In a light-based gaming environment includes plural players each with a respective light-emitting device configured to directionally emit a respective light-based signal that distinguishes each player from at least one other player, a player action controlled light-based gaming system includes a display device configured to visually display information; a memory having stored therein first and second video instances; a controller that selectively causes the display device to display the first and second video instances; and a plurality of light-based receivers located within the gaming environment. When the display device statically displays the first video instance in locational relationship to a first light-based receiver, if the first light-based receiver receives a light-based signal, the controller selectively causes the display device to display the second video instance.
PLAYER-ACTION CONTROLLED LIGHT-BASED GAMING SYSTEM AND METHOD

RELATED DOCUMENTS


BACKGROUND OF THE INVENTION

[0002] Light-based gaming environments include locations in which multiple players can interact with light emitted devices. For example, a laser tag environment can include a large structure in which obstacles, scenery, and other environmental details can be provided as an arena in which one or more players can shoot other players with "phasers."

DETAILED DESCRIPTION

[0003] It is an object of the present invention to provide a player-action controlled light-based gaming system and method. The present invention can include one or more light-based systems and one or more methods of effectuating such one or more light-based systems.

[0004] Further, it is important to note that this disclosure includes a plurality of elements, limitations, and/or aspects, and such elements, limitations, and/or aspects need not be interpreted as being conjunctively required by one or more embodiments of the present invention. Rather, all combinations of the one or more elements, limitations, and/or aspects are provided as enabling a separate embodiment of the present invention, which can be claimed with particularity in one or more future filed Non-Provisional Patent Applications. Moreover, any particular elements, limitations, and/or aspects disclosed herein are to be construed strictly as illustrative and enabling. Therefore, it is expressly set forth that such elements, limitations, and/or aspects independently or in any combination of one or more thereof, are merely illustratively representative of one or more embodiments and/or aspects of the present invention and are not to be construed as necessary in a strict sense.

[0005] Further, to the extent the same element, limitation, or aspect is defined differently anywhere within this disclosure, the broader definition is to take absolute precedence, with the distinctions encompassed by the narrower definition to be strictly construed as optional.

[0006] An exemplary gaming environment can include a designated area for at least two players, with each player having a respective light-emitting device configured to directionally emit a light-based signal that can distinguish each player from at least one other player.

[0007] For example and not in limitation, a light-emitting device can be based on one or more of infra-red light, a laser beam, visible light, invisible light, an LED beam, incandescent light, or any other lighting technology that is functionally compatible with the present invention. In another exemplary aspect of the present invention, a light-based signal can uniquely distinguish a player from at least one other player by including a data instance, such as a player identifier ("player 1, player 2, team 1, team 2, team 3, etc."), for example and not in limitation. Further, a light-based signal can inherently distinguish a user by the frequency, duration, color, color temperature, color shade, pulse rhythm, or any other light-based information conveyance.

[0008] The present invention includes at least one video display device for displaying video instances, which can include one or more still images, moving videos, animations, video effects, etc. For example, a video display device can include a video projector or a video monitor. It should be noted that the present invention contemplates any type of video projector or video monitor technology, insofar as the same can functionally display a video image.

[0009] The present invention further includes a memory that is communicatively connected to one or more of the at least one display device, and further, includes video data representing at least a first video instance and a second video instance. Notably, any form of functionally compatible memory can be utilized with the present invention, including but not limited to one or more of the following: a hard drive, flash memory, an optical disk, a video tape, etc.

[0010] The present invention can further include a controller communicatively connected to a display device and configured to selectively cause the display device to display at least the first and second video images. According to the present invention, a controller can be provided via any functionally compatible combination of logic circuitry, software, firmware, a processor, a microcontroller, an integrated circuit, or any other hardware/software combination, for example and not in limitation. Moreover, it is important to note that a controller can be provided via one or more hardware and/or software elements, which can be disposed together or remotely. For example, particular functions of a controller can be shared or delegated to another element of the present invention, such as a light-based receiver (infra) or a light emitting device, for example and not in limitation.

[0011] The present invention can further include at least two light-based receivers, communicatively connected to the controller, and located within the gaming environment. In an exemplary aspect, a light-based receiver can be configured to receive a light-based signal via a player, and optionally, can be configured to differentiate between players. Upon receiving a light-based signal, a light-based receiver can relay the light-based signal (or a pertinent portion or pertinent representation thereof) to the controller for processing. Notably, a controller can optionally be located with a light-based receiver (e.g., multiple controllers) or located remotely.

[0012] In another exemplary aspect of the present invention, the display device can display the first video instance in a specific manner. First, the display device can display the first video instance at on, and/or near at least one of the light-based receivers, such that a location-based logical relationship exists between the first video instance and at least one light-based receiver. Second, the first video instance is displayed at a static location within the gaming environment, which excludes anything that physically moves a significant distance (i.e., more than two feet) during a game, and includes one or more surfaces that may tilt, rotate, or otherwise slightly move for any desired visual effects.

[0013] If a player then causes their light-emitting device to emit a light-based signal that reaches one or more of the at least one light-based receivers, such a receiver or receivers can receive the light-based signal and convey relatively pertinent information to the controller. The controller can then
apply one or more sets of pre-determined logic, which is
determined in part on the light-based signal, to selectively
display the second video instance anywhere within the gaming environment, including overlaying
the first video instance. Optionally, the controller can
display the device to stop displaying the first video
instance, in whole or in part.

[0014] Exemplary pre-determined logic can be based, at
least in part, on any combination of the following:
[0015] 1. the fact that any light-based signal was received,
[0016] 2. the distinguishing nature of the light-based signal,
[0017] 3. which team is the player on,
[0018] 4. the player's level,
[0019] 5. the frequency and/or duration a light-based signal
has been received by the player, any player, the last player,
players of the same team, etc.,
[0020] 6. how quickly or slowly the light-based signal was
received since any video instance was displayed,
[0021] 7. the remaining or elapsed time of any game,
[0022] 8. any score of the present game (total score, player score,
team score, etc.), or
[0023] 9. the number of initial or active players in a game.
[0024] For example and not in limitation, the first video
instance can be of a zombie walking towards a player, with the
at least one light-based receiver located such that a player can
"shoot" the zombie with the player's light-emitting device.
Notably, depending on the number and positioning of the first
video instance and/or the at least one light-based receivers,
various resulting effects can be achieved. For example and not in
limitation, a light-based receiver can be positioned at or
near any one or more of the zombie's head, a leg, an arm, a
foot, etc., such that the receipt of a light-based signal by a
particularly located light-based receiver can be processed by
the controller so as to select a correspondingly desired second
video instance, such as a video representation of a portion of
the zombie being "shot" by a gun.

[0025] Notably, the present invention can also be applied to
an alternative gaming environment in which the light-emitting
devices and light receivers are reversed. Specifically,
players can have respective light receivers and the gaming
environment can have a plurality of light-emitting devices.
Such light-emitting devices can directionally emit a light-
based signal, which can uniquely distinguish light-emitting
devices by including a data instance, such as a light-
emitting device identifier ("device 1, device 2, area 1, area 2,
area 3, etc.").

[0026] It will be apparent to one of ordinary skill in the art
that the manner of making and using the present invention has
been adequately disclosed in the above-written description of
the exemplary embodiments, elements, and aspects, independ-
ently and in any combination thereof.

[0027] It should be understood, however, that the invention
is not necessarily limited to the specific embodiments,
aspects, arrangement, and components shown and described
above, but may be susceptible to numerous variations within
the scope of the invention.

[0028] Accordingly, the specification is to be regarded in an
illustrative and enabling, rather than a restrictive, sense.
[0029] Therefore, it will be understood that the above
description of the embodiments of the present invention are
susceptible to various modifications, changes, and adapta-
tions, and the same are intended to be comprehended within
the meaning and range of equivalents of the respectively
described embodiments, elements, aspects, and steps.

Therefore, I claim:

1. In light-based gaming environment having a plurality of
players each with respective light-emitting devices config-
ured to directionally emit a respective light-based signal that
distinguishes each player from at least one other player, a
player action controlled light-based gaming system, compris-
ing:

a display device configured to visually display informa-
tion;
a memory, communicatively connected to said display
device, and having video data stored therein, the video
data including at least a first video instance and a second
video instance;
a controller communicatively connected to said display
device and configured to selectively cause the display
device to display at least the first and second video
instances; and

a plurality of light-based receivers, communicatively con-
nected to the controller, and located within the gaming
environment;

wherein when said display device is displaying the first
video instance, in locational relationship to a first light-
based receiver, and at a static location within the gaming
environment, if the first light-based receiver receives a
light-based signal, said controller selectively causes said
display device to display the second video instance.

2. In light-based gaming environment having a plurality of
players each with a respective light-based receiver that
distinguishes each player from at least one other player, a
player action controlled light-based gaming system, compris-
ing:

a display device configured to visually display informa-
tion;
a memory, communicatively connected to said display
device, and having video data stored therein, the video
data including at least a first video instance and a second
video instance;
a controller, communicatively connected to said display
device and to each light-based receiver, and configured
to selectively cause the display device to display at least
the first and second video instances; and

a plurality of light emitting devices configured to direction-
ally emit a respective light-based signal, and located
within the gaming environment;

wherein when said display device is displaying the first
video instance, in locational relationship to a first light
emitting device emitting a light-based signal, and at a
static location within the gaming environment, if one of
the light receivers receives the light-based signal, said
controller selectively causes said display device to dis-
play the second video instance.