a more customized/immersive gaming experience for the player that increases interaction with the broader physical world. *Id.*

3. Claim 22

The Kolo-Zyda combination renders claim 22 obvious. Friedman, ¶¶464-471.

Zyda discloses that “real world news may be of any type.” Zyda, ¶53. Thus, 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. Friedman, ¶465. Zyda further discloses modifying non-player characters (NPCs) based on real world occurrences. *Id.*, ¶¶9, 40.

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, ¶¶73-74, 131, 175-176, 178, 239, 245.*

Thus, 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. Friedman, ¶¶466-467.

In the Kolo-Zyda combination, 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 or a gym). Further, when the mobile device (*computing device*) queries the server to retrieve a *local element script* as 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) 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-world surroundings (the *local element script* therefore *modifies the storyline to reflect that*

news item). Friedman, ¶¶468-469. 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. Friedman, ¶470.

4. Claim 23

The Kolo-Zyda combination renders claim 23 obvious. Friedman, ¶¶472-475.

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.

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

5. Claim 25

The Kolo-Zyda combination renders claim 25 obvious. Friedman, ¶¶476-484.

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.

Thus, a POSITA would have found it obvious that the news item (*local element*) may refer to a local celebrity or news figure such as when the figure is

appearing at an event at a location Kolo's players may be located, e.g., at a shopping center or gym. Friedman, ¶478.

In the Kolo-Zyda combination, 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). Friedman, ¶479.

Further, when the mobile device (*computing device*) queries the server to retrieve a *local element script* as described regarding 1[b] and 1[c] and the player is at a location where the local celebrity or news figure is appearing, 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). Further, *if the news item refers to a local celebrity or news figure*, 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-world surroundings (the *local element script* therefore *modifies the storyline to introduce a non-player character representing that local celebrity or news figure*). Friedman, ¶¶480-481. A POSITA would have been motivated to do so

because it was a well-known technique to make the game reflect the player's real-world surroundings and feel more immersive/interactive. Friedman, ¶482.

6. Claim 28

The Kolo-Zyda combination renders claim 28 obvious. Friedman, ¶¶485-488.

As described regarding claims 22 and 25 (which depend from and disclose all limitations of claim 20), 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 §§VI.C.3, VI.C.5. To the extent this claim requires that a *local element* refer to, e.g., multiple *local events*, *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*, 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. Friedman, ¶487.

VII. CONCLUSION

IPR of the Challenged Claims is respectfully requested.

VIII. MANDATORY NOTICES

A. Real Party in Interest

Petitioner identifies themselves as real parties in interest.

B. Related Matters

To the best of Petitioner's knowledge, the '827 Patent has been involved in the following matters:

- *ImagineAR, Inc. v. Niantic, Inc.*, 1:24-cv-01252 (D. Del.).

C. Notice of Counsel and Service Information

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D. Service Information

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CERTIFICATE OF WORD COUNT UNDER 37 CFR §42.24(d)

Pursuant to 37 C.F.R. §42.24(a), Petitioner hereby certifies that portions of the above-captioned Petition for *inter partes* review of U.S. Patent No. 11,666,827, in accordance with and reliance on the word count provided by the word-processing system used to prepare this Petition, that the number of words in this paper is 13,953. Pursuant to 37 C.F.R. §42.24(a), this word count is in compliance and excludes the table of contents, table of authorities, mandatory notices under §42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing. This word count was prepared using Microsoft Word.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that true copies of the Petition for *inter partes* review of U.S. Patent No. 11,666,827 and supporting materials (Exhibits and Power of Attorney) were served via overnight delivery on the Patent Owner at the correspondence address of record as listed on PAIR:

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