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Applicant(s) : Jeffrey D. Mullen

For : LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

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EXPRESS MAIL CERTIFICATION

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I hereby certify that this transmittal letter and the other papers and fees identified in this transmittal letter as being transmitted herewith are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10 on the date indicated above and are addressed to the Hon. Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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TRANSMITTAL LETTER FOR
ORIGINAL PATENT APPLICATION

Sir:

Transmitted herewith for filing are the [X] specification; [X] claims; [X] abstract; [X] executed declaration; [X] Print EFS; for the above-identified patent application.

This application claims the benefit of U.S. Provisional Patent Application No. 60/628,475 filed on November 16, 2004 and entitled "Location-Based Games and Augmented Reality Systems," (Docket No. JDM/008 PROV) which is hereby incorporated herein in its entirety.

Also transmitted herewith are:

☒ Fourteen (14) sheets of:

☐ Formal drawings.

☒ Informal drawings. Formal drawings will be filed during the pendency of this application.

☐ An assignment of the invention to _____

☐ A check in the amount of $40.00 to cover the recording fee.

☐ Please charge $40.00 to Deposit Account No. 06-1075 in payment of the recording fee. A duplicate copy of this transmittal letter is transmitted herewith.

☐ An associate power of attorney.

☐ A certified copy of the priority document, _____ application, No. _____, filed _____.

Applicant(s) hereby request(s) small entity status under 37 C.F.R. § 1.27. The filing fee has been calculated as shown below:

FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE
FILING, SEARCH AND EXAMINATION FEES				$ 500.00
TOTAL CLAIMS	3 - 20 =		x $ 25	= $ 00.00
INDEPENDENT CLAIMS	3 - 3 =		x $100	= $ 00.00
☐ A MULTIPLE DEPENDENT CLAIM			+ $180	= $ 00.00
GROUPS OF 50 SHEETS ABOVE 100 SHEETS			x $125	= $ 00.00
			TOTAL	$ 500.00

☒ A check in the amount of $ 500.00 in payment of the filing fee is transmitted herewith. A duplicate copy of this transmittal letter is being transmitted herewith.

Jeffrey D. Mullen
Applicant
Customer No. 32733
350 West 43rd St., Apt. 5H
New York, NY 10036
Mobile: (914) 837-7741

SMALL ENTITY
JDM/008

LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

Cross-Reference to Related Applications

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 60/628,475 (Docket No. JDM/008 PROV) filed on August 16, 2004 and titled "Location-Based Games and Augmented Reality Systems," which is hereby incorporated by reference herein in its entirety.

Background of the Invention

[0002] This invention relates to location-based game systems.

[0003] Virtual Reality (VR) systems have been developed in which a user is provided with a non-transparent head-mounted display. This display provides images to the user such that the user is immersed in a virtual, alternate reality. A user cannot see his/her physical environment while immersed in such a virtual, alternate reality. Accordingly, VR systems are deficient because a user cannot easily move around a physical environment while immersed in the virtual reality because a user cannot see his/her

physical environment. If a user begins to physically move in his/her physical environment without being able to see his/her physical environment then the user may trip, or bump into, a physical object (e.g., a rock or chair).

[0004] As a result of the mobility constraints of traditional VR systems, a user is traditionally placed on a platform that is surrounded by padded safety rails. A user cannot move outside of this protected platform and moves through the virtual, alternate reality created by the VR system through the use of a manual joystick. Such a VR system is deficient because it severely limits the way that a user may interact with the virtual, alternate reality provided by the VR system.

[0005] Traditional manual controls occasionally have a primary control and a number of supplemental controls. Such a primary control occasionally takes the form of a joystick. The primary control occasionally provides the main control signal to a video game. Traditionally, the main control signal controls the location of a video game character in a virtual world. Such controls, however, are deficient because the controls require unnatural user movement to generate the primary control signal. It is therefore desirable to provide a primary control device that does not require unnatural user movement to generate a primary control signal to a video game.

Summary of the Invention

[0006] A handheld location-based game system is provided in which a user's physical position on a physical playfield (e.g., the physical world, a

physical environment, or a defined physical playfield) correlates to a video game character's location in a virtual playfield. In this manner, a video game character may be controlled without the need for a joystick. A handheld location-based game system is also provided that includes manual controls. Such manual controls may be utilized during location-based gameplay. An Augmented Realty (AR) game system may also be provided as, for example, a location-based game system and may display virtual indicia on a semi-transparent head-mounted display such that a user can see both virtual indicia and his/her physical environment. Virtual indicia may also be provided that interacts with a physical environment. For example, information may be provided to an AR game system about a user's physical environment. Furthering this example, the location of a doorway in a room may be provided to an AR video game such that a virtual character may be seen by a user of an AR display to walk through a doorway and disappear. Thus, a video game system may be provided that augments a user's environment to provide a video game. As the video game progresses, the user may interact with his/her physical environment in order to play a virtual game(e.g., by walking through his/her environment and shooting at virtual ducks flying through the air).

[0007] A switch may also provided that allows a user to manually play a location-based game (e.g., an AR game). In this manner, a user may be able to obtain functionality from the location-based game system when the user is not able to move. Such a benefit may be utilized, for example, when the user is a passenger in a moving car or sick in bed.

[0008] A location-based game can, however, be provided while a player is in bed or is in a car. For example, a location-based game could be implemented based on the movement of a car such that the movement of the car is translated into a control signal for the game (e.g., the location of a car in a game). Such a video game system may be embedded in a vehicle (e.g., a car). If a car is safely utilized on a large parking lot, a number of games may be realized as location-based games (e.g., as augmented reality games where game graphics are selectively provided on the vehicle's dash/windows). While in bed, a location-based game can be provided by translating small differences in location of the system (or a controller for a system). The system (or a controller to the system) can, for example, be a fishing rod such that the movement of a flick of the system is used to generate a control signal for casting a virtual rod in a virtual video game system.

[0009] A playmat is provided that may be packaged with a handheld location-based game system. If the handheld system is dedicated to a single game (e.g., the handheld system is not enabled to download additional games, play additional games, or receive cartridge-based or disc-based games) then the playmat may be representative of that single game. Additionally, such a single game dedicated system (or any system or any controller) may be shaped similar to, for example, the main character of the video game, or any character or characteristic of a video game, in order to increase the whimsical and festive nature of playing the game.

[0010] A playmat for a location-based system (e.g., an AR system) may correlate to a particular virtual playfield. Doing so may assist the user in playing the handheld location-based game. Using the classic game of FROGGER as an example, the virtual playfield of FROGGER may be the same for each level (disregarding the types of virtual computer controlled objects used in each level). Thus, a FROGGER playmat may include indicia representative of this virtual playfield. Additional non-playfield indicia may be provided on the playmat to provide additional location-based game information to a user. For example, a "START" circle may be provided on the playmat. Such a "START" circle may correlate to the location where the user can start each level.

[0011] In this manner, the location-based game may be configured (e.g., scaled) such that user movements on the playmat playfield correlate to location-based game movements on the virtual playfield. Thus, the location-based game may utilize the knowledge of the origin location (e.g., the START location) and the playmat perimeters (e.g., physical playfield perimeters) to provide a location-based game. Such a playmat may also be beneficial to locating devices that may accumulate errors over time. As such the location-based game and the playmat may be configured to reduce the chance of such accumulation errors. For example, if a locating device accumulates noticeable location errors after 30 seconds of gameplay, each game level may be limited to a particular period of time (e.g., 30 seconds). In configuring the size of the playmat, and appropriately scaling the location-based game to the playmat, the amount of time before noticeable errors

accrue can be manipulated. Similarly, the average amount of time before noticeable errors accrue can be determined such that an appropriate time limit for finishing a level can be subsequently determined. Persons skilled in the art will appreciate that a number of location-based systems can be fabricated in which noticeable errors may never accrue. One such example may be a hybrid locating system that uses an inertial positioning system (e.g., any number of accelerometers and/or gyroscopes) to determine location between signals received from a positioning device (e.g., a GPS device).

[0012] Taking FROGGER as an example, a user may be given 30 seconds to travel between the "START" location and an "END" location on the playmat. After the user has completed a level (or dies), that user may be instructed to return to the origin position such that the locating device may reset so that the errors accumulated during the last level is removed but the location-based game knows where the user is. Multiple playmats may be packaged together with a location-based game. Playmats that are similar but have different sizes may also be packaged together with a location-based game. Persons skilled in the art will appreciate that a location-based game can measure the exact location of a device (e.g., via a positioning system such as a GPS system) and/or follow the movement of a device to determine changes in movement (e.g., via any number of accelerometers and/or gyroscopes) or a hyrbid of different types of sensors.

[0013] Playmats may also include holes such that they may be easily pegged into the ground or such that gaming components may be attached to the playmat at

particular locations. For example, if the locating device is a local positioning system, positioning transmitters may be positioned at pre-determined locations on the playmat (e.g., holes cut into the playmat for receiving the transmitters) to expedite the correct setup of the local positioning systems.

[0014] Systems and methods of scaling information from physical playfields to a video game system are also provided. Systems and methods of storing such information are also provided.

[0015] A location-based gaming system with a head-mounted display is provided such that video game indicia may be overlaid onto the user's physical playfield. Such a head-mounted display may be transparent such that a user can see through the display in areas where virtual indicia is not displayed. In this manner, the user may travel as fast as he/she wants to without risk of bumping into, or tripping over, a physical object. The display may also be non-transparent. A camera, however, may be provided on, or around, the head-mounted display to capture the physical environment. The physical environment can then be manipulated by a processor such that, for example, virtual indicia (e.g., a video game character or component is added) is added to the physical environment. The combination of the physical environment and virtual indicia can then be displayed to a user on a head-mounted display (or any type of display) such that a user can still see his/her physical environment even with a non-transparent display. As such, a non-transparent video game system is provided that can provide both augmented reality and virtual reality functionalities.

[0016] Such overlays may include games in which only video game characters and interactive objects are overlaid onto the physical environment. As a result, the user's physical environment may be structurally kept the same.

[0017] To increase the safety of a game that allows for a high-level of user mobility, such video game indicia may be provided with different contrasts (e.g., strength) at different distances from a user such that at least close virtual objects/characters are semi-transparent such that close, physical hazards may be recognized by a user. Similarly, no virtual indicia may be allowed to come within a certain distance of a user (from the user's perspective). Thus, a virtual indicia (e.g., a video game character) may never block a hazardous object that is close to a user.

[0018] A landscape detector may be provided with a location-based game system such that information on the physical terrain of the user's physical environment may be utilized by the gaming system. If the locating device is a GPS device (or if the area has already been scanned), landscape information may be retrieved from memory that stores such information.

[0019] The information provided by the landscape detector may be utilized, for example, to position where portions of a video game playfield, objects, and characters may be positioned on a display (e.g., on a head-mounted display). Such information may also be used, for example, to control the movement characteristics of computer-controlled video game characters and indicia. A directional device may also be included to determine the direction and/or pitch that the user (e.g., the head-mounted display) is

facing. Such information may be utilized to determine the rotation of a users head as well as the user's visual perspective. Thus, the head-mounted display may, in itself, provide control signals to a video game.

[0020] To simplify the process of providing an augmented video game system, a video game may be played in the game system in an ever-changing virtual world. Portions of this game, and perspectives of those portions, may be selectively displayed to the user at a particular time. In this manner, the complexity of an augmented reality game may be simplified such that the augmented system renders a non-visible game based on control signals and, for example, portions of this game are selected and provided to a display based on the control signals. Thus, any type of video game hardware, or software, may be utilized and a module may be provided for the image selection process. Such a module can also configure the image to be displayed to a user (e.g., aligned with a user's physical terrain) or another device (e.g., another module) can be utilized to correlate selected indicia on a physical terrain. Such modules can also convert control signals provided by an AR game controller (e.g., head-mounted movement sensors and/or positioning systems) to control signals understood by any game system. As such, a classic 3-Dimensional video game (e.g., Goldeneye 007 or Pacman 3D) can be played on a classic video-game system (e.g., Nintendo 64 or Playstation), yet be provided as an AR game system. This may be accomplished through the use of an add-on module that may, for example, translate control signals communicated between the game system and add-on module,

selective images (and audio) from the game system to display on the AR display, and determine how to display the selected images (and audio) on the AR display (and AR sound system).

[0021] Such an add-on module can interface via character control interfaces and audio/video outputs on a game system. In such a configuration, the add-on module may receive just static images/sounds. Thus, the add-on module may be provided with information to process the image, determine the location of video game indicia (e.g., a video game enemy) and determine the action of video game indicia (e.g., a video game enemy shooting). Such information may be provided in a look-up table provided on a remote database such that copies of images for a number of, or all of, video game indicia for any particular game can be obtained and compared to the received still images. Thus, the module can determine how video game indicia is being presented in the game such that the video game indicia can be appropriately presented on an AR display. Furthermore, an AR add-on module can be interfaced to the control processor of a game system (or any component of a video game system such as the system's rendering device). Such an interface may, for example, directly skew what is being rendered and how it is being rendered for later use in an AR display. Such an interface may also, for example, monitor the movement and status of video game indicia directly from the video game system (e.g., directly from the processor).

[0022] An AR game system may be utilized in many applications. For example, an AR game system may be utilized in the military training of soldiers. To accommodate such an application the landscape of a pre-

determined area (e.g., a particular square area of a military based) may be scanned at a point before a game is played. Virtual objects may be generated using this scanned information that correspond to physical objects. Such a process may be utilized when the landscape is being scanned as a game is playing. Thus, the video game system may construct a virtual world similar to the scanned physical world and generate computer-controlled characters (and interactive or impenetrable objects) on the physical world. Such a pre-scanned system may be relatively inexpensive. If the virtual game characters are computer-controlled enemy combatants (or manually controlled characters by instructors at a stationary game device or manually controlled characters by instructors using a location-based game device on a different, location-synched playfield) then military soldiers may be trained in a variety of safe, combat-realistic situations.

[0023] The systems and methods of the present invention may be utilized for any type of Augmented Reality (AR) application and is not limited to video games. For example, AR applications for wearable-computers may be provided. In one such application, virtual advertisements can be displayed on a user's head-mounted display to augment these virtual advertisements over the real world. The display of virtual advertisements may be provided to such a wearable computer when the wearable computer reaches a particular location. The virtual advertisements can be displayed within a physical environment based on the characteristics of the physical environment (e.g., displayed in front of you if nobody is walking in front of you or displayed above the heads of people walking

in front of you if people are walking in front of you). Similarly, AR-phone calls may be realized such that the image of the person you are calling is displayed in your physical environment (e.g., the person you are having a telephone conversation is displayed as walking besides you or a two-dimensional video is displayed in front of you).

Brief Description of the Drawings

[0024] The principles and advantages of the present invention can be more clearly understood from the following detailed description considered in conjunction with the following drawings, in which the same reference numerals denote the same structural elements throughout, and in which:

[0025] FIG. 1 is an illustration of a handheld location-based game system and accompanying playmat constructed in accordance with the principles of the present invention;

[0026] FIG. 2 is an illustration of a handheld location-based game system in the shape of the virtual character that the location-based game system controls constructed in accordance with the principles of the present invention;

[0027] FIG. 3 is an illustration of scaling a virtual playfield to a physical playfield constructed in accordance with the principles of the present invention;

[0028] FIG. 4 is an illustration of landscape detection constructed in accordance with the principles of the present invention;

[0029] FIG. 5 is an illustration of virtual impenetrable object construction on a playfield based

on detected landscape objects constructed in accordance with the principles of the present invention;

[0030] FIG. 6 is an illustration of computer-controlled character positioning and movement based on detected landscape objects constructed in accordance with the principles of the present invention;

[0031] FIG. 7 is an illustration of virtual playfield mapping that includes physically detected impenetrable objects constructed in accordance with the principles of the present invention;

[0032] FIG. 8 is an illustration of computer controls for video game characters in a location-based game constructed in accordance with the principles of the present invention;

[0033] FIG. 9 is an illustration of different data storage structures for a location-based game constructed in accordance with the principles of the present invention;

[0034] FIG. 10 is an illustration of displaying video game characters in a semi-visible display for a location-based game constructed in accordance with the principles of the present invention;

[0035] FIG. 11 is an illustration of displaying video game characters with different transparencies for a location-based game constructed in accordance with the principles of the present invention;

[0036] FIG. 12 is an illustration of computer controlled movement of video game characters in a virtual playfield constructed in accordance with the principles of the present invention;

[0037] FIG. 13 is an illustration of pre-scanning a physical playfield constructed in accordance with the principles of the present invention; and

[0038] FIG. 14 is an illustration of a location-based game topology constructed in accordance with the principles of the present invention.

Detailed Description of the Drawings

[0039] U.S. Provisional Patent Application No. 60/603,481 filed on August 20, 2004 entitled "Wireless Devices With Flexible Monitors and Keyboards" (Docket No. JDM/007 PROV) and U.S. Patent Application No. 11/208,943 filed on August 22, 2005 entitled "Wireless Devices With Flexible Monitors and Keyboards" (Docket No. JDM/007) are hereby incorporated by reference herein in their entirety.

[0040] U.S. Provisional Patent Application No. 60/560,435 filed on April 7, 2004 entitled "Advanced Cooperative Defensive Military Tactics, Armor, and Systems" (Docket No. JDM/006 PROV) and U.S. Patent Application No. 11/101,782 filed on April 7, 2005 entitled "Advanced Cooperative Defensive Military Tactics, Armor, and Systems" (Docket No. JDM/006) are hereby incorporated by reference herein in their entirety.

[0041] U.S. Provisional Application No. 60/560,435 filed on September 2, 2003 entitled "Systems and Methods for Location Based Games and Employment of the Same on Location Enabled Devices" (Docket No. JDM/005 PROV) and U.S. Patent Application No. 10/932,536 filed on September 1, 2004 entitled "Systems and Methods for Location-Based Games and Employment of the Same on Location-Enabled Devices" (Docket No. JDM/005) are hereby incorporated by reference herein in their entirety.

[0042] U.S. Patent Application No. 10/797,801 filed on March 9, 2004 titled "Systems and Methods for Providing Remote Incoming Call Notification for Wireless Telephones" (Docket No. JDM/004) is hereby incorporated by reference herein in its entirety.

[0043] U.S. Provisional Patent Application No. 60/367,967 filed on March 25, 2002 entitled "Systems and Methods for Locating Cellular Phones" (Docket No. JDM/002 PROV) and U.S. Patent Application No. 10/400,296 filed on March 25, 2003 titled "Systems and Methods for Locating Wireless Telephones and Security Measures for the Same" (Docket No. JDM/002) are hereby incorporated by reference herein in their entirety.

[0044] Turning first to FIG. 1, gaming system 100 is provided that includes handheld game system 101 and playmat 150.

[0045] Gaming system 100 may be a location-based game system in which the physical location (or physical movement) of a user on a physical playfield determines the virtual location (or virtual movement) of a virtual character on a virtual playfield. Location information may be obtained through, for example, any type of triangulation technique such as a GPS system or a localized positioning system (LPS). For example, the time it takes multiple signals from multiple transmitters to reach device 101 may be utilized to determine the position of device 101. Location information may alternatively be obtained through various cell phone or wireless LAN location techniques. For example, a user's signal strength between multiple hubs or base stations may be utilized to determine that user's location. As per another example, inertial movement sensors such as accelerometers and/or

gyroscopes may be utilized to keep track of a user's movement in a particular direction. In this manner, the user's location may be determined and updated based on the user's movements. Hybrids of such systems may also be utilized. For example, an accelerometer may be utilized to keep track of a user's position until a second locating signal is provided (e.g., a GPS system). In this manner, a GPS signal may be the master locating signal while the accelerometer provides location updates between GPS signals. Generally, device 140 is the locating device (or locating devices) for game system 101.

[0046] Game system 101 may include manual controls 120 and manual control switch 132 that turns ON and OFF location-based controls. In this manner, a user may still obtain functionality from game system 101 while, for example, sitting on a park bench. ON/OFF switch 131 may control when device 101 is turned ON and OFF.

[0047] Persons skilled in the art will appreciate that controls similar to manual controls 120 and 131 may also be provided on an AR game system. Thus, a user may use manual controls to control the location of a video game character in an AR game (e.g., control what first-person perspective is displayed on an AR display) without physically moving. A user may also use manual controls similar to manual controls 120 and 131 to toggle between an AR and VR game, toggle between AR and VR configurations of a game, and toggle from a location-based control scheme to a manual control scheme after an AR game configuration has been toggled to a VR game configuration. Thus, if a user is located in an environment that makes location-based AR gameplay difficult, (e.g., a small-room or in a car), the user

can instruct the game system to provide a VR version of the game to be played with a manual controller. Thus, a user may instruct an AR/VR game system to display all virtual indicia on a head-mounted display (and/or render all virtual indicia) and not allow any areas of the display to become transparent. Thus, a user may instruct an AR/VR game system to switch from location-based control to manual input control. For systems with multiple control signals generated from multiple control devices, a switch for alternate control schemes may be provided for each control device. For example, a user may turn a location-based sensor in a head-mounted display off, thus allowing a directional pad on a controller to control the location of a video-game character (a user may also turn a switch associated with the directional pad ON). Yet, the user may decide not turn OFF inertial movement sensors in a hand-held controller, thus deciding not to, for example, use control buttons or a directional pad to replace the functionality of the inertial movement sensors. Thus, a user may still swing around a hand-held controller to register internal sensor readings as control signals to, for example, swing around a video game object (e.g., a sword or lightsaber) in a game (e.g., a VR game) when the user is sitting in a car even though the user could, for example, switch to a directional pad for the control the video game object. Additional examples of a video game object controlled by one or more inertial sensors may include, for example, a fishing rod, tennis racket, baseball bat, pool cue, football (e.g., throwing a football), baseball (e.g., throwing a football), steering wheel, clutch, gun (or another object-projecting device or projectile), horse-

racing whip, frisbee, net, boxing gloves, or any type of object or action.

[0048] Persons skilled in the art will appreciate that a location-based game system may not require a controller in addition to a game system. For example, game system 101 may be fabricated with just one or more location sensors and/or inertial movement sensors without any additional manual controls. In one example, game system 101 may be a low-cost system that only provides a primary control signal to move a virtual character in a virtual world (e.g., move a frog through an environment). Additional manual controls may be provided on a game system (e.g., controls 120) and a game system may include connection ports to receive additional devices such as additional controllers, other game systems, displays (e.g., a TV or a head-mounted display), memory, add-on modules (e.g., software and/or hardware upgrade modules), or any type of peripheral.

[0049] Playmat 120 may be provided in order to increase the whimsical and festive nature of playing game system 101. For example, playmat 120 may include indicia similar to environment indicia in a particular game. Playmat 150 may be sized according to the characteristics of a game, or virtual environment, on system 101. For example, if a game on game system 101 has a water component and a land component, playmat 1450 may have indicia of a water component (e.g., indicia 152) and land component (e.g., indicia 151). The size of each of these components may correspond to the movement needed of device 101 to travel across these components in a virtual environment. For example, if a user has to move 5 feet to cross the land

component on a level of a game provided by game system 101 then the land component of playmat 150 may be 5 feet long.

[0050] Playmats may be distributed with game system 101 in kits. In this manner, multiple playmats may be included in such a kit (e.g., a retail package) that correspond to different environmental indicia on the game. So, for example, the kit may include a level 1 playmat and a level 2 playmat. Alternatively, multiple versions of the same playmats may be included of the same level (e.g., have the same type of indicia), but may be fabricated in different sizes. Alternatively a playmat with an adjustable size may be provided. Alternatively still, a playmat may be provided with multiple different play areas (e.g., one half is used for level 1, the second half is used for level two) that can utilize both sides of the mat (e.g., one side is used for level 1, the second side is used for level two). By including different playmats, or by defining different playmat areas, a user may use a different playmat, or playmat area, depending on how much physical movement is needed to move a virtual game character. Control of a virtual game character may be adjustable such that, for example, one mode is provided where a 1 foot movement moves the virtual character 1 pixel while a second mode is provided where a 2 foot movement moves the character 1 pixel. Playmat 150 may include apertures 180 such that playmat 150 may be secured to a surface (e.g., pegged into the ground). Indicia may also be located on the playmat that corresponds to objects in the game. For example, the goal of the game may be included as indicia on a playmat (e.g., indicia 160).

[0051] Some game systems may use a reference location such that a user is requested to return to that reference location before playing, for example, a particular level (e.g., the next level after a level has been completed). Such a reference position may also be included as indicia on the playmat (e.g., indicia 170). Game system 101 may include display 102 for displaying a video game (e.g., displaying a 2-dimensional or 3-dimensional image). Location device 140 (e.g., a positioning system and/or inertial movement sensing system) may control the movement of a video game character in a virtual world. The movement of the video game character in the virtual world may be displayed on display 102. Display 102 may be, for example, a transparent display capable of having virtual indicia displayed selective portions of the display. Thus, a user may look down through display 102 and see playmat 150. Any number of virtual indicia may be, in the example of FROGGER, a frog, a number of moving cars and busses, and a number of moving logs). Thus, the static environment of the video game may not need to be displayed on such a transparent display because indicia representative of this static environment may exist on playmat 150. In this manner, a user may look down through a transparent display and see the portion of playmat 150 that is aligned beneath the transparent display. If virtual indicia is supposed to be in the area of the virtual world that corresponds to the area of playmat 150 being viewed through a transparent display of system 101, then that virtual indicia may be appropriately displayed on the transparent display screen. Persons skilled in the art will appreciate that when a user is looking through a

transparent display toward ground, the visibility of virtual indicia may be limited. Functionality may be provided in game system 101 such that display 102 is a transparent display that can be held up to a user's eyes. Thus, the direction, the location, and the pitch of game system 101 may, for example, be determined and utilized to determine what, and where, virtual indicia are displayed on such a transparent display.

[0052] Persons skilled in the art will appreciate that a head-mounted display (or a display that is held-up to a user's eyes) may be provided with any number of horizontal, vertical, or otherwise aligned two-dimensional images or three-dimensional images. For example, to reduce the complexity of a hand-held game system 101 with the functionality of a hold-to-eye AR system, the virtual indicia may be provided on the display such that the virtual indicia is provided as flat, horizontal two-dimensional images hovering over playmat 150. One advantage of such a two-dimensional example may be that functionally the size of display screen 102 becomes the size of playmat 150 when viewed through display 102 when display 102 is provided as a transparent display operable to display virtual images. Another advantage is that the same processing that is utilized to render a two-dimensional game (e.g., a two-dimensional FROGGER game) may be utilized to render a two-dimensional AR game. Game system 101 may include a clip 111 attached to game system 101 via band 110.

[0053] FIG. 2 shows handheld game system 200 that is fabricated in a shape similar to a virtual character that a user controls by moving game system 200. As illustrated, game system 200 shows the classic game of FROGGER in which the main character is a frog.

Handheld game system 200 is fabricated to resemble a frog, thus adding to the whimsical and festive nature of the functionality of the location-based game. Characteristics other than the shape may be manipulated to increase the whimsical and festive nature of a game system. The paint scheme of the system may, for example, be associated to the colors of a virtual indicia operable of being provided by the game system.

[0054] FIG. 3 shows one mapping embodiment in which actual playfield 310 may be scaled to virtual playfield 350. The use of a virtual playfield may be utilized, for example, in systems in which movement scaling is desired. In this manner, a user may be provided with the ability to control how far a particular physical movement (e.g., a 1 foot movement) moves a virtual character (e.g., 1 pixel or 2 pixels). The use of a virtual playfield may also be utilized in systems in which multiple players are on the same virtual playfield. Accordingly, location information may be transmitted directly to a second game device or via an intermediary device such as a database (e.g., a database remote from the multiple game devices). Such a database may push information received from one game device to another game device. Alternatively, the gaming device may periodically, or continually, check the database to see if new information is available or what information is available. In order to share information, such as location information, between two or more gaming devices, a security measure may be provided. For example, the user of one gaming device may request that the user of a second gaming device grant permission for the user of the requesting gaming device to retrieve location information of the

requested user's game device from a remote database. The requested user may then use his/her game device to grant permission. Permissions can be granted, for example, for the duration of a particular game between the players, any game between the players for a particular game, any game between the players for any game, a particular length of time (e.g., a day or a week), or a particular time of day (e.g., after-school). Additional parental controls may be provided that allow a third-party to change the permissions of a game device (e.g., such that a child cannot play multiplayer during school hours). The identification of an individual to a game device may, for example, be done via a username and password. A game device may be operable to communicate wirelessly with any number of services. Thus, a parent may go on the internet and contact a server/database that is operable to communicate with a gaming device, identify himself/herself, and change the permissions the child has for using the system. Such a parental control may be operable to prohibit any type of multiple play or games that exceed a particular maturity rating (e.g., a child may be allowed to access everyone games, but not teen or adult games).

[0055] A parent, the user, or a third-party, may prohibit play within particular areas or may prohibit game information being sent in particular areas. For example, the manufacturer may prohibit the a game system from sending location information to game systems located in different regions such that U.S. players cannot play against Japanese players. Alternatively, the manufacturer may prohibit a U.S. region game to be played on U.S. region system, or any

region system, outside of the U.S. (e.g., in Japan). A game, or game system, may be operable to store a log of game play and a history of where the game device has been located over time. In this manner, games may be fabricated in which the game world corresponds to an actual area of the physical world (such as the planet Earth or New York City). As such, a New York City game may be provided in which you travel New York City playing the game. Accordingly, the game may prompt a player to go to a particular location (e.g., Times Square) to play a mini-game associated to that location (e.g., a Times Square game) in order to obtain a virtual item (e.g., a Times Square T-shirt).

[0056] A location-based game (e.g., an AR game) may have its own virtual currency system such that any user can exchange real money for the virtual currency system, with the game manufacturer taking a percentage cut, and the virtual currency can be used to buy/sell items. A user can be provided with the option to then convert the virtual currency back to real currency (e.g., the U.S. dollar) with the game manufacturer again taking a percentage of the conversion. In this manner, a number of advertising schemes may be provided in a video game, or an augmented application, such as an AR video game. For example, an advertiser may buy advertising space at a particular location. A user may view the location at the particular location. If a user enters a physical store, or a virtual store, associated with the advertisements location then the user may be given a portion of the proceeds of the money collected by the advertiser. Alternatively, an advertiser may designate a maximum amount of advertising money the advertiser is willing to spend

for a particular amount of time and the amount of money the advertiser is desirous of paying for each entering, or qualified, customer. A qualified customer may be, for example, any user that enters the store with a device operable to display/receive the advertisement, any user whose entrance denotes the first known entrance of that user to a particular location, any user whose entrance denotes the first known entrance of that user to a particular chain of stores (e.g., McDonalds), or any user that interacts with the advertisement before entering the store. When a user is determined to be a qualified a user, a percentage of the advertiser's fee for that qualified user may go to the video game manufacturer (or other third-party such a location-based advertisement service) and a percentage of the advertiser's fee for that qualified user may go to the qualified user. Alternatively, for example, the store that gave up its virtual advertising space (e.g., in an AR game where physical locations in the world are a part of gameplay) may get a percentage (e.g., the qualified user's percentage). Thus, a store can virtually advertise to an AR video game (or another location-based service such as an AR information application run on a wearable computer) where third party advertisements are provided by an advertising service. Each store (or chain of stores) may define a particular type of third-party virtual advertisement to be displayed (e.g., sporting good ads) and, for example, a minimum price per qualified customer that needs to be met to provide the third-party advertisement over a default advertisement chosen by the store (e.g., the stores advertisement).

[0057] Location scaling may be advantageously utilized in a number of situations. For example, one player may scale his/her physical movement differently than another player in order to produce a handicap/advantage or to allow for two players to play an AR game that are located on different physical playfields having different sizes. Thus, cousins can play against/with each other in the same virtual environment even though one player is located in a small, fenced-in backyard in Texas while the other player is located in wide, open soccer field in Minnesota.

[0058] Information on the actual playfield and virtual playfield may be stored on the memory of a portable device, an intermediary device, or both. Also, information about the actual playfield may be stored on the portable device while the virtual playfield is stored, for example, on an intermediary device. Information about a playfield may include, for example, the parameters of the playfield, scaling information, and the status of the playfield (e.g., where a particular user is located in an actual playfield and where a user is located in a virtual playfield). The information about a playfield may also include where actual objects are located (e.g., the areas of an actual playfield where impenetrable objects such as house or boulder are located). The information about a playfield may also include where virtual objects are located (e.g., the areas of a virtual playfield where a virtual sword or treasure is located).

[0059] Additionally, actual playfield data may not be stored at all so that only virtual playfield data is

stored (and scaling information to convert the information to information useable on a particular actual playfield). Thus, scaling may be done only at an intermediary device (or other game device) such that the intermediary device (or other game device) scales right before information is transmitted to a game device. Alternatively, scaling may be done at the game system level such that scaled information may be written directly into a virtual playfield (e.g., such that the intermediary device or other game systems do not have any knowledge of how information is scaled). In this manner, a standard type of location information may be used to transmit information between devices. Such a standard may be 10 pixels for 1 foot such that devices only need to transmit data in the standard and the devices themselves can be set to scale the standard location information in any manner without affecting, for example, remote devices. Further still, virtual playfield data may not be stored at all and actual playfield data may be utilized to operate the game. Such playfields may take the form of, for example, a matrix of data, a matrix of vectors, or a matrix of matrices. In one embodiment, each matrix location may correspond to a pixel or a group of pixels (or a location or a group of locations). A user's location (and/or the location of game characters or game objects) may be stored in such matrices and utilized to operate the game.

[0060] Suppose a game system is configured such that recognition of movement along actual playfield 310 is recognized by moving through areas that are 1 foot by 1 foot. Suppose a virtual playfield 350 operates under a similar scheme only that the recognition of movement

along the virtual playfield is recognized as movement through areas that are .5 foot by .5 foot area. Gameplay between two players located in two different playfields (both of which could be actual or virtual) may occur by simply transmitting the number of location areas that a particular player has traveled through (e.g., player 1 travels vertically two area locations). Such a number may be scaled such that the user's actual movement of 5 location areas (e.g., 5 feet) is transmitted to the process controlling virtual playfield as 10 location areas (e.g., 10 feet). As stated above, each system and/or intermediary may have its own virtual playfield for a one or multiplayer game. Persons skilled in the art will appreciate that a two player game may be provided on a single game system. Particularly, a number of wireless controllers may be provided. A user can set up how much movement of a controller in an actual world would be required to move a virtual character a particular distance in a virtual world. Thus, a user can control the speed of his/her virtual character compared to other users.

[0061] A user therefore may start at origin O (noted on actual playfield 310 as position 10, 5 or information/location 301) and move up 3 feet and to the left 1 foot to be at location L (noted on actual playfield 310 as position 7, 4 or information/location 302). In this manner, data may be stored on a matrix (or other data structure such as a database accessed by a memory pointer) corresponding to an actual playfield location (e.g., matrix location 7, 4). Actual playfield data (such as actual location information) may then be scaled and stored on a second playfield data structure (e.g., as location 14, 8 on a second

matrix) such that, for example, a scaling functionality can be provided. Generally, locations on different playfields are scaled according to a relationship between the structure of the two playfields. Multiple types of information can be written to a matrix such as a matrix for a virtual playfield. For example, a player identifier and scaling information may be stored in a matrix location. Persons skilled in the art will appreciate that the location of a user can also be stored in data structures as location information or the location can be determined based on where non-location information is stored in a storage structure (e.g., where in a matrix a players identification information is stored). Information about virtual indicia such as virtual characters and objects may also be stored in such a virtual playfield.

[0062] A playfield may also have event data (such as data E at location 1, 6 on playfield 310 or information/location 303). Event data may trigger an action if someone occurs at that event location, in relation to that event location, or in relation to the event data. For example, event data may be configured such that if a user (e.g., a manually controlled virtual character) enters location storing event data E, or location 303, an event occurs (e.g., the level is completed or the game develops in a particular way). As per another example, event data may be configured such that if a user accomplishes a goal (e.g., shoots a rocket-propelled grenade at the location and the rocket-propelled grenade hits, or enters the location, then the event data may change the characteristics of the location such that an

impenetrable location becomes an accessible via an access pathway).

[0063] A processor may move, operate, the virtual objects in such a virtual playfield according to code representative of the game. Code representative of the game can take account of particular situations such as, when example, a computer-controlled video game character nears, or enters the location of, a player-controlled video game character. The code can use this information and other information (e.g., additional manual control information from a player such as the status of ATTACK and DEFEND buttons) to determine what happens to the manually or computer-controlled game character on the virtual playfield. Thus, the video game can, for example, be executed on the system(s) housing the virtual playfield. If, for example, the virtual playfield is located on a remote system such as a remote database (or a game system remote from head-mounted displays) each separate gaming device, or head-mounted displays, may only need to have the ability to receive and display video/sound representative of the video game environment and send location and control information to the system playing the video-game. Such an embodiment provides light-weight and inexpensive head-mounted displays or game devices and may not need to store an actual playfield. Such devices can transmit location and control information scaled to a standard format (e.g., 0.5 foot movements) as well as other information such as the direction the user is facing, the perspective of the user (e.g., how the user's head is tilted such as the pitch and roll of the head) and the status of any additional buttons. Persons skilled in the art will appreciate that sensors

can be utilized to determine the pitch, yaw, or roll of a device such as a head-mounted display and such information may be utilized by an AR game system (e.g., utilized to select and display virtual indicia on a virtual display).

[0064] In a dedicated single player game with no scaling capabilities, for example, actual playfield matrix 310 (or a playfield matrix) may be utilized to store location information and operate the game. As a result, the actual playfield matrix 310 may be visualized as a virtual playfield matrix. In this manner, a processor may periodically (or in real time) update the location of game objects or the status of the game (e.g., environment objects, enemy objects, and interactive objects) based on particular characteristics of the game. For example, if, for any period or at any time, a user's location corresponds to the location of an end object (as stored in actual matrix 310) then the game may determine that the game has ended and display associated graphics to the user by way of a display.

[0065] In a multiplayer game with two portable systems and a remote intermediary, the intermediary may, for example, utilize playfield matrix 350 to update game locations while the individual systems use different playfield matrices. One portable system may, for example, have a playfield matrix similar to playfield matrix 310. The other portable system may have, for example, a playfield matrix similar to playfield matrix 350. As a result, even though data is handled at a different scale on each portable system, the data is scaled to the same matrix (e.g., the same virtual playfield). Thus, the two portable systems may

easily play with each other - even if the two portable systems are using completely different playfields of different sizes (e.g., one player is playing on a basketball court in Japan while a second player is playing in his/her backyard in the USA). Such players may chose an actual playfield dimension from a variety of dimensions (e.g., 10 feet by 10 feet or 20 feet by 20 feet) and information may be stored according to these dimensions and transmitted to an intermediary (e.g., a database stored on a remote database). Information may be transmitted periodically or in real time. Information may be received periodically or in real time (in order to, for example, obtain opponent player information). Transmissions may alternatively occur when information changes. The portable systems may be in charge of transmitting/receiving. The intermediary (or intermediaries) may be in charge of transmitting/receiving. Or, for example, the portable system may be in charge of transmitting information when that portable system's location changes and the intermediary may be in charge of transmitting information (e.g., when the portable system receives information) when the opponent player's (or any one of multiple opponent players) location changes or a game characteristic changes (e.g., the location of a virtual game character not associated to an actual user changes).

[0066] FIG. 4 shows semi-visible display 451 in which an AR game is provided. Landscape detector 451 may be provided in such a system such that the location of actual environmental objects may be determined and utilized in the game. In environment 410, environmental objects 411 and 412 are present.

Accordingly, landscape detector may determine the location of environmental objects 411 and 412 and record this location in memory (e.g., in a remote or local playfield matrix or data structure). The game may be then utilize such environmental objects to change the characteristics of the game (e.g., where virtual game characters not associated to actual users may move in a virtual environment). Thus, computer-controlled characters may not be able to move into areas with such environmental objects and the movement profiles of a computer-controlled character may change as a result of the environmental object. As such, a default traveling route that a computer-controlled character is coded to travel (or a default behavior that a character is coded with) may be changed due to an environmental object.

[0067] Landscape detector 451 may take multiple forms. For example, landscape detector 451 may measure the distance to objects and the shape of the object. This may be done for example by sound/light sensing (e.g., reflective sensing such as sound/light echoing or color sensing with respect to light source) or any type of object/distance sensing (e.g., infrared). A camera may be utilized to take a picture/video of the environment. Video processing features may be utilized to determine landscape as, for example, a user moves around the landscape. Such determined landscape may be stored in the game system (or a remote system) and utilized to determine where to place virtual images on a display (e.g., a head-mounted display) based on the alignment of that display to the actual environment. Landscape sensing may be done throughout game play or at set times (e.g., before a game is started or

periodically). Such information may be stored in memory as part of an environment profile and associated with location information such as global information such that the environmental profile may be utilized whenever that user plays in that environment (e.g., at a particular longitude and latitude coordinate).

[0068] Alternatively still, environmental data may be coded directly into the game. For example, if the military desires an AR system for special operations warfare then a particular field may be utilized for game play. That particular field may include environmental objects and the location and size of these environmental objects may be coded directly into the system (e.g., on a playfield matrix or data structure). Virtual interfaces may help code such data by allowing a user to, for example, pick shapes and place them on a virtual playfield and manipulate the shapes until they correspond to actual shapes on an actual playfield. In this manner, functionality may also be added to objects. For example, if the object is a house, the object may be coded as hollow and may allow a user to pass through a particular portion of the object (e.g., the portion that correlates to a doorway) but not other portions of the object (e.g., the portion that correlates to wall). Virtual objects generated by a Location-Based (LB) or AR game (or other AR or LB service) that do not correspond to actual objects may operate in a similar manner (such that if a user tries to pass through a wall his/her perspective does not change). This may be an advantage over scanning techniques because scanning techniques may denote the object as solid if the door is closed when scanning occurs.

[0069] As a result of system 400, virtual characters may be displayed on display 452 and augmented over reality. Using the above example, computer controlled enemy soldiers may be played in the house and may have the functionality of only being able to move inside of the house (manually controlled enemy soldiers may similarly be restrained from moving out of the house). Therefore, U.S. soldiers using augmented reality system 400 may be able to train with highly skilled virtual combatants in real environments. Such combatants may also be controlled remotely by other users (e.g., instructors) operating in a similarly sized real building on a different field. In this manner, live rounds may be used in a safe environment (if, for example, only 1 person is playing in each actual environment). Sensors may be placed on a physical door to the building to determine whether the door is OPEN or CLOSED. Alternatively, the landscape detector may be configured to recognize open doors or the AR system may determine that an access pathway is available in a real world once a user enters into such an access pathway (e.g., a location the game system things is blocked may be changed to unblocked after a game system moves into the location). Thus, the status of an actual, physical object (e.g., a door) may affect the game. Using the above examples, enemy soldiers may be able to move out of the building once an access pathway is created that leads into the house (e.g., where computer controlled characters, or other indicia can only leave through such access pathways or other exits). Access pathways may also be created in virtual objects not present in the physical, actual world. For example, a virtual house, or other object, may be

augmented over a user's environment. If a user tries to pass though the object improperly (e.g., without opening a door or performing another action such as blowing a hole in the virtual object), the user may be able to walk forward in his/her physical environment, but the augmented reality perspective/scene provided to the user may not change. Actions (e.g., solutions) may be stored in the game that, when triggered, create an access pathway in a virtual object. Such an action may be, for example, pressing an OPEN button, or performing an OPEN function, on a virtual door, blowing a hole into a virtual wall via a gun or bomb, placing a virtual key (e.g., a virtual key obtained earlier in a game) near the virtual door or a virtual keyhole associated to a door, properly using an alphanumeric virtual access pad on the alphanumeric door, or getting past a particular stage in the game (e.g., lighting a computer-controlled virtual game character on fire so that the virtual game character crashes through the door).

[0070] Device 400 may have any component of a location-base game including, for example, positioning systems (e.g., GPS systems) and movement sensors (e.g., accelerometers and/or gyroscopes). Furthermore, additional sensors may be utilized to determine pitch that the head-mounted display is pointed, the height of the head-mounted display, the roll of the head-mounted display, and the direction that the head-mounted display is pointed. The perspective of virtual game characters may be, for example, determined by such pitch, height, roll, direction, and location information.

[0071] FIG. 500 shows virtual environments 501 and 550 that may be rendered using actual environment data may be used in, for example, a location-based game (e.g., an AR game) in a variety of different ways. Persons skilled in the art will appreciate that environments of a figure (e.g., such as environments 501 and 550) may also be considered playfields (e.g., virtual game playfields) or may be virtual indicia (e.g., virtual game objects and characters) augmeted over actual, physical environments.

[0072] In one methodology, actual, physical objects are scanned in by a landscape detector (or manually entered) may be virtualized as virtual objects in the video game. Thus, information regarding actual, physical environmental objects may be saved on a virtual playfield that stores information for a game such as a game matrix/database or other data structure. Persons skilled in the art will appreciate that such virtual objects may be displayed to a user or may be used only as game information that game code uses to execute a game. In an example where virtual environmental objects are displayed back to a user that has associated physical environmental objects in his/her view, the virtual environmental objects may be augmented to replace, or lay over, the physical, objects. Such a technique may be utilized to provide a more seamless execution of an AR game as virtual characters may be aligned with the virtual objects. Thus, if the game becomes misaligned to the landscape on a display (e.g., a semi-visible head-mounted display), the characters may still be aligned with the virtual environmental objects and the misalignment may not be noticed. Also, physical objects may be

recognized as described above, their appearance manipulated, and then used to augment a viewer's perspective of the actual environmental object. For example, suppose a game has a number of immobile, non-hollow objects (e.g., crashed spaceships, dead dinosaurs, gigantic trees), the size of scanned in environmental objects (e.g., houses, boulders, trees) may be compared to the size of the game objects. Objects that are close in size to an environmental objects may be rendered in the location of the actual, physical environmental object until, for example, all of the actual, physical environmental objects have been augmented with environmental game objects. Such a feature may increase the available area of a playfield that a user may walk to. Such a feature may make playing the same game in different playfields appear different as virtual environmental objects are placed differently in the different playfields. Such a difference may result in a difference in the difficulty of the game.

[0073] In environment 501, environmental objects 511 and 512 may be virtualized as a 2-D object in a 3-D space. Alternatively, as shown in environment 550, environmental objects 511 and 512 are virtualized as 3-D objects in a 3-D space (e.g., either by 3-D objects or 2-D objects that define the perimeter of the 3-D object. If the environmental sensor can only sense the distance to an object and, for example, the 2-D size of the object then program logic may be provided to generate a 3-D image from the sensed 2-D image. For example, program logic may assume that a 2-foot tall and 2-foot wide 2-D object is 2-feet deep and, in this manner, may determine depth information based on height

and width information. Such depth information may be updated as more information is gathered (e.g., as a user walks to a point where the depth of the object may be sensed). Persons skilled in the art will appreciate that two still images of an object taken from different perspectives may be utilized to determine additional dimensions of an object when compared to when only a single image is evaluated. Thus, the information on the actual environment may be ever-changing and utilized continually, or periodically, by the game system.

[0074] In another methodology, virtual environmental data may be utilized to display virtual environments on areas of the head-mounted display (or other display). This can provide numerous functionalities. For example, if two players play on different field with different objects, virtual objects from an opponents field may be generated on a user's field such that both opponents have the same type of area to play in. Each user may then not be able to move into environmental objects from other player's environments. Alternatively still, the location of actual environmental objects may determine the placement of, for example, non-interactive and/or impenetrable virtual objects. For example, if an augmented reality game has an item shop, that item shop may be overlaid over a large actual environmental object (e.g., a wall) such that the user's "free space" is maximized.

[0075] FIG. 6 shows virtual character movement between environmental objects in environments 610 and 600. Persons skilled in the art will appreciate that environments of a figure (e.g., such as environments 610 and 600) may also be considered playfields (e.g.,

virtual game playfields) or may be virtual indicia (e.g., virtual game objects and characters) augmented over actual, physical environments. In environment 601, no environmental objects may be present. Therefore, logic may be provided such that virtual character 610 moves along path 611 while virtual character 620 moves along path 621. In environment 650, actual environmental object may be present and stored in memory as virtual objects 651 and 652. Alternatively, no actual environmental objects may have been scanned but virtual objects may otherwise be provided at the locations of virtual objects 651 and 652 (e.g., may be originally coded into a game's code or intelligently placed at the locations based on the actual environment). If the stored location of virtual objects 651 impedes on the planned movement of virtual characters, then program logic (e.g., game code) may manipulate the movement path of virtual characters around these virtual objects. If the movement path is dynamic (e.g., not laid out) then such virtual environment locations may not be "moved into" by a dynamic virtual character. Persons skilled in the art will appreciate that a number of intelligent placement features of virtual objects/characters may be provided. For example, a virtual object/character may be placed in the middle of a particular open space to maximize the change of the virtual object/character coming within a particular distance of a user (e.g., to maximize the virtual object/character's field of vision on the virtual playfield). Alternatively, virtual objects/characters may be played in locations determined to be strategically advantageous. For example, if there is only a single entrance to a

playfield or playfield area (e.g., a doorway to a room) then virtual objects/characters can be spread about either behind virtual objects placed in the playfield (from the perspective someone standing in the door) or placed such that multiple objects/characters have different perspective angles to the door (e.g., such that virtual enemy soldiers can cover the doorway from different angles). Thus, cooperative defensive and offensive tactics may be used by the virtual game objects/characters.

[0076] Visibility of virtual objects/characters may be set and modified for a head-set augmented reality system. For example, a user may define a virtual visibility of 100 feet. Virtual barriers may then be provided (e.g., rendered and augmented on a display) at this proximity (or at predefined boundaries) to immerse the user in the augmented world. For example, if a child is playing in a city, then the visual barriers may take the form of fog and this may hide any skyscrapers that may take away from the believability of the augmented reality.

[0077] FIG. 7 shows a playfield data structure in which environmental object data 701 (e.g., barrier information data) may be stored. Such a playfield data structure may be used as the primary information structure for the game such that program logic refers to information in the playfield structure to determine game events (e.g., point scoring, deaths, level completions).

[0078] FIG. 8 shows expanded virtual character information (shows as information C 802 and information Cc 801) stored in a playfield data structure. If a character takes up more than one pixel (or more than

one data block if data blocks are associated with size) then one of the data locations may be the controlling location Cc. Thus, program logic may just move the controlling character information data Cc and then this controlling character information may be utilized to generate surrounding character information (e.g., C). Any sort of character information may be associated to, for example, a control location or any character information. For example, the distance a computer-controlled virtual character can see (e.g., the distance at which the character can read information on a virtual playfield) can be associated to the control information (e.g., the control location) for that character. As per another example, the distance a character can use a particular attack (e.g., project a projective using sling-shot versus shooting a bullet out of a gun) can be related, in a game's code) the control information (e.g., the control location) for that character.

[0079] FIG. 9 shows possible data structures that may be utilized for a playfield data structure. Matrix of pointers 910, matrix of descriptors 920, matrix of vectors 930, or matrix of tables/matrices 940 may be utilized. Matrix of pointers 910 may be, for example, pointers that point to memory locations in which a large amount of information is stored (e.g., in which a vector of information is stored). Matrix of descriptors 920 may be, for example, a matrix of the information needed for a particular playfield location. Matrix of vectors 930 may have one or more matrix locations associated to one or more playfield locations and may include complex information in any form (e.g., vector form or table form as shown in matrix of tables

940). Any data structures such as any type of database may be utilized or, alternatively, actions and information may be written as additional code into a games code or, alternatively still, used by a games code as code updates.

[0080] FIG. 10 shows virtual characters 1010 and 1060 generated on display screens 1001 and 1051. Depending on the distance of virtual characters (either controlled by an opponent or computer controlled) from the display (or locating device on the system), the size of virtual characters that are shown may be manipulated. In this manner, a user is provided augmented reality indicia that is scaled to the perspective of that user (e.g., height, pitch, roll, distance and location of the perspective). As such a true three-dimensional virtual object/character can be provided whose size scales according to the height, pitch, roll, distance, and location of the perspective to the virtual object/character (e.g., the perspective of a user).

[0081] Logic may be included such that virtual characters (either controlled by an opponent or computer controlled) are transparent (e.g., virtual object/character 1160 of environment 1150 of FIG. 11) or non-transparent (e.g., virtual object/character 1110 of environment 1101 of FIG. 11). A user may be able to manually control the transparency or the contrast of indicia that is being displayed. Transparent objects may offer the additional functionality of making the environment safer to move in. For example, a user may trip over a rock if that user is in an "invincible mode" and runs through a virtual character and that character covers the rock by being non-transparent. A

user is less likely to trip over a rock if that user can see the rock, in some form, through a character. The transparency of a character may also change depending on the user's distance from that character. For example, far-away characters may be semi-transparent (noting they can't interact with you yet such as they can't shoot you yet) while characters that you are sharing a location with are almost entirely-transparent. Persons skilled in the art will appreciate that the transparency of a virtual object may be changed by, for example, changing the number of pixels that define an image are displayed. The smaller amount of pixels that are used to depict a character that are used, the more transparent a character (or virtual object) may become.

[0082] Virtual characters (either opponent-controlled or computer controlled) may have certain functionalities that have certain functionality envelopes. For example, a virtual controlled character may have an interactive object like a weapon (e.g., a gun) that may shoot an interactive bullet over a particular distance. Such envelopes may take any form. For example, if a virtual character has a force field then the force field may be mapped around, for example, a controlling location a particular distance. Thus, an event may occur if a different character (such as a user-operated character) walks into this envelope (e.g., the user's health may decrease).

[0083] As illustrated in FIG. 1200, such envelopes may be utilized to determine how far a virtual character may see. For example, one character (e.g., information C1 1201) may only see in the direction that character is facing (e.g., information S1 1202). A

second character may see in a particular direction around that character (e.g., information S2 1203). These envelopes may overlap (e.g., information S3 1204) such that if a user walks into S1, C1 can attack (or some other functionality may be utilized by the game). If a user walks into S2, C2 can attack (or some other functionality may be utilized by the game). If a user walks into S3, C1 and C2 can attack (or some other functionality may be utilized by the game).

[0084] FIG. 13 shows system 1300 in which sections of an actual playfield are scanned in before gameplay begins. Such scanning may be utilized from the perimeter of an area (or multiple perimeters). Alternatively, the game may be fabricated to utilize scanning from the center of an area and the user may be directed to rotate at a particular speed for a particular period of time (or until a particular number of rotations have occurred). Alternatively, a virtual configuration indicia (e.g., a virtual character) may be displayed on a display (e.g., a user's head-mounted display during set up). Manual controls may allow a user to change the location of the configuration indicia and acknowledge when desired configuration is obtained. Thus, a user may look at a particular portion of an actual playfield, move his/her head up and down, and continually change and acknowledge the location of the virtual indicia so that the virtual indicia is aligned with the landscape (e.g., is standing on the landscape). The game code (e.g., the code aligning the image on the display) may be dynamically updated such that as a user moves his/her head, the perspective to the virtual indicia changes and a user can change any misalignment that occurs at

any perspective and such misalignment errors may be used to update the game's code (or rendering/alignment code). Manually entered acknowledgment information for alignment via manual controls may be utilized to generate a representation of the physical landscape a user is playing the game on. Thus, actual, physical environmental data can either be, for example, scanned by a location detector prior to a game (or during a game), built using a computer administration interface, or manually entered on the fly via configuration and acknowledgment controls.

[0085] FIG. 14 shows game system 1401 and network topology 1450.

[0086] Game system 1401 may include, for example, any number of power sources 1420, output devices 1425, memory 1430, connection terminal (e.g., input, output interfaces) 1435, additional components 1440, location devices (e.g., GPS, LPS, accelerometers, gyroscopes, inertial movement sensors, hybrid location systems) 1445, manual input controls 1450, wireless transmitters and receivers 1455 and other communication transmitters and receivers (e.g., blue tooth, WiFi, wireless LAN, infrared, radio), landscape device 1465.

[0087] Topology 1450 may include remote facilities such as content or administrator facilities 1480 with intermediaries such as remote databases 1481 (or content providers), network 1451 (e.g., a wireless network such as a wireless LAN based network). Internet portals 1461 and 1471 may also be provided such that information may be published and downloaded from web-based game systems (e.g., via cellular phone game systems). Portable gaming devices 1460 (e.g., handheld device 100 of FIG. 1 or head-mounted device

452 of FIG. 2 or a cell phone) may be utilized as game systems. Alternatively, stationary devices (e.g., home game systems) may be utilized to generate virtual game characters on an augmented reality system. As mentioned, wireless phones may include location devices such that wireless phones may, for example, download program logic and be utilized a location-based game systems or as control devices for augmented reality game systems. Any third-party service may be utilized by an AR game system (or an AR wearable computer). For example, cell phone, or another wireless communication service, may be provided to an AR device. Location security services (e.g., permission control services or encryption/compression services) may also be utilized by an AR system.

[0088] Persons skilled in the art will also appreciate that the present invention is not limited to only the embodiments described. Instead, the present invention more generally involves providing location-based games and AR systems. Persons skilled in the art will also appreciate that the apparatus of the present invention may be implemented in other ways then those described herein. For example, the AR capabilities may be utilized for AR advertising in which advertisement signs are provided outside of certain locations (e.g., outside a GPS signal that denotes you are near a GAP clothing store). Such an advertisement may be positioned, for example, based on a landscape detector, perspective determining devices, or particular locations. All such modifications are within the scope of the present invention, which is limited only by the claims that follow.

What is Claimed is:

1. An augmented reality game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

memory comprising video game logic operable to provide a video game;

a processor for utilizing said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2. A location-based game system comprising:

memory comprising video game logic for providing a video game;

a processor operable to utilize said video game logic to provide said video game;

at least one manual control;

a locating device operable to determine the physical location of said locating device on a physical playfield; and

a switch that determines whether said at least one manual control or said locating device determines the location of a video game character in said video game.

3. A location-based game system for providing a video game comprising:

a handheld game device comprising:

a locating device operable to determine a physical location for said locating device, wherein said physical location determines a virtual location for a virtual game character in a virtual playfield of said video game; and

a playmat having indicia representative of said virtual playfield comprising:

a length L, wherein said length L is utilized by said video game;

a width W, wherein said length W is utilized by said video game.

SMALL ENTITY
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LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

Abstract of the Disclosure

Handheld location based games are provided in which a user's physical location correlates to the virtual location of a virtual character on a virtual playfield.

Augmented Reality (AR) systems are provided in which video game indicia are overlaid onto a user's physical environment. A landscape detector is provided that may obtain information about the user's landscape, in addition to the user's location, in order to provide overlaying information to an AR head-mounted display and control information to non-user controlled video game characters.

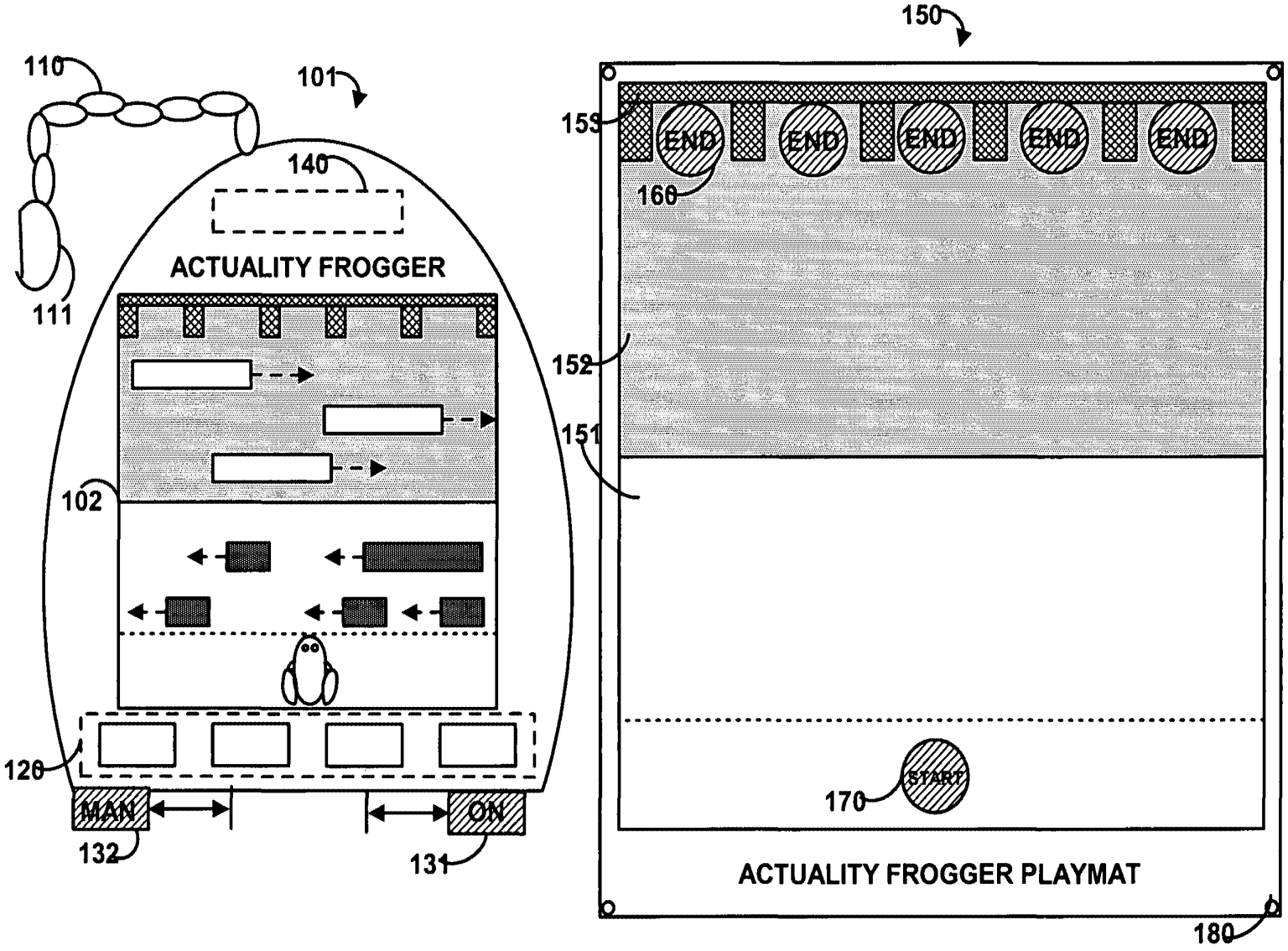


FIG. 1

EV620766322US

200

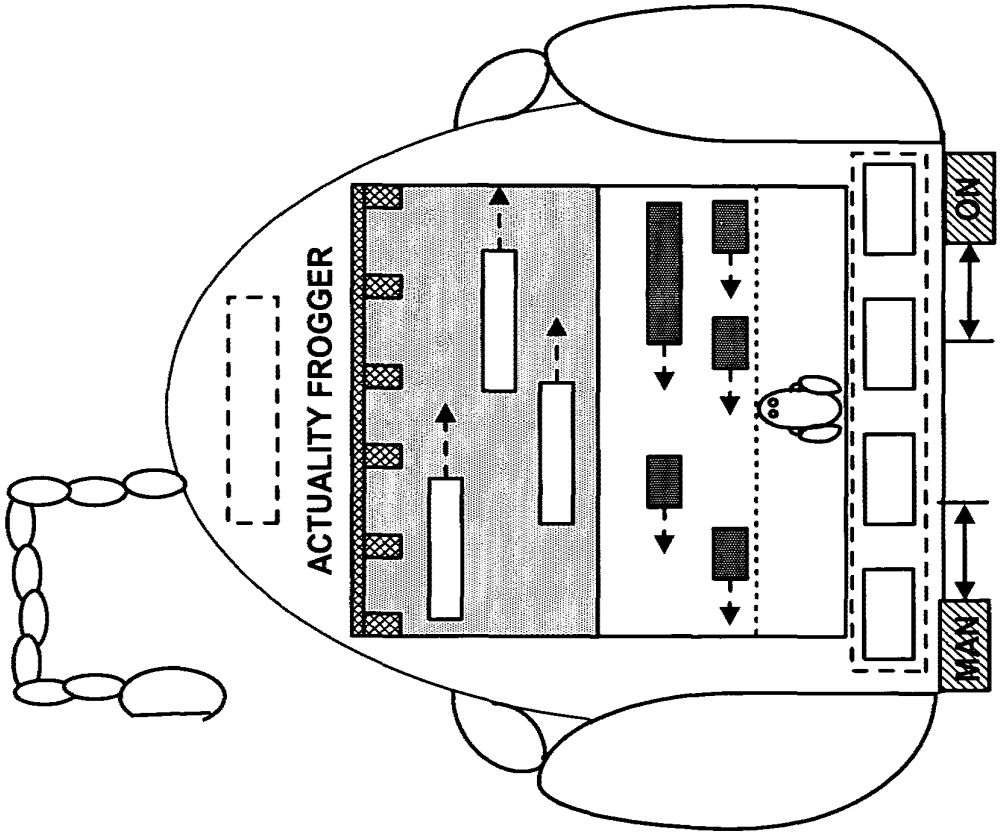


FIG. 2

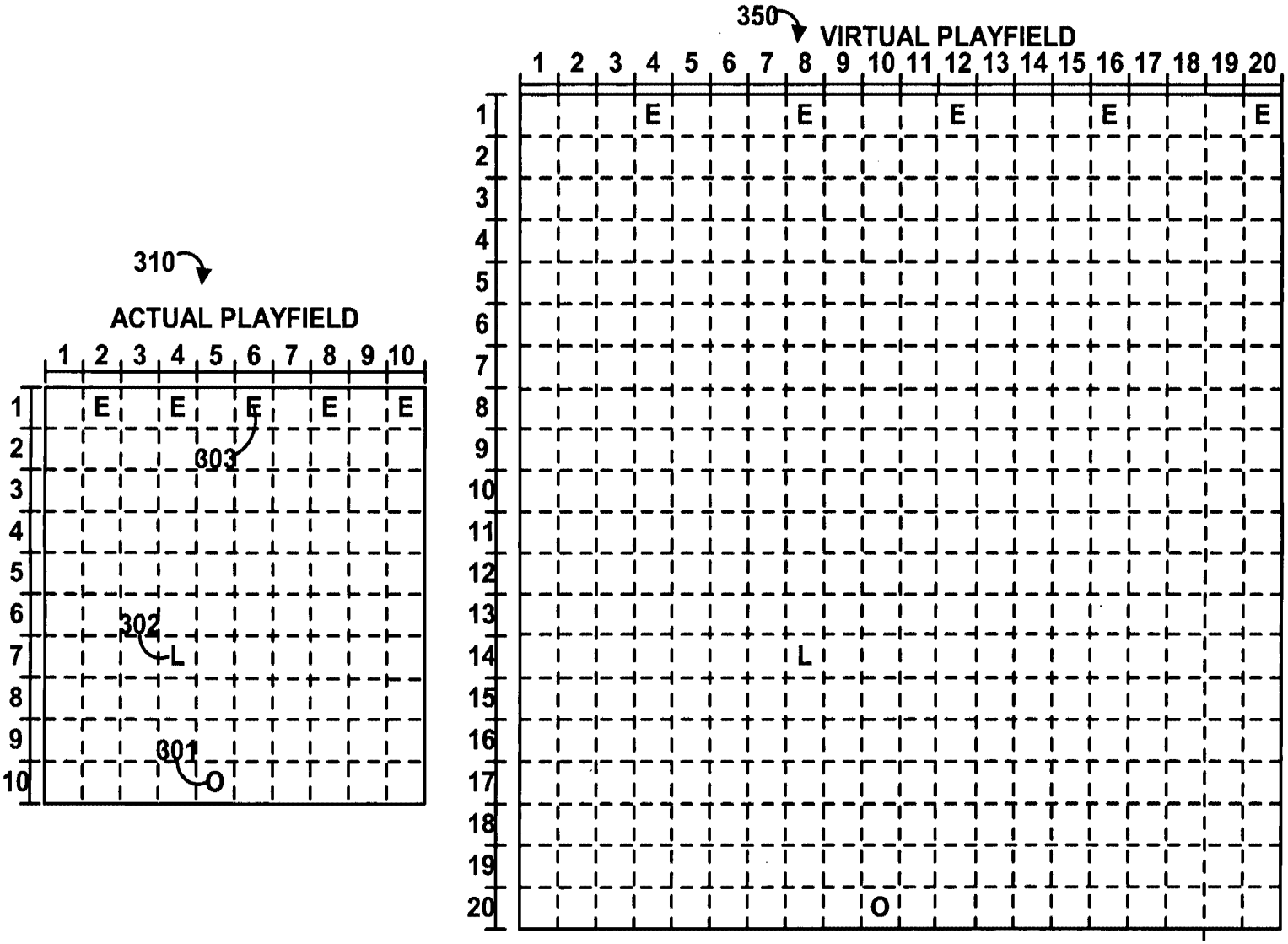


FIG. 3

EV620766322US

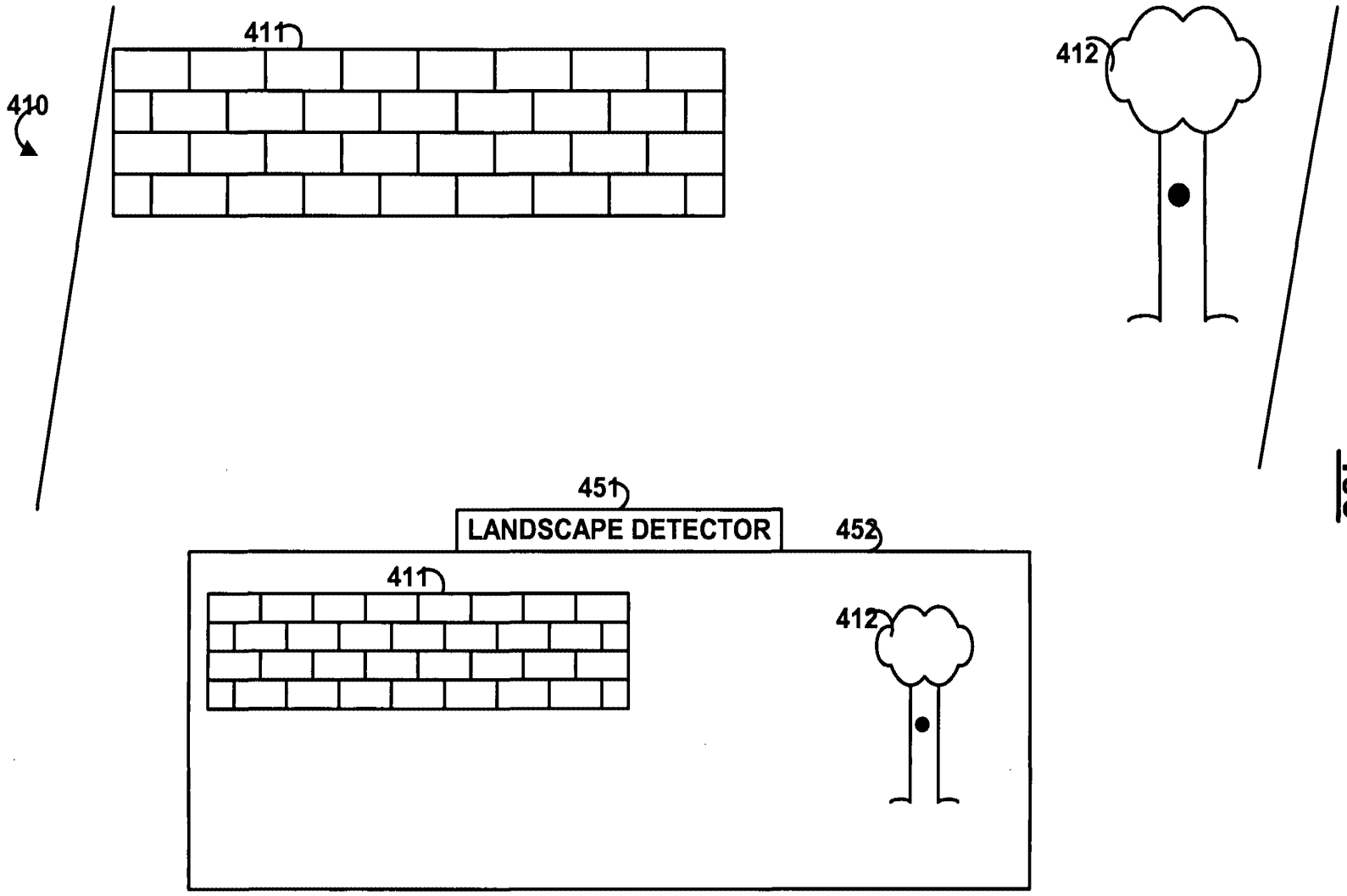


FIG. 4

EV620766322US

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500

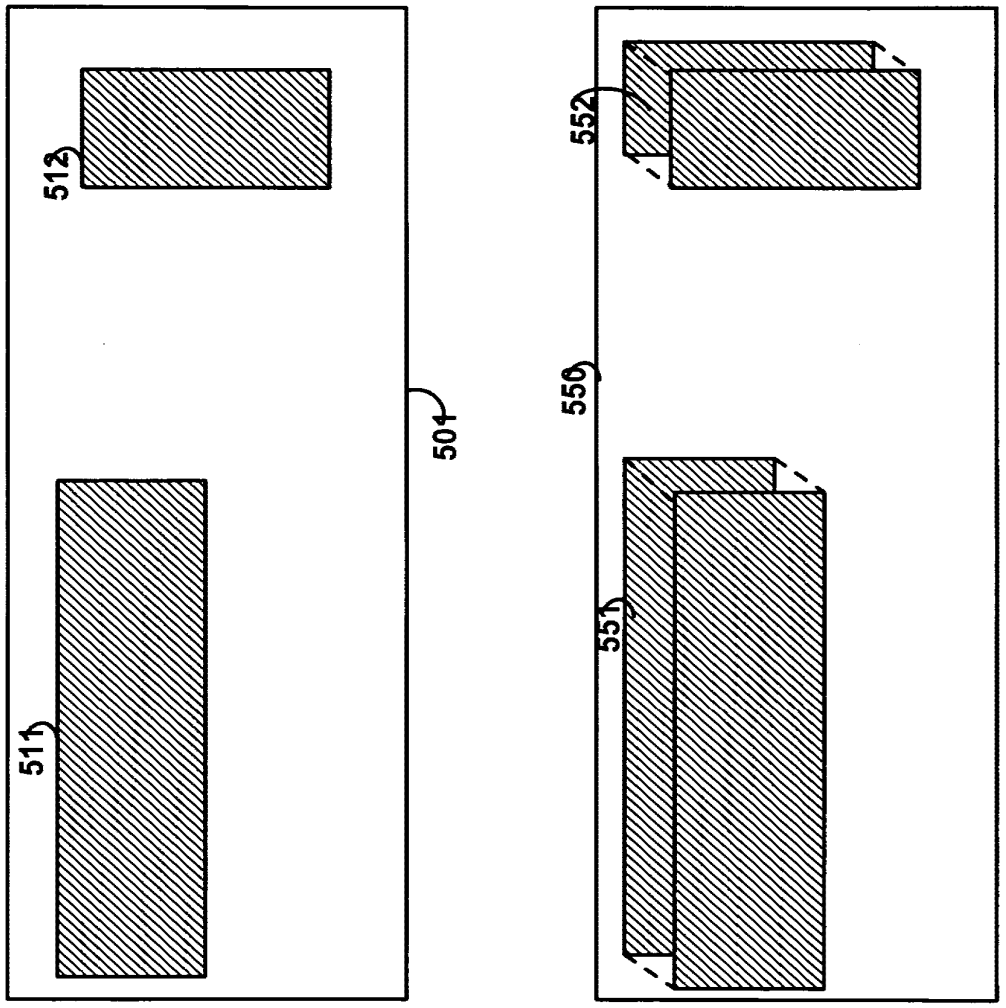


FIG. 5

600

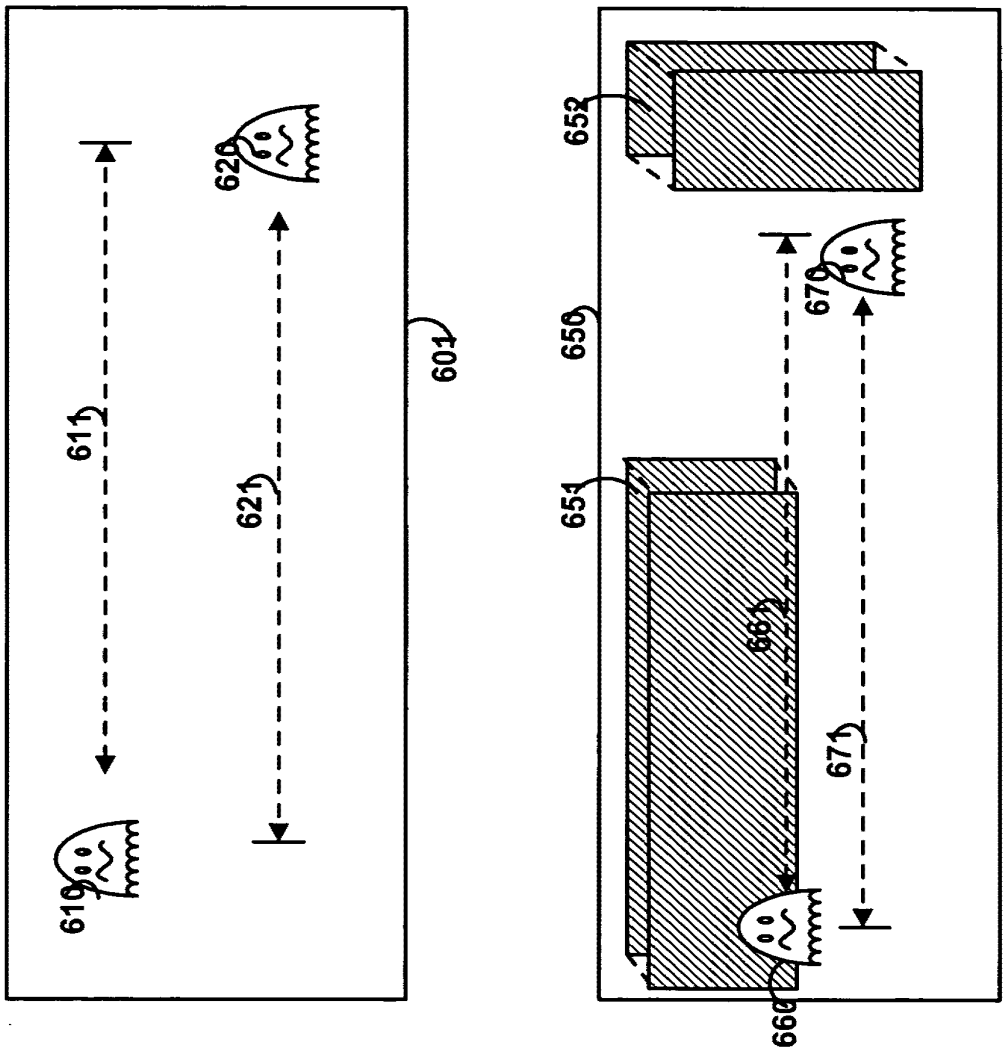


FIG. 6

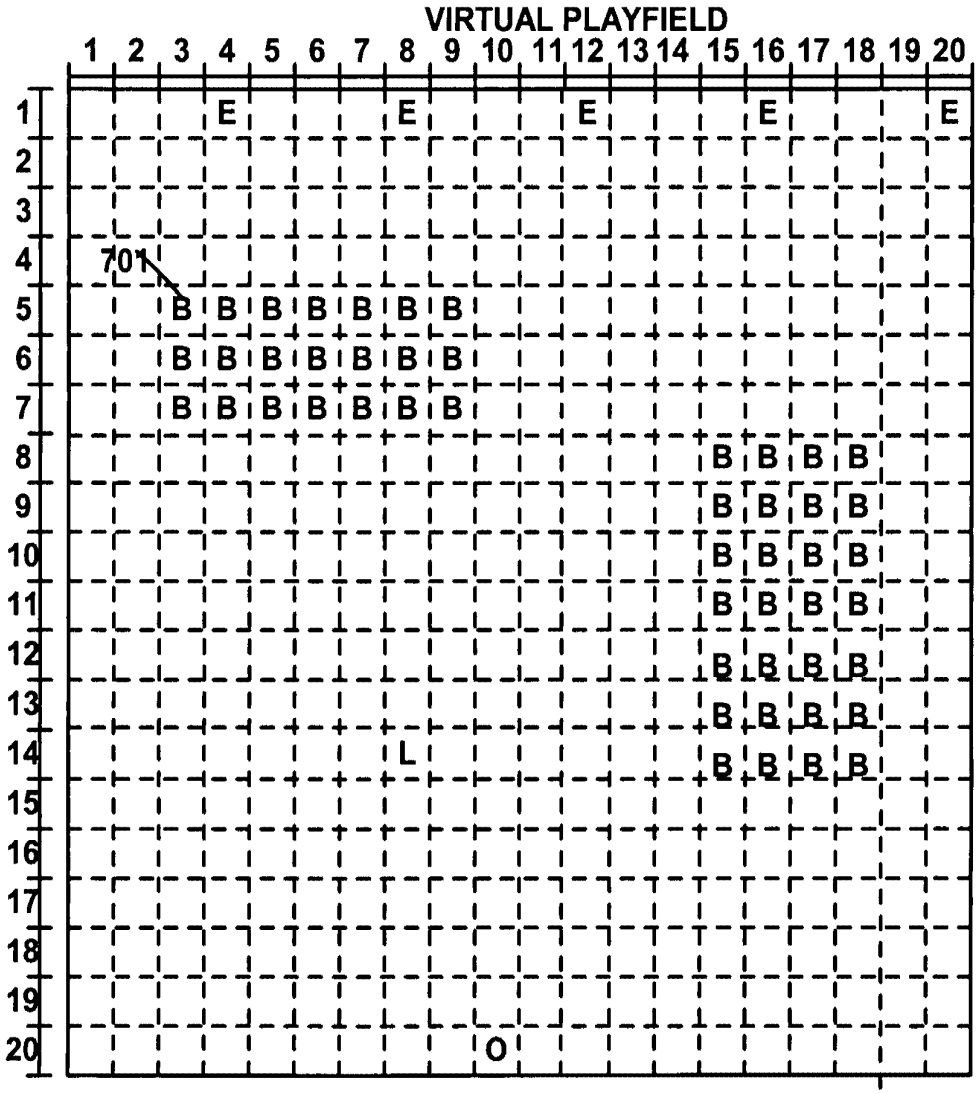


FIG. 7

EV620766322US

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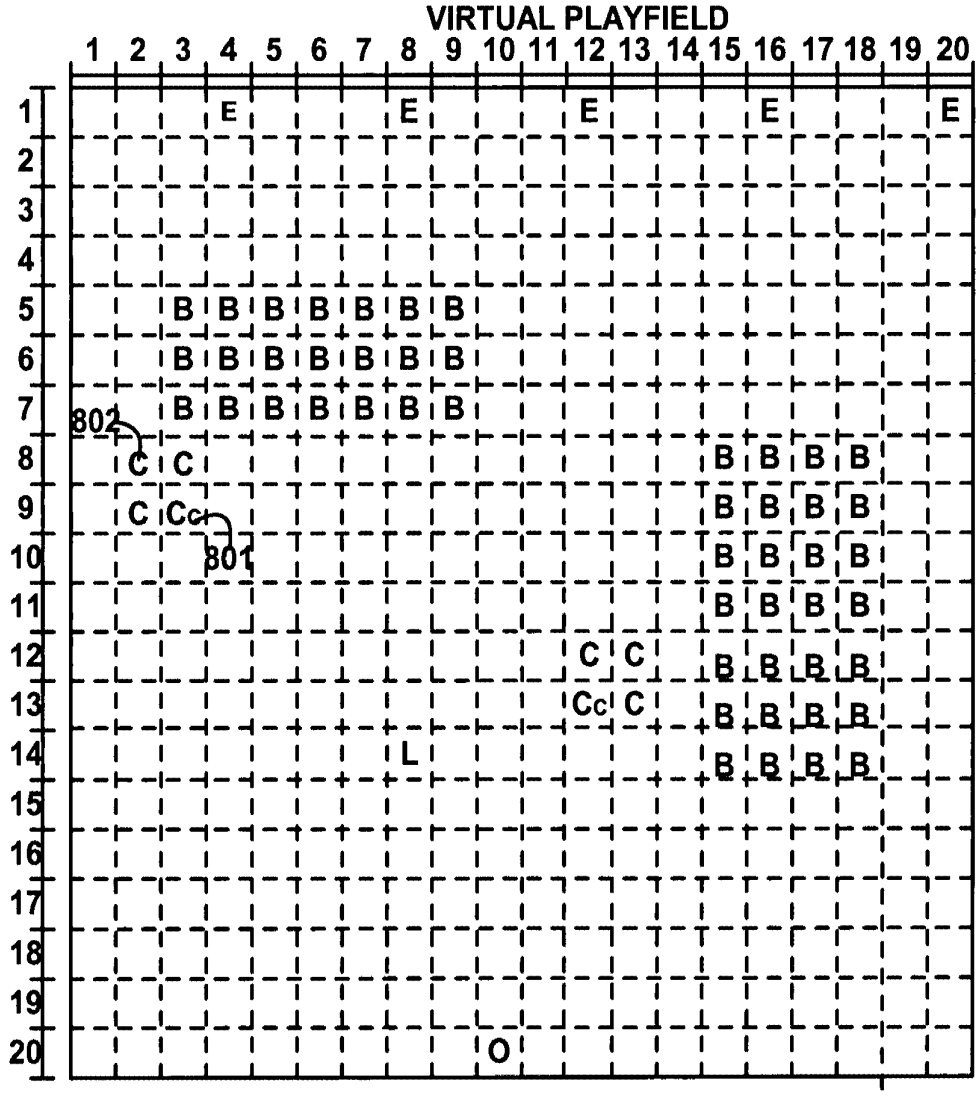


FIG. 8

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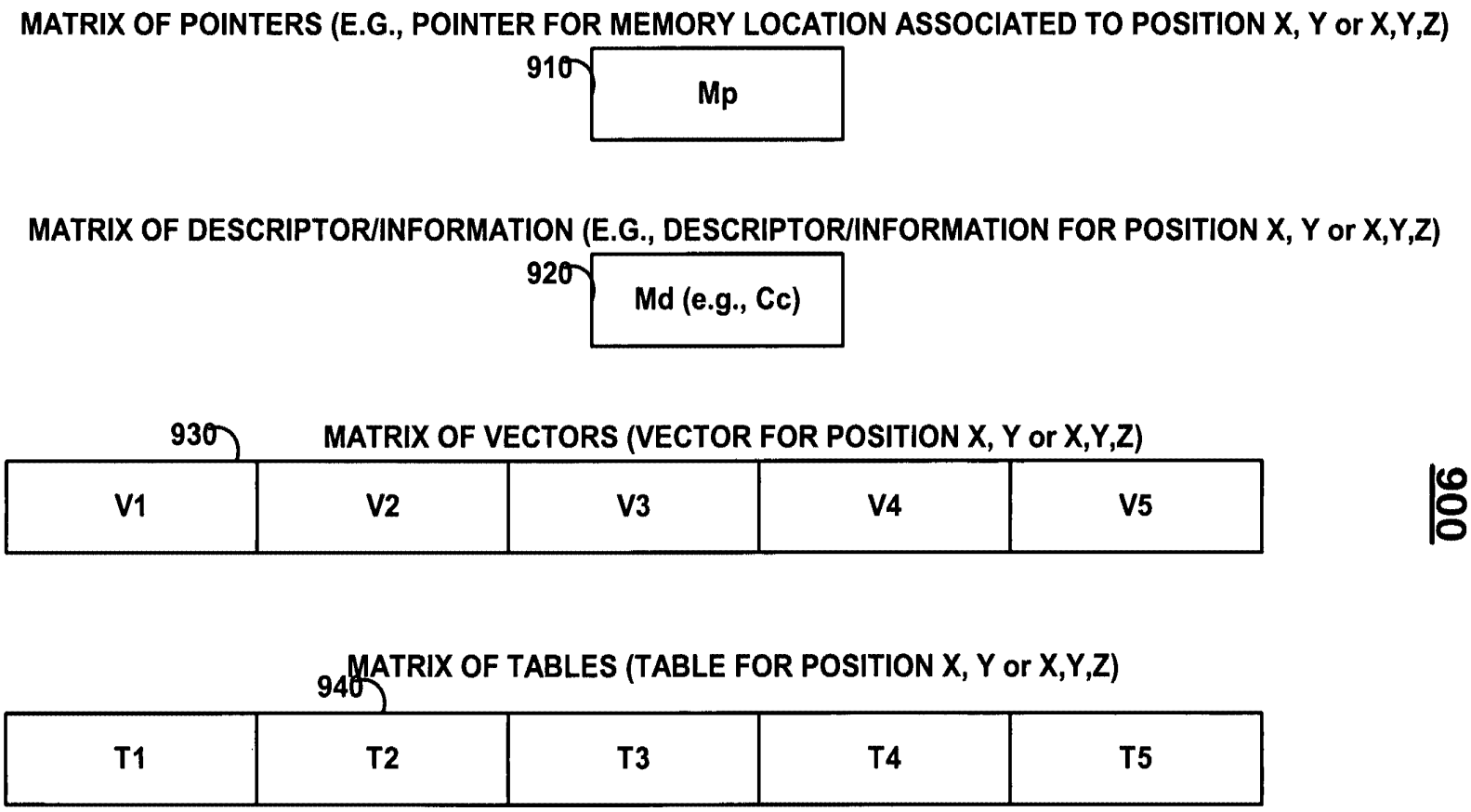


FIG. 9

EV620766322US

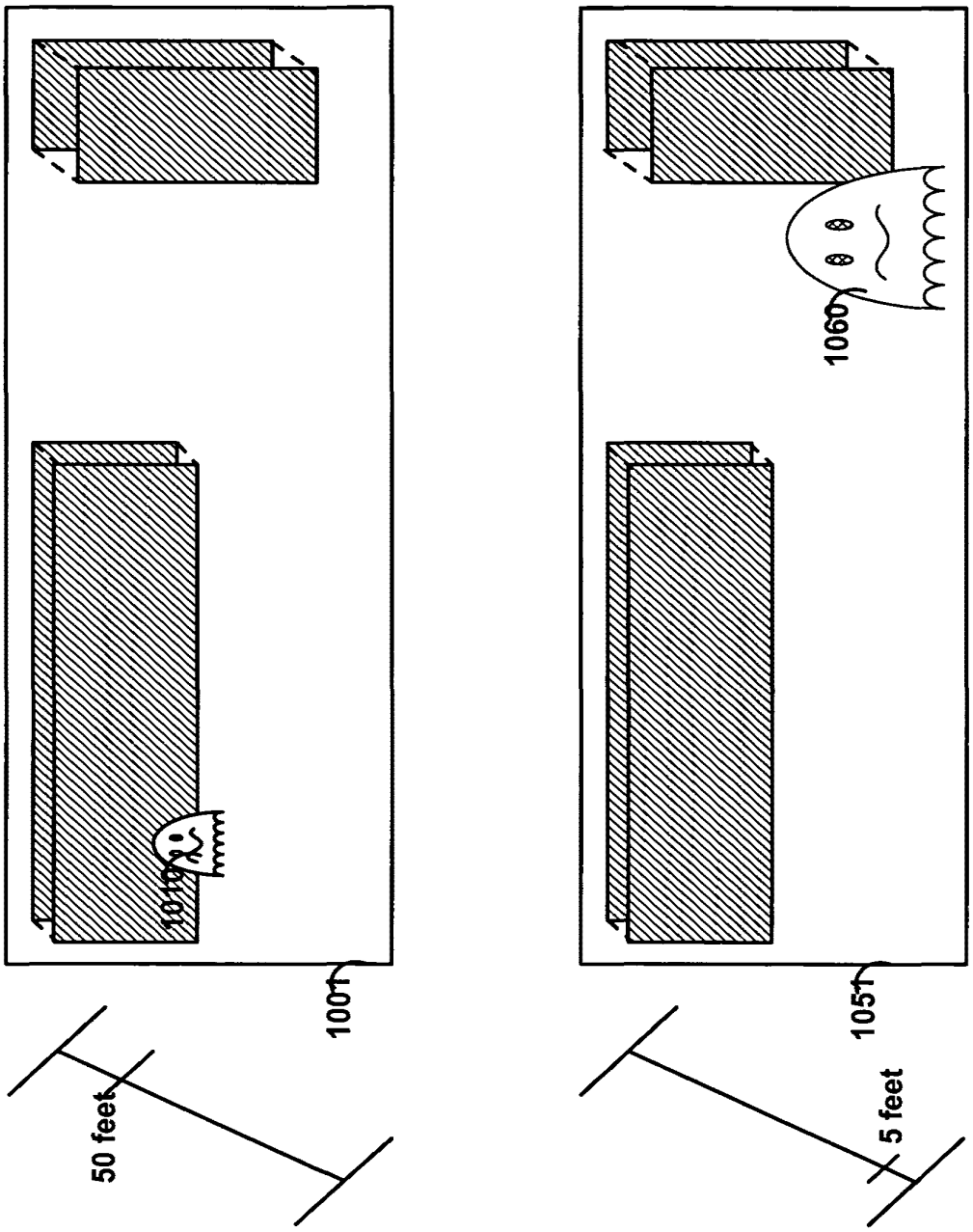


FIG. 10

1100

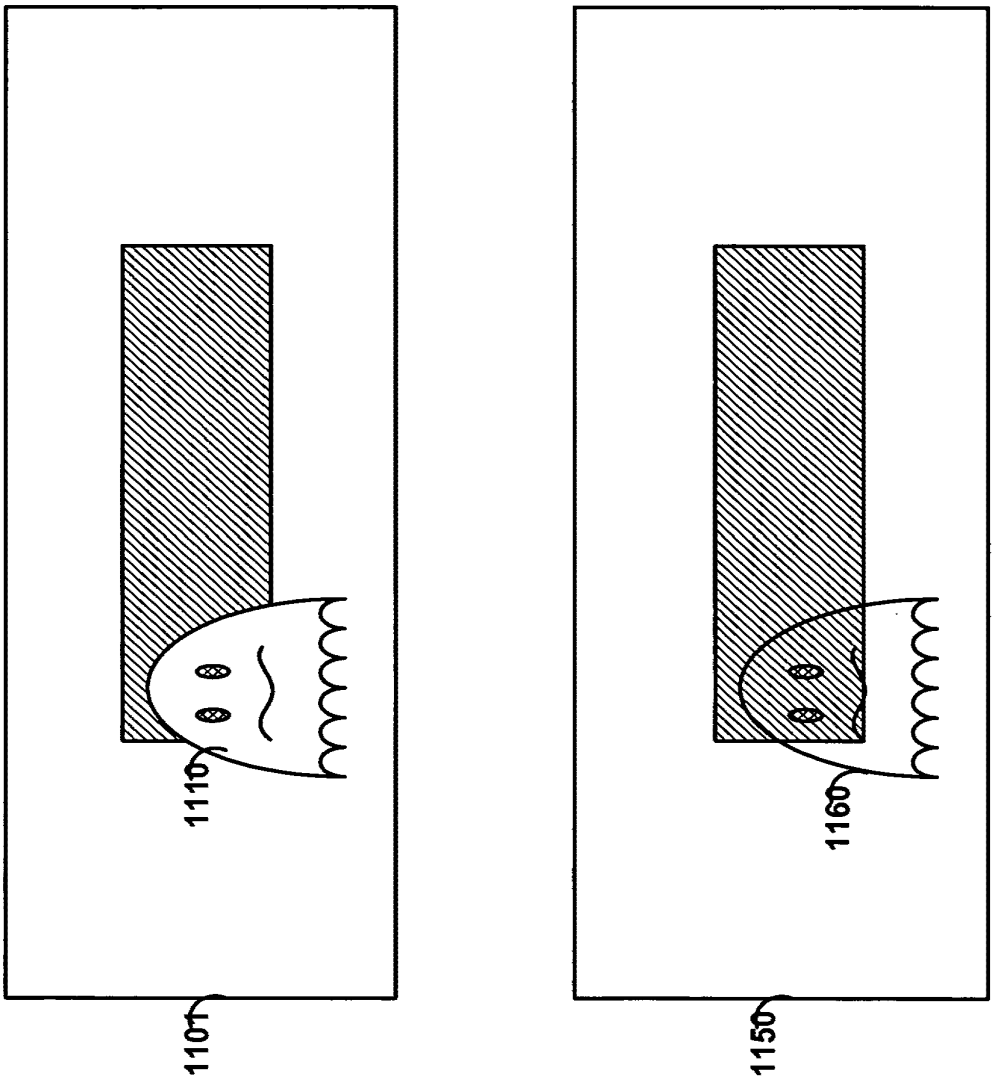


FIG. 11

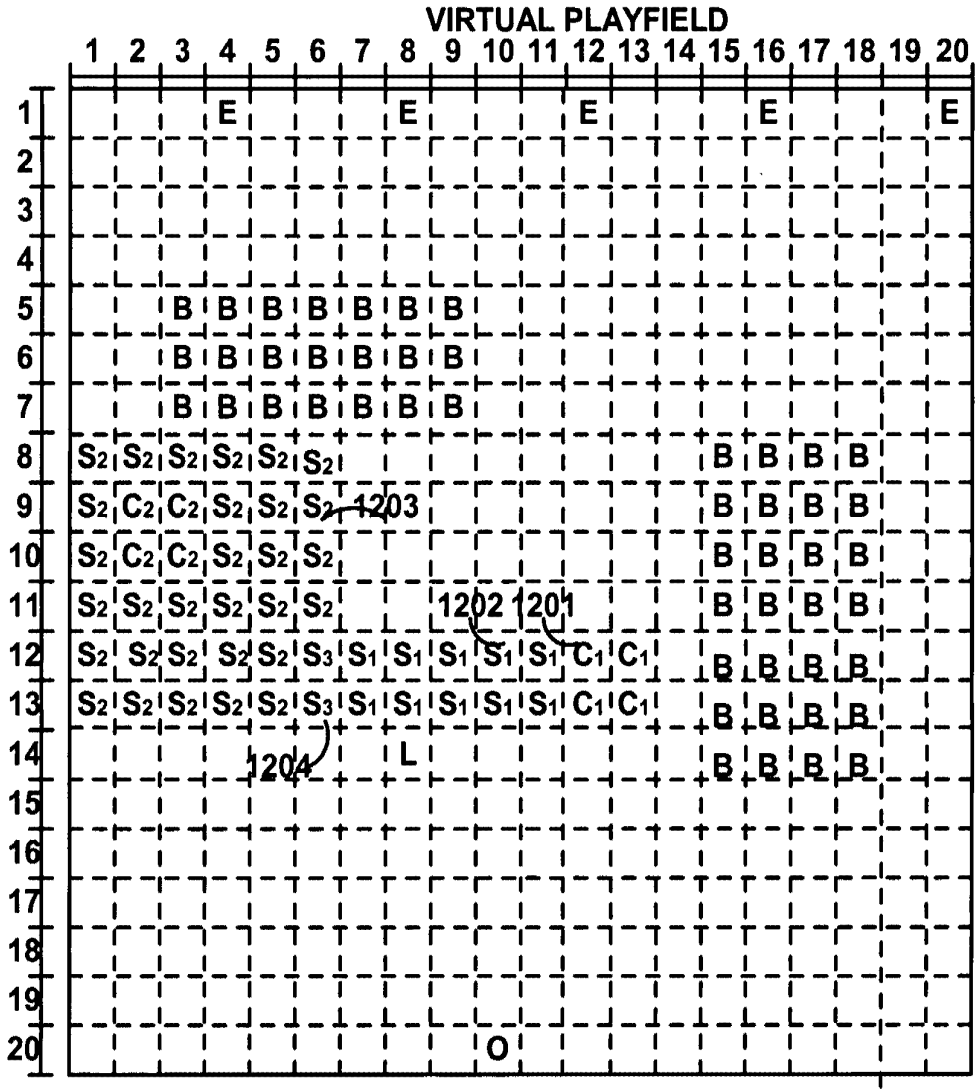


FIG. 12

12/14
1200

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1300

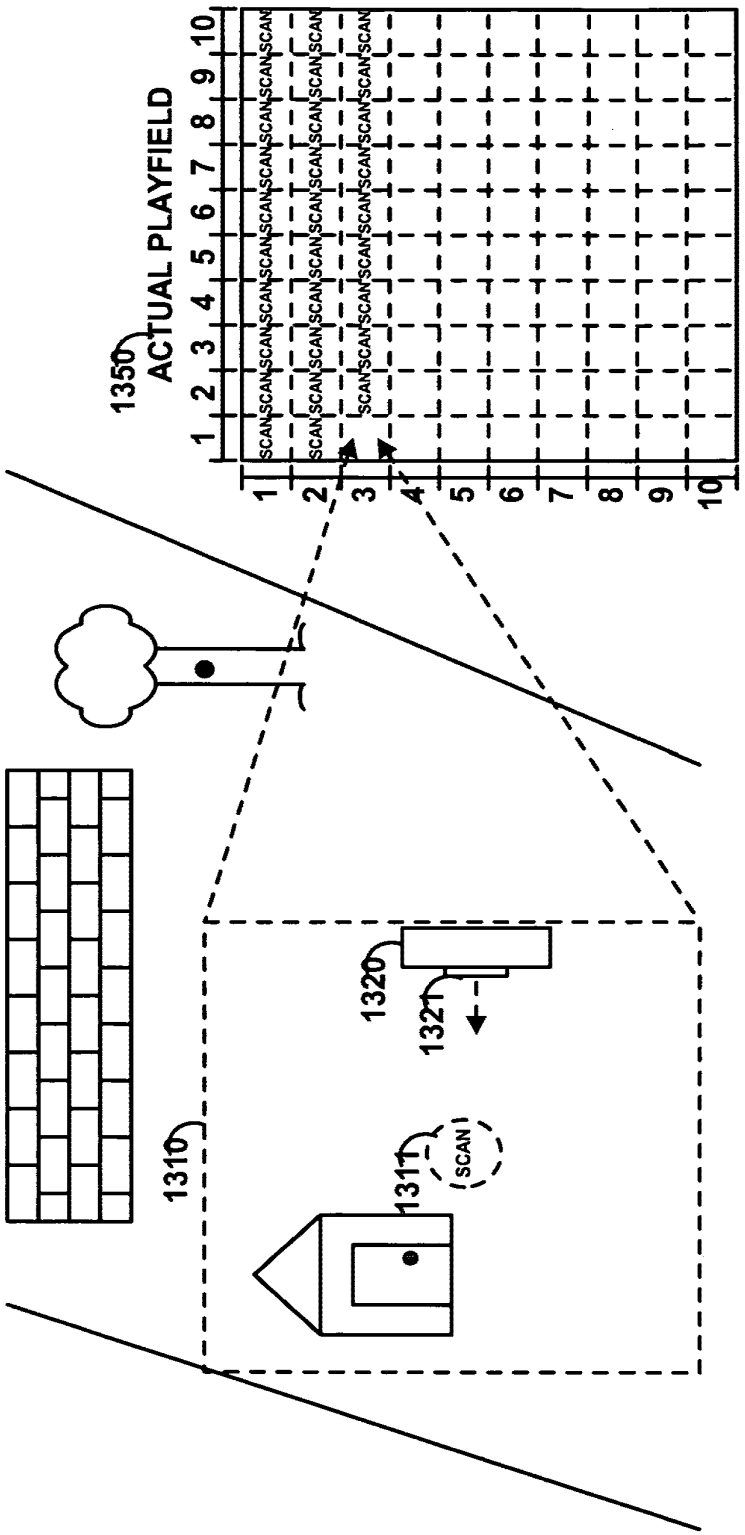

1350
ACTUAL PLAYFIELD
1 2 3 4 5 6 7 8 9 10
SCAN
1 2 3 4 5 6 7 8 9 10
1320
1321
1310
1311
SCAN

FIG. 13

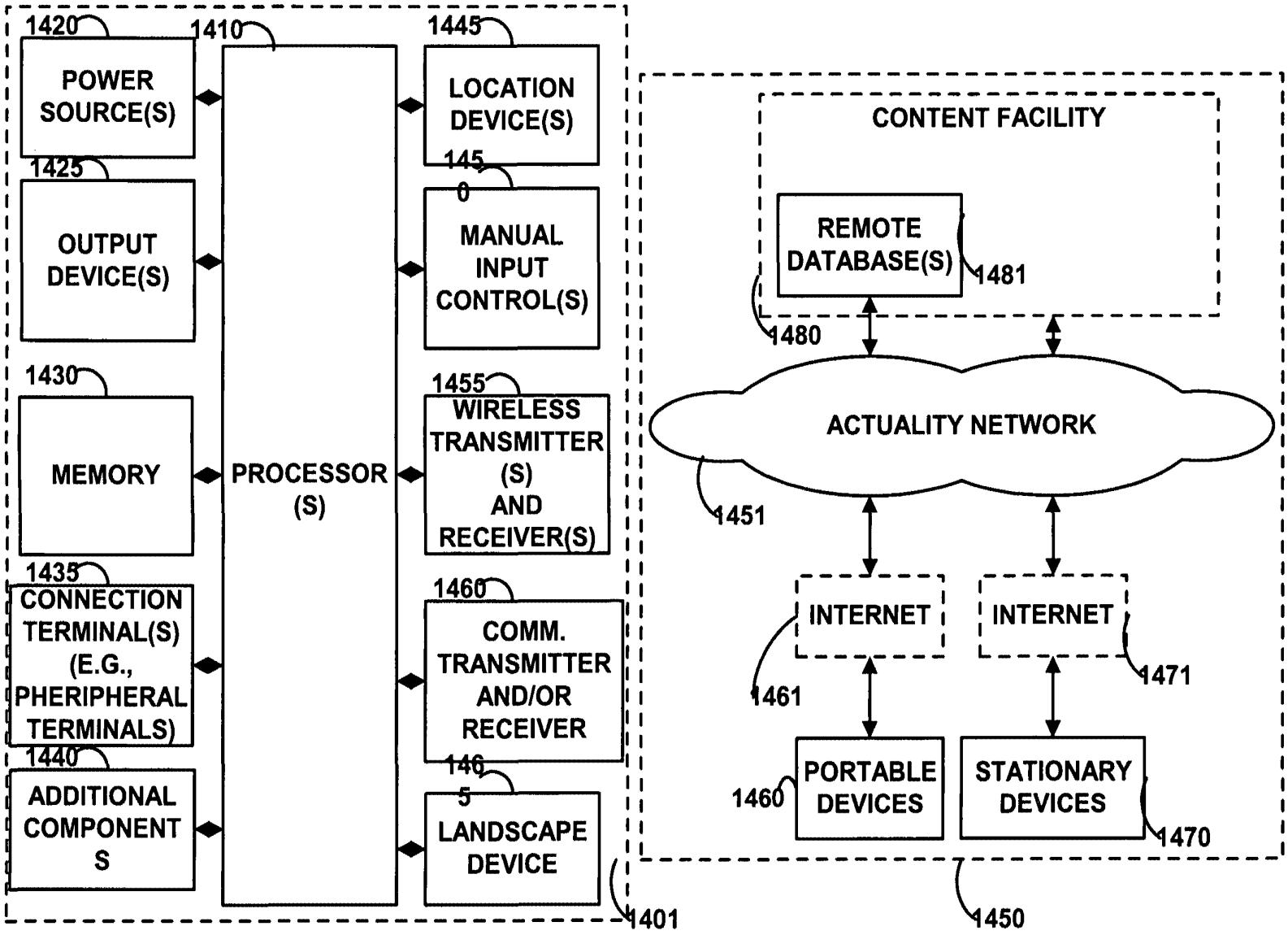


FIG. 14

14/14

EV620766322US

SMALL ENTITY
JDM/008

DECLARATION

I, Jeffrey D. Mullen, declare that I am a citizen of the United States of America, respectively residing at and having post office addresses at 350 West 43rd Street, New York, New York 10036; and

that I verily believe myself to be the original and first inventor of the invention or discovery in:

LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

which is described and claimed in the attached specification, and for which a patent is sought;

that I have reviewed and do understand the content of said specification, including the claims, and acknowledge my duty to disclose to the United States Patent and Trademark Office information known by myself to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56;

that I do not know and do not believe that this invention or discovery was ever known or used in the United States of America before my invention or discovery thereof, or patented or described in any printed publication in any country before my invention or discovery thereof, or more than one year prior to this application; or in public use or on sale in the United States of America more than one year prior to this application; that this invention or discovery has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an

application filed by myself or my legal representatives or assigns more than twelve months prior to this application; and that no application for patent or inventor's certificate on this invention or discovery has been filed in any country foreign to the United States of America by myself or my legal representatives or assigns;

I hereby claim the benefit under Title 35, United States Code § 119(e) to the United States provisional applications listed below.

60/628,475	November 16, 2004
(Application Serial No.)	(Filing Date)

and I request that communications be sent to:

Jeffrey D. Mullen
350 West 43rd St., Apt. 5H
New York, NY 10036

and that telephone calls be directed to:

Jeffrey D. Mullen
(914) 837-7741

Wherefore, I pray that Letters Patent be granted to myself for the invention or discovery described and claimed in the attached specification and claims, and I hereby subscribe my name to the foregoing specification, claims, and declaration.

I declare, further, that I understand the English language and that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and, further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

11/16/2005
Date

Jeffrey D. Mullen

PATENT APPLICATION SERIAL NO _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

11/22/2005 RMEBRAHT 00000042 11281812

01 FC:2011	150.00 OP
02 FC:2111	250.00 OP
03 FC:2311	100.00 OP

PTO-1556
(5/87)

*U.S Government Printing Office: 2002 — 466-267/69033

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number: 11281812

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	150.00		N/A	300.00
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	$250		N/A	$500
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	$100		N/A	$200
TOTAL CLAIMS (37 CFR 1.16(i))	3 minus 20 =	* 0	X$ 25 =		OR	X$50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	* 0	X100 =			X200 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			+180=			+360=	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	300		TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X$ 25 =		OR	X$50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X100 =		OR	X200 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		OR	+360=	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X$ 25 =		OR	X$50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X100 =		OR	X200 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		OR	+360=	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

INVENTOR INFORMATION

Inventor One Given Name:: Jeffrey D
Family Name:: Mullen
Postal Address Line One:: 350 West 43rd St., Apt. 5H
City:: New York
State or Province:: New York
Country:: USA
Postal or Zip Code:: 10036
City of Residence:: New York
State or Province of Residence:: New York
Country of Residence:: USA
Citizenship Country:: USA

CORRESPONDENCE INFORMATION

Correspondence Customer Number:: 32733
Electronic Mail One:: jmullen54@aol.com

APPLICATION INFORMATION

Title Line One:: LOCATION-BASED GAMES AND AUGMENTED REALI
Title Line Two:: TY SYSTEMS
Total Drawing Sheets:: 14
Formal Drawings?:: No
Application Type:: Utility
Docket Number:: JDM/008
Secrecy Order in Parent Appl.?:: No

REPRESENTATIVE INFORMATION

Representative Customer Number:: 32733

CONTINUITY INFORMATION

This application is a:: NON PROV. OF PROVISIONAL
> Application One:: 60/628,475
Filing Date:: 11-16-2004

Source:: PrintEFS Version 1.0.1

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 01/09/2008

JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232

EXAMINER	
WERT, JOSHUA P	

ART UNIT	PAPER NUMBER
3714	

MAIL DATE	DELIVERY MODE
01/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

HT

Office Action Summary	Application No.	Applicant(s)	
	11/281,812	MULLEN, JEFFREY D.	
	Examiner	Art Unit	
	Josh Wert	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Noro et al., US 2003/0062675 (Noro).

3. Noro discloses an augmented reality game system comprising a head-mounted display for overlaying virtual indicia onto a physical playfield (103); a memory and processor comprising video game logic to provide a video game (102) a detector for determining landscape characteristics to be utilized in the game (paragraph 0015; the computer determines what the player is looking at and uses that information in the game; and a locating device to determine the physical location of the device within the game (104).

4. Claims 2 and 3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bull et al., US 2002/0198055 (Bull).

5. Bull discloses a location based game comprising a memory and processor on a handheld device for providing the game (paragraphs 0014 – 0021); a manual control (the keys on the cell phone); a locating device to determine the physical location of the device (cell receiver that determines the location of the cell phone) and a switch that

determines the location of the player in the game and displays it on a playmate having a defined length and width (Figures 1-6 and paragraphs 0022-0035).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Josh Wert whose telephone number is 571-270-1894. The examiner can normally be reached on Monday - Thursday 7:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

1/5/08
JPW

ROBERT E. PEZZUTO
SUPERVISORY PRIMARY EXAMINER
ROBERT E. PEZZUTO
SUPERVISORY PRIMARY EXAMINER

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner Josh Wert	Art Unit 3714	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0198055	12-2002	Bull et al.	463/49
*	B	US-2003/0062675	04-2003	Noro et al.	273/237
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 9936

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/281,812	11/16/2005 RULE	273	3714	JDM/008

APPLICANTS
Jeffrey D. Mullen, New York, NY;

**** CONTINUING DATA ***************************
This appln claims benefit of 60/628,475 11/16/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ****
12/20/2005

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /JOSHUA P WERT/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	14	3	3

ADDRESS
JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232
UNITED STATES

TITLE
Location-based games and augmented reality systems

FILING FEE RECEIVED	FEES: Authority has been given in Paper	☐ All Fees
500	No._____ to charge/credit DEPOSIT ACCOUNT	☐ 1.16 Fees (Filing)
	No._____ for following:	☐ 1.17 Fees (Processing Ext. of time)
		☐ 1.18 Fees (Issue)
		☐ Other _____
		☐ Credit

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Wert, Josh	3714

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008								
	1	✓								
	2	✓								
	3	✓								

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Wert, Josh	3714

SEARCHED

Class	Subclass	Date	Examiner
463	1, 49	1/5/2008	JPW
273	237	1/5/2008	JPW

SEARCH NOTES

Search Notes	Date	Examiner
East text search - heads up/mounted display with landscape or field	1/5/2008	JPW
Inventor Name Search	1/5/2008	JPW

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

JDM/008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Joshua P. Wert

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15232
July 9, 2008

REPLY TO OFFICE ACTION

Sir:

This is in response to the Office Action dated January 9, 2008. A three-month extension of time is applicable hereto and is being submitted herewith. In response to the Office Action dated January 9, 2008, applicant amends the application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 10 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) An augmented reality game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

memory comprising video game logic operable to provide a video game;

a processor for utilizing said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2. (original) A location-based game system comprising:

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memory comprising video game logic for providing a video game;

a processor operable to utilize said video game logic to provide said video game;

at least one manual control;

a locating device operable to determine the physical location of said locating device on a physical playfield; and

a switch that determines whether said at least one manual control or said locating device determines the location of a video game character in said video game.

3. (original) A location-based game system for providing a video game comprising:

a handheld game device comprising:

a locating device operable to determine a physical location for said locating device, wherein said physical location determines a virtual location for a virtual game character in a virtual playfield of said video game; and

a playmat having indicia representative of said virtual playfield comprising:

a length L, wherein said length L is utilized by said video game;

a width W, wherein said length W is utilized by said video game.

4. (new) A system comprising:

a first video game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

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a processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a second video game system, wherein said first video game system communicates information with said second video game system.

5. (new) A system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

a processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the

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physical location of said locating device in providing said video game; and

a handheld controller for providing at least one control signal to said video game.

6. (new) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

7. (new) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

8. (new) The augmented reality game system of claim 1, wherein said landscape characteristics are utilized to control a computer-controlled video game character.

9. (new) The augmented reality game system of claim 1, further comprising a wireless transmitter and receiver.

10. (new) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical

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playfield and said computer-controlled video game character is limited to visibility within a certain area.

11. (new) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area.

12. (new) The location-based game system of claim 2, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

13. (new) The location-based game system of claim 2, wherein said locating device comprises an inertial movement system.

14. (new) The location-based game system of claim 2, wherein said locating device comprises a positioning system.

15. (new) The location-based game system of claim 2, further comprising a transparent display screen for displaying said video game.

16. (new) The location-based game system of claim 2, further comprising an ON/OFF switch.

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17. (new) The location-based game system of claim 3, wherein said handheld game device is shaped to resemble said virtual game character.

18. (new) The location-based game system of claim 3, wherein said playmat includes indicia representative of a playmat location a user is to start a portion of said video game.

19. (new) The location-based game system of claim 3, wherein said playmat includes indicia representative of said video game.

20. (new) The location-based game system of claim 3, wherein a time-limit is provided to complete a portion of said video game.

21. (new) The location-based game system of claim 3, wherein a time-limit is provided to complete a portion of said video game, and said portion of said video game is associated with said playmat.

22. (new) The location-based game system of claim 3, wherein a first surface of said playmat is associated with a first portion of said video game and a second surface of said playmat is associated with a second portion of said video game.

23. (new) The location-based game system of claim 3, wherein said handheld game device comprises a transparent display.

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24. (new) The system of claim 4, wherein information regarding said physical location is provided to a remote database.

25. (new) The system of claim 4, wherein information regarding said physical location is provided to said second video game system.

26. (new) The system of claim 4, wherein information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system.

27. (new) The system of claim 4, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

28. (new) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

29. (new) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

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30. (new) The system of claim 5, wherein said landscape characteristics are utilized to control computer-controlled video game character.

31. (new) The system of claim 5, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

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REMARKS/ARGUMENTS

Summary of Office Action

Claims 1-3 are pending in the application.

Claim 1 was rejected under 35 U.S.C. § 102(b) as being unpatentable over Noro U.S. Patent Application No. 2003/0062675 (hereinafter "Noro").

Claims 2 and 3 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Bull et al U.S. Patent No. 2002/0198055 (hereinafter "Bull").

Summary of Applicant's Amendments

Applicant has added new claims 4-31 in order to more particularly point out and distinctly claim the subject matter that applicant regards as the invention.

Applicant traverses the Examiner's rejections. Applicant reserves the right to claim any subject matter lost by any claim amendment or cancellation, or any subject matter included in the present application, in one or more continuation or divisional applications.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(b) in view of Noro

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Noro.

Applicant’s invention of claim 1 includes a locating device operable to determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicia onto a physical playfield.

Noro alleges a game board as well as determining the direction of the view of a player of the game board.

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Noro, however, does not locate on the physical playfield in which graphics are displayed. Instead, Noro includes two areas. The first area is a viewing area. The second area is the game board area. Accordingly, Noro does not show or suggest applicant's invention of claim 1 of a locating device operable to determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicia onto the physical playfield.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 1, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(b) in view of Bull

Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bull.

Claim 2

Bull alleges a wireless device that displays the status and results of a game of tag.

Applicant's invention of claim 2 includes a switch that determines whether at least one manual control or a locating device determines the location of a video game character in a video game.

Bull clearly does not show or suggest a switch – let alone one that determines whether at least one manual control or a locating device determines the location of a video game character in a video game. Bull merely alleges eliminating a player from a game when turning off a wireless device or otherwise ending communication.

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In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 2, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 3

Applicant's invention of claim 3 includes a playmat having indicia representative of a virtual playfield.

Bull cleary does not show or suggest a playmat – let alone one that includes indicia representative of a virtual playfield. Bull alleges a display screen on a wireless device. A display screen on a wireless device is not a playmat.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 3, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

New Claims 4-31

Applicant has added new claims 4-5. As shown above, claim 1 is patentable. Accordingly, applicant respectfully submits that claims 4-5 are patentable because claims 4-5 include patentable features included in patentable claim 1. Claims 5-31 are patentable as claims 5-31 depend from patentable independent claims.

Conclusion

Applicant respectfully submits that this application, including the pending claims, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

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The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/

Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
731 South Negley, Apt. 2
Pittsburgh, PA 15232
Mobile: (914) 837-7741

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Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	11	25	275
Independent claims in excess of 3	2201	2	105	210
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	525	525
Miscellaneous:				
			Total in USD ($)	**1010**

Electronic Acknowledgement Receipt

EFS ID:	3585312
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	09-JUL-2008
Filing Date:	16-NOV-2005
Time Stamp:	03:19:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1010
RAM confirmation Number	6354
Deposit Account	503855
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1		JDM-008--Reply.pdf	71245 fa46b967d49d207541b645789d5b0769027292a4	yes	13

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Amendment - After Non-Final Rejection	1	1
Claims	2	9
Applicant Arguments/Remarks Made in an Amendment	10	13

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	8422 e861c3efab14a32f1ba39bcb9162a6a6d8737f8c	no	2

Warnings:

Information:

Total Files Size (in bytes):	79667

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/281,812	11/16/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 07/09/2008

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 31	Minus	** 20	= 11	X $25 =	275	OR	X $ =	
Independent (37 CFR 1.16(h))	* 5	Minus	***3	= 2	X $105 =	210	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	485	OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/Kimberly Cooper/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 02/18/2009

JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232

EXAMINER	
WERT, JOSHUA P	

ART UNIT	PAPER NUMBER
3714	

MAIL DATE	DELIVERY MODE
02/18/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/281,812	MULLEN, JEFFREY D.	
	Examiner	Art Unit	
	JOSHUA WERT	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

1. The examiner acknowledges the amendments to the claims filed 7/09/2008 including the addition of claims 4-31. No new matter appears to have been added in the new claims. The examiner requests that in future amendments, applicant provide an indication of where support for any claim amendments appears in the specification.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-31 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-20 of

copending Application No. 11/208,943 and claims 76-80 & 100-117 of copending Application No. 10/932,536. Although the conflicting claims are not identical, they are not patentably distinct from each other because in their totality, they claim the same structure of a video game system including a transparent, head mounted display for use in a location based game.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 8, 10, 11, 24, 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Noro et al., US 2003/0062675 (Noro).

6. Regarding claim 1, Noro discloses an augmented reality game system comprising a head-mounted display for overlaying virtual indicia onto a physical playfield (103); a memory and processor comprising video game logic to provide a video game (102) a detector for determining landscape characteristics to be utilized in the game (paragraph 0015; the computer determines what the player is looking at and uses

that information in the game); and a locating device to determine the physical location of the device within the game (104).

7. Regarding claim 4, Noro discloses multiple video game systems being used simultaneously and communicating between each other to provide one game experience (Paragraph 0056; each player wears a see-through HMD).

8. Regarding claim 8, Noro discloses that landscape characteristics are used to control computer-controlled video game characters (Paragraph 0056; in a chess game the landscape is the chess board with its assortment of pieces. The landscape characteristics are the location and movement of the pieces on the board. The computer-controlled video game characters are the Computer Graphics (CG) representation of the pieces on the game board. Noro discloses that the location, type and movement of the pieces on the board controls the computer graphics displayed to the player.

9. Regarding claims 10, 11, Noro discloses superimposing CG of pieces and actions on the board and game pieces by the head-mounted display in a limited visibility area (Paragraph 0056; Limited visibility area is the enclosed boundary of the board) and where the CG game character includes a reaction to entering a certain area (Paragraph 0056; when the Knight enters the area/square of a piece that is being conquered/taken, an action is shown of the Knight fighting the piece to be taken).

10. Regarding claims 24, 25, Noro discloses providing game information to dispersed computers/servers and databases (Paragraph 0205, 0208 and 0210).

11. Regarding claim 27, Noro discloses the system comprising a positioning system and an inertial movement system (104).

12. Claims 2, 3, 14, 16 and 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bull et al., US 2002/0198055 (Bull).

13. Regarding claims 2 and 3, Bull discloses a location based game comprising a memory and processor on a handheld device for providing the game (paragraphs 0014 – 0021); a manual control (the keys on the cell phone); a locating device to determine the physical location of the device (cell receiver that determines the location of the cell phone) and a switch that determines the location of the player in the game and displays it on a playmate having a defined length and width (Figures 1-6 and paragraphs 0022-0036).

14. Regarding claim 14, Bull discloses the wireless devices showing their relative position (Paragraph 0014).

15. Regarding claim 16, Bull discloses the wireless device comprising an on/off switch (paragraph 0036).

16. Regarding claims 18, 19, Bull discloses the playmat including the indicia of the player and the players target (Figures 1-6). Each time a new target is selected for the player the playmat indicates where the player is to begin moving to tag the new target.

17. Regarding claims 20, 21, Bull discloses that the present types of games as used by the disclosed system are run for a specified period of time (paragraph 0004).

18. Regarding claim 22, Bull discloses a first surface of the playmate associated with a first portion of a video game (Figure 5, the grid which is associated with the players current position and target) and a second surface of said playmat associated with a second portion of the video game (Figure 5, the remainder of the screen which is associated with the total game score and messages).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 5, 26 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Official Notice.

21. Regarding claim 5, Noro discloses an augmented reality game system comprising a head-mounted display (HMD) for overlaying virtual indicia onto a physical playfield (103); a processor comprising video game logic to provide a video game (102) a detector for determining landscape characteristics to be utilized in the game (paragraph 0015; the computer determines what the player is looking at and uses that information in the game); and a locating device to determine the physical location of the device within the game (104). Additionally, Noro discloses that the system includes a PC or game console (22). Official notice is taken that it is well known in the art for both PC's and game consoles to comprise handheld controllers for providing control signals

(on/off, start, pause). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a handheld controller attached to the computer/game console of Noro in order to allow a player to start and pause the game.

22. Regarding claim 26, Noro substantially discloses the claimed invention except for the information transfer between the first and second video game systems being based on permission. Official notice is taken that it is well known in the computer art to limit access to electronic systems by an owner/operator to require permission of another person/system to access their system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to require permission of the electronic devices to access information in order to maintain a desired level of security on the electronic devices.

23. Claims 6, 7 & 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro as applied to claim 1 or 5 above (along with Official Notice if applicable), and further in view of Applicant's Admitted Prior Art.

24. Regarding claims 6 and 28, Noro substantially discloses the claimed invention except for varying the transparency of the virtual objects based on perceived distance. Applicant admits in the specification (paragraph 0081 of the PGPub) that it is well known to one skilled in the art to vary the transparency of virtual objects based on perceived distance.

25. Regarding claim 7 and 29, as applicant has admitted that it is within the skill of one skilled in the art to very the transparency of a perceived image based on perceived

distance, it would have been obvious to one having such ordinary skill in the art to very the transparency of a perceived image linearly such that far away perceived images are semi-transparent through the spectrum to a close image being virtually transparent to an image that is too close being completely transparent (i.e. not displayed) so that images that are too close to be fully displayed are not displayed at all.

26. Regarding claim 30, Noro discloses that landscape characteristics are used to control computer-controlled video game characters (Paragraph 0056; in a chess game the landscape is the chess board with its assortment of pieces. The landscape characteristics are the location and movement of the pieces on the board. The computer-controlled video game characters are the Computer Graphics (CG) representation of the pieces on the game board. Noro discloses that the location, type and movement of the pieces on the board controls the computer graphics displayed to the player.

27. Regarding claim 31, Noro discloses the system comprising a positioning system and an inertial movement system (104).

28. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro as applied to claim 1 above.

29. Regarding claim 9, Noro substantially discloses the claimed invention except for the system comprising a wireless transmitter and receiver. Noro discloses the HMD being connected to the PC/game console with a hard wire. A hard wire connection and a wireless connection between a computer and an input device are art recognized

equivalents. It would have been obvious at the time the invention was made to modify the hard wire connection between the HUD and the PC/game console as disclosed by Noro to be wireless including a wireless transmitter and receiver in order to allow greater mobility for the user.

30. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Bates et al., US 2006/0148490 (Bates).

31. Bull substantially discloses the claimed invention except for the locating device comprising an inertial movement system. Bates teaches a wireless phone (700) that comprises an inertial movement system to determine the movement of the wireless phone (paragraph 0041). It would have been obvious to one having ordinary skill at the time the invention was made to modify the system disclosed by Bull to incorporate an inertial movement system along with the positioning system in the wireless phone to ensure the accuracy of the location data transmitted from the wireless phone for the game.

32. Claims 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Wong et al., U.S. Patent 6,636,203 (Wong).

33. Bull substantially discloses the claimed invention except for the wireless phone comprising a transparent display. Wong teaches a wireless phone with a transparent display (Figures 5A and 5B). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a transparent display as taught by

Wong on the wireless device disclosed by Bull in order to provide natural feeling tactile feedback to the user.

34. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bull.

35. Bull substantially discloses the claimed invention except for the handheld game device (wireless phone) shaped to resemble a virtual character. The physical shape of a device is a design choice of a manufacturer. The shape being that of a game character does not change the functionality of the claimed device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a handheld game device of any shape, size and design as wanted including that of resembling a virtual character in order to achieve the desired appearance.

Response to Arguments

36. Applicant's arguments filed 7/09/2008 have been fully considered but they are not persuasive.

37. Regarding claim 1, applicant remarks that Noro does not disclose a locating device operable to determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicial onto the physical playfield. Noro discloses in the abstract and in Figure 22, as two examples, that Noro generates computer graphics based on items on the game board according to

the position/attitude information and displaying them with superposition with the image of the real field in the HMD.

38. Regarding claim 2, applicant remarks that Bull does not disclose a switch that determines whether said locating device determines the location of a video game character in said video game. Applicant continues to say that Bull discloses, "eliminating a player from a game when turning off a wireless device or otherwise ending communication". In that section of Bull (Paragraph 0036), Bull discloses the switch (on/off) which determines if the locating device is determining the location of the character. If the wireless phone is off then the locating device is not determining the location, if it is on then it is. The examiner has taken the broadest reasonable interpretation of the claim language in light of the specification in rejecting the claim, which has been explained above.

39. Regarding claim 3, applicant remarks that "Bull clearly does not show or suggest a playmat" and that "A display screen on a wireless device is not a playmat". Since playmat is not defined in the claims such that it can not read upon a display, it therefore can be a display. Bull clearly discloses a play area on a display that meets all of the limitations present in the claim for the playmat (a length and a width having indicia representative of a virtual playfield). Therefore, Bull clearly meets the limitations of the claims as written.

Conclusion

40. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA WERT whose telephone number is (571)270-1894. The examiner can normally be reached on Monday - Thursday 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2/4/2009

/J. W./
Examiner, Art Unit 3714

/Corbett Coburn/
Primary Examiner
AU 3714

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner JOSHUA WERT	Art Unit 3714	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,717,414 A	02-1998	Bergsneider et al.	345/8
*	B	US-5,815,411 A	09-1998	Ellenby et al.	702/150
*	C	US-6,184,857 B1	02-2001	Latham, Roy W.	345/589
*	D	US-6,287,200 B1	09-2001	Sharma, Dipanshu	463/40
*	E	US-6,320,495 B1	11-2001	Sporgis, Peter	340/323R
*	F	US-2002/0198055 A1	12-2002	Bull et al.	463/49
*	G	US-6,530,841 B2	03-2003	Bull et al.	463/42
*	H	US-2003/0062675 A1	04-2003	Noro et al.	273/237
*	I	US-6,633,267 B2	10-2003	Numa, TakayuKi	345/7
*	J	US-6,756,882 B2	06-2004	Benes et al.	340/323R
*	K	US-6,752,720 B1	06-2004	Clapper et al.	463/58
*	L	US-2005/0049022 A1	03-2005	Mullen, Jeffrey D.	463/001
*	M	US-6,908,392 B2	06-2005	Friedman et al.	463/49

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner JOSHUA WERT	Art Unit 3714	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,989,831 B2	01-2006	Ebersole et al.	345/420
*	B	US-2006/0105838 A1	05-2006	Mullen, Jeffrey D.	463/031
*	C	US-2006/0148490 A1	07-2006	Bates et al.	455/456.1
*	D	US-2006/0258420 A1	11-2006	Mullen, Jeffrey D.	463/001
*	E	US-2007/0281766 A1	12-2007	Mullen, Jeffrey D.	463/007
*	F	US-2007/0281765 A1	12-2007	Mullen, Jeffrey D.	463/001
*	G	US-7,321,785 B2	01-2008	Harris, Scott C.	455/557
*	H	US-2008/0015018 A1	01-2008	Mullen, Jeffrey David	463/039
*	I	US-2008/0015024 A1	01-2008	Mullen, Jeffrey D.	463/042
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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	S					
	T					

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	Wert, Josh	3714

SEARCHED			
Class	**Subclass**	**Date**	**Examiner**
463	1, 49	1/5/2008	JPW
273	237	1/5/2008	JPW

SEARCH NOTES		
Search Notes	**Date**	**Examiner**
East text search - heads up/mounted display with landscape or field	1/5/2008	JPW
Inventor Name Search	1/5/2008	JPW
Updated East search - see attached	2/4/2009	JPW
Forward search of Noro reference	2/4/2009	JPW
Consulted with Primary Corbett Coburn about applicants arguments	2/4/2009	JPW

INTERFERENCE SEARCH			
Class	**Subclass**	**Date**	**Examiner**

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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20030062675").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/04 11:43
L2	1243	augmented near reality	US-PGPUB; USPAT	OR	ON	2009/02/04 13:28
L3	158	augmented near reality with location	US-PGPUB; USPAT	OR	ON	2009/02/04 13:28
L4	491	location near2 based with game	US-PGPUB; USPAT	OR	ON	2009/02/04 14:14
L5	2	("2003/0062675").URPN.	USPAT	OR	ON	2009/02/04 14:25
L6	439	noro.in.	USPAT	OR	ON	2009/02/04 14:26
L7	5	(noro near hideo).in.	USPAT	OR	ON	2009/02/04 14:26
L8	16	(noro near hideo).in.	US-PGPUB; USPAT	OR	ON	2009/02/04 14:27
L11	8335	(head adj mounted adj display) or hud	US-PGPUB; USPAT	OR	ON	2009/02/04 15:27
L12	1021	11 and transparencies	US-PGPUB; USPAT	OR	ON	2009/02/04 15:27
L13	34	11 and transparencies near2 (diffrent or vary$3)	US-PGPUB; USPAT	OR	ON	2009/02/04 15:28
L14	31	11 and transparencies with distance	US-PGPUB; USPAT	OR	ON	2009/02/04 15:29
L15	17	11 and (display same distance same ((to or too) adj close))	US-PGPUB; USPAT	OR	ON	2009/02/04 15:56
L16	27438	(wireless near2 phone) or cellphone or (cell adj phone) with (inertial adj movent)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:51
L17	0	((wireless near2 phone) or cellphone or (cell adj phone)) with (inertial adj movent)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:51
L18	1	((wireless near2 phone) or cellphone or (cell adj phone)) with (inertial adj movement)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:51

L19	2	((wireless near2 phone) or cellphone or (cell adj phone)) same (inertial adj movement)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:52
L20	140	((wireless near2 phone) or cellphone or (cell adj phone)) same (transparent adj display)	US-PGPUB; USPAT	OR	ON	2009/02/04 17:07
L21	127	((wireless near2 phone) or cellphone or (cell adj phone)) with (transparent adj display)	US-PGPUB; USPAT	OR	ON	2009/02/04 17:08
S1	824	bull.in.	US-PGPUB; USPAT	OR	ON	2008/01/05 18:31
S2	10	S1 and game	US-PGPUB; USPAT	OR	ON	2008/01/05 18:31
S3	1723	(head near2 display) with game	US-PGPUB; USPAT	OR	ON	2008/01/05 18:33
S4	1687	(head near2 display near2 (mount$ or up)) with game	US-PGPUB; USPAT	OR	ON	2008/01/05 18:33
S5	17	(head near2 display near2 (mount$ or up)) with game with (landscape or playfield or field or area)	US-PGPUB; USPAT	OR	ON	2008/01/05 18:34
S6	56	((JEFFREY) near2 (MULLEN)).INV.	US-PGPUB; USPAT	OR	ON	2009/01/03 21:50
S7	0	("("20020052933" | "20020090985" | "20030062675" | "20050009608" | "6080063" | "6287200" | "6633267" | "6690947" | "6735435" | "7303474"). PN.").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/03 21:54
S8	10	("20020052933" | "20020090985" | "20030062675" | "20050009608" | "6080063" | "6287200" | "6633267" | "6690947" | "6735435" | "7303474"). PN.	US-PGPUB; USPAT	OR	ON	2009/01/03 21:54

S9	21	("20010003450" | "20010034249" | "20020090980" | "20030048256" | "20030050019" | "20030109286" | "20030144034" | "20040061683" | "20060034039" | "20060061555" | "20060146488" | "20060194619" | "20060209218" | "6229514" | "6311076" | "6643124" | "6771232" | "7050835" | "7180665" | "7184086" | "7187363"). PN.	US-PGPUB; USPAT	OR	ON	2009/01/03 21:55

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	**Art Unit**
	Wert, Josh	3714

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008	02/04/2009							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4		✓							
	5		✓							
	6		✓							
	7		✓							
	8		✓							
	9		✓							
	10		✓							
	11		✓							
	12		✓							
	13		✓							
	14		✓							
	15		✓							
	16		✓							
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	22		✓							
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	24		✓							
	25		✓							
	26		✓							
	27		✓							
	28		✓							
	29		✓							
	30		✓							
	31		✓							

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PTO/SB/30EFS (10-08)
Approved for use through 11/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11/281,812	Filing Date	2005-11-16	Docket Number (if applicable)	JDM/008	Art Unit	3714
First Named Inventor	Jeffrey D. Mullen			Examiner Name	Joshua P. Wert		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 503855

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☐ Patent Practitioner Signature

☒ Applicant Signature

PTO/SB/30EFS (10-08)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Applicant Signature			
Applicant 1		Remove	
Signature	/Jeffrey D. Mullen/	Date (YYYY-MM-DD)	2009-08-16
Name	Jeffrey D. Mullen		
Click ADD for additional Applicant Signature		Add	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

JDM/008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Joshua P. Wert

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15232
August 18, 2009

REPLY TO OFFICE ACTION

Sir:

This is in response to the Office Action dated February 18, 2009. A three-month extension of time and Request for Continued Examination is applicable hereto and is being submitted herewith. In response to the Office Action dated February 18, 2009, applicant amends the application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 10 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) An augmented reality game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

memory comprising video game logic operable to provide a video game;

a processor for utilizing said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2. (original) A location-based game system comprising:

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memory comprising video game logic for providing a video game;

a processor operable to utilize said video game logic to provide said video game;

at least one manual control;

a locating device operable to determine the physical location of said locating device on a physical playfield; and

a switch that determines whether said at least one manual control or said locating device determines the location of a video game character in said video game.

3. (currently amended) A location-based game system for providing a video game comprising:

a handheld game device comprising:

a display;

a locating device operable to determine a physical location for said locating device, wherein said physical location determines a virtual location for a virtual game character in a virtual playfield of said video game; and

a playmat having indicia representative of said virtual playfield comprising:

a length L, wherein said length L is utilized by said video game;

a width W, wherein said length W is utilized by said video game.

4. (previously presented) A system comprising:

a first video game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

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a processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a second video game system, wherein said first video game system communicates information with said second video game system.

5. (previously presented) A system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

a processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the

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physical location of said locating device in providing said video game; and

a handheld controller for providing at least one control signal to said video game.

6. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

7. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

8. (previously presented) The augmented reality game system of claim 1, wherein said landscape characteristics are utilized to control a computer-controlled video game character.

9. (previously presented) The augmented reality game system of claim 1, further comprising a wireless transmitter and receiver.

10. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video

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game character is limited to visibility within a certain area.

11. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area.

12. (previously presented) The location-based game system of claim 2, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

13. (previously presented) The location-based game system of claim 2, wherein said locating device comprises an inertial movement system.

14. (previously presented) The location-based game system of claim 2, wherein said locating device comprises a positioning system.

15. (previously presented) The location-based game system of claim 2, further comprising a transparent display screen for displaying said video game.

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16. (previously presented) The location-based game system of claim 2, further comprising an ON/OFF switch.

17. (previously presented) The location-based game system of claim 3, wherein said handheld game device is shaped to resemble said virtual game character.

18. (previously presented) The location-based game system of claim 3, wherein said playmat includes indicia representative of a playmat location a user is to start a portion of said video game.

19. (previously presented) The location-based game system of claim 3, wherein said playmat includes indicia representative of said video game.

20. (previously presented) The location-based game system of claim 3, wherein a time-limit is provided to complete a portion of said video game.

21. (previously presented) The location-based game system of claim 3, wherein a time-limit is provided to complete a portion of said video game, and said portion of said video game is associated with said playmat.

22. (previously presented) The location-based game system of claim 3, wherein a first surface of said playmat is associated with a first portion of said video game and a second surface of said playmat is associated with a second portion of said video game.

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23. (currently amended) The location-based game system of claim 3, wherein said display ~~handheld game device comprises~~ is a transparent display.

24. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to a remote database.

25. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system.

26. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system.

27. (previously presented) The system of claim 4, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

28. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

29. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-

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mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

30. (previously presented) The system of claim 5, wherein said landscape characteristics are utilized to control computer-controlled video game character.

31. (previously presented) The system of claim 5, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

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REMARKS/ARGUMENTS

Summary of Office Action

Claims 1-31 are pending in the application.

Claims 1-31 were rejected on the grounds of a provisional double patenting rejection in view of claims 17-20 of Application No. 11/208,943 and claims 76-80 and 100-117 of Application No. 10/932,536.

Claims 1, 4, 8, 10, 11, 24, 25, and 27 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Noro U.S. Patent Application No. 2003/0062675 (hereinafter "Noro").

Claims 2, 3, 14, 16, and 18-22 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Bull et al U.S. Patent No. 2002/0198055 (hereinafter "Bull").

Claims 5, 26, and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Official Notice.

Claims 6, 7, and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Official Notice (if applicable) and further in view of Applicant's Admitted Prior Art.

Claim 9 was rejected under 35 U.S.C. 102(a) as being unpatentable over Noro.

Claims 12 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Bates et al. U.S. Patent Application No. 2006/0148490 (hereinafter "Bates").

Claims 14 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Wong et al. U.S. Patent No. 6,636,203 (hereinafter "Wong").

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Claim 17 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bull.

Summary of Applicant's Amendments

Applicant has amended claims 3 and 23 without prejudice and solely in order to expedite prosecution.

Applicant traverses the Examiner's rejections. Applicant reserves the right to claim any subject matter lost by any claim amendment or cancellation, or any subject matter included in the present application, in one or more continuation or divisional applications.

The Provisional Double Patenting Rejection

Claims 1-31 were rejected on the grounds of a provisional double patenting rejection in view of claims 17-20 of Application No. 11/208,943 and claims 76-80 and 100-117 of Application No. 10/932,536.

The claims of the present application are patentably distinct from the claims of Application No. 11/208,943. None of the claims of the present application claim at least a flexible keyboard (claims 1-16 of Application No. 11/208,943) or a display extendable from, and operable to be stored in, a housing (claims 17-21 of Application No. 11/208,943). Similarly, none of the claims of Application No. 11/208,943 claim at least a video game (claims 1-31 of the present application). In light of the foregoing, applicant respectfully requests that the Examiner’s provisional double patenting rejection of Application No. 11/208,943 be withdrawn.

The claims of the present application are also patentably distinct from the claims of Application No. 10/932,536. The claims of Application No. 10/932,536 do

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not claim at least a playmat (e.g., claim 3 and 17-23 of the present application), landscape detector (claims 1, 4, 5-11, 24-31 of the present application), and a switch for switching between manual controls and location controls (e.g., claim 2 and 12-16 of the present application). In light of the foregoing, applicant respectfully requests that the Examiner's provisional double patenting rejection of Application No. 10/932,536 be withdrawn.

Furthermore, the Examiner's rejections are provisional in nature. Accordingly, the Examiner's rejections are premature until identical claims in multiple pending cases are in condition for allowance.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(b) in view of Noro

Claims 1, 4, 8, 10, 11, 24, 25, and 27 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Noro.

Claim 1

Applicant's invention of claim 1 includes a locating device operable to determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicia onto a physical playfield.

Noro alleges a game board as well as determining the direction of the view of a player of the game board.

Noro, however, does not locate a locating device on the physical playfield in which graphics are displayed. Instead, Noro includes two dinstinct areas. The first area is a viewing area. The second area is the game board area. Accordingly, Noro does not show or suggest applicant's invention of claim 1 of a locating device operable to

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determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicia onto that physical playfield.

The Examiner stated that:

> "in the abstract and FIG. 22 … Noro generates computer graphics based on items on the game board according to the position/attitude information and displaying them with superposition with the image of the real field in the HDM." (Office Action, page 11)

The Examiner's referenced portion of Noro, however, only clarifies the distinction between Noro and applicant's invention of claim 1. Particularly, Noro does not determining the physical location of a locating device on the physical playfield in which virtual indicia is overlayed. Noro is inoperable to determine the location of a locating device on the same field as where indicia are being displayed. Noro includes a viewing area and a game board area.

Furthermore, applicant's invention of claim 1 includes both a locating device, operable to locate itself on a physical playfield, and a detector for determining landscape characteristics of that physical playfield, where virtual indicia is operable to be displayed on that physical playfield. Noro does not show or suggest such a feature.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 1, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 4

As shown above in connection with the arguments for the patentability of claim 1, Noro does not show or

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suggest determining the physical location of a locating device on a physical playfield as well as overlaying virtual indicia onto that physical playfield. Applicant's invention of claim 4 includes determining the physical location of a locating device on a physical playfield as well as overlaying virtual indicia onto that physical playfield.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 4, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(b) in view of Bull

Claims 2, 3, 14, 16, and 18-22 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Bull.

Claim 2

Bull alleges a wireless device that displays the status and results of a game of tag.

Applicant's invention of claim 2 includes a switch that determines whether at least one manual control or a locating device determines the location of a video game character in a video game.

The Examiner stated that:

> "Bull discloses the switch (on/off) which determines if the locating device is determining the location of the character. If a wireless phone is off then the locating device is not determining the location, if it is on then it is."

However, applicant's invention of claim 2 includes a switch that determines whether at least one

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manual control or a locating device determines the location of a video game character in a video game.

The Examiner's example only alleges turning off Bull's phone in order to turn off Bull's locating. Turning off Bull's phone does not provide applicant's invention of claim 2 of using a manual control to determine the location of a video game character in a video game. In fact, turning off Bull's Phone allegedly turns off the game:

> "any player that attempts to prevent a tag by turning off the wireless device … is eliminated from the game." (Bull, paragraph 36).

Turning off Bull's phone does not magically discuss applicant's invention of claim 2 of a manual control to determine the location of a video game character in a video game.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 2, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 3

Applicant's invention of claim 3 includes a playmat having indicia representative of a virtual playfield.

Bull alleges a phone having a display.

The Examiner stated that:

> "Since playmat is not defined in the claims such that it cannot read upon a display, it therefore can be a display." (Office Action, page 11).

A portable phone's display screen is not a playmat – it is a display of a portable phone. Under the Examiner's logic, the Examiner could read a swimming pool to be a display of a portable phone so long as a swimming

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pool was not defined in the claims to not read upon a display of a portable phone.

Regardless, applicant has amended claim 3 to include a display. Accordingly, claim 3 includes both a display and a playmat. Bull does not show or suggest both a display and a playmat.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 3, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Applicant's Response to the Rejections Under 35 U.S.C. § 103(a) in view of Noro and Official Notice

Claims 5, 26, and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Official Notice.

Particularly, the Examiner stated:

> "Official notice is taken that it is well known in the art for both PC's and game consoles to comprise handheld controllers for providing control signals (on/off, start, pause)." (Office Action, page 7).

The Examiner rejected claim 5 in view of Official Notice. Applicant traverses all of the Examiner's rejections in view of Official Notice. The Examiner has the burden of showing each and every element of applicant's invention in a prior art combination. MPEP § 2144.03 requires that the facts of which notice are being taken be capable of instant and unquestionable demonstration as being well known in the art. *See In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant believes that the "facts" of which the Examiner may have provided a rejection without showing each and every element

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of a claim in a reference do not meet that standard, and invoke his right under MPEP § 2144.03 to have the Examiner provide documentary proof that those facts are actually well known.

Noro discusses an imaging experiencing system and information processing method. In Noro, a user allegedly moves cards in order to play a game (*See* Noro, paragraph 218). Accordingly, even if a suitable reference was found, it would clearly be inoperable to combine an alleged controller with Noro's precision device. Doing so would eviscerate the spirit of the Noro device. The Examiner cannot mutilate references in hindsight only to create an entirely new, inoperable device that directly teaches away from devices of the individual references.

Furthermore, similar to applicant's arguments for the patentability of claim 1, Noro does not show or suggest applicant's invention of claim 5 of determining the physical location of a locating device on a physical playfield as well as overlaying virtual indicia onto that physical playfield.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 5, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Additional Rejections in view of Official Notice

Claims 6, 7, and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Official Notice (if applicable) and further in view of Applicant's Admitted Prior Art.

The Examiner stated that:

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> "Applicant admits in the specification (paragraph 081 of the PGPub) that it is well known to one skilled in the art to vary the transparency of the virtual objects based on perceived distance." (Office Action, page 8).

Applicant makes no such admission. In fact, paragraph 81 teaches numerous patentable features. For example, applicant teaches that applicant's system may provide far-away characters as semitransparent while characters one is sharing a location with are almost entirely-transparent. Applicant teaches changing the transparency of a character based on distance in paragraph 81. Applicant notes at the end of paragraph 81 that "persons skilled in the art will appreciate" applicant's teachings. Accordingly, paragraph 81 does not include any admission of art.

Accordingly, applicant respectfully requests that the Examiner's rejection of claims 6, 7, and 28-31 be withdrawn.

Additionally, at least claims 6, 7, and 28-31 were also rejected under Official Notice. At least claims 9 and 26 also appear to be rejected under Official Notice.

Applicant traverses all of the Examiner's rejections in view of Official Notice. For all rejections under 35 U.S.C. § 103(a), the Examiner has the burden of showing each and every element of applicant's invention in the prior art combination. MPEP § 2144.03 requires that the facts of which notice are being taken be capable of instant and unquestionable demonstration as being well known in the art. *See In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant believes that the "facts" of which the Examiner may have provided a rejection without showing each and every element of a claim in a

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reference do not meet that standard, and invoke his right under MPEP § 2144.03 to have the Examiner provide documentary proof that those facts are actually well known.

Furthermore, Noro discusses a precision device and thus directly teaches away from being mutilated in hindsight with unrelated references to create entirely new devices that eviscerate the spirit of the individual devices. Any such device would be rendered inoperable.

Additionally, as shown above, the independent claims of the present application are patentable. Accordingly, applicant respectfully submits that dependent claims 6, 7, 9, 26, and 28-31 are patentable for depending from a patentable independent claim.

The Dependent Claims

Claim 9 was rejected under 35 U.S.C. 102(a) as being unpatentable over Noro. Claims 12 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Bates. Claims 14 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Wong.

As shown above, the independent claims are patentable. Accordingly, applicant respectfully submits that dependent claims 9, 12, 13, 14, and 23 are patentable for depending from a patentable independent claim.

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Conclusion

Applicant respectfully submits that this application, including the pending claims, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/
Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
731 South Negley, Apt. 2
Pittsburgh, PA 15232
Mobile: (914) 837-7741

Meta Exhibit 1016
Meta v. Mullen - Page 00142

Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	555	555

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	405	405
		Total in USD ($)		**960**

Electronic Acknowledgement Receipt

EFS ID:	5909334
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	18-AUG-2009
Filing Date:	16-NOV-2005
Time Stamp:	15:11:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$960
RAM confirmation Number	1318
Deposit Account	503855
Authorized User	MULLEN,JEFFREY D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	JDM-008--RCE.pdf	37931 3a62d39c8a30b57f3642eb1e650347a514756d2e	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		JDM-008--Reply.pdf	99314 15fb804e2efd6f7e4716ae00d78914f4cdccb5d5	yes	20

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment After Final	1	1
	Claims	2	9
	Applicant Arguments/Remarks Made in an Amendment	10	20

Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	31836 f45989a6ae768dd10ae9c6b1df718a69adec1588	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	169081	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/281,812	11/16/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 08/18/2009

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 5	Minus	***5	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TAMARA HARRELL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 10/02/2009

JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232

EXAMINER	
WERT, JOSHUA P	

ART UNIT	PAPER NUMBER
3714	

MAIL DATE	DELIVERY MODE
10/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/281,812	MULLEN, JEFFREY D.	
	Examiner	Art Unit	
	JOSHUA WERT	3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Meta Exhibit 1016
Meta v. Mullen - Page 00150

DETAILED ACTION

Response to Amendment

1. The examiner acknowledges the amendment filed 8/18/2009. No new matter appears to have been added in the case.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-31 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-20 of copending Application No. 11/208,943 and claims 76-80 & 100-117 of copending Application No. 10/932,536. Although the conflicting claims are not identical, they are

not patentably distinct from each other because in their totality, they claim the same structure of a video game system including a transparent, head mounted display for use in a location based game.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 8, 10, 11, 24, 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Noro et al., US 2003/0062675 (Noro).

5. Regarding claim 1, Noro discloses an augmented reality game system comprising a head-mounted display for overlaying virtual indicia onto a physical playfield (103); a memory and processor comprising video game logic to provide a video game (102) a detector for determining landscape characteristics to be utilized in the game (paragraph 0015; the computer determines what the player is looking at and uses that information in the game); and a locating device to determine the physical location of the device within the game (104).

6. Regarding claim 4, Noro discloses multiple video game systems being used simultaneously and communicating between each other to provide one game experience (Paragraph 0056; each player wears a see-through HMD).

7. Regarding claim 8, Noro discloses that landscape characteristics are used to control computer-controlled video game characters (Paragraph 0056; in a chess game the landscape is the chess board with its assortment of pieces. The landscape characteristics are the location and movement of the pieces on the board. The computer-controlled video game characters are the Computer Graphics (CG) representation of the pieces on the game board. Noro discloses that the location, type and movement of the pieces on the board controls the computer graphics displayed to the player.

8. Regarding claims 10, 11, Noro discloses superimposing CG of pieces and actions on the board and game pieces by the head-mounted display in a limited visibility area (Paragraph 0056; Limited visibility area is the enclosed boundary of the board) and where the CG game character includes a reaction to entering a certain area (Paragraph 0056; when the Knight enters the area/square of a piece that is being conquered/taken, an action is shown of the Knight fighting the piece to be taken).

9. Regarding claims 24, 25, Noro discloses providing game information to dispersed computers/servers and databases (Paragraph 0205, 0208 and 0210).

10. Regarding claim 27, Noro discloses the system comprising a positioning system and an inertial movement system (104).

11. Claims 2, 3, 14, 16 and 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bull et al., US 2002/0198055 (Bull).

12. Regarding claims 2 and 3, Bull discloses a location based game comprising a memory and processor on a handheld device for providing the game (paragraphs 0014 – 0021); a manual control (the keys on the cell phone); a locating device to determine the physical location of the device (cell receiver that determines the location of the cell phone) and a switch that determines the location of the player in the game and displays it on a playmate having a defined length and width (Figures 1-6 and paragraphs 0022-0036).

13. Regarding claim 14, Bull discloses the wireless devices showing their relative position (Paragraph 0014).

14. Regarding claim 16, Bull discloses the wireless device comprising an on/off switch (paragraph 0036).

15. Regarding claims 18, 19, Bull discloses the playmat including the indicia of the player and the players target (Figures 1-6). Each time a new target is selected for the player the playmat indicates where the player is to begin moving to tag the new target.

16. Regarding claims 20, 21, Bull discloses that the present types of games as used by the disclosed system are run for a specified period of time (paragraph 0004).

17. Regarding claim 22, Bull discloses a first surface of the playmate associated with a first portion of a video game (Figure 5, the grid which is associated with the players current position and target) and a second surface of said playmat associated with a

second portion of the video game (Figure 5, the remainder of the screen which is associated with the total game score and messages).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 5 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong, U.S. Patent 6,102,802 (Armstrong).

20. Regarding claim 5, Noro discloses an augmented reality game system comprising a head-mounted display (HMD) for overlaying virtual indicia onto a physical playfield (103); a processor comprising video game logic to provide a video game (102) a detector for determining landscape characteristics to be utilized in the game (paragraph 0015; the computer determines what the player is looking at and uses that information in the game); and a locating device to determine the physical location of the device within the game (104). Additionally, Noro discloses that the system includes a PC or game console (22). Armstrong teaches that game controllers are commonly used with game consoles and PC's to allow player input to the game for any number of purposes (Col. 1, line 15 – col. 2, line 43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a handheld

controller as taught by Armstrong attached to the computer/game console of Noro in order to allow a player to start and pause the game.

21. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong and in view of Official notice.

22. Regarding claim 26, the combination of Noro and Armstrong substantially discloses the claimed invention except for the information transfer between the first and second video game systems being based on permission. Official notice is taken that it is well known in the computer art to limit access to electronic systems by an owner/operator to require permission of another person/system to access their system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to require permission of the electronic devices to access information in order to maintain a desired level of security on the electronic devices.

23. Claims 6, 7 & 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro as applied to claim 1 above or over Noro in view of Armstrong as applied to claim 5 above, and further in view of Morihira, U.S. Patent 6,361,438 (Morihira).

24. Regarding claims 6, 7, 28 and 29, Noro substantially discloses the claimed invention except for varying the transparency of the virtual objects based on perceived distance. Morihira teaches a video game transparency control system (abstract) which varies the transparency of game images based on perceived distances through varying the amount of pixels displayed. It would have been obvious to one having ordinary skill

in the art at the time the invention was made to modify game images transparencies as taught by Morihira in order to convey virtual object distance.

25. Regarding claim 30, Noro discloses that landscape characteristics are used to control computer-controlled video game characters (Paragraph 0056; in a chess game the landscape is the chess board with its assortment of pieces. The landscape characteristics are the location and movement of the pieces on the board. The computer-controlled video game characters are the Computer Graphics (CG) representation of the pieces on the game board. Noro discloses that the location, type and movement of the pieces on the board controls the computer graphics displayed to the player.

26. Regarding claim 31, Noro discloses the system comprising a positioning system and an inertial movement system (104).

27. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro as applied to claim 1 above.

28. Regarding claim 9, Noro substantially discloses the claimed invention except for the system comprising a wireless transmitter and receiver. Noro discloses the HMD being connected to the PC/game console with a hard wire. A hard wire connection and a wireless connection between a computer and an input device are art recognized equivalents. It would have been obvious at the time the invention was made to modify the hard wire connection between the HUD and the PC/game console as disclosed by

Noro to be wireless including a wireless transmitter and receiver in order to allow greater mobility for the user.

29. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Bates et al., US 2006/0148490 (Bates).

30. Bull substantially discloses the claimed invention except for the locating device comprising an inertial movement system. Bates teaches a wireless phone (700) that comprises an inertial movement system to determine the movement of the wireless phone (paragraph 0041). It would have been obvious to one having ordinary skill at the time the invention was made to modify the system disclosed by Bull to incorporate an inertial movement system along with the positioning system in the wireless phone to ensure the accuracy of the location data transmitted from the wireless phone for the game.

31. Claims 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Wong et al., U.S. Patent 6,636,203 (Wong).

32. Bull substantially discloses the claimed invention except for the wireless phone comprising a transparent display. Wong teaches a wireless phone with a transparent display (Figures 5A and 5B). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a transparent display as taught by Wong on the wireless device disclosed by Bull in order to provide natural feeling tactile feedback to the user.

33. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bull.

34. Bull substantially discloses the claimed invention except for the handheld game device (wireless phone) shaped to resemble a virtual character. The physical shape of a device is a design choice of a manufacturer. The shape being that of a game character does not change the functionality of the claimed device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a handheld game device of any shape, size and design as wanted including that of resembling a virtual character in order to achieve the desired appearance.

Response to Arguments

35. Applicant's arguments filed 8/18/2009 have been fully considered but they are not persuasive.

36. Applicant argues that the provisional double patenting rejection based on co-pending applications 11/208,943 and 10/932,536 should be withdrawn. The examiner concedes that since the double patenting rejection is provisional that it does not need to be addressed until the applications are in condition for allowance. However, in order to keep the record clear and complete, the rejections were made and will maintain until claims from the applications are allowed and no longer conflict or until the applications go abandoned. A more detailed response to the particulars of each application will be made when the claims are allowable over the prior art.

37. Regarding applicants remarks concerning claims 1 and 4, the arguments are not persuasive. Applicant argues that Noro does not disclose locating the locating device on the physical playfield n which graphics are displayed. Clearly Noro discloses a locating device (Figure 1, (104) Position and attitude sensor). The examiner believes that it is not disputed that Noro discloses a position sensor that determines the position of itself in space. Therefore, it is believed that applicant disputes where the position sensor determines its position. It should be clear to the applicant that the device disclosed by Noro is not limited in where it can calculate its position. If the game board is large enough to stand on, or to hold ones head over, then it should be clear that there is nothing in the disclosure of Noro that prohibits the position and attitude sensor from being on or over the game board and determining its position. See paragraphs 0094-0098 in which Noro discloses using points on the board from virtually any angle of view to calculate position. Therefore, Noro does in fact disclose a system with a locating device which can determine its location on, over or away from a playfield.

38. Regarding applicant's arguments concerning claims rejected as anticipated by Bull et al., applicant's arguments are not in commensurate scope with the claims. Claim 2 recites "a switch that determines whether said at least one manual control **or** said locating device determines the location of a video game character…". Since the claim is written in the alternative "or" if one **or** the other (manual control or locating device) devices determines the location of the character, the only structure needed to anticipate the claim is a switch that determines if one determines the location of the character. Bull discloses an on/off switch which determines if the locating device determines the

location of the game character. If applicant's intent in the languages is as described in the arguments, then the claim language should be amended so that the switch changes between the manual control and the locating device to determine the location of the video game character.

39. Regarding applicants arguments concerning claim 3, applicant's arguments are not persuasive. The claim language of claim 3 states that the playmat has indicia representative of the virtual playfield and the virtual playfield having the location of the virtual characters. As such, without further structure in the claim, the playmat is interpreted by the examiner to be a display image on a display (Figures 1-6 of Bull).

40. Regarding applicants arguments concerning the official notice of using a controller with a game console and varying the transparency of an image on a display, art has been provided and the official notice has been removed in view of the new art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA WERT whose telephone number is (571)270-1894. The examiner can normally be reached on Monday - Thursday 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/21/2009
/J. W./
Examiner, Art Unit 3714

/Corbett Coburn/
Primary Examiner
AU 3714

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner JOSHUA WERT	Art Unit 3714	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,102,802	08-2000	Armstrong, Brad A.	463/37
*	B	US-6,361,438	03-2002	Morihira, Shigeki	463/31
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	247	game adj controller with pda	US-PGPUB; USPAT	OR	ON	2009/09/21 15:50
L3	91359	game adj controller with game asj console	US-PGPUB; USPAT	OR	ON	2009/09/21 15:51
L4	6995	(game adj controller) with (game asj console)	US-PGPUB; USPAT	OR	ON	2009/09/21 15:51
L5	6995	(game adj controller) same (game asj console)	US-PGPUB; USPAT	OR	ON	2009/09/21 15:51
L6	844	(game adj controller) same (game adj console)	US-PGPUB; USPAT	OR	ON	2009/09/21 15:51
L7	52	reduce with pixels with transparency	US-PGPUB; USPAT	OR	ON	2009/09/21 15:57
L8	5303	characters with transparent	US-PGPUB; USPAT	OR	ON	2009/09/21 16:24
L9	63	characters with transparent with game	US-PGPUB; USPAT	OR	ON	2009/09/21 16:24
S1	824	bull.in.	US-PGPUB; USPAT	OR	ON	2008/01/05 18:31
S2	10	S1 and game	US-PGPUB; USPAT	OR	ON	2008/01/05 18:31
S3	1723	(head near2 display) with game	US-PGPUB; USPAT	OR	ON	2008/01/05 18:33
S4	1687	(head near2 display near2 (mount$ or up)) with game	US-PGPUB; USPAT	OR	ON	2008/01/05 18:33
S5	17	(head near2 display near2 (mount$ or up)) with game with (landscape or playfield or field or area)	US-PGPUB; USPAT	OR	ON	2008/01/05 18:34
S6	56	((JEFFREY) near2 (MULLEN)).INV.	US-PGPUB; USPAT	OR	ON	2009/01/03 21:50
S7	0	("("20020052933" | "20020090985" | "20030062675" | "20050009608" | "6080063" | "6287200" | "6633267" | "6690947" | "6735435" | "7303474").PN.").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/01/03 21:54

S8	10	("20020052933" | "20020090985" | "20030062675" | "20050009608" | "6080063" | "6287200" | "6633267" | "6690947" | "6735435" | "7303474").PN.	US-PGPUB; USPAT	OR	ON	2009/01/03 21:54
S9	21	("20010003450" | "20010034249" | "20020090980" | "20030048256" | "20030050019" | "20030109286" | "20030144034" | "20040061683" | "20060034039" | "20060061555" | "20060146488" | "20060194619" | "20060209218" | "6229514" | "6311076" | "6643124" | "6771232" | "7050835" | "7180665" | "7184086" | "7187363").PN.	US-PGPUB; USPAT	OR	ON	2009/01/03 21:55
S10	1	("20030062675").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/04 11:43
S11	1243	augmented near reality	US-PGPUB; USPAT	OR	ON	2009/02/04 13:28
S12	158	augmented near reality with location	US-PGPUB; USPAT	OR	ON	2009/02/04 13:28
S13	491	location near2 based with game	US-PGPUB; USPAT	OR	ON	2009/02/04 14:14
S14	2	("2003/0062675").URPN.	USPAT	OR	ON	2009/02/04 14:25
S15	439	noro.in.	USPAT	OR	ON	2009/02/04 14:26
S16	5	(noro near hideo).in.	USPAT	OR	ON	2009/02/04 14:26
S17	16	(noro near hideo).in.	US-PGPUB; USPAT	OR	ON	2009/02/04 14:27
S18	8335	(head adj mounted adj display) or hud	US-PGPUB; USPAT	OR	ON	2009/02/04 15:27
S19	1021	S18 and transparencies	US-PGPUB; USPAT	OR	ON	2009/02/04 15:27
S20	34	S18 and transparencies near2 (diffrent or vary$3)	US-PGPUB; USPAT	OR	ON	2009/02/04 15:28

S21	31	S18 and transparencies with distance	US-PGPUB; USPAT	OR	ON	2009/02/04 15:29
S22	17	S18 and (display same distance same ((to or too) adj close))	US-PGPUB; USPAT	OR	ON	2009/02/04 15:56
S23	27438	(wireless near2 phone) or cellphone or (cell adj phone) with (inertial adj movent)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:51
S24	0	((wireless near2 phone) or cellphone or (cell adj phone)) with (inertial adj movent)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:51
S25	1	((wireless near2 phone) or cellphone or (cell adj phone)) with (inertial adj movement)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:51
S26	2	((wireless near2 phone) or cellphone or (cell adj phone)) same (inertial adj movement)	US-PGPUB; USPAT	OR	ON	2009/02/04 16:52
S27	140	((wireless near2 phone) or cellphone or (cell adj phone)) same (transparent adj display)	US-PGPUB; USPAT	OR	ON	2009/02/04 17:07
S28	127	((wireless near2 phone) or cellphone or (cell adj phone)) with (transparent adj display)	US-PGPUB; USPAT	OR	ON	2009/02/04 17:08

EAST Search History (Interference)

< This search history is empty>

9/ 21/ 2009 5:10:42 PM
C:\ Documents and Settings\ jwert\ My Documents\ EAST\ Workspaces\ 11281812.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Wert, Josh	3714

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008	02/04/2009	09/21/2009						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4		✓	✓						
	5		✓	✓						
	6		✓	✓						
	7		✓	✓						
	8		✓	✓						
	9		✓	✓						
	10		✓	✓						
	11		✓	✓						
	12		✓	✓						
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	16		✓	✓						
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	27		✓	✓						
	28		✓	✓						
	29		✓	✓						
	30		✓	✓						
	31		✓	✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	Wert, Josh	3714

SEARCHED			
Class	**Subclass**	**Date**	**Examiner**
463	1, 49	1/5/2008	JPW
273	237	1/5/2008	JPW

SEARCH NOTES		
Search Notes	**Date**	**Examiner**
East text search - heads up/mounted display with landscape or field	1/5/2008	JPW
Inventor Name Search	1/5/2008	JPW
Updated East search - see attached	2/4/2009	JPW
Forward search of Noro reference	2/4/2009	JPW
Consulted with Primary Corbett Coburn about applicants arguments	2/4/2009	JPW
Updated east search - see attached	9/21/2009	JPW

INTERFERENCE SEARCH			
Class	**Subclass**	**Date**	**Examiner**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Joshua P. Wert

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15232
April 2, 2010

REPLY TO OFFICE ACTION

Sir:

This is in response to the Office Action dated October 2, 2009. A three-month extension of time is applicable hereto and is being submitted herewith. In response to the Office Action dated October 2, 2009, applicant amends the application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 10 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An augmented reality game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

memory comprising video game logic operable to provide a video game;

a wearable processor for utilizing said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2. (currently amended) A location-based game system comprising:

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memory comprising video game logic for providing a video game;

a processor operable to utilize said video game logic to provide said video game;

at least one manual control;

a locating device operable to determine the physical location of said locating device on a physical playfield; and

a switch ~~that determines~~ for changing from ~~whether~~ said at least one manual control determining the location of a video game character in said video game to ~~or~~ said locating device determining ~~determines~~ the location of ~~a~~ said video game character in said video game.

3. (currently amended) A location-based game system for providing a video game comprising:

a handheld game device comprising:

a display;

a locating device operable to determine a physical location for said locating device, wherein said physical location determines a virtual location for a virtual game character in a virtual playfield of said video game; and

a playmat having permanent indicia representative of said virtual playfield comprising:

a length L, wherein said length L is utilized by said video game;

a width W, wherein said length W is utilized by said video game.

4. (currently amended) A system comprising:

a first video game system comprising:

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a head-mounted display operable to overlay virtual indicia onto a physical playfield;

a wearable processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a second video game system, wherein said first video game system communicates information with said second video game system.

5. (previously presented) A system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

a processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

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a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a handheld controller for providing at least one control signal to said video game.

6. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

7. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

8. (previously presented) The augmented reality game system of claim 1, wherein said landscape characteristics are utilized to control a computer-controlled video game character.

9. (previously presented) The augmented reality game system of claim 1, further comprising a wireless transmitter and receiver.

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10. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video game character is limited to visibility within a certain area.

11. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area.

12. (previously presented) The location-based game system of claim 2, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

13. (previously presented) The location-based game system of claim 2, wherein said locating device comprises an inertial movement system.

14. (previously presented) The location-based game system of claim 2, wherein said locating device comprises a positioning system.

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15. (previously presented) The location-based game system of claim 2, further comprising a transparent display screen for displaying said video game.

16. (previously presented) The location-based game system of claim 2, further comprising an ON/OFF switch.

17. (previously presented) The location-based game system of claim 3, wherein said handheld game device is shaped to resemble said virtual game character.

18. (previously presented) The location-based game system of claim 3, wherein said playmat includes indicia representative of a playmat location a user is to start a portion of said video game.

19. (previously presented) The location-based game system of claim 3, wherein said playmat includes indicia representative of said video game.

20. (previously presented) The location-based game system of claim 3, wherein a time-limit is provided to complete a portion of said video game.

21. (previously presented) The location-based game system of claim 3, wherein a time-limit is provided to complete a portion of said video game, and said portion of said video game is associated with said playmat.

22. (previously presented) The location-based game system of claim 3, wherein a first surface of said

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playmat is associated with a first portion of said video game and a second surface of said playmat is associated with a second portion of said video game.

23. (previously presented) The location-based game system of claim 3, wherein said display is a transparent display.

24. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to a remote database.

25. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system.

26. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system.

27. (previously presented) The system of claim 4, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

28. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending

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on the perceived distance of said virtual object from said head-mounted display.

29. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

30. (previously presented) The system of claim 5, wherein said landscape characteristics are utilized to control computer-controlled video game character.

31. (previously presented) The system of claim 5, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

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REMARKS/ARGUMENTS

Summary of Office Action

Claims 1-31 are pending in the application.

Claims 1-31 were rejected on the grounds of a provisional double patenting rejection in view of claims 17-20 of Application No. 11/208,943 and claims 76-80 and 100-117 of Application No. 10/932,536.

Claims 1, 4, 8, 10, 11, 24, 25, and 27 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Noro U.S. Patent Application No. 2003/0062675 (hereinafter "Noro").

Claims 2, 3, 14, 16, and 18-22 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Bull et al U.S. Patent No. 2002/0198055 (hereinafter "Bull").

Claims 5 and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of U.S. Patent No. 6,102,802 (hereinafter “Armstrong”).

Claim 26 was rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong and in view of Official Notice.

Claims 6, 7, and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong and further in view of Morihira U.S. Patent No. 6,361,438 (hereinafter “Morihira”).

Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Noro.

Claims 12 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Bates et al. U.S. Patent Application No. 2006/0148490 (hereinafter “Bates”).

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Claims 15 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Wong et al. U.S. Patent No. 6,636,203 (hereinafter "Wong").

Claim 17 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bull.

Summary of Applicant's Amendments

Applicant has amended claims 1-4 without prejudice and solely in order to expedite prosecution.

Applicant traverses the Examiner's rejections. Applicant reserves the right to claim any subject matter lost by any claim amendment or cancellation, or any subject matter included in the present application, in one or more continuation or divisional applications.

The Provisional Double Patenting Rejections

Claims 1-31 were rejected on the grounds of a provisional double patenting rejection in view of claims 17-20 of Application No. 11/208,943 and claims 76-80 and 100-117 of Application No. 10/932,536.

The claims of the present application are patentably distinct from the claims of Application No. 11/208,943.

After the mailing of the present Office Action, an amendment was entered in Application No. 11/208,943 that included the feature of a plurality of buttons operable to be activated via mechanical distortion. Patent No. 7,667,962 was issued from Application No. 11/208,943. None of the claims of the present application are a duplicate of a claim from Patent No. 7,667,962.

Additionally, none of the claims of the present application claim at least a flexible keyboard (claims 1-16

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of Application No. 11/208,943) or a display extendable from, and operable to be stored in, a housing (claims 17-21 of Application No. 11/208,943). Similarly, none of the claims of Application No. 11/208,943 claim at least a video game (claims 1-31 of the present application). In light of the foregoing, applicant respectfully requests that the Examiner's provisional double patenting rejection of Application No. 11/208,943 be withdrawn.

The claims of the present application are also patentably distinct from the claims of Application No. 10/932,536.

The claims of Application No. 10/932,536 do not claim at least a playmat (e.g., claim 3 and 17-23 of the present application), landscape detector (claims 1, 4, 5-11, 24-31 of the present application), and a switch for switching between manual controls and location controls (e.g., claim 2 and 12-16 of the present application). In light of the foregoing, applicant respectfully requests that the Examiner's provisional double patenting rejection of Application No. 10/932,536 be withdrawn.

Furthermore, applicant's claims 1-4 have been amended and such amendments further add patentable distinctions.

Accordingly, applicant respectfully requests that the Examiner's provisional double patenting rejections be withdrawn.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(b) in view of Noro

Claims 1, 4, 8, 10, 11, 24, 25, and 27 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Noro.

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Claim 1

Applicant's invention of claim 1 includes a locating device operable to determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicia onto a physical playfield.

Noro alleges a game board as well as determining the direction of the view of a player of the game board.

Solely to expedite prosecution, applicant has amended claim 1 to include a processor for providing a video game that is wearable. Noro does not show or suggest such a feature. Noro merely alleges a game console or PC. *See* Noro, FIG. 4. In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 1, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Furthermore, Noro does not locate a locating device on the physical playfield in which graphics are displayed. Instead, Noro includes two dinstinct areas. The first area is a viewing area. The second area is the game board area. Accordingly, Noro does not show or suggest applicant's invention of claim 1 of a locating device operable to determine the physical location of the locating device on a physical playfield and a head-mounted display operable to overlay virtual indicia onto that physical playfield.

The Examiner stated that:

"If the game board …." (Office Action, page 11)

The Examiner's cannot change the Noro device. The Noro device is what the Noro device is. Any change to the Noro device is merely hindsight reconstruction. Noro is clear on having two distinct areas – a viewing area and

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a game board area. Changing the size of the game board area merely shifts the viewing area.

Furthermore, applicant's invention of claim 1 includes both a locating device, operable to locate itself on a physical playfield, and a detector for determining landscape characteristics of that physical playfield, where virtual indicia is operable to be displayed on that physical playfield. Noro does not show or suggest such a feature.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 1, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 4

As shown above in connection with the arguments for the patentability of claim 1, Noro does not show or suggest a processor that is wearable. Additionally, Noro does not show or suggest, for example, determining the physical location of a locating device on a physical playfield as well as overlaying virtual indicia onto that physical playfield. Applicant's invention of claim 4 includes a processor that is wearable. Applicant's invention of claim 4 also includes determining the physical location of a locating device on a physical playfield as well as overlaying virtual indicia onto that physical playfield.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 4, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

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Applicant's Response to the
Rejections Under 35 U.S.C. § 102(b) in view of Bull

Claims 2, 3, 14, 16, and 18-22 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Bull.

Claim 2

Bull alleges a wireless device that displays the status and results of a game of tag.

Applicant's invention of claim 2 includes a switch for changing from said at least one manual control determining the location of a video game character in a video game to a locating device determining the location of a video game character in said video game.

The Examiner stated that:

> "If applicant's intent in the languages is as described in the arguments, then the claim language should be amended."
> (Office Action, page 12)

Applicant has amended claim 2 to solely to expedite prosecution. Bull does not show or suggest applicant's invention of claim 2 of a switch for changing from said at least one manual control determining the location of a video game character in a video game to a locating device determining the location of a video game character in said video game.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 2, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

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Claim 3

Applicant's invention of amended claim 3 includes a playmat having permanent indicia representative of a virtual playfield.

Bull alleges a phone having a display.

The Examiner stated that:

> "without further structure in the claim, the playmat is interpreted by the examiner to be a display image on a display." (Office Action, page 12).

Solely in order to expedite prosecution, applicant has amended claim 3 to include indicia that is permanent. Bull does not show or suggest applicant's invention of claim 3 of a playmat having permanent indicia.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 3, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Applicant's Response to the Rejections Under 35 U.S.C. § 103(a) in view of Noro and Armstrong

Claims 5 and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong.

Noro alleges a game board as well a user physically using this game board.

Armstrong discusses a controller.

Neither Noro nor Armstrong, used either alone or in combination, show or suggest applicant's invention of claim 5 of a video game where said video game logic utilizes the physical location of said locating device in providing said video game and a handheld controller for providing at least one control signal to said video game.

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Noro operates without the use of a controller. In fact, due to the operational attributes of Noro, Noro would be inoperable with a controller. Armstrong does not correct for this deficiency. Armstrong merely discusses a controller. The Examiner cannot, in hindsight, merely cut and paste random elements of unrelated systems to create an entirely new, inoperable device that eviscerates the very spirit of the individual devices. Neither Noro nor Armstrong, used either alone or in combination, show or suggest applicant's invention of claim 5 of a video game where said video game logic utilizes the physical location of said locating device in providing said video game and a handheld controller for providing at least one control signal to said video game

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 5, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Additional Rejections in view of Official Notice

Claim 26 was rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong and in view of Official Notice.

Additionally, claim 17 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bull and claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Noro. Applicant contends that such single reference obviousness rejections may also include Official Notice rejections.

Applicant traverses all of the Examiner's rejections in view of Official Notice. For all rejections under 35 U.S.C. § 103(a), the Examiner has the burden of

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showing each and every element of applicant's invention in the prior art combination. MPEP § 2144.03 requires that the facts of which notice are being taken be capable of instant and unquestionable demonstration as being well known in the art. *See In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant believes that the "facts" of which the Examiner may have provided a rejection without showing each and every element of a claim in a reference do not meet that standard, and invoke his right under MPEP § 2144.03 to have the Examiner provide documentary proof that those facts are actually well known.

Furthermore, Noro and Bull discuss precision devices and thus directly teaches away from being mutilated in hindsight with unrelated references to create entirely new devices that eviscerate the spirit of the individual devices. Any such device would be rendered inoperable.

Additionally, as shown above, the independent claims of the present application are patentable. Accordingly, applicant respectfully submits that dependent claims are patentable for depending from a patentable independent claim.

The Dependent Claims

Claims 6, 7, and 28-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Noro in view of Armstrong and further in view of Morihira. Claims 12 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Bates et al. Claims 15 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bull in view of Wong.

As shown above, the independent claims are patentable. Accordingly, applicant respectfully submits

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that dependent claims are patentable for depending from a patentable independent claim.

Conclusion

Applicant respectfully submits that this application, including the pending claims, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/

Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
731 South Negley, Apt. 2
Pittsburgh, PA 15232
Mobile: (914) 837-7741

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Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	555	555

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**555**

Electronic Acknowledgement Receipt

EFS ID:	7341095
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	02-APR-2010
Filing Date:	16-NOV-2005
Time Stamp:	11:42:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$555
RAM confirmation Number	7208
Deposit Account	503855
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		JDM-008--Reply.pdf	34332 d3fe963253046bc9b105068b3c1f0c4d9a1a7934	yes	19

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	9
	Applicant Arguments/Remarks Made in an Amendment	10	19

Warnings:

Information:

2	Fee Worksheet (PTO-875)	fee-info.pdf	29669 0d9d44dcc873521d6b7f3ae753d8e170b6297219	no	2

Warnings:

Information:

Total Files Size (in bytes):	64001

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/281,812	11/16/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	04/02/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 5	Minus	***5	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/LAJUAN HICKSON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/281,812	11/16/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **04/02/2010**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 31	Minus	** 31	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 5	Minus	***5	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/LAJUAN HICKSON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PLUS Search Results for S/N 11281812, Searched Mon Dec 13 15:21:20 EST 2010

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 03/04/2011

JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232

EXAMINER	
HALL, ARTHUR O	

ART UNIT	PAPER NUMBER
3718	

MAIL DATE	DELIVERY MODE
03/04/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/281,812	MULLEN, JEFFREY D.	
	Examiner	Art Unit	
	ARTHUR O. HALL	3718	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *2,3 and 12-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-11 and 24-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Meta Exhibit 1016
Meta v. Mullen - Page 00196

DETAILED ACTION

Response to Amendment

Examiner acknowledges applicant's amendment of claims 1-4 in the Response dated 4/2/2010 directed to the Non-final Office Action dated 10/2/2009. Claims 1-31 are pending in the application and claims 1, 4-11 and 24-31 are subject to examination as part of this office action.

Examiner acknowledges that applicant's arguments in the Response dated 4/2/2010 directed to the rejection set forth under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) in the Non-final Office Action dated 10/2/2009 are deemed moot in light of a new ground of rejection under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) as set forth below in view of applicant's amendments and in view of applicant's arguments.

Examiner acknowledges that the provisional grounds of nonstatutory Obviousness-type Double Patenting rejection under 35 U.S.C. 101 was obviated by applicant's arguments and amendments.

Election/Restrictions

Restriction to one of the following inventions is required:

Inventions	Claims	Drawn To	Class/Subclass
A	1, 4-11, 24-31	Combination	7
B	2, 12-16	Subcombination	38

C	3, 17-23	Subcombination	36

The table above includes the groups, statutory category of invention for each group, class/subclass for each group along with Examiners suggested association of claims.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because at least the following reason(s) apply:

The inventions are distinct, each from the other because of the following reasons:

Inventions A and (B and C together) are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination is an augmented reality game system that utilizes a detector that determines the landscape characteristics of a physical playfield to be used in a video game in which video game indicia is utilized by a wearable processor such that a head mounted display overlays virtual indicia onto the physical playfield. The subcombination

has separate utility such as being a location-based game system that uses a switch to change from a manual control that determines the location of a video game character in a video game to a locating device that determines the location of the video game character in the video game, **or**, that uses a playmat that has permanent indicia thereon that represents a virtual playfield having a length L and width W utilized by a video game.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

If applicant elects B and C directed to subcombinations, then applicants must make a further election of subcombinations usable together as follows:

Inventions B and C are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination B has separate utility such as

being directed to a location-based game system that uses a switch to change from a manual control that determines the location of a video game character in a video game to a locating device that determines the location of the video game character in the video game. See MPEP § 806.05(d). However, subcombination C is directed to a location-based game system that uses a playmat that has permanent indicia thereon that represents a virtual playfield having a length L and width W utilized by a video game.

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Jefferey Mullen on 1/12/2011, a provisional election was made with traverse to prosecute the invention of Invention A, combination, claims 1, 4-11 and 24-31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2-3 and 12-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Moreover, applicant stated that election with traverse was merely to preserve applicant's right to traverse potentially based on search burden, but not because applicant disagreed substantively with Examiner's restriction requirement.

Claim Rejections - 35 USC § 102

Examiner sets forth new grounds of rejection under 35 U.S.C. § 102(e) with respect to amended features as described below because each of the features of applicant's claimed invention as amended continues to be anticipated by the prior art.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Examiner submits that a wearable processor "for utilizing," a detector "for determining," and a handheld controller "for providing" are devices merely "capable of" executing a process as recited by claims 1 and 4-5, which is intended use language and is given very limited patentable weight when evaluating the claims because the terms "for utilizing," "for determining," "for providing," and "capable of" suggest or make optional the steps recited, do not limit a claim to a particular structure and do not limit the scope of the claim (See MPEP 2106 II, C. Review the Claims). Therefore, Examiner submits that applicants' claims are interpreted as broadly as reasonably allowed in light of the specification in accordance with *In re Zletz* (See *In re Zletz*, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

The claims are replete with intended use language, and Examiner suggests that applicants review all claims and replace such language with an affirmative recitation of how the structural features execute the functional limitations of the claimed invention.

Claims 1, 4-5, 24-27 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohshima et al. (US Patent 6,951,515; hereinafter Ohshima). Features are described by figures with reference characters where necessary for clarity.

Regarding claims 1, 4 and 5, Ohshima shows

an augmented reality game system / system (column 5, lines 55-59 and column 7, lines 50-54, Fig. 1, Fig. 4, 1001 and Fig. 6, Ohshima; a system including a game apparatus used by a player wearing head mounted displays (HMDs) to execute processes in a virtual reality game with a different system including other plural game apparatus used by other plural players wearing HMDs is disclosed) comprises:

a first video game system (column 5, lines 55-59 and column 7, lines 50-54 and Fig. 3, Ohshima; a game apparatus or first video game system used by a player wearing HMDs is disclosed) comprises:

a head-mounted display operable to overlay virtual indicia onto a physical playfield (column 6, lines 34-47, column 7, lines 37-38, Fig. 3, 100, and Fig. 4, 1001, Ohshima; the HMD used by the player or any of the players is configured to virtual distribute or overlay virtual objects or virtual indicia to appear disposed onto the table or physical playfield in the game);

memory comprising video game logic operable to provide a video game (column 8, lines 30-40 and Figs. 6 and 8, 5003, Ohshima; a database or memory stores the real object information and player information or game logic that is configured to be used to implement the virtual game);

a wearable processor, which is a processor, for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display (column 6, lines 47-52, column 7, lines 7-13 and lines 39-49 and Fig. 4, 1002, Ohshima; a location/posture sensor or wearable processor in communication with the database and HMDs utilizes posture data of the head of the player or video game logic to provide the viewpoint of the virtual objects stored in the database and to cause the distribution of the virtual objects onto the table as video game indicia via the HMD of the player);

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game (column 6, lines 52-56, column 7, lines 24-36, and Fig. 3, 1003, Ohshima; a video camera or detector senses the real landscape including the table in real time as landscape characteristics to be used in the virtual game);

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game (column 6, lines 29-33, column 7, lines 17-24 and Fig. 3, 103, 104, Ohshima; a location sensor or locating device is configured to determine the physical location of a real object that is moveable on the table by using the located position of the location sensor on the table that corresponds to the real object position and to use this position to identify virtual objects disposed onto the table via the HMDs);

a handheld controller for providing at least one control signal to said video game (column 6, lines 57-63, column 7, lines 13-16 and lines 39-49, and Fig. 4, 1004 and 1005, Ohshima; a controller or handheld controller includes a different location/posture sensor that detects the posture of the players hand to be used in a shooting action made by the player in the virtual game); and

a second video game system, wherein said first video game system communicates information with said second video game system (column 5, lines 55-59 and column 7, lines 50-54 and Fig. 6, Ohshima; other plural game apparatuses used by other plural players wearing HMDs execute virtual game processes in communication

with the game apparatus used by the player wearing HMDs).

Regarding claim 24, information regarding said physical location is provided to a remote database (column 8, lines 30-67, Ohshima; the database stores the real object information that includes position information of the real object as detected by the location sensor to be used to implement the virtual game).

Regarding claim 25, information regarding said physical location is provided to said second video game system (column 7, lines 50-67, Ohshima; the position information and other game data is communicated and utilized between the plural game apparatuses or systems of the plural players as part of plural game system communication).

Regarding claim 26, information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system (column 7, lines 50-67, Ohshima; the position information and other game data is communicated and utilized between the plural game apparatuses or systems of the plural players as part of plural game system communication when the player allows or permits or initiates communication with other players in the game).

Regarding claims 27 and 31, the locating device comprises: a positioning system; and an inertial movement system (column 7, lines 17-24, Ohshima; the location sensor provides a location/posture signal of the viewpoint of the player with respect to the real object, and the location segment of the signal is the positioning system since location indicates position and the posture segment of the signal is the inertial movement system since posture indicates orientation).

Claim Rejections - 35 USC § 103

Examiner sets forth new grounds of rejection under 35 U.S.C. § 103(a) with respect to amended features as described below because each of the features of applicant's claimed invention as amended continues to be unpatentable or obvious over the prior art.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6-11 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Fukushima et al. (US Patent 6,346,929; hereinafter Fukushima). Features are described by figures with reference characters where necessary for clarity.

Ohshima teaches features of the claimed invention as described above.

However, Ohshima does not appear to teach that a virtual object overlayed by the HMD onto the table is displayed at different transparencies based on perceived distance of the virtual object from the HMD as claimed. Therefore, attention is directed to Fukushima, which teaches

Regarding claims 6 and 28, a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display (column 6, line 61 to column 7, line 7, Fukushima; a virtual indication or virtual object of an operator or player's hand is displayed in an HMD in a different imagery with respect to a parent image based on the virtual indication being apparently viewable closer to the operator than the parent image, and it would have been obvious at the time of invention to one having ordinary skill in the art to realize that the imagery of the virtual indication with respect to the parent image is a transparency since viewing images in front of another image requires a visual of translucence to be shown in the virtual world).

Fukushima suggests that a HMD device that functions in a system to give the operator or user or player instruction of operation through virtual indication of real images that the operator can use to execute inputs during complex operation tasks will eliminate the loss of sense of the operation of what the user is attempting to manipulate and avoid erroneous operations (column 1, lines 36-52, Fukushima).

Thus, it would have been obvious to a person having ordinary skill in the art at the time the applicant's invention was made to modify Ohshima in view of the teachings of Fukushima for the purpose of providing the gaming systems of Ohshima having HMDs configured to communicate virtual object data therebetween during game player

and process virtual objects onto a physical table that are upgradeable to and/or integrable with the viewing of a virtual indication of a operator's hand as being apparently closer to the operator than a parent image based on perceived virtual distance of the virtual indication as disclosed by Fukushima in order to eliminate the loss of sense of the operation of what the user is attempting to manipulate and avoid erroneous operations by giving the operator or user or player instruction of operation through virtual indication of real images that the operator can use to execute inputs during complex operation tasks.

Regarding claims 7 and 29, a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display (column 6, line 61 to column 7, line 7, Fukushima; the virtual indication is displayed onto the field closer to the operator than a parent, and it would have been obvious at the time of invention to one having ordinary skill in the art to realize that the virtual indication is displayed when the apparent distance of the virtual indication from the HMD is not within a perceived distance that is further from the operator than the parent image since the virtual indication is displayed when the virtual indication is apparently closer to the operator than the parent image).

Regarding claims 8 and 30, the landscape characteristics are utilized to control a computer- controlled video game character (column 6, line 61 to column 7, line 7, Fukushima; a view of the field is used in the determination of displaying the virtual indication onto the field closer to the operator than a parent).

Regarding claim 9, a wireless transmitter and receiver (column 3, lines 28-54 and Fig. 2, 5, 10, Fukushima; signals are transmitted and received as radio or wireless signals between the mount portion and the processing portion).

Regarding claim 10, a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video game character is limited to visibility within a certain area (column 4, lines 53-59 and column 6, lines 1-21, Fukushima; a specified object that is disposed virtually via a HMD to lie in a specified area is determined by the processing portion and mount portion to be visible within the specified area in which the specified object is designated to lie).

Regarding claim 11, a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area (column 4, lines 53-59 and column 6, lines 1-21, Fukushima; if the specified object is determined to lie within the specified area, it is determine whether a specified motion of the specified object is conducted).

Response to Arguments

Applicant's arguments filed in the Response dated 4/2/2010 directed to the Examiners' rejection under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) have been considered fully and are moot in light of a new ground of rejection under 35 U.S.C. § 102(e) and 35 U.S.C. 103(a) as set forth above in view of applicant's amendments and in view of applicant's arguments thereof.

Examiner has provided the above new grounds of rejection of the claims under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) because each of the features of applicant's claimed invention continues to be anticipated by or unpatentable or obvious over the prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

C US-6,522,312 B2, Ohshima et al.

D US-6,822,643 B2, Matsui et al.

E US-2002/0075286 A1, Yonezawa et al.

F US-6,411,266 B1, Maguire, Jr.

G US-2002/0070916 A1, Noro et al.

H US-7,055,101 B2, Abbott et al.

I US-6,720,949 B1, Pryor et al.

J US-6,765,567 B1, Roberson et al.

K US-7,008,323 B1, Hayashi

L US-7,113,151 B2, Kinebuchi

M US-7,250,935 B2, Kubota et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARTHUR O. HALL whose telephone number is

(571)270-1814. The examiner can normally be reached on Mon - Fri, 8:00am - 5:00 pm, Alt Fri, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arthur O Hall/
Primary Examiner, Art Unit 3718

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner ARTHUR O. HALL	Art Unit 3718	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,951,515 B2	10-2005	Ohshima et al.	463/31
*	B	US-6,346,929 B1	02-2002	Fukushima et al.	345/8
*	C	US-6,522,312 B2	02-2003	Ohshima et al.	345/8
*	D	US-6,822,643 B2	11-2004	Matsui et al.	345/204
*	E	US-2002/0075286 A1	06-2002	Yonezawa et al.	345/679
*	F	US-6,411,266 B1	06-2002	Maguire, Jr., Francis J.	345/8
*	G	US-2002/0070916 A1	06-2002	Noro et al.	345/156
*	H	US-7,055,101 B2	05-2006	Abbott et al.	715/744
*	I	US-6,720,949 B1	04-2004	Pryor et al.	345/158
*	J	US-6,765,567 B1	07-2004	Roberson et al.	345/419
*	K	US-7,008,323 B1	03-2006	Hayashi, Atsushi	463/32
*	L	US-7,113,151 B2	09-2006	Kinebuchi, Tadashi	345/8
*	M	US-7,250,935 B2	07-2007	Kubota et al.	345/156

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Arthur O. Hall	3718

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008	02/04/2009	09/21/2009						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4		✓	✓						
	5		✓	✓						
	6		✓	✓						
	7		✓	✓						
	8		✓	✓						
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	10		✓	✓						
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	26		✓	✓						
	27		✓	✓						
	28		✓	✓						
	29		✓	✓						
	30		✓	✓						
	31		✓	✓						

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Arthur O. Hall	3718

SEARCHED

Class	Subclass	Date	Examiner
463	1, 49	1/5/2008	JPW
273	237	1/5/2008	JPW
463	1-5, 7-9, 30-34, 36-39, 40-43, 49-57	2/9/2011	/A. O. H./
273	108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367	2/9/2011	/A. O. H./
345	1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671	2/9/2011	/A. O. H./
717	168-178	2/9/2011	/A. O. H./
348	37, 119, 141-142, 240.99, E13.022-E13.027, E13.036	2/9/2011	/A. O. H./
434	115, 117, 118, 211	2/9/2011	/A. O. H./
715	706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807	2/9/2011	/A. O. H./
A63F013	00, 06, 10	2/9/2011	/A. O. H./
A63F09	24	2/9/2011	/A. O. H./
G06F017	00	2/9/2011	/A. O. H./

SEARCH NOTES

Search Notes	Date	Examiner
East text search - heads up/mounted display with landscape or field	1/5/2008	JPW
Inventor Name Search	1/5/2008	JPW
Updated East search - see attached	2/4/2009	JPW
Forward search of Noro reference	2/4/2009	JPW
Consulted with Primary Corbett Coburn about applicants arguments	2/4/2009	JPW
Updated east search - see attached	9/21/2009	JPW
Searched part of Class/Subclass 463/1-5, 7-9, 30-34, 36-39, 40-43, 49-57; 273/108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367; 345/1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671; 717/168-178; 348/37, 119, 141-142, 240.99, E13.022-E13.027, E13.036; 434/115, 117, 118, 211; 715/706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807; A63F013/00, 06, 10; A63F09/24; G06F017/00	2/9/2011	/A. O. H./
Requested, received and reviewed references from PLUS search	2/9/2011	/A. O. H./
Performed Inventor and Assignee Search in EAST and PALM	2/9/2011	/A. O. H./
Performed Priority Search in eDAN, PALM and Oath/Declaration and Specification	2/9/2011	/A. O. H./
Evaluated US Patent Application Publication 2005/0049022 A1 for double patenting	2/9/2011	/A. O. H./

/ARTHUR O HALL/ Examiner.Art Unit 3718	

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INTERFERENCE SEARCH			
Class	**Subclass**	**Date**	**Examiner**

/ARTHUR O HALL/ Examiner.Art Unit 3718	

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	12582	463/1-5.ccls. or 463/7-9.ccls. or 463/30-34.ccls. or 463/36-39.ccls. or 463/40-43.ccls. or 463/49-57.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:19
S2	4697	273/108.1.ccls. or 273/127R.ccls. or 273/148R.ccls. or 273/148B.ccls. or 273/309.ccls. or 273/317.1.ccls. or 273/340.ccls. or 273/348.ccls. or 273/361-367.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:21
S3	23892	345/1.1-3.4.ccls. or 345/156.ccls. or 345/157.ccls. or 345/160.ccls. or 345/419.ccls. or 345/473-475.ccls. or 345/618-619.ccls. or 345/629.ccls. or 345/660-671.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:22
S4	6388	717/168-178.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:23
S5	2910	348/37.ccls. or 348/119.ccls. or 348/141-142.ccls. or 348/240.99.ccls. or 348/E13.022-E13.027.ccls. or 348/E13.036.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:23
S6	1106	434/115.ccls. or 434/117.ccls. or 434/118.ccls. or 434/211.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:24
S7	9830	715/706.ccls. or 715/738.ccls. or 715/757-759.ccls. or 715/762-764.ccls. or 715/766.ccls. or 715/781-783.ccls. or 715/788.ccls. or 715/794-795.ccls. or 715/798.ccls. or 715/801-802.ccls. or 715/807.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:26

S8	18811	A63F013/00.ipc. or A63F013/06.ipc. or A63F013/10.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:27
S10	8039	A63F9/24.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:27
S11	42892	G06F017/00.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:27
S12	50	(US-20060105838-$).did. or (US-4553750-$ or US-5013038-$ or US-5810359-$ or US-5851148-$ or US-6089979-$ or US-6164650-$ or US-3809395-$ or US-4248427-$ or US-4266774-$ or US-4285523-$ or US-4315655-$ or US-4329570-$ or US-4333654-$ or US-4333657-$ or US-4335809-$ or US-4341389-$ or US-4343757-$ or US-4349197-$ or US-4357012-$ or US-4364193-$ or US-4365804-$ or US-4372560-$ or US-4373211-$ or US-4392653-$ or US-4394018-$ or US-4402510-$).did. or (US-4403806-$ or US-4405130-$ or US-4407507-$ or US-4408763-$ or US-4411432-$ or US-4418278-$ or US-4422093-$ or US-4421319-$ or US-4422645-$ or US-4461485-$ or US-4462594-$ or US-4474265-$ or US-4488725-$ or US-4496149-$ or US-4542873-$ or US-4552360-$ or US-4568089-$ or US-4596391-$ or US-4609245-$ or US-4615527-$ or US-4615525-$ or US-4755806-$ or US-4771344-$).did.	US-PGPUB; USPAT	OR	ON	2011/02/09 17:29

S13	12	(("20030062675") or ("20020198055") or ("20060148490") or ("6636203") or ("6102802") or ("6361438")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/02/09 17:30
S14	117131	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S10 or S11 or S12 or S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 17:33
S15	12582	463/1-5.ccls. or 463/7-9.ccls. or 463/30-34.ccls. or 463/36-39.ccls. or 463/40-43.ccls. or 463/49-57.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S16	4697	273/108.1.ccls. or 273/127R.ccls. or 273/148R.ccls. or 273/148B.ccls. or 273/309.ccls. or 273/317.1.ccls. or 273/340.ccls. or 273/348.ccls. or 273/361-367.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S17	23892	345/1.1-3.4.ccls. or 345/156.ccls. or 345/157.ccls. or 345/160.ccls. or 345/419.ccls. or 345/473-475.ccls. or 345/618-619.ccls. or 345/629.ccls. or 345/660-671.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
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S19	2910	348/37.ccls. or 348/119.ccls. or 348/141-142.ccls. or 348/240.99.ccls. or 348/E13.022-E13.027.ccls. or 348/E13.036.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S20	1106	434/115.ccls. or 434/117.ccls. or 434/118.ccls. or 434/211.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31

S21	9830	715/706.ccls. or 715/738.ccls. or 715/757-759.ccls. or 715/762-764.ccls. or 715/766.ccls. or 715/781-783.ccls. or 715/788.ccls. or 715/794-795.ccls. or 715/798.ccls. or 715/801-802.ccls. or 715/807.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S22	18811	A63F013/00.ipc. or A63F013/06.ipc. or A63F013/10.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S23	8039	A63F9/24.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S24	42892	G06F017/00.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S25	50	(US-20060105838-$).did. or (US-4553750-$ or US-5013038-$ or US-5810359-$ or US-5851148-$ or US-6089979-$ or US-6164650-$ or US-3809395-$ or US-4248427-$ or US-4266774-$ or US-4285523-$ or US-4315655-$ or US-4329570-$ or US-4333654-$ or US-4333657-$ or US-4335809-$ or US-4341389-$ or US-4343757-$ or US-4349197-$ or US-4357012-$ or US-4364193-$ or US-4365804-$ or US-4372560-$ or US-4373211-$ or US-4392653-$ or US-4394018-$ or US-4402510-$).did. or (US-4403806-$ or US-4405130-$ or US-4407507-$ or US-4408763-$ or US-4411432-$ or US-4418278-$ or US-4422093-$ or US-4421319-$ or US-4422645-$ or US-4461485-$ or US-4462594-$ or US-4474265-$ or US-4488725-$ or US-4496149-$ or US-4542873-$ or US-	US-PGPUB; USPAT	OR	ON	2011/02/09 20:31

		4552360-$ or US-4568089-$ or US-4596391-$ or US-4609245-$ or US-4615527-$ or US-4615525-$ or US-4755806-$ or US-4771344-$).did.				
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S28	680	S27 and ((head$1mount or head$1mounted) with (display or monitor or screen))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:31
S29	1193	S27 and ((head$1mount or head$1mounted or (head near1 (mount or mounted))) with (display or monitor or screen))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:32
S30	1210	S27 and ((head$1mount or head$1mounted or (head near1 (mount or mounted or mounting))) with (display or monitor or screen))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:32
S31	1244	S27 and ((head$1mount or head$1mounted or (head near2 (mount or mounted or mounting))) with (display or monitor or screen))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:33
S32	1274	S27 and ((head$1mount or head$1mounted or (head near3 (mount or mounted or mounting))) with (display or monitor or screen))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:33
S33	1018	S32 and ((virtual or video) with (indicia or image or object or symbol or character))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:45

S34	801	S33 and (processor or micro$1processor or cpu)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:46
S35	727	S34 and (memory or ram or rom or storage)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:46
S36	552	S35 and (detector or sensor or indicator or receiver or transceiver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:51
S37	484	S36 and ((locate or locating or position or direction or radio or frequency or location or locus) with (detector or sensor or device or machine or apparatus or finder))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 20:55
S38	109	S37 and ((physical or real or game or play) with (play $1field or board or pad or tablet))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/09 21:00
S39	102	((JEFFREY) near2 (MULLEN)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/09 22:36
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		("6263218") or ("6697647") or ("6249222") or ("20020115478") or ("6160489") or ("20030176205") or ("20030040286") or ("20040058647")).PN.				
S48	3	"6411266".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/22 20:26
S49	0	S48 and (game or gaming)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/22 20:26
S50	4	"6951515".pn. or "6522312".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/23 14:15
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S52	11	(("20030062675") or ("6822643") or ("20020075286") or ("6411266") or ("20020070916")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/02/23 14:17
S53	1	S52 and (wire$1less or radio or rf)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/23 14:17

S54	65	(("7321682") or ("7055101") or ("5704836") or ("6720949") or ("6892162") or ("6765567") or ("7011582") or ("7008323") or ("6685566") or ("7371163") or ("20060017654") or ("3809395") or ("5662523") or ("5495576") or ("6084556") or ("6270414") or ("6346929") or ("6351261") or ("6611242") or ("7113151") or ("7248232") or ("7250935") or ("7289130") or ("7312795") or ("7427996") or ("7619626") or ("20020154214") or ("20040056870")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/02/23 14:40
S55	13	S54 and (wire$1less or radio or rf)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/23 14:41
S56	13	S55 and (location or position or area or region)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/02/23 14:56

2/28/2011 11:45:10 AM
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EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S40	108	((JEFFREY) near2 (MULLEN)).INV.	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:36
S41	11	S40 and ((virtual.clm. or video.clm.) with (indicia.clm. or image.clm. or object.clm. or symbol.clm. or character.clm.))	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:37
S42	4	S41 and (processor.clm. or micro$1processor.clm. or cpu.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:38
S43	3	S42 and (memory.clm. or ram.clm. or rom.clm. or storage.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:38
S44	3	S43 and (detector.clm. or sensor.clm. or indicator.clm. or receiver.clm. or transceiver.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:39
S45	3	S44 and ((locate.clm. or locating.clm. or position.clm. or direction.clm. or radio.clm. or frequency.clm. or location.clm. or locus.clm.) with (detector.clm. or sensor.clm. or device.clm. or machine.clm. or apparatus.clm. or	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:39

		finder.clm.))				
S46	2	S45 and ((physical.clm. or real.clm. or game.clm. or play.clm.) with (play$1field.clm. or board.clm. or pad.clm. or tablet.clm.))	US-PGPUB; USPAT; UPAD	OR	ON	2011/02/09 22:40

2/28/2011 11:46:08 AM
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BIB DATA SHEET

CONFIRMATION NO. 9936

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/281,812	11/16/2005	463	3718	JDM/008

APPLICANTS
Jeffrey D. Mullen, New York, NY;

**** CONTINUING DATA ***************************
This appln claims benefit of 60/628,475 11/16/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
12/20/2005

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ARTHUR O. HALL/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	14	3	3

ADDRESS

JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232
UNITED STATES

TITLE

Location-based games and augmented reality systems

FILING FEE RECEIVED		
985	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

JDM/008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Arthur Hall

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15232
September 5, 2011

REPLY TO OFFICE ACTION

Sir:

This is in response to the Office Action dated March 4, 2011. A three-month extension of time is applicable hereto and is being submitted herewith. In response to the Office Action dated March 4, 2011, applicant amends the application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) An augmented reality game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

memory comprising video game logic operable to provide a video game;

a wearable processor for utilizing said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2-3. (cancelled)

4. (previously presented) A system comprising:

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a first video game system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

a wearable processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a second video game system, wherein said first video game system communicates information with said second video game system.

5. (previously presented) A system comprising:

a head-mounted display operable to overlay virtual indicia onto a physical playfield;

a processor for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

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a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a handheld controller for providing at least one control signal to said video game.

6. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

7. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

8. (previously presented) The augmented reality game system of claim 1, wherein said landscape characteristics are utilized to control a computer-controlled video game character.

9. (previously presented) The augmented reality game system of claim 1, further comprising a wireless transmitter and receiver.

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10. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video game character is limited to visibility within a certain area.

11. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area.

12-23. (cancelled)

24. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to a remote database.

25. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system.

26. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system.

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27. (previously presented) The system of claim 4, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

28. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

29. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

30. (previously presented) The system of claim 5, wherein said landscape characteristics are utilized to control computer-controlled video game character.

31. (previously presented) The system of claim 5, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

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REMARKS/ARGUMENTS

Summary of Office Action

Claims 1-31 are pending in the application.

The Examiner provided a Restriction Requirement.

The Examiner rejected claims 1, 4-5, 24-27, and 31 under 35 U.S.C. 102(e) as being anticipated by Ohshima et al. U.S. Patent No. 6,951,515 (hereinafter "Ohshima").

The Examiner rejected claims 6-11 and 28-30 under 35 U.S.C. 103(a) as being unpatentable over Ohsima in view of Fukushima et al. U.S. Patent No. 6,346,929 (hereinafter "Fukushima").

Summary of Applicant's Amendments

Applicant has cancelled claims 2-3 and 12-23 without prejudice and solely in order to expedite prosecution.

Applicant traverses the Examiner's rejections. Applicant reserves the right to claim any subject matter lost by any claim amendment or cancellation, or any subject matter included in the present application, in one or more continuation or divisional applications.

Applicant's Response to the Election Requirement

The Examiner made a Restriction Requirement with respect to the following groups.

Group A drawn to claims 1, 4-11, and 24-31

Group B drawn to claims 2 and 12-16

Group C drawn to claims 3 and 17-23

Applicant hereby elects, with traverse, Group A (claims 1, 4-11, and 24-31).

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The Examiner stated:

> "Moreover, applicant stated that election with traverse was merely to preserve applicant's right to traverse potentially based on search burden, but not because applicant disagreed substantively with Examiner's restriction requirement."
> (Office Action, page 6)

Applicant's recollection is that applicant did not agree substantively nor did applicant disagree substantively with the Examiner's Restriction Requirement. Applicant stated that no undue burden was created in requiring the Examiner to examine the claims that the Examiner had previously examined. Accordingly, applicant contends that the Examiner's statement is a mischaracterization. The Restriction Requirement is improper. Applicant traverses the Examiner's Restriction Requirement and reserves the right to traverse on any and all grounds.

However, it is clear that no burden is placed on the Examiner in requiring the Examiner to search the claims the Examiner has previously searched and examined.

If any burden has been created, burden has been created on the shoulders of the applicant. Since the filing of the application, the Examiner has searched and examined the entirety of the claims in, for example, the Office Actions dated January 9, 2008, February 18, 2009, and October 2, 2009.

Now, the Examiner has issued a Restriction Requirement. Applicant reserves the right to petition for a Patent Term Adjustment and/or Patent Term Extension to remedy the burden created by the Examiner for at least the time of filing and allowance of the present application and all continuation/divisional applications.

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Additionally, the Examiner appears to have changed the Restriction Requirement. Applicant does not recall the presentation of combinations/subcombinations as well as class/sub-classes to the applicant. Accordingly, applicant traverses the Restriction Requirement.

Regardless, solely in order to expedite prosecution, applicant has cancelled claims 2-3 and 12-23.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(e) in view of Ohshima

The Examiner rejected claims 1, 4-5, 24-27, and 31 under 35 U.S.C. 102(e) as being anticipated by Ohshima.

The Examiner stated:

> "Examiner submits that … 'for providing' are devices merely 'capable of' executing a process … and is given very limited patentable weight … terms … 'for providing' suggest or make optional the steps required, do not limit a claim to a particular structure and do not limit the scope of the claim." (page 7)

The Examiner's position is absurd. The features are clearly not optional -- merely not included as an actor. The configurations are structural and functional features. The Examiner must show such configurations in the prior art references - else applicant's claims are patentable and in condition for allowance.

Claim 1

Applicant's invention of claim 1 includes a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

Ohshima alleges a

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The Examiner stated that Ohshima alleges:

> "(column 6, lines 52-56, column 7, lines 24-36, and FIG. 3, 1003 … a video camera or detector senses the real landscape including the table in real time as landscape characteristics to be used in the virtual game" (Office Action, page 11)

Ohshima, however, does not show or suggest applicant's invention of claim 1 of a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

Ohshima, however, requires that the locations and shapes of still real objects placed on Ohshima's table be input in advance. *See* Ohshima, col. 6, lines 23-29. As such, Ohshima merely includes:

> "a predetermined memory for pre-storing position information and shape information of the real object …
> a reading unit that reads out the position information and shape information of the real object from said pre-determined memory unit as needed." (Ohshima, col. 13, lines 5-10)

Accordingly, Ohshima merely requires inputting, in advance, the location and shapes of still real objects. Inputting, in advance, the location and shapes of still real objects does not show or suggest applicant's invention of claim 1 that includes a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

Ohshima clarifies by suggesting a camera is required for a user to see a real landscape in a video-see through HMD and a camera is not needed for a user to see a real landscape in an optical see-through mode:

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> "Since the video camera 1003 uses, e.g., a video-see through HMD in this game, it can sense a real landscape in real time. Hence, when an optical see-through HMD is used, the video camera 1003 is not required." (Ohshima, col. 6, lines 53-56)

All alignment of virtual objects in Ohshima is allegedly based off the alignment and occlusion process that utilizes the real objects. *See* Ohshima, col. 6, lines 25-30.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 1, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 4

As shown above, claim 1 is patentable. Claim 4 includes patentable features similar to patentable features of claim 1. Accordingly, applicant respectfully submits that claim 4 is patentable.

Ohshima does not show or suggest applicant's invention of claim 4 of a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 4, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 5

As shown above, claim 1 is patentable. Claim 5 includes patentable features similar to patentable features of claim 1. Accordingly, applicant respectfully submits that claim 5 is patentable.

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Ohshima does not show or suggest applicant's invention of claim 5 of a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 5, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Additional Rejections in view of Official Notice

Applicant contends that the Examiner's rejections may include Official Notice and applicant traverses all of the Examiner's rejections in view of Official Notice. For all rejections under 35 U.S.C. § 103(a), the Examiner has the burden of showing each and every element of applicant's invention in the prior art combination. MPEP § 2144.03 requires that the facts of which notice are being taken be capable of instant and unquestionable demonstration as being well known in the art. *See In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant believes that the "facts" of which the Examiner may have provided a rejection without showing each and every element of a claim in a reference do not meet that standard, and invoke his right under MPEP § 2144.03 to have the Examiner provide documentary proof that those facts are actually well known.

Additionally, as shown above, the independent claims of the present application are patentable. Accordingly, applicant respectfully submits that dependent claims are patentable for depending from a patentable independent claim.

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The Dependent Claims

The Examiner rejected claims 6-11 and 28-30 under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Fukushima. As shown above, the independent claims are patentable. Accordingly, applicant respectfully submits that dependent claims are patentable for depending from a patentable independent claim.

Conclusion

Applicant respectfully submits that this application, including the pending claims, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/

Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
731 South Negley, Apt. 2
Pittsburgh, PA 15232
Mobile: (914) 837-7741

Meta Exhibit 1016
Meta v. Mullen - Page 00239

Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	555	555

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**555**

Electronic Acknowledgement Receipt

EFS ID:	10878188
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	05-SEP-2011
Filing Date:	16-NOV-2005
Time Stamp:	23:29:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$555
RAM confirmation Number	7330
Deposit Account	503855
Authorized User	MULLEN,JEFFREY D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		JDM-008-Reply.pdf	24553 287092cdba129e4844db5d80d3a6c41fd6995dd3	yes	13

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	13

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	29669 d5b87a9024bb01a5a8a29846736c2ca8b578de80	no	2

Warnings:

Information:

Total Files Size (in bytes):	54222

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/281,812	11/16/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 09/05/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 17	Minus	** 31	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***5	= 0	X $110 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DONNA SMALLS LOGAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 09/22/2011

JEFFREY D. MULLEN
731 SOUTH NEGLEY
APT. 2
PITTSBURGH, PA 15232

EXAMINER	
HALL, ARTHUR O	

ART UNIT	PAPER NUMBER
3718	

MAIL DATE	DELIVERY MODE
09/22/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/281,812	MULLEN, JEFFREY D.	
	Examiner	Art Unit	
	ARTHUR O. HALL	3718	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1,4-11 and 24-31* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,4-11 and 24-31* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

Examiner acknowledges applicant's cancellation of claims 2-3 and 12-23 in the Response dated 9/5/2011 directed to the Non-final Office Action dated 3/4/2011. Claims 1, 4-11 and 24-31 are pending in the application and subject to examination as part of this office action.

Examiner acknowledges that applicants arguments directed to the rejection set forth under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) are deemed unpersuasive in light of the evidence disclosed in the Ohshima et al. (US Patent 6,951,515; hereinafter Ohshima) and Fukushima et al. (US Patent 6,346,929; hereinafter Fukushima) references cited in the Non-final Office Action dated 3/4/2011, in view of applicant's arguments made in the Response dated 9/5/2011 directed to the Non-final Office Action dated 3/4/2011. Thus, the rejections under 35 U.S.C. 102(e) and 35 U.S.C. 103(a) are not withdrawn. Therefore, Examiner maintains the grounds of rejection under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a) as set forth below.

Examiner acknowledges that applicant's arguments directed to the Requirement for Restriction are unpersuasive as described below.

Claim Rejections - 35 USC § 102

Examiner maintains and incorporates herein the grounds of rejection of the claims under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a) as described in the Non-final

Office Action dated 3/4/2011 because the limitations of the claims in the Response dated 9/5/2011 are the same as the limitations of the claims examined in the Non-final Office Action dated 3/4/2011, and because each of the features of applicant's claimed invention continues to be anticipated by and unpatentable or obvious over the prior art.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Examiner submits that a wearable processor "for utilizing," a detector "for determining," and a handheld controller "for providing" are devices merely "capable of" executing a process as recited by claims 1 and 4-5, which is intended use language and is given very limited patentable weight when evaluating the claims because the terms "for utilizing," "for determining," "for providing," and "capable of" suggest or make optional the steps recited, do not limit a claim to a particular structure and do not limit the scope of the claim (See MPEP 2106 II, C. Review the Claims). Therefore, Examiner submits that applicants' claims are interpreted as broadly as reasonably allowed in light of the specification in accordance with *In re Zletz* (See *In re Zletz*, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

The claims are replete with intended use language, and Examiner suggests that applicants review all claims and replace such language with an affirmative recitation of how the structural features execute the functional limitations of the claimed invention.

Claims 1, 4-5, 24-27 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohshima et al. (US Patent 6,951,515; hereinafter Ohshima). Features are described by figures with reference characters where necessary for clarity.

Regarding claims 1, 4 and 5, Ohshima shows

an augmented reality game system / system (column 5, lines 55-59 and column 7, lines 50-54, Fig. 1, Fig. 4, 1001 and Fig. 6, Ohshima; a system including a game apparatus used by a player wearing head mounted displays (HMDs) to execute processes in a virtual reality game with a different system including other plural game apparatus used by other plural players wearing HMDs is disclosed) comprises:

a first video game system (column 5, lines 55-59 and column 7, lines 50-54 and Fig. 3, Ohshima; a game apparatus or first video game system used by a player wearing HMDs is disclosed) comprises:

a head-mounted display operable to overlay virtual indicia onto a physical playfield (column 6, lines 34-47, column 7, lines 37-38, Fig. 3, 100, and Fig. 4, 1001, Ohshima; the HMD used by the player or any of the players is configured to virtual distribute or overlay virtual objects or virtual indicia to appear disposed onto the table or physical playfield in the game);

memory comprising video game logic operable to provide a video game (column 8, lines 30-40 and Figs. 6 and 8, 5003, Ohshima; a database or memory stores the real object information and player information or game logic that is configured to be used to implement the virtual game);

a wearable processor, which is a processor, for utilizing video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display (column 6, lines 47-52, column 7, lines 7-13 and lines 39-49 and Fig. 4, 1002, Ohshima; a location/posture sensor or wearable processor in communication with the database and HMDs utilizes posture data of the head of the player or video game logic to provide

the viewpoint of the virtual objects stored in the database and to cause the distribution of the virtual objects onto the table as video game indicia via the HMD of the player);

a detector for determining landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game (column 6, lines 52-56, column 7, lines 24-36, and Fig. 3, 1003, Ohshima; a video camera or detector senses the real landscape including the table in real time as landscape characteristics to be used in the virtual game);

a locating device operable to determine the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game (column 6, lines 29-33, column 7, lines 17-24 and Fig. 3, 103, 104, Ohshima; a location sensor or locating device is configured to determine the physical location of a real object that is moveable on the table by using the located position of the location sensor on the table that corresponds to the real object position and to use this position to identify virtual objects disposed onto the table via the HMDs);

a handheld controller for providing at least one control signal to said video game (column 6, lines 57-63, column 7, lines 13-16 and lines 39-49, and Fig. 4, 1004 and 1005, Ohshima; a controller or handheld controller includes a different location/posture sensor that detects the posture of the players hand to be used in a shooting action made by the player in the virtual game); and

a second video game system, wherein said first video game system communicates information with said second video game system (column 5, lines 55-59 and column 7, lines 50-54 and Fig. 6, Ohshima; other plural game apparatuses used by other plural players wearing HMDs execute virtual game processes in communication with the game apparatus used by the player wearing HMDs).

Regarding claim 24, information regarding said physical location is provided to a remote database (column 8, lines 30-67, Ohshima; the database stores the real object information that includes position information of the real object as detected by the

location sensor to be used to implement the virtual game).

Regarding claim 25, information regarding said physical location is provided to said second video game system (column 7, lines 50-67, Ohshima; the position information and other game data is communicated and utilized between the plural game apparatuses or systems of the plural players as part of plural game system communication).

Regarding claim 26, information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system (column 7, lines 50-67, Ohshima; the position information and other game data is communicated and utilized between the plural game apparatuses or systems of the plural players as part of plural game system communication when the player allows or permits or initiates communication with other players in the game).

Regarding claims 27 and 31, the locating device comprises: a positioning system; and an inertial movement system (column 7, lines 17-24, Ohshima; the location sensor provides a location/posture signal of the viewpoint of the player with respect to the real object, and the location segment of the signal is the positioning system since location indicates position and the posture segment of the signal is the inertial movement system since posture indicates orientation).

Claim Rejections - 35 USC § 103

Examiner maintains and incorporates herein the grounds of rejection of the claims under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a) as described in the Non-final Office Action dated 3/4/2011 because the limitations of the claims in the Response dated 9/5/2011 are the same as the limitations of the claims examined in the Non-final

Office Action dated 3/4/2011, and because each of the features of applicant's claimed invention continues to be anticipated by and unpatentable or obvious over the prior art.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 6-11 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Fukushima et al. (US Patent 6,346,929; hereinafter Fukushima). Features are described by figures with reference characters where necessary for clarity.

Ohshima teaches features of the claimed invention as described above.

However, Ohshima does not appear to teach that a virtual object overlayed by the HMD onto the table is displayed at different transparencies based on perceived distance of the virtual object from the HMD as claimed. Therefore, attention is directed to Fukushima, which teaches

Regarding claims 6 and 28, a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display (column 6, line 61 to column 7, line 7, Fukushima; a virtual indication or virtual object of an operator or player's hand is displayed in an HMD in a different imagery with respect to a parent image based on the virtual indication being apparently viewable closer to the operator than the parent image, and it would have been obvious at the time of invention to one having ordinary skill in the art to realize that

the imagery of the virtual indication with respect to the parent image is a transparency since viewing images in front of another image requires a visual of translucence to be shown in the virtual world).

Fukushima suggests that a HMD device that functions in a system to give the operator or user or player instruction of operation through virtual indication of real images that the operator can use to execute inputs during complex operation tasks will eliminate the loss of sense of the operation of what the user is attempting to manipulate and avoid erroneous operations (column 1, lines 36-52, Fukushima).

Thus, it would have been obvious to a person having ordinary skill in the art at the time the applicant's invention was made to modify Ohshima in view of the teachings of Fukushima for the purpose of providing the gaming systems of Ohshima having HMDs configured to communicate virtual object data therebetween during game player and process virtual objects onto a physical table that are upgradeable to and/or integrable with the viewing of a virtual indication of a operator's hand as being apparently closer to the operator than a parent image based on perceived virtual distance of the virtual indication as disclosed by Fukushima in order to eliminate the loss of sense of the operation of what the user is attempting to manipulate and avoid erroneous operations by giving the operator or user or player instruction of operation through virtual indication of real images that the operator can use to execute inputs during complex operation tasks.

Regarding claims 7 and 29, a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object

from said head-mounted display is not within a certain perceived distance from said head-mounted display (column 6, line 61 to column 7, line 7, Fukushima; the virtual indication is displayed onto the field closer to the operator than a parent, and it would have been obvious at the time of invention to one having ordinary skill in the art to realize that the virtual indication is displayed when the apparent distance of the virtual indication from the HMD is not within a perceived distance that is further from the operator than the parent image since the virtual indication is displayed when the virtual indication is apparently closer to the operator than the parent image).

Regarding claims 8 and 30, the landscape characteristics are utilized to control a computer- controlled video game character (column 6, line 61 to column 7, line 7, Fukushima; a view of the field is used in the determination of displaying the virtual indication onto the field closer to the operator than a parent).

Regarding claim 9, a wireless transmitter and receiver (column 3, lines 28-54 and Fig. 2, 5, 10, Fukushima; signals are transmitted and received as radio or wireless signals between the mount portion and the processing portion).

Regarding claim 10, a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video game character is limited to visibility within a certain area (column 4, lines 53-59 and column 6, lines 1-21, Fukushima; a specified object that is disposed virtually via a HMD to lie in a specified area is determined by the processing portion and mount portion to be visible within the specified area in which the specified object is designated to lie).

Regarding claim 11, a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical

location corresponds to entering said certain area (column 4, lines 53-59 and column 6, lines 1-21, Fukushima; if the specified object is determined to lie within the specified area, it is determine whether a specified motion of the specified object is conducted).

Response to Arguments

Applicants argument's filed in the Response dated 9/5/2011 directed to the Examiners' rejection under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a) have been considered fully and are unpersuasive in light of the evidence disclosed in the Ohshima and Fukushima references, and in view of applicant's arguments thereof.

Regarding applicant's arguments concerning claims 1, 4-11, and 24-31 rejected as anticipated under 35 U.S.C. § 102(e) or unpatentable or obvious under 35 U.S.C. § 103(a):

Applicant argues that no undue burden was created in requiring Examiner to examine the claims previously examined. Examiner submits that even though it is generally true that there is no burden in examining previously examined claims, there is still the possibility of an undue burden if examination of the claims, albeit by a different Examiner, was completed without regard to a proper restriction of the claims. Examiner merely stated previously to applicant, which Examiner thought was clear, that Examiner believed that restriction was proper due to distinct inventions having been previously claimed and examined.

Applicant argues that Examiner changed the restriction requirement to use combination and subcombinations. Examiner submits that the original requirement for restriction stated to applicant over the phone required a combination/subcombination restriction of invention, and that Examiner did not intentionally nor inadvertently change the restriction requirement.

Applicant argues that Examiner erred in stating that the features of the invention associated with functional language equivalent to "capable of" are intended use language. Examiner submits that applicant is incorrect in this assertion because any language that is equivalent to the term "capable of" is considered to be intended use language, which means that the functional language followed by the intended use language must be given limited patentable weight (See In re Zletz, described above). Further, Examiner submits that any reference applied as teaching the functional language merely has to be capable of performing the functional language, and thus, does not have to be configured to do so. Hence, Examiner submits that Ohshima and Fukushima was applied as either being configured to or capable of performing the function recited in the claimed invention (See teachings of Ohshima and Fukushima described above).

Applicant argues that Ohshima does not show a detector that determines landscape characteristics of a physical playfield in which video game logic uses the landscape characteristics to provide the video game because applicant states that

Ohshima requires the locations and shapes of still real objects placed on the table in Ohshima to be input in advance. Examiner submits that Ohshima does not require that the locations and shapes must be input in advance, but merely that the locations and shapes can be input in advance (column 6, lines 29-32, Ohshima). Further, Examiner finds nothing recited inherently or otherwise in the claimed invention that requires that the locations and shapes cannot be input in advance. Thus, Examiner finds that Ohshima shows, as describe above, that a video camera or detector senses the real landscape including the table in real time as landscape characteristics to be used in the virtual game (column 6, lines 52-56, column 7, lines 24-36, and Fig. 3, 1003, Ohshima).

Applicant argues that Examiner may have taken official notice in making rejections under 35 USC 103(a). At the outset, Examiner submits that applicant has not stated which facts applicants believe Examiner has taken official notice of so as to place Examiner on notice of how to respond to applicant's inquiry. Furthermore, Examiner submits that evidence was cited and explained for each and every element of the claimed invention, as described above, so as to present a prima facie case of obviousness against the applicant's claim invention.

Consequently, applicant's arguments have been deemed to be unpersuasive in light of the evidence disclosed in the Ohshima reference, but also with respect to the Fukushima reference, and in light of applicant's arguments thereof. Hence, Examiner maintains the grounds of rejection of the claims under 35 U.S.C. § 102(e) and 35 U.S.C.

§ 103(a) as described in the Non-final Office Action dated 3/4/2011 because each of the features of applicant's claimed invention continues to be anticipated by and unpatentable or obvious over the prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A US-2004/0056870 A1, Shimoyama et al.

B US-7,371,163 B1, Best

C US-2006/0017654 A1, Romo

D US-6,611,242 B1, Hongo et al.

E US-6,270,414 B2, Roelofs

F US-5,704,836, Norton et al.

G US-7,321,682 B2, Tooyama et al.

H US-6,351,261 B1, Reichlen et al.

I US-6,685,566 B2, Ohshima

J US-5,662,523, Yasumaru et al.

K US-7,289,130 B1, Satoh et al.

L US-7,312,795 B2, Aso et al.

M US-7,427,996 B2, Yonezawa et al.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARTHUR O. HALL whose telephone number is (571)270-1814. The examiner can normally be reached on Mon - Fri, 8:00am - 5:00 pm, Alt Fri, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ARTHUR O. HALL/
Primary Examiner, Art Unit 3718

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner ARTHUR O. HALL	Art Unit 3718	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0056870 A1	03-2004	Shimoyama et al.	345/629
*	B	US-7,371,163 B1	05-2008	Best, Robert M.	463/1
*	C	US-2006/0017654 A1	01-2006	Romo, Justin R.	345/007
*	D	US-6,611,242 B1	08-2003	Hongo et al.	345/2.1
*	E	US-6,270,414 B2	08-2001	Roelofs, Gregory Robert	463/36
*	F	US-5,704,836	01-1998	Norton et al.	463/36
*	G	US-7,321,682 B2	01-2008	Tooyama et al.	382/154
*	H	US-6,351,261 B1	02-2002	Reichlen et al.	345/427
*	I	US-6,685,566 B2	02-2004	Ohshima, Toshikazu	463/32
*	J	US-5,662,523	09-1997	Yasumaru et al.	463/30
*	K	US-7,289,130 B1	10-2007	Satoh et al.	345/629
*	L	US-7,312,795 B2	12-2007	Aso et al.	345/419
*	M	US-7,427,996 B2	09-2008	Yonezawa et al.	345/629

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	Arthur O. Hall	3718

SEARCHED

Class	Subclass	Date	Examiner
463	1, 49	1/5/2008	JPW
273	237	1/5/2008	JPW
463	1-5, 7-9, 30-34, 36-39, 40-43, 49-57	2/9/2011	/A. O. H./
273	108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367	2/9/2011	/A. O. H./
345	1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671	2/9/2011	/A. O. H./
717	168-178	2/9/2011	/A. O. H./
348	37, 119, 141-142, 240.99, E13.022-E13.027, E13.036	2/9/2011	/A. O. H./
434	115, 117, 118, 211	2/9/2011	/A. O. H./
715	706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807	2/9/2011	/A. O. H./
A63F013	00, 06, 10	2/9/2011	/A. O. H./
A63F09	24	2/9/2011	/A. O. H./
G06F017	00	2/9/2011	/A. O. H./

SEARCH NOTES

Search Notes	Date	Examiner
East text search - heads up/mounted display with landscape or field	1/5/2008	JPW
Inventor Name Search	1/5/2008	JPW
Updated East search - see attached	2/4/2009	JPW
Forward search of Noro reference	2/4/2009	JPW
Consulted with Primary Corbett Coburn about applicants arguments	2/4/2009	JPW
Updated east search - see attached	9/21/2009	JPW
Searched part of Class/Subclass 463/1-5, 7-9, 30-34, 36-39, 40-43, 49-57; 273/108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367; 345/1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671; 717/168-178; 348/37, 119, 141-142, 240.99, E13.022-E13.027, E13.036; 434/115, 117, 118, 211; 715/706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807; A63F013/00, 06, 10; A63F09/24; G06F017/00	2/9/2011	/A. O. H./
Requested, received and reviewed references from PLUS search	2/9/2011	/A. O. H./
Performed Inventor and Assignee Search in EAST and PALM	2/9/2011	/A. O. H./
Performed Priority Search in eDAN, PALM and Oath/Declaration and Specification	2/9/2011	/A. O. H./
Evaluated US Patent Application Publication 2005/0049022 A1 for double patenting	2/9/2011	/A. O. H./
Updated Earlier Search (see attached "search history")	9/18/2011	/A. O. H./

	/ARTHUR O HALL/ Primary Examiner.Art Unit 3718

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INTERFERENCE SEARCH			
Class	**Subclass**	**Date**	**Examiner**

	/ARTHUR O HALL/ Primary Examiner.Art Unit 3718

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EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S79	114	((JEFFREY) near2 (MULLEN)).INV.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45
S80	11	S79 and ((virtual. clm. or video. clm.) with (indicia. clm. or image. clm. or object. clm. or symbol. clm. or character. clm.))	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45
S81	4	S80 and (processor.clm. or micro$1processor. clm. or cpu.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45
S82	3	S81 and (memory. clm. or ram.clm. or rom.clm. or storage.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45
S83	3	S82 and (detector. clm. or sensor. clm. or indicator. clm. or receiver. clm. or transceiver.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45
S84	3	S83 and ((locate. clm. or locating. clm. or position. clm. or direction. clm. or radio.clm. or frequency.clm. or location.clm. or locus.clm.) with (detector.clm. or sensor.clm. or device.clm. or machine.clm. or apparatus.clm. or	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45

		finder.clm.))				
S85	2	S84 and ((physical.clm. or real.clm. or game.clm. or play.clm.) with (play$1field.clm. or board.clm. or pad.clm. or tablet.clm.))	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45
S86	2	S85	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/18 20:45

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S57	13642	463/1-5.ccls. or 463/7-9.ccls. or 463/30-34.ccls. or 463/36-39.ccls. or 463/40-43.ccls. or 463/49-57.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S58	4759	273/108.1.ccls. or 273/127R.ccls. or 273/148R.ccls. or 273/148B.ccls. or 273/309.ccls. or 273/317.1.ccls. or 273/340.ccls. or 273/348.ccls. or 273/361-367.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S59	25700	345/1.1-3.4.ccls. or 345/156.ccls. or 345/157.ccls. or 345/160.ccls. or 345/419.ccls. or 345/473-475.ccls. or 345/618-619.ccls. or 345/629.ccls. or 345/660-671.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S60	6991	717/168-178.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S61	3041	348/37.ccls. or 348/119.ccls. or 348/141-142.ccls. or 348/240.99.ccls. or 348/E13.022-E13.027.ccls. or 348/E13.036.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S62	1120	434/115.ccls. or 434/117.ccls. or 434/118.ccls. or 434/211.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46

S63	10927	715/706.ccls. or 715/738.ccls. or 715/757-759.ccls. or 715/762-764.ccls. or 715/766.ccls. or 715/781-783.ccls. or 715/788.ccls. or 715/794-795.ccls. or 715/798.ccls. or 715/801-802.ccls. or 715/807.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S64	20229	A63F013/00.ipc. or A63F013/06.ipc. or A63F013/10.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S65	9026	A63F9/24.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S66	46137	G06F017/00.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S67	50	(US-20060105838-$).did. or (US-4553750-$ or US-5013038-$ or US-5810359-$ or US-5851148-$ or US-6089979-$ or US-6164650-$ or US-3809395-$ or US-4248427-$ or US-4266774-$ or US-4285523-$ or US-4315655-$ or US-4329570-$ or US-4333654-$ or US-4333657-$ or US-4335809-$ or US-4341389-$ or US-4343757-$ or US-4349197-$ or US-4357012-$ or US-4364193-$ or US-4365804-$ or US-4372560-$ or US-4373211-$ or US-4392653-$ or US-4394018-$ or US-4402510-$).did. or (US-4403806-$ or US-4405130-$ or US-	US-PGPUB; USPAT	OR	ON	2011/09/18 20:46

		4407507-$ or US-4408763-$ or US-4411432-$ or US-4418278-$ or US-4422093-$ or US-4421319-$ or US-4422645-$ or US-4461485-$ or US-4462594-$ or US-4474265-$ or US-4488725-$ or US-4496149-$ or US-4542873-$ or US-4552360-$ or US-4568089-$ or US-4596391-$ or US-4609245-$ or US-4615527-$ or US-4615525-$ or US-4755806-$ or US-4771344-$).did.				
S68	12	(("20030062675") or ("20020198055") or ("20060148490") or ("6636203") or ("6102802") or ("6361438")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/09/18 20:46
S69	125968	S57 or S58 or S59 or S60 or S61 or S62 or S63 or S64 or S65 or S66 or S67 or S68	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S70	1371	S69 and ((head$1mount or head$1mounted or (head near3 (mount or mounted or mounting))) with (display or monitor or screen))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S71	1100	S70 and ((virtual or video) with (indicia or image or object or symbol or character))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S72	873	S71 and (processor or micro$1processor or cpu)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46

S73	794	S72 and (memory or ram or rom or storage)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S74	608	S73 and (detector or sensor or indicator or receiver or transceiver)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S75	535	S74 and ((locate or locating or position or direction or radio or frequency or location or locus) with (detector or sensor or device or machine or apparatus or finder))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S76	127	S75 and ((physical or real or game or play) with (play$1field or board or pad or tablet))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S77	127	S76	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:46
S78	535	S75	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/18 20:54

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	Arthur O. Hall	3718

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008	02/04/2009	09/21/2009	09/18/2011					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	-					
	3	✓	✓	✓	-					
	4		✓	✓	✓					
	5		✓	✓	✓					
	6		✓	✓	✓					
	7		✓	✓	✓					
	8		✓	✓	✓					
	9		✓	✓	✓					
	10		✓	✓	✓					
	11		✓	✓	✓					
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	27		✓	✓	✓					
	28		✓	✓	✓					
	29		✓	✓	✓					
	30		✓	✓	✓					
	31		✓	✓	✓					

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PTO/SB/30EFS (10-08)
Approved for use through 11/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11281812	Filing Date	2005-11-16	Docket Number (if applicable)	JDM/008	Art Unit	3714
First Named Inventor	Jeffrey D. Mullen			Examiner Name	Arthur Hall		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 503855

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☐ Patent Practitioner Signature

☒ Applicant Signature

PTO/SB/30EFS (10-08)
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Applicant Signature			
Applicant 1		Remove	
Signature	/Jeffrey D. Mullen/	Date (YYYY-MM-DD)	2012-03-22
Name	Jeffrey D. Mullen		
Click ADD for additional Applicant Signature		Add	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Arthur Hall

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15232
March 22, 2012

REPLY TO OFFICE ACTION

Sir:

This is in response to the Office Action dated March 22, 2012. A three-month extension of time and a Request for Continued Examination is applicable hereto and is being submitted herewith. In response to the Office Action dated September 22, applicant amends the application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An augmented reality game system comprising:

a head-mounted display that ~~operable to overlay~~ that overlays virtual indicia onto a physical playfield;

memory comprising video game logic that provides ~~operable to provide~~ a video game;

a wearable processor that utilizes ~~for utilizing~~ said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector that determines ~~for determining~~ landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device that determines ~~operable to determine~~ the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2-3. (cancelled)

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4. (currently amended) A system comprising:

a first video game system comprising:

a head-mounted display that overlays ~~operable to overlay~~ virtual indicia onto a physical playfield;

a wearable processor that utilizes ~~for utilizing~~ video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector that determines ~~for determining~~ landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device that determines ~~operable to determine~~ the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a second video game system, wherein said first video game system communicates information with said second video game system.

5. (currently amended) A system comprising:

a head-mounted display that overlays ~~operable to overlay~~ virtual indicia onto a physical playfield;

a processor that utilizes ~~for utilizing~~ video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

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a detector that determines ~~for determining~~ landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device that determines ~~operable to determine~~ the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a handheld controller for providing at least one control signal to said video game.

6. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

7. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

8. (previously presented) The augmented reality game system of claim 1, wherein said landscape characteristics are utilized to control a computer-controlled video game character.

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9. (previously presented) The augmented reality game system of claim 1, further comprising a wireless transmitter and receiver.

10. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video game character is limited to visibility within a certain area.

11. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area.

12-23. (cancelled)

24. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to a remote database.

25. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system.

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26. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system.

27. (previously presented) The system of claim 4, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

28. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

29. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

30. (previously presented) The system of claim 5, wherein said landscape characteristics are utilized to control computer-controlled video game character.

31. (previously presented) The system of claim 5, wherein said locating device comprises:

a positioning system; and

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an inertial movement system.

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REMARKS/ARGUMENTS

Summary of Office Action

Claims 1-31 are pending in the application.

The Examiner rejected claims 1, 4-5, 24-27, and 31 under 35 U.S.C. 102(e) as being anticipated by Ohshima et al. U.S. Patent No. 6,951,515 (hereinafter "Ohshima").

The Examiner rejected claims 6-11 and 28-30 under 35 U.S.C. 103(a) as being unpatentable over Ohsima in view of Fukushima et al. U.S. Patent No. 6,346,929 (hereinafter "Fukushima").

Summary of Applicant's Amendments

Applicant has amended claims 1, 4, and 5 without prejudice and solely in order to expedite prosecution.

Applicant traverses the Examiner's rejections. Applicant reserves the right to claim any subject matter lost by any claim amendment or cancellation, or any subject matter included in the present application, in one or more continuation or divisional applications.

Applicant's Response to the Election Requirement

Applicant maintains the traversal, and reasons of the traversal, of the previous Restriction Requirement.

Applicant's Response to the
Rejections Under 35 U.S.C. § 102(e) in view of Ohshima

The Examiner rejected claims 1, 4-5, 24-27, and 31 under 35 U.S.C. 102(e) as being anticipated by Ohshima.

The Examiner stated:

> "Examiner submits that … 'for providing' are devices merely 'capable of' executing a process …

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> and is given very limited patentable weight … terms … 'for providing' suggest or make optional the steps required, do not limit a claim to a particular structure and do not limit the scope of the claim." (page 7)

The Examiner's position is in erorr.

If a prior art reference does not explicitly show a feature, that prior art reference is not, as described, "capable of" performing a feature and does not include a structure "for" performing the feature.

The Examiner cannot correct the deficiencies of a reference with any argument outside of the reference. The references are limited to only what the references discuss. The Examiner must show such configurations in the prior art references – else applicant's claims are patentable and in condition for allowance.

The features are clearly not optional. The configurations are structural and functional features.

Nonetheless, solely in order to expedite prosecution and without prejudice, applicant has amended claims 1, 4, and 5.

Claim 1

Applicant's invention of claim 1 includes a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

The Examiner stated that Ohshima alleges:

> "senses the real landscape"
> (Office Action, page 5)

Ohshima, however, does not show or suggest applicant's invention of claim 1 of a detector that

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determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

Ohshima requires that the locations and shapes of still real objects placed on Ohshima's table be input in advance. *See* Ohshima, col. 6, lines 23-29. For example:

> "a predetermined memory for pre-storing position information and shape information of the real object …
>
> a reading unit that reads out the position information and shape information of the real object from said pre-determined memory unit as needed." (Ohshima, col. 13, lines 5-10)

Accordingly, Ohshima merely requires inputting, in advance, the location and shapes of still real objects. Inputting, in advance, the location and shapes of still real objects does not show or suggest applicant's invention of claim 1 that includes a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 1, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 4

As shown above, claim 1 is patentable. Claim 4 includes patentable features similar to patentable features of claim 1. Accordingly, applicant respectfully submits that claim 4 is patentable.

Ohshima does not show or suggest applicant's invention of claim 4 of a detector that determines landscape characteristics of said physical playfield,

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wherein said video game logic utilizes said landscape characteristics in providing said video game.

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 4, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Claim 5

As shown above, claim 1 is patentable. Claim 5 includes patentable features similar to patentable features of claim 1. Accordingly, applicant respectfully submits that claim 5 is patentable.

Ohshima does not show or suggest applicant's invention of claim 5 of a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

In light of the foregoing, applicant respectfully requests that the Examiner's rejection of claim 5, and any claims dependent therefrom, under 35 U.S.C. § 103(a) be withdrawn.

Additional Rejections in view of Official Notice

Applicant contends that the Examiner's rejections may include Official Notice and applicant traverses all of the Examiner's rejections in view of Official Notice. For all rejections under 35 U.S.C. § 103(a), the Examiner has the burden of showing each and every element of applicant's invention in the prior art combination. MPEP § 2144.03 requires that the facts of which notice are being taken be capable of instant and unquestionable demonstration as being well known in the art. *See In re Ahlert*, 424 F.2d

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1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant believes that the "facts" of which the Examiner may have provided a rejection without showing each and every element of a claim in a reference do not meet that standard, and invoke his right under MPEP § 2144.03 to have the Examiner provide documentary proof that those facts are actually well known.

Additionally, as shown above, the independent claims of the present application are patentable. Accordingly, applicant respectfully submits that dependent claims are patentable for depending from a patentable independent claim.

The Dependent Claims

The Examiner rejected claims 6-11 and 28-30 under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Fukushima. As shown above, the independent claims are patentable. Accordingly, applicant respectfully submits that dependent claims are patentable for depending from a patentable independent claim.

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Conclusion

Applicant respectfully submits that this application, including the pending claims, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/
Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
731 South Negley, Apt. 2
Pittsburgh, PA 15232
Mobile: (914) 837-7741

Meta Exhibit 1016
Meta v. Mullen - Page 00286

Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	635	635

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	465	465
		Total in USD ($)		**1100**

Electronic Acknowledgement Receipt

EFS ID:	12368308
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	Location-based games and augmented reality systems
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	22-MAR-2012
Filing Date:	16-NOV-2005
Time Stamp:	14:03:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1100
RAM confirmation Number	343
Deposit Account	503855
Authorized User	MULLEN,JEFFREY D.

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Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees) Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	JDM-008--RCE.pdf	697337 bc7f7935fb6a5385c17b9f5c59acfc263fec227a	no	3
Warnings:					
Information:					
2		JDM-008-Reply.pdf	23549 90603cdde4c26beb968760c22da2d190b69e03c5	yes	13

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	7
Applicant Arguments/Remarks Made in an Amendment	8	13

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31598 35e5b0da12f05466397f55d3082c3ad8ed6a2d0e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	752484		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/281,812	11/16/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY ☒ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
			TOTAL			TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

AMENDMENT	03/22/2012	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 17	Minus	** 31	= 0	X $30 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	***5	= 0	X $125 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/ANGELONA JONES/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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NOTICE OF ALLOWANCE AND FEE(S) DUE

32733 7590 05/22/2013

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

EXAMINER
ELISCA, PIERRE E

ART UNIT	PAPER NUMBER
3718	

DATE MAILED: 05/22/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

TITLE OF INVENTION: LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	08/22/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

32733 7590 05/22/2013
JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

TITLE OF INVENTION: LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	08/22/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELISCA, PIERRE E	3718	463-001000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Meta Exhibit 1016
Meta v. Mullen - Page 00294

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Meta Exhibit 1016

Meta v. Mullen - Page 00295

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 05/22/2013

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

EXAMINER	
ELISCA, PIERRE E	

ART UNIT	PAPER NUMBER
3718	

DATE MAILED: 05/22/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 520 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 520 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 11/281,812	Applicant(s) MULLEN, JEFFREY D.	
	Examiner PIERRE E. ELISCA	Art Unit 3718	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *3/22/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1,4-11 and 24-31*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

   Interim copies:

   a) ☐ All b) ☐ Some c) ☐ None of the: Interim copies of the priority documents have been received.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/PIERRE E. ELISCA/
Primary Examiner, Art Unit 3718

REASONS FOR ALLOWANCE

1. This is an Examiner's statement of reason for allowance.

2. Regarding the claimed terms, the Examiner notes that a "general term must be understood in the context in which the inventor presents it." *In re Glaug* 283 F.3d 1335, 1340, 62 USPQ2d 1151, 1154 (Fed. Cir. 2002). Therefore the Examiner must interpret the claimed terms as found on pages 1-47 of the specification. Clearly almost all the general terms in the claims may have multiple meanings. So where a claim term "is susceptible to various meanings, . . . the inventor's lexicography must prevail . . . ." *Id.* Using these definitions for the claims, the claimed invention was not reasonably found in the prior art.

3. The closest prior art Ohshima et al (U.S. Pat. No. 6,951,515) which discloses an augmented reality game system. However, Ohshima singularly or in combination fail to disclose the recited feature:

4. As per claims 1, 4, and 5 "a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game, and a locating device that determines the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game".

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PIERRE E. ELISCA whose telephone number is (571)272-6706. The examiner can normally be reached on 6:30 to 5:00. Hoteler.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571 272 4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PIERRE E. ELISCA/
Primary Examiner, Art Unit 3718

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner PIERRE E. ELISCA	Art Unit 3718	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,951,515	10-2005	Ohshima et al.	463/31
*	B	US-6,346,929	02-2002	Fukushima et al.	345/8
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Refine Search

Search Results

Terms	Documents
(detect$3 near3 landscape near3 characteristic$1)	5

Database:
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US Patents OCR Backfile
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletin Database
Foreign Patent Retrieval

Search Type: Prior Art Interference

Search: L1

Refine Search

Order By: Date Hits

Recall Text Clear Interrupt

Search History

DATE: Thursday, May 16, 2013 Purge Queries Printable Copy Create Case

Order By	Set Name Side by Side	Query	Hit Count	Set Name Result Set	Set Name Grid	Set Name Classification	
Prior Art Searches							
	DB=PGPB,USPT; PLUR=YES; OP=OR						
Date	L1	(detect$3 near3 landscape near3 characteristic$1)	5	L1	L1	L1	Review all

END OF SEARCH HISTORY

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 9936

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/281,812	11/16/2005	463	3718	JDM/008

APPLICANTS
Jeffrey D. Mullen, New York, NY;

**** CONTINUING DATA ***************************
This appln claims benefit of 60/628,475 11/16/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
12/20/2005

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ARTHUR O. HALL/ Examiner's Signature	☐ Met after Allowance P.E Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	14	3	3

ADDRESS

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238
UNITED STATES

TITLE

Location-based games and augmented reality systems

FILING FEE RECEIVED		
985	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	PIERRE E ELISCA	3718

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	**SUBCLASS**	**CLAIMED**					**NON-CLAIMED**				
463	1	A	6	3	F	9 / 24 (2006.01.01)					
CROSS REFERENCE(S)											
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**										
463	31										

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	17	
/PIERRE E ELISCA/ Primary Examiner.Art Unit 3718	5/17/13	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	14

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	PIERRE E ELISCA	3718

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	17	
/PIERRE E ELISCA/ Primary Examiner.Art Unit 3718	5/17/13	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	14

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	PIERRE E ELISCA	3718

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		17												
	2		18												
	3		19												
8	4		20												
13	5		21												
2	6		22												
3	7		23												
4	8	9	24												
5	9	10	25												
6	10	11	26												
7	11	12	27												
	12	14	28												
	13	15	29												
	14	16	30												
	15	17	31												
	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 17	
/PIERRE E ELISCA/ Primary Examiner.Art Unit 3718 (Primary Examiner)	5/17/13 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 14

Meta Exhibit 1016
Meta v. Mullen - Page 00306

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	Arthur O. Hall	3718

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008	02/04/2009	09/21/2009	09/18/2011	05/17/2013				
1	1	✓	✓	✓	✓	=				
	2	✓	✓	✓	-					
	3	✓	✓	✓	-					
8	4		✓	✓	✓	=				
13	5		✓	✓	✓	=				
2	6		✓	✓	✓	=				
3	7		✓	✓	✓	=				
4	8		✓	✓	✓	=				
5	9		✓	✓	✓	=				
6	10		✓	✓	✓	=				
7	11		✓	✓	✓	=				
	12		✓	✓	-					
	13		✓	✓	-					
	14		✓	✓	-					
	15		✓	✓	-					
	16		✓	✓	-					
	17		✓	✓	-					
	18		✓	✓	-					
	19		✓	✓	-					
	20		✓	✓	-					
	21		✓	✓	-					
	22		✓	✓	-					
	23		✓	✓	-					
9	24		✓	✓	✓	=				
10	25		✓	✓	✓	=				
11	26		✓	✓	✓	=				
12	27		✓	✓	✓	=				
14	28		✓	✓	✓	=				
15	29		✓	✓	✓	=				
16	30		✓	✓	✓	=				
17	31		✓	✓	✓	=				

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Arthur O. Hall	3718

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
463	1, 49	1/5/2008	JPW
273	237	1/5/2008	JPW
463	1-5, 7-9, 30-34, 36-39, 40-43, 49-57	2/9/2011	/A. O. H./
273	108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367	2/9/2011	/A. O. H./
345	1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671	2/9/2011	/A. O. H./
717	168-178	2/9/2011	/A. O. H./
348	37, 119, 141-142, 240.99, E13.022-E13.027, E13.036	2/9/2011	/A. O. H./
434	115, 117, 118, 211	2/9/2011	/A. O. H./
715	706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807	2/9/2011	/A. O. H./
A63F013	00, 06, 10	2/9/2011	/A. O. H./
A63F09	24	2/9/2011	/A. O. H./
G06F017	00	2/9/2011	/A. O. H./

SEARCH NOTES		
Search Notes	Date	Examiner
East text search - heads up/mounted display with landscape or field	1/5/2008	JPW
Inventor Name Search	1/5/2008	JPW
Updated East search - see attached	2/4/2009	JPW
Forward search of Noro reference	2/4/2009	JPW
Consulted with Primary Corbett Coburn about applicants arguments	2/4/2009	JPW
Updated east search - see attached	9/21/2009	JPW

	/ARTHUR O HALL/ Primary Examiner.Art Unit 3718

SEARCH NOTES

Search Notes	Date	Examiner
Searched part of Class/Subclass 463/1-5, 7-9, 30-34, 36-39, 40-43, 49-57; 273/108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367; 345/1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671; 717/168-178; 348/37, 119, 141-142, 240.99, E13.022-E13.027, E13.036; 434/115, 117, 118, 211; 715/706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807; A63F013/00, 06, 10; A63F09/24; G06F017/00	2/9/2011	/A. O. H./
Requested, received and reviewed references from PLUS search	2/9/2011	/A. O. H./
Performed Inventor and Assignee Search in EAST and PALM	2/9/2011	/A. O. H./
Performed Priority Search in eDAN, PALM and Oath/Declaration and Specification	2/9/2011	/A. O. H./
Evaluated US Patent Application Publication 2005/0049022 A1 for double patenting	2/9/2011	/A. O. H./
Updated Earlier Search (see attached "search history")	9/18/2011	/A. O. H./
West Search	5/17/2013	P.E

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
463	1	5/17/2013	P.E
463	31	5/17/2013	P.E

	/ARTHUR O HALL/ Primary Examiner.Art Unit 3718

Meta Exhibit 1016

Meta v. Mullen - Page 00309

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 07/18/2013

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

EXAMINER	
ELISCA, PIERRE E	

ART UNIT	PAPER NUMBER
3718	

MAIL DATE	DELIVERY MODE
07/18/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Application No. : 11281812
Applicant : Mullen
Filing Date : 11/16/2005
Date Mailed : 07/18/2013

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given 2 month(s) from the mail date of this Notice, or the time remaining from the Notice of Allowance and Fee(s) Due, whichever is longer, within which to respond.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED. **This period for reply is NOT extendable under 37 CFR 1.136(a).**

See attachment(s).

A copy of this notice MUST be returned with the reply. Please address response to "Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450".

/Daxa Patel/
Publication Branch
Office of Data Management
(571) 272-4200

Application No. 11281812

IDENTIFICATION OF SPECIFICATION/DRAWING INCONSISTENCIES

☐ On Page of the specification there is a brief description of FIG. , but the drawings filed do not include a drawing with that designation. Applicant must respond either by supplying the omitted drawing or by amending the specification to remove all references to that drawing.

☐ The drawings filed include FIG. , but the specification's brief description of the drawings does not describe a drawing with that designation. Applicant must respond either by amending the specification to add a brief description of that drawing or by correcting the drawings to remove the drawing in question.

☐ Drawings are present in the application and are referred to in the detailed description of the invention, but the specification does not contain a brief description of the drawings as required by 37 CFR 1.74 and 37 CFR 1.77(b)(8).

☒ Page 44 of the specification refers to FIG. 1200, but no drawing with that designation is described in the brief description of the drawings and no drawing with that designation is present in the application. Applicant must respond either by amending the specification to remove all references to that drawing, or by supplying that drawing and amending the specification to add a brief description of it.

☐ OTHER:

☐ COMMENTS:

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (10-08)
Approved for use through 11/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11281812	Filing Date	2005-11-16	Docket Number (if applicable)	JDM/008	Art Unit	3718
First Named Inventor	Jeffrey D. Mullen			Examiner Name	Pierre E Elisca		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 503855

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☐ Patent Practitioner Signature

☒ Applicant Signature

PTO/SB/30EFS (10-08)
Approved for use through 11/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Applicant Signature			
Applicant 1		Remove	
Signature	/Jeffrey D. Mullen/	Date (YYYY-MM-DD)	2013-08-21
Name	Jeffrey D. Mullen		
Click ADD for additional Applicant Signature		Add	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

JDM/008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Arthur Hall

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15238
August 21, 2013

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. §§ 1.56 and 1.97, applicant wishes to call the attention of the Examiner to the following documents:

Patent Documents

5,724,660	Kauser	03-1998
5,741,182	Lipps et al.	04-1998
5,802,274	Dorak et al.	09-1998
5,902,343	Hale et al.	05-1999

5,913,727	Ahdoot	06-1999
6,011,653	Karasawa	01-2002
6,015,344	Kelly et al.	01-2000
6,080,063	Khosla	06-2000
6,106,397	Phillips	08-2000
6,106,399	Baker et al.	08-2000
6,287,200	Sharma	09-2001
6,337,668	Berstis	01-2002
6,378,390	Saito	04-2002
6,520,853	Suzuki	02-2003
6,522,312	Ohshima et al.	02-2003
6,625,299	Meisner et al.	09-2003
6,633,267	Numa	10-2003
6,633,304	Anabuki et al.	10-2003
6,663,105	Sullivan	12-2003
6,690,947	Tom	02-2004
6,735,435	Newell et al.	05-2004
6,853,935	Satoh	02-2005
6,951,515	Ohshima et al.	10-2005
6,961,055	Doak et al.	11-2005
6,972,734	Ohshima et al.	12-2005
7,038,699	Sato et al.	05-2006
7,050,078	Dempski	05-2006
7,056,216	Ohshima	06-2006
7,084,887	Sato	08-2006
7,303,474	Anserson et al.	12-2007
2001/0006908	Fujioka et al.	07-2001
2001-0040591	Abbott	11-2001
2001/0054019	ae Fabrega	12-2001
2002/0131404	Mehta et al.	09-2002
2002/00592933	Leonhard et al.	05-2002
2002/0061741	Leung et al.	05-2002

2002/0082068	Singhal	06-2002
2002/0082082	Stamper et al.	06-2002
2002/0090985	Tochner et al.	07-2002
2003/0144047	Sprogis	07-2003
2003/0210228	Ebersole et al.	11-2003
2003/0224855	Cunningham	12-2003
2003/0062675	Noro et al.	04-2003
2004/0046655	Benes	03-2004
2004/0058732	Piccionelli	03-2004
2004/0128250	Fox et al.	07-2004
2004/0248653	Barros	12-2004
2005/0009608	Robarts et al.	01-2005
2006/0154710	Serafat	07-2006

Foreign Patent Documents

WO02073287	09-1992	Yonezawa et al.

Non-Patent Literature

Wikipedia, Super Dodge Ball - Wikipedia, the free encyclopedia. Accessed December 14, 2010. http://en.wikipedia.org/wiki/Super_Dodge_Bal

GameFAQs: Super Dodge Ball (NES) FAQ/Walkthrough by TOKADasrik. Accessed December 14, 2010. http://www.gamefaqs.com/nes/587662-super-dodge-ball/faqs/34823

Youtube.com Screenshot of Super Dodge Ball Walkthrough with Commentary (Part 1 of 2). Accessed: December 14, 2010. http://www.youtube.com/watch?v=E1IUWmr65JA

"First Person Indoor/outdoor Augmented Reality Application: ARQuake," written by Thomas et al, and published February 2002

Halo: Combat Evolved, Wikipedia description, http://en.wikipedia.org/wiki/Halo_%28game%29

Quake Game Manual, Release circa 1996

"Antti Kotanen, Marko Hannikainen, Helena Leppakoski, Hamalainen "Experiments on Local Positioning with Bluetooth" Proceedings of the International Conference on Information Technology: Computers and Communications (ITCC '03) April, 2003

Mortal Kombat instruction booklet for Super Nintendo, 1992, Licensed from Midway.

Mortal Kombat 4 (released October 15, 1997). Published by Midway Games <http://en.wikipedia.org/w/index.php?title=Mortal_Kombat_4&printable=yes>

For the above-identified documents that are United States patents, copies of these documents are not being submitted herewith.

It is respectfully requested that these documents be (1) fully considered by the Patent and Trademark Office during examination of this application; and (2) printed on any patent which may issue on this application. Applicant requests that a copy of Form PTO/SB/08A, as considered and initialed by the Examiner, be returned with the next communication.

Applicant hereby submits that not all of the patent documents and non-patent literature submitted herein may be, in fact, prior art to the present application. Applicant reserves

Meta Exhibit 1016
Meta v. Mullen - Page 00319

the right to dispute whether references, or subject matter within references, are prior art to the present application (e.g., continuation-in-part subject matter filed after the filing date of the present application).

This Statement is being submitted with a Request for Continued Examination. In accordance with 37 C.F.R. § 1.97(a)(4), no fee is required. An early and favorable action is respectfully requested.

Respectfully submitted,

/Jeffrey D. Mullen/

Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
1310 Riverfront Drive
Pittsburgh, PA 15238
Mobile: (914)837-7741

Meta Exhibit 1016
Meta v. Mullen - Page 00320

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449A/PTO				***Complete if known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	11/281,812
				Filing Date	11/16/2005
				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	1	of	4	**Attorney Docket Number**	JDM/008

U.S. PATENT DOCUMENTS					
Examiner initials*	Cite No.[1]	Document Number Number – Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,724,660	03-1998	Kauser	
		5,741,182	04-1998	Lipps et al.	
		5,802,274	09-1998	Dorak et al.	
		5,902,343	05-1999	Hale et al.	
		5,913,727	06-1999	Ahdoot	
		6,011,653	01-2002	Karasawa	
		6,015,344	01-2000	Kelly et al.	
		6,080,063	06-2000	Khosla	
		6,106,397	08-2000	Phillips	
		6,106,399	08-2000	Baker et al.	
		6,287,200	09-2001	Sharma	
		6,337,668	01-2002	Berstis	
		6,378,390	04-2002	Saito	
		6,520,853	02-2003	Suzuki	
		6,522,312	02-2003	Ohshima et al.	
		6,625,299	09-2003	Meisner et al.	
		6,633,267	10-2003	Numa	
		6,633,304	10-2003	Anabuki et al.	
		6,663,105	12-2003	Sullivan	
		6,690,947	02-2004	Tom	
		6,735,435	05-2004	Newell et al.	
		6,853,935	02-2005	Satoh	
		6,951,515	10-2005	Ohshima et al.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Substitute for form 1449A/PTO				***Complete if known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	11/281,812
				Filing Date	11/16/2005
				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	2	of	4	**Attorney Docket Number**	JDM/008

		6,961,055	11-2005	Doak et al.	
		6,972,734	12-2005	Ohshima et al.	
		7,038,699	05-2006	Sato et al.	
		7,050,078	05-2006	Dempski	
		7,056,216	06-2006	Ohshima	
		7,084,887	08-2006	Sato	
		7,303,474	12-2007	Anserson et al.	
		2001/0006908	07-2001	Fujioka et al.	
		2001-0040591	11-2001	Abbott	
		2001/0054019	12-2001	ae Fabrega	
		2002/0131404	09-2002	Mehta et al.	
		2002/00592933	05-2002	Leonhard et al.	
		2002/0061741	05-2002	Leung et al.	
		2002/0082068	06-2002	Singhal	
		2002/0082082	06-2002	Stamper et al.	
		2002/0090985	07-2002	Tochner et al.	
		2003/0144047	07-2003	Sprogis	
		2003/0210228	11-2003	Ebersole et al.	
		2003/0224855	12-2003	Cunningham	
		2003/0062675	04-2003	Noro et al.	
		2004/0046655	03-2004	Benes	
		2004/0058732	03-2004	Piccionelli	
		2004/0128250	07-2004	Fox et al.	
		2004/0248653	12-2004	Barros	
		2005/0009608	01-2005	Robarts et al.	
		2006/0154710	07-2006	Serafat	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Substitute for form 1449A/PTO				***Complete if known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	11/281,812
				Filing Date	11/16/2005
				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	3	of	4	**Attorney Docket Number**	JDM/008

FOREIGN PATENT DOCUMENTS						
Examiner initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		WO02073287	09-1992	Yonezawa et al.		

NON PATENT LITERATURE DOCUMENTS			
Examiner initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		Wikipedia, Super Dodge Ball – Wikipedia, the free encyclopedia. Accessed December 14, 2010. http://en.wikipedia.org/wiki/Super_Dodge_Bal	
		GameFAQs: Super Dodge Ball (NES) FAQ/Walkthrough by TOKADasrik. Accessed December 14, 2010. http://www.gamefaqs.com/nes/587662-super-dodge-ball/faqs/34823	
		Youtube.com Screenshot of Super Dodge Ball Walkthrough with Commentary (Part 1 of 2). Accessed: December 14, 2010. http://www.youtube.com/watch?v=E1IUWmr65JA	
		"First Person Indoor/outdoor Augmented Reality Application: ARQuake," written by Thomas et al, and published February 2002	
		Halo: Combat Evolved, Wikipedia description, http://en.wikipedia.org/wiki/Halo_%28game%29	
		Quake Game Manual, Release circa 1996	
		"Antti Kotanen, Marko Hannikainen, Helena Leppakoski, Hamalainen "Experiments on Local Positioning with Bluetooth" Proceedings of the International Conference on Information Technology: Computers and Communications (ITCC '03) April, 2003	
		Mortal Kombat instruction booklet for Super Nintendo, 1992, Licensed from Midway.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449A/PTO				***Complete if known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	11/281,812
				Filing Date	11/16/2005
				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	4	of	4	**Attorney Docket Number**	JDM/008

NON PATENT LITERATURE DOCUMENTS			
Examiner initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		Mortal Kombat 4 (released October 15, 1997). Published by Midway Games <http://en.wikipedia.org/w/index.php?title=Mortal_Kombat_4&printable=yes>	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3714
Examiner	:	Arthur Hall

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15238
August 21, 2013

AMENDMENT

Sir:

A Request for Continued Examination is applicable hereto and is being submitted herewith. Applicant amends the application as follows:

Amendments to the Specification are reflected in the listing of claims which begins on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 8 of this paper.

Amendments to the Specification:

Applicant hereby replaces paragraph 83 starting on line 29 of page 44 of the specification with the following paragraph showing amendments:

--As illustrated in FIG. 12, ~~1200,~~ such envelopes may be utilized to determine how far a virtual character may see. For example, one character (e.g., information C1 1201) may only see in the direction that character is facing (e.g., information S1 1202). A second character may see in a particular direction around that character (e.g., information S2 1203). These envelopes may overlap (e.g., information S3 1204) such that if a user walks into S1, C1 can attack (or some other functionality may be utilized by the game). If a user walks into S2, C2 can attack (or some other functionality may be utilized by the game). If a user walks into S3, C1 and C2 can attack (or some other functionality may be utilized by the game).--

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An augmented reality game system comprising:

a head-mounted display that ~~that~~ overlays virtual indicia onto a physical playfield;

memory comprising video game logic that provides a video game;

a wearable processor that utilizes said video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said memory and said head-mounted display;

a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game; and

a locating device that determines the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game.

2-3. (cancelled)

4. (previously presented) A system comprising:

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a first video game system comprising:

a head-mounted display that overlays virtual indicia onto a physical playfield;

a wearable processor that utilizes video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

a locating device that determines the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a second video game system, wherein said first video game system communicates information with said second video game system.

5. (previously presented) A system comprising:

a head-mounted display that overlays virtual indicia onto a physical playfield;

a processor that utilizes video game logic to provide video game indicia to said head-mounted display based on said video game logic, wherein said processor is coupled to said head-mounted display;

a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game;

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a locating device that determines the physical location of said locating device on the physical playfield, wherein said video game logic utilizes the physical location of said locating device in providing said video game; and

a handheld controller for providing at least one control signal to said video game.

6. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

7. (previously presented) The augmented reality game system of claim 1, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

8. (previously presented) The augmented reality game system of claim 1, wherein said landscape characteristics are utilized to control a computer-controlled video game character.

9. (previously presented) The augmented reality game system of claim 1, further comprising a wireless transmitter and receiver.

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10. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield and said computer-controlled video game character is limited to visibility within a certain area.

11. (previously presented) The augmented reality game system of claim 1, wherein a computer-controlled video game character is overlayed by said head-mounted display on said physical playfield, said computer-controlled video game character is limited to visibility within a certain area, and said computer-controlled video game character provides a reaction to said physical location when said physical location corresponds to entering said certain area.

12-23. (cancelled)

24. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to a remote database.

25. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system.

26. (previously presented) The system of claim 4, wherein information regarding said physical location is provided to said second video game system based on a permission associated with said first video game system for said second video game system.

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27. (previously presented) The system of claim 4, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

28. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield and said virtual object is displayed at different transparencies depending on the perceived distance of said virtual object from said head-mounted display.

29. (previously presented) The system of claim 5, wherein a virtual object is overlayed by said head-mounted display on said physical playfield so long as the perceived distance of said virtual object from said head-mounted display is not within a certain perceived distance from said head-mounted display.

30. (previously presented) The system of claim 5, wherein said landscape characteristics are utilized to control computer-controlled video game character.

31. (previously presented) The system of claim 5, wherein said locating device comprises:

a positioning system; and

an inertial movement system.

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REMARKS/ARGUMENTS

Summary of Office Action

Claims 1-31 are allowed.

Summary of Applicant's Amendments

Applicant has amended the specification without prejudice and solely in order to expedite prosecution.

Applicant has amended claim 1 without prejudice and solely in order to expedite prosecution.

Applicant traverses the Examiner's rejections. Applicant reserves the right to claim any subject matter lost by any claim amendment or cancellation, or any subject matter included in the present application, in one or more continuation or divisional applications.

Response to Notice to File Corrected Application Papers

In the Notice to File Corrected Application Papers, it was noted that "Page 44 of the specification refers to FIG. 1200, but no drawing with that designation is described in the brief description of the drawings" (Notice mailed July 18, 2013, page 2). Applicant has amended the specification without prejudice solely in order to expedite prosecution. No new matter was added. Applicant submits the application is in a state of allowance.

Conclusion

Applicant respectfully submits that this application, including the pending claims, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

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The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/

Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
1310 Riverfront Drive
Pittsburgh, PA 15238
Mobile: (914) 837-7741

Meta Exhibit 1016
Meta v. Mullen - Page 00333

Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE - 2nd and Subsequent Request	2820	1	850	850
		Total in USD ($)		**850**

Electronic Acknowledgement Receipt

EFS ID:	16653073
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	21-AUG-2013
Filing Date:	16-NOV-2005
Time Stamp:	20:54:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$850
RAM confirmation Number	9699
Deposit Account	503855
Authorized User	MULLEN, JEFFREY D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	JDM-008--RCE.pdf	697789 9a9743df0d902636562d21c8142d6cb7b34824dc	no	3
Warnings:					
Information:					
2	Transmittal Letter	JDM-008--IDS.pdf	68684 f237af8afcf9c7a88fd50e2fc3e9662587c5cda7	no	5
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	JDM-008--IDS--PTOSB08A.pdf	292546 ed652abedf2b7ed14a8b8fbe23c115326179285b	no	4
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
4		JDM-008-Reply.pdf	192832 b73774f3acbdab53037284a56ac56d1dd53dafb3	yes	9

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	7
Applicant Arguments/Remarks Made in an Amendment	8	9

Warnings:					
Information:					
5	Non Patent Literature	References1.pdf	12223620 75594ad06b19157de315ffb0fed4490838469273	no	45
Warnings:					
Information:					
6	Non Patent Literature	References2.pdf	5585526 cf454c5bd1b95148562049c577159454ddbde42b	no	109

Warnings:					
Information:					
7	Non Patent Literature	References3.pdf	1288690 803500334907c5f5a2df3513002fd20d3fca7b4d	no	27
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	29940 9bd811b968ddb5f5d039a2b3eebf5093bbfd826a	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	20379627		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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NOTICE OF ALLOWANCE AND FEE(S) DUE

32733 7590 08/29/2013

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

EXAMINER
ELISCA, PIERRE E

ART UNIT	PAPER NUMBER
3718	

DATE MAILED: 08/29/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

TITLE OF INVENTION: LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	11/29/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

32733 7590 08/29/2013
JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

TITLE OF INVENTION: LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	11/29/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELISCA, PIERRE E	3718	463-001000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
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1 _____
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

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- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Meta Exhibit 1016
Meta v. Mullen - Page 00340

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Meta Exhibit 1016

Meta v. Mullen - Page 00341

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

32733 7590 08/29/2013

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

EXAMINER	
ELISCA, PIERRE E	

ART UNIT	PAPER NUMBER
3718	

DATE MAILED: 08/29/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 520 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 520 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 11/281,812	Applicant(s) MULLEN, JEFFREY D.	
	Examiner PIERRE E. ELISCA	Art Unit 3718	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *RCE filed on 8/21/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1,4-11 and 24-31*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

   Interim copies:

   a) ☐ All b) ☐ Some c) ☐ None of the: Interim copies of the priority documents have been received.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 8/21/2013
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/PIERRE E. ELISCA/
Primary Examiner, Art Unit 3718

Meta Exhibit 1016
Meta v. Mullen - Page 00344

1. The present application is being examined under the pre-AIA first to invent provisions.

REASONS FOR ALLOWANCE

2. This is an Examiner's statement of reason for allowance.

3. Regarding the claimed terms, the Examiner notes that a "general term must be understood in the context in which the inventor presents it." *In re Glaug* 283 F.3d 1335, 1340, 62 USPQ2d 1151, 1154 (Fed. Cir. 2002). Therefore the Examiner must interpret the claimed terms as found on pages 1-47 of the specification. Clearly almost all the general terms in the claims may have multiple meanings. So where a claim term "is susceptible to various meanings, . . . the inventor's lexicography must prevail . . . ." *Id.* Using these definitions for the claims, the claimed invention was not reasonably found in the prior art.

4. The closest prior art Ohshima et al (U.S. Pat. No. 6,951,515) which discloses an augmented reality game system. However, Ohshima singularly or in combination fail to disclose the recited feature:

5. As per claims 1, 4, and 5 "a detector that determines landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game, and a locating device that determines the physical location of said locating device on the physical playfield, wherein said video

game logic utilizes the physical location of said locating device in providing said video game".

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PIERRE E. ELISCA whose telephone number is (571)272-6706. The examiner can normally be reached on 6:30 to 5:00. Hoteler.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Hall can be reached on 571 270 1814. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PIERRE E. ELISCA/
Primary Examiner, Art Unit 3718

Notice of References Cited	Application/Control No. 11/281,812	Applicant(s)/Patent Under Reexamination MULLEN, JEFFREY D.	
	Examiner PIERRE E. ELISCA	Art Unit 3718	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,951,515	10-2005	Ohshima et al.	463/31
*	B	US-6,346,929	02-2002	Fukushima et al.	345/8
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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BIB DATA SHEET

CONFIRMATION NO. 9936

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/281,812	11/16/2005	463	3718	JDM/008

APPLICANTS
Jeffrey D. Mullen, New York, NY;

**** CONTINUING DATA ***************************
This appln claims benefit of 60/628,475 11/16/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
12/20/2005

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /Pierre Eddy Elisca/ Examiner's Signature	☐ Met after Allowance P.E Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	14	3	3

ADDRESS

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238
UNITED STATES

TITLE

LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS

FILING FEE RECEIVED		
985	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

PTO/SB/08A (10-01)
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 4

Complete if known	
Application Number	11/281,812
Filing Date	11/16/2005
First Named Inventor	Jeffrey D. Mullen
Art Unit	3714
Examiner Name	Arthur Hall
Attorney Docket Number	JDM/008

U.S. PATENT DOCUMENTS

Examiner initials*	Cite No.[1]	Document Number Number – Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/PE/		5,724,660	03-1998	Kauser	
		5,741,182	04-1998	Lipps et al.	
		5,802,274	09-1998	Dorak et al.	
		5,902,343	05-1999	Hale et al.	
		5,913,727	06-1999	Ahdoot	
		6,011,653	01-2002	Karasawa	
		6,015,344	01-2000	Kelly et al.	
		6,080,063	06-2000	Khosla	
		6,106,397	08-2000	Phillips	
		6,106,399	08-2000	Baker et al.	
		6,287,200	09-2001	Sharma	
		6,337,668	01-2002	Berstis	
		6,378,390	04-2002	Saito	
		6,520,853	02-2003	Suzuki	
		6,522,312	02-2003	Ohshima et al.	
		6,625,299	09-2003	Meisner et al.	
		6,633,267	10-2003	Numa	
		6,633,304	10-2003	Anabuki et al.	
		6,663,105	12-2003	Sullivan	
		6,690,947	02-2004	Tom	
		6,735,435	05-2004	Newell et al.	
		6,853,935	02-2005	Satoh	
		6,951,515	10-2005	Ohshima et al.	

Examiner Signature	/Pierre Elisca/	Date Considered	08/24/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
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Substitute for form 1449A/PTO				***Complete if known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	11/281,812
				Filing Date	11/16/2005
				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	2	of	4	**Attorney Docket Number**	JDM/008

/PE/		6,961,055	11-2005	Doak et al.	
		6,972,734	12-2005	Ohshima et al.	
		7,038,699	05-2006	Sato et al.	
		7,050,078	05-2006	Dempski	
		7,056,216	06-2006	Ohshima	
		7,084,887	08-2006	Sato	
		7,303,474	12-2007	Anserson et al.	
		2001/0006908	07-2001	Fujioka et al.	
		2001-0040591	11-2001	Abbott	
		2001/0054019	12-2001	ae Fabrega	
		2002/0131404	09-2002	Mehta et al.	
		2002/00592933	05-2002	Leonhard et al.	
		2002/0061741	05-2002	Leung et al.	
		2002/0082068	06-2002	Singhal	
		2002/0082082	06-2002	Stamper et al.	
		2002/0090985	07-2002	Tochner et al.	
		2003/0144047	07-2003	Sprogis	
		2003/0210228	11-2003	Ebersole et al.	
		2003/0224855	12-2003	Cunningham	
		2003/0062675	04-2003	Noro et al.	
		2004/0046655	03-2004	Benes	
		2004/0058732	03-2004	Piccionelli	
		2004/0128250	07-2004	Fox et al.	
		2004/0248653	12-2004	Barros	
		2005/0009608	01-2005	Robarts et al.	
		2006/0154710	07-2006	Serafat	

Examiner Signature	/Pierre Elisca/	Date Considered	08/24/2013

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				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	3	of	4	**Attorney Docket Number**	JDM/008

FOREIGN PATENT DOCUMENTS						
Examiner initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/PE/		WO02073287	09-1992	Yonezawa et al.		

NON PATENT LITERATURE DOCUMENTS			
Examiner initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
/PE/		Wikipedia, Super Dodge Ball – Wikipedia, the free encyclopedia. Accessed December 14, 2010. http://en.wikipedia.org/wiki/Super_Dodge_Bal	
/PE/		GameFAQs: Super Dodge Ball (NES) FAQ/Walkthrough by TOKADasrik. Accessed December 14, 2010. http://www.gamefaqs.com/nes/587662-super-dodge-ball/faqs/34823	
/PE/		Youtube.com Screenshot of Super Dodge Ball Walkthrough with Commentary (Part 1 of 2). Accessed: December 14, 2010. http://www.youtube.com/watch?v=E1IUWmr65JA	
/PE/		"First Person Indoor/outdoor Augmented Reality Application: ARQuake," written by Thomas et al, and published February 2002	
		Halo: Combat Evolved, Wikipedia description, http://en.wikipedia.org/wiki/Halo_%28game%29	
/PE/		Quake Game Manual, Release circa 1996	
/PE/		"Antti Kotanen, Marko Hannikainen, Helena Leppakoski, Hamalainen "Experiments on Local Positioning with Bluetooth" Proceedings of the International Conference on Information Technology: Computers and Communications (ITCC '03) April, 2003	
/PE/		Mortal Kombat instruction booklet for Super Nintendo, 1992, Licensed from Midway.	

Examiner Signature	/Pierre Elisca/	Date Considered	08/24/2013

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(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	4	of	4	**Attorney Docket Number**	JDM/008

NON PATENT LITERATURE DOCUMENTS			
Examiner initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
/PE/		Mortal Kombat 4 (released October 15, 1997). Published by Midway Games <http://en.wikipedia.org/w/index.php?title=Mortal_Kombat_4&printable=yes>	

Examiner Signature	/Pierre Elisca/	Date Considered	08/24/2013

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	PIERRE E ELISCA	3718

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2008	02/04/2009	09/21/2009	09/18/2011	05/17/2013	08/24/2013			
1	1	✓	✓	✓	✓	=	=			
	2	✓	✓	✓	-					
	3	✓	✓	✓	-					
8	4		✓	✓	✓	=	=			
13	5		✓	✓	✓	=	=			
2	6		✓	✓	✓	=	=			
3	7		✓	✓	✓	=	=			
4	8		✓	✓	✓	=	=			
5	9		✓	✓	✓	=	=			
6	10		✓	✓	✓	=	=			
7	11		✓	✓	✓	=	=			
	12		✓	✓	-					
	13		✓	✓	-					
	14		✓	✓	-					
	15		✓	✓	-					
	16		✓	✓	-					
	17		✓	✓	-					
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	20		✓	✓	-					
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9	24		✓	✓	✓	=	=			
10	25		✓	✓	✓	=	=			
11	26		✓	✓	✓	=	=			
12	27		✓	✓	✓	=	=			
14	28		✓	✓	✓	=	=			
15	29		✓	✓	✓	=	=			
16	30		✓	✓	✓	=	=			
17	31		✓	✓	✓	=	=			

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	PIERRE E ELISCA	3718

CPC

Symbol			Type	Version
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CPC Combination Sets

Symbol			Type	Set	Ranking	Version
	/					
	/					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 17	
/PIERRE E ELISCA/ Primary Examiner.Art Unit 3718 (Primary Examiner)	8/24/2013 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 14

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	PIERRE E ELISCA	3718

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
463	1	A	6	3	F	9 / 24 (2006.01.01)						

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
463	31				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/PIERRE E ELISCA/ Primary Examiner.Art Unit 3718	8/24/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	14

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	**Art Unit**
	PIERRE E ELISCA	3718

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		17												
	2		18												
	3		19												
8	4		20												
13	5		21												
2	6		22												
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4	8	9	24												
5	9	10	25												
6	10	11	26												
7	11	12	27												
	12	14	28												
	13	15	29												
	14	16	30												
	15	17	31												
	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 17	
/PIERRE E ELISCA/ Primary Examiner.Art Unit 3718 (Primary Examiner)	8/24/2013 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 14

Meta Exhibit 1016
Meta v. Mullen - Page 00356

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11281812	MULLEN, JEFFREY D.
	Examiner	Art Unit
	Arthur O. Hall	3718

CPC- SEARCHED

Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner
46327346327 33457173484 34715A63F01 3A63F09G06 F017	1, 492371-5, 7-9, 30-34, 36-39, 40-43, 49-57108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-3671.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671168-17837, 119, 141-142, 240.99, E13.022-E13.027, E13.036115, 117, 118, 211706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 80700, 06, 102400	1/5/20081/5/20082/9/20112/9/20112/9/20112/9/20112/9/20112/9/20112/9/20112/9/20112/9/2011	JPWJPW/A. O. H.//A. O. H.//A. O. H.//A. O. H.//A. O. H.//A. O. H.//A. O. H.//A. O. H./

SEARCH NOTES

Search Notes	Date	Examiner
East text search - heads up/mounted display with landscape or fieldInventor Name SearchUpdated East search - see attachedForward search of Noro referenceConsulted with Primary Corbett Coburn about applicants argumentsUpdated east search - see attachedSearched part of Class/Subclass 463/1-5, 7-9, 30-34, 36-39, 40-43, 49-57; 273/108.1, 127R, 148R, 148B, 309, 317.1, 340, 348, 361-367; 345/1.1-3.4, 156, 157, 160, 419, 473-475, 618-619, 629, 660-671; 717/168-178; 348/37, 119, 141-142, 240.99, E13.022-E13.027, E13.036; 434/115, 117, 118, 211; 715/706, 738, 757-759, 762-764, 766, 781-783, 788, 794-795, 798, 801-802, 807; A63F013/00, 06, 10; A63F09/24; G06F017/00Requested, received and reviewed references from PLUS searchPerformed Inventor and Assignee Search in EAST and PALMPerformed Priority Search in eDAN, PALM and Oath/Declaration and SpecificationEvaluated US Patent Application Publication 2005/0049022 A1 for double patentingUpdated Earlier Search (see attached "search history")West Search	1/5/20081/5/20082/4/20092/4/20092/4/20099/21/20092/9/20112/9/20112/9/20112/9/20112/9/20112/9/20112/9/20119/18/20115/17/2013	JPWJPWJPWJPWJPWJPW/A. O. H.//A. O. H.//A. O. H.//A. O. H.//A. O. H./P.E

Meta Exhibit 1016
Meta v. Mullen - Page 00357

INTERFERENCE SEARCH			
US Class/ CPC Symbol	**US Subclass / CPC Group**	**Date**	**Examiner**
463	1	5/17/2013	P.E
463	31	5/17/2013	P.E

Meta Exhibit 1016
Meta v. Mullen - Page 00358

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11281812	11/16/2005	Jeffrey D. Mullen	JDM/008	9936

TITLE OF INVENTION:

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$890	$300	$0	$1190	11/29/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☑ Issue Fee

☑ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-3855 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Jeffrey D. Mullen/ Date 10/06/2013

Typed or printed name Jeffrey D. Mullen Registration No. 52,056

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Meta Exhibit 1016
Meta v. Mullen - Page 00359

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

JDM/008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Jeffrey D. Mullen
Application No.	:	11/281,812
Confirmation No.	:	9936
Filed	:	November 16, 2005
For	:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
Group Art Unit	:	3718
Examiner	:	PIERRE E ELISCA

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pittsburgh, PA 15238
October 6, 2013

COMMENTS TO EXAMINER'S REASONS FOR ALLOWANCE

Sir:

This is in response to the Notice of Allowance mailed August 29, 2013. An issue fee payment is being submitted herewith. In response to the Notice of Allowance:

Remarks/Arguments begin on page 2 of this paper.

REMARKS

A Notice of Allowance was mailed August 29, 2013. Applicant submits herewith an issue fee payment.

The Examiner stated in the reasons for allowance that:

> "the Examiner notes that a 'general term must be understood in the context in which the inventor presents it.' *In re Glaug* 283 F.3d 1335, 1340, 62 USPQ2d 1151, 1154 (Fed. Cir. 2002). Therefore the Examiner must interpret the claimed terms as found on pages 1-47 of the specification. Clearly almost all the general terms in the claims may have multiple meanings. So where a claim term 'is susceptible to various meanings,… the inventor's lexicography must prevail …" *Id.* Using these definitions for the claims, the claimed invention was not reasonably found in the prior art.
> …
> The closest prior art Ohshima et al (U.S. Pat. No. 6,951,515) which discloses an augmented reality game system. However, Ohshima singularly or in combination fail to disclose the recited feature:
> …
> As per claims 1, 4, and 5 "a detector that determines the landscape characteristics of said physical playfield, wherein said video game logic utilizes said landscape characteristics in providing said video game, and a locating device that determines the physical location of said locating device on the physical playfield, wherein said game logic utilizes the physical location of said locating device in providing said video game"
> (Notice of Allowance, pages 2-3).

The Examiner's reasons for allowance contain generalizations and characterizations. Among other things, the Examiner characterized language and grouped both claims 1, 4 and 5 together when providing the reasons for

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allowance. In light of the foregoing, the Examiner's reasons for allowance are incorrect.

Each element of each claim must be read its broadest possible scope such as its plain and ordinary meaning. The more meanings a term includes, the broader the scope may be. No limitations can be inferred into any claim element.

Applicant respectfully submits that claim 1 is patentable for the features included in claim 1. Claim 4 is patentable for the features included in claim 4. Claim 5 is patentable for the features includes in claim 5. Claim 1 does not include any feature not explicitly included in claim 1. Claim 4 does not include any feature not explicitly included in claim 4. Claim 5 does not include any feature not explicitly included in claim 5.

The Director is hereby authorized to charge any fees required in conjunction with this filing, or credit any overpayment of the same, to Deposit Account No. 50-3855, Order No. JDM/008.

Respectfully Submitted,

/Jeffrey D. Mullen/

Jeffrey D. Mullen
Applicant (Reg. No. 52,056)
Customer No. 32733
1310 Riverfront Drive
Pittsburgh, PA 15238
Mobile: (914) 837-7741

Meta Exhibit 1016
Meta v. Mullen - Page 00363

Electronic Patent Application Fee Transmittal

Application Number:	11281812
Filing Date:	16-Nov-2005
Title of Invention:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Filer:	Jeffrey David Mullen
Attorney Docket Number:	JDM/008

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	890	890
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1190**

Electronic Acknowledgement Receipt

EFS ID:	17049653
Application Number:	11281812
International Application Number:	
Confirmation Number:	9936
Title of Invention:	LOCATION-BASED GAMES AND AUGMENTED REALITY SYSTEMS
First Named Inventor/Applicant Name:	Jeffrey D. Mullen
Customer Number:	32733
Filer:	Jeffrey David Mullen
Filer Authorized By:	
Attorney Docket Number:	JDM/008
Receipt Date:	06-OCT-2013
Filing Date:	16-NOV-2005
Time Stamp:	15:20:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1190
RAM confirmation Number	7842
Deposit Account	503855
Authorized User	MULLEN, JEFFREY D.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	JDM-008--ptol85b.pdf	72062 2e333d53e071540c21fd6beb08c55af2ec555e68	no	2
Warnings:					
Information:					
2	Transmittal Letter	JDM-008--CommentsToExaminersReasonsForAllowance.pdf	163508 0c55b6b70c8659f9a3892181ba5ba414ddac19a5	no	3
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31835 7a2532600e90fe6c3e50d5fa55f32d4c6922fc80	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	267405		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Substitute for form 1449A/PTO				***Complete if known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	11/281,812
				Filing Date	11/16/2005
				First Named Inventor	Jeffrey D. Mullen
				Art Unit	3714
(use as many sheets as necessary)				**Examiner Name**	Arthur Hall
Sheet	3	of	4	**Attorney Docket Number**	JDM/008

Change(s) applied to document, /T.R./ 10/24/2013

FOREIGN PATENT DOCUMENTS

Examiner initials*	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/PE/		WO02073287	09-~~1992~~ 2002	Yonezawa et al.		

NON PATENT LITERATURE DOCUMENTS

Examiner initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
/PE/		Wikipedia, Super Dodge Ball – Wikipedia, the free encyclopedia. Accessed December 14, 2010. http://en.wikipedia.org/wiki/Super_Dodge_Bal	
/PE/		GameFAQs: Super Dodge Ball (NES) FAQ/Walkthrough by TOKADasrik. Accessed December 14, 2010. http://www.gamefaqs.com/nes/587662-super-dodge-ball/faqs/34823	
/PE/		Youtube.com Screenshot of Super Dodge Ball Walkthrough with Commentary (Part 1 of 2). Accessed: December 14, 2010. http://www.youtube.com/watch?v=E1IUWmr65JA	
/PE/		"First Person Indoor/outdoor Augmented Reality Application: ARQuake," written by Thomas et al, and published February 2002	
		Halo: Combat Evolved, Wikipedia description, http://en.wikipedia.org/wiki/Halo_%28game%29	
/PE/		Quake Game Manual, Release circa 1996	
/PE/		"Antti Kotanen, Marko Hannikainen, Helena Leppakoski, Hamalainen "Experiments on Local Positioning with Bluetooth" Proceedings of the International Conference on Information Technology: Computers and Communications (ITCC '03) April, 2003	
/PE/		Mortal Kombat instruction booklet for Super Nintendo, 1992, Licensed from Midway.	

Examiner Signature	/Pierre Ellisca/	Date Considered	08/24/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 4

Complete if known	
Application Number	11/281,812
Filing Date	11/16/2005
First Named Inventor	Jeffrey D. Mullen
Art Unit	3714
Examiner Name	Arthur Hall
Attorney Docket Number	JDM/008

U.S. PATENT DOCUMENTS

Examiner initials*	Cite No.[1]	Document Number Number – Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/PE/		5,724,660	03-1998	Kauser	
		5,741,182	04-1998	Lipps et al.	
		5,802,274	09-1998	Dorak et al.	
		5,902,343	05-1999	Hale et al.	
		5,913,727	06-1999	Ahdoot	
Change(s) applied to document, /T.R./ 10/24/2013		6,011,653	01-2000	Karasawa	
		6,015,344	01-2000	Kelly et al.	
		6,080,063	06-2000	Khosla	
		6,106,397	08-2000	Phillips	
		6,106,399	08-2000	Baker et al.	
		6,287,200	09-2001	Sharma	
		6,337,668	01-2002	Berstis	
		6,378,390	04-2002	Saito	
		6,520,853	02-2003	Suzuki	
		6,522,312	02-2003	Ohshima et al.	
		6,625,299	09-2003	Meisner et al.	
		6,633,267	10-2003	Numa	
		6,633,304	10-2003	Anabuki et al.	
		6,663,105	12-2003	Sullivan	
		6,690,947	02-2004	Tom	
		6,735,435	05-2004	Newell et al.	
		6,853,935	02-2005	Satoh	
		6,951,515	10-2005	Ohshima et al.	

Examiner Signature	/Pierre Elisca/	Date Considered	08/24/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 4

Complete if known	
Application Number	11/281,812
Filing Date	11/16/2005
First Named Inventor	Jeffrey D. Mullen
Art Unit	3714
Examiner Name	Arthur Hall
Attorney Docket Number	JDM/008

/PE/		6,961,055	11-2005	Doak et al.	
		6,972,734	12-2005	Ohshima et al.	
		7,038,699	05-2006	Sato et al.	
		7,050,078	05-2006	Dempski	
		7,056,216	06-2006	Ohshima	
		7,084,887	08-2006	Sato	
		7,303,474	12-2007	Anserson et al.	
		2001/0006908	07-2001	Fujioka et al.	
		2001-0040591	11-2001	Abbott	
		2001/0054019	12-2001	de ~~ae~~ Fabrega	
		2002/0131404	09-2002	Mehta et al.	
		2002/~~00592933~~	05-2002	Leonhard et al.	0052933
		2002/0061741	05-2002	Leung et al.	
		2002/0082068	06-2002	Singhal	
		2002/0082082	06-2002	Stamper et al.	
		2002/0090985	07-2002	Tochner et al.	
		2003/0144047	07-2003	Sprogis	
		2003/0210228	11-2003	Ebersole et al.	
		2003/0224855	12-2003	Cunningham	
		2003/0062675	04-2003	Noro et al.	
		2004/0046655	03-2004	Benes	
		2004/0058732	03-2004	Piccionelli	
		2004/0128250	07-2004	Fox et al.	
		2004/0248653	12-2004	Barros	
		2005/0009608	01-2005	Robarts et al.	
		2006/0154710	07-2006	Serafat	

Change(s) applied to document, /C.H./ 10/21/2013

Change(s) applied to document, /T.R./ 10/25/2013

Examiner Signature	/Pierre Elisca/	Date Considered	08/24/2013

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/281,812	11/19/2013	8585476	JDM/008	9936

32733 7590 10/30/2013

JEFFREY D. MULLEN
1310 Riverfront Drive
PITTSBURGH, PA 15238

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 700 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Jeffrey D. Mullen, New York, NY;

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