Patent Search Summary

Name of Inventors: Tan Yin Leong
                     Leow Wee Dar, Jason
                     Chan Meng Kong, George
                     Kim Ong Seok, Khim

Title of Invention: A method of enhancing audience experience in large scale
                      entertainment event
Project Name: NATIONAL

Abstract:

In large scale entertainment or celebration event, example Singapore National Day Parade, a method of creating a crowd-based visual display is proposed. Audiences will participate in the event by using their smart phone in synchronization with a central server to create a large scale pattern changing display of artworks.

1 Patent with high possibility of infringement

2 Patent Search Keywords (Higher KWP or Key Word Point implies better relevant to invention)

Keyword	KWP		Keyword	KWP
phone	1 KWP		crowd pattern	4 KWP
event	0 KWP		server	2 KWP
celebration	0 KWP		synchronize	1 KWP
display	1 KWP		network	1 KWP
artwork	0 KWP		wifi	3 KWP
image	2 KWP		luminescent	1 KWP
stadium	1 KWP		animation	1 KWP
crowd-based	1 KWP			0 KWP
crowd based	1 KWP			0 KWP
pixel	0 KWP			0 KWP
wireless	4 KWP			0 KWP
communication	2 KWP			0 KWP
audience	2 KWP			0 KWP
mobile	4 KWP			0 KWP
	0 KWP			0 KWP
	0 KWP			0 KWP
	0 KWP			0 KWP

3 Initial test on search terms

Search terms (Using www.google.com/patents)	Reviewed	Relevant ?
smartphone display celebration event stadium (22 reviewed) Relevant term: event	22	Some
digital display at celebration event in stadium (reviewed 30 / 14,900) Relevant terms: visual presentation. large stadium event, audience, visual display, visual image, live performance,	30	Some
method of using smart phone as display in public event (reviewed 100 / 26,700)	100	Some
visual and display and event and stadium (reviewed 100 / 333,000) Relevant terms: crowd based visual display	100	Yes
crowd based visual display (reviewed 110 / 8320)	110	Yes
US640409 (3846784, 3958235, 4160973, 4470044, 4552542, 4080753, 4983031, 5406300, 5444456, 5791966)	10	No
Total =	372	

Summary

5 Patent Search:

www.google.com/patents
http://patft.uspto.gov/   http://www.uspto.gov/web/patents/classification/
http://worldwide.espacenet.com http://www.thomasnet.com/   https://www.ip2.sg
http://www.freepatentsonline.com/   http://www.sumobrain.com/
http://www.wipo.int/patentscope/search/en/search.jsf
http://www.epatents.gov.sg/PE/   http://www.wipo.int/classifications/ipc/en/
http://ipsearch.ipd.gov.hk/patent/index.html   https://data.epo.org/

Source	Search keywords	Result	Review	Related	P.Infrin	Page
Google Patent	"crowd-based" and display and stadium	28	28	3	1	5A
Google Patent	"crowd based" and display and stadium	20	20	4	1	9A
Google Patent	"crowd based" and pattern and wifi	63	63	0	0	9B
Google Patent	"crowd pattern"	18	18	1	1	9C
Google Patent	wifi and crowd and stadium and display -"crowd control"	270	270	3	2	9D
	Total	399	399	11	5	

Summary

Source	Search keywords	Result	Review	Related	P.Infrin	Page
		Total				

5A	Date:	19 Oct 2014, 7:37 PM
	Search engine:	google.com/patents
	Search terms:	"crowd-based" and display and stadium
	Total patents:	20
	Reviewed patents:	20
	Relevant patents:	3
	Infringe patents:	1
	Remark:	

US8049688, US20050170318, US20020118147, US20030017823, US20060139750

US008049688B2

(12) **United States Patent**

Yu et al.

(10) **Patent No.:** US 8,049,688 B2

(45) **Date of Patent:** Nov. 1, 2011

(54) **APPARATUS AND METHOD FOR CREATING A CROWD-BASED VISUAL DISPLAY WITH PIXELS THAT MOVE INDEPENDENTLY**

(75) Inventors: **Young Ki Yu**, Marrietta, GA (US); **Matthew Flagg**, Atlanta, GA (US); **Suzanne Roshto**, Alpharetta, GA (US); **Greg Roberts**, Alpharetta, GA (US)

(73) Assignee: **PlayVision Technologies, Inc.**, Mountain View, CA (US)

(57) **ABSTRACT**

The present invention provides a light-emitting apparatus and a method by which a crowd-based display is created wherein each light-emitting apparatus represents one of many independently moving pixels in the crowd-based display. This invention also provides methods, both internal and external to the light-emitting apparatus, by which the visual display sequence is controlled to provide various forms of colorful illumination. This invention discloses a shock wave method, a time-synchronized playback method, and a laser-based actuation method for creating the visual displays of illumination.
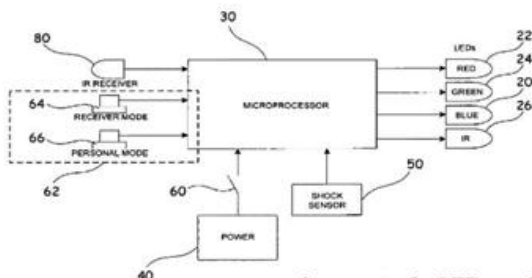
galvanometer for LED wand control. In a manner similar to a CRT (cathode ray tube) display, an infrared laser or projector transmits control data from a digital control computer to a large area covering hundreds or possibly thousands of LED wands. By scanning the display area repeatedly and rapidly, dynamic display content is sent to pixel locations in the area.
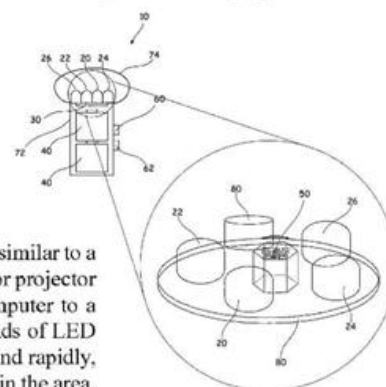
US 20050170318A1

(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: **US 2005/0170318 A1**
Yeomans (43) Pub. Date: **Aug. 4, 2005**

(54) **STUNT CARD AND METHOD FOR PERFORMING CARD STUNTS**

(76) Inventor: **Paul Yeomans**, Lafayette, CA (US)

Correspondence Address:
BEESON SKINNER BEVERLY LLP
ONE KAISER PLAZA, SUITE 750
OAKLAND, CA 94612 (US)

(57) **ABSTRACT**

A stunt card for performing card stunts by participant members of a crowd in common attendance at an event at a venue, preferably one having a seating arrangement such as a sporting event in a sports stadium, comprises a planar medium, foldable between unfolded and folded configurations to form a stunt color panel, a commemorative panel, and a theme panel. In a folded configuration the stunt card preferably includes two visible sides each obverse to the other; one side forming a stunt color panel, the other forming a theme panel. A selected color is depicted on substantially all of the stunt color panel and a thematic design is depicted on the theme panel. The design on the theme panel is preferably related to the event at which the crowd is in attendance, but may reflect any theme that is commonly meaningful to the crowd. The folded stunt card has sufficient rigidity to enable it be flipped over quickly from the theme panel to the stunt color panel and still substantially retain its planar shape. Opening the stunt card to the unfolded configuration exposes the commemorative panel. The commemorative panel depicts printed matter calculated to motivate retention of the stunt card.
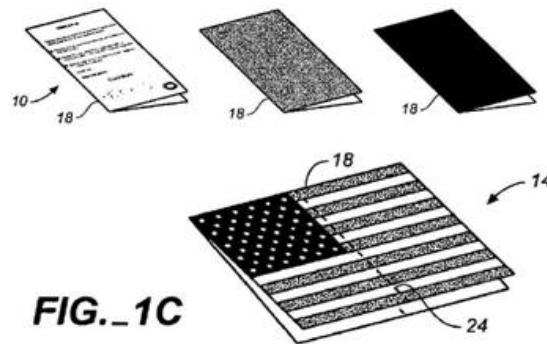
FIG._1C
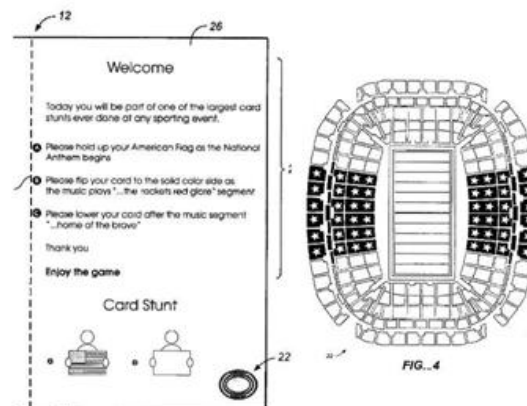
FIG._4

US 20060139750A1

(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2006/0139750 A1**

Solomon (43) Pub. Date: **Jun. 29, 2006**

(54) **PERFORMANCE DISPLAY SYSTEM**

(76) Inventor: **Dennis J. Solomon**, Yarmouth Port, MA (US)

(57) **ABSTRACT**

The present invention discloses an improved method and device for the display of a images incorporating the audience in a performance together with the integration of independently translocated three-dimensional displays. Improved methods for manufacturing a visual display incorporating a scanned light source and presenting visual information are also disclosed.

What I claim is:

1. A projector and audience unit receiver system comprising:

a) a control board having means to transmit a series of commands to a projector,

b) said projector having means to receive said commands from said control board and having means to project at least one directional signal to at least one of a plurality of audience unit receivers,

c) said audience unit receiver having means to receive said signal and emit a designated response.

simplest embodiment, the projector **100** displays an invisible IR **106** image at a specific wavelength (880 nanometers, for example) on the audience **22** which causes the wavelength-specific audience unit communication receiver **202** to activate one or more light emitters or modulators **206**. The
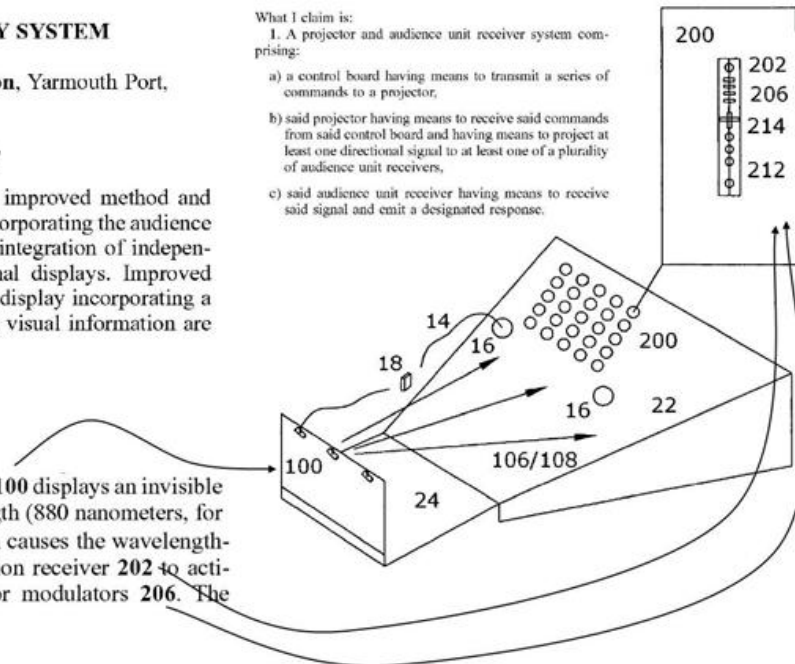
US006965785B2

(12) **United States Patent**
Mager et al.

(10) Patent No.: **US 6,965,785 B2**
(45) Date of Patent: **Nov. 15, 2005**

(54) **COOPERATIVE WIRELESS LUMINESCENT IMAGERY**

(76) Inventors: **Gary N. Mager**, Seattle, WA (US); **Paul R. Nash**, Bellevue, WA (US); **G. Eric Engstrom**, Kirkland, WA (US)

What is claimed is:

1. In a wireless communication device, a method comprising:

receiving data representing a set of one or more picture elements of an audience assisted image, the data transmitted to the wireless communication device to facilitate coordinated display of a luminescent representation of a portion of the audience assisted image by the wireless communication device in cooperation with one or more additional wireless communication devices; and

generating the luminescent representation based at least in part upon the received data.
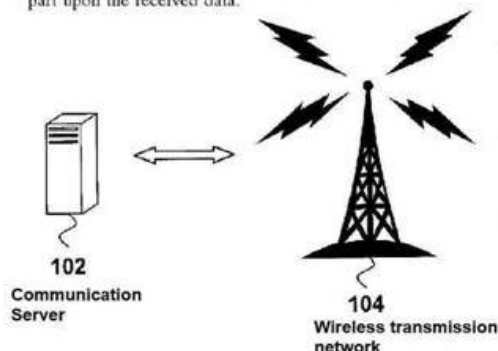
(57) **ABSTRACT**

A wireless communication device having luminescent display capabilities in accordance with various embodiments is provided with a machine accessible medium including instructions to receive data representing a set of one or more picture elements of an audience assisted image to facilitate coordinated display of a luminescent representation of a portion of the audience assisted image by the wireless communication device in cooperation with one or more additional wireless communication devices, as well as a processor to execute the instructions.

Wireless mobile client
108

108

108

102
Communication Server

104
Wireless transmission network

106
Venue
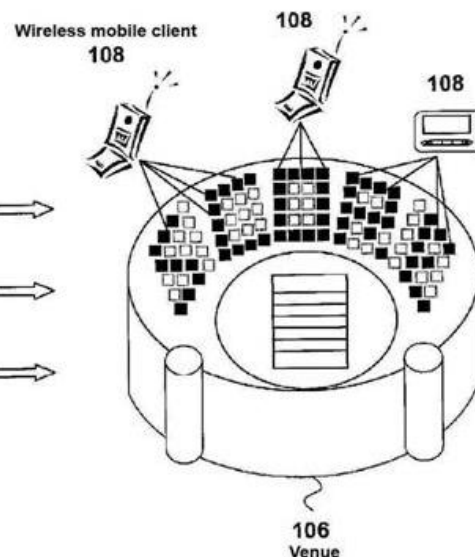
CLASS 455,TELECOMMUNICATIONS

Sub class 566
Having display: This subclass is indented under subclass 550.1. Subject matter having visual presentation of a signal.

Sub Class 3.06
Combined with diverse art device (e.g., audio/sound or entertainment system): This subclass is indented under subclass 3.01. Subject matter wherein the distribution system is combined with another art device.

Patent Search

9A Date: 9 Dec 2014, 8:18 PM
Search engine: google.com/patents
Search terms: "crowd based" and display and stadium

Total patents: 20
Reviewed patents: 20
Relevant patents: 4
Infringe patents: 1
Remark:
Same as previous search result.

9B Date: 9 Dec 2014, 8:24 PM
Search engine: google.com/patents
Search terms: "crowd based" and pattern and wifi

Total patents: 63
Reviewed patents: 63
Relevant patents: 0
Infringe patents: 0
Remark:

9C Date: 11 Dec 2014, 5:07 PM
Search engine: google.com/patents
Search terms: "crowd pattern"

Total patents: 18
Reviewed patents: 18
Relevant patents: 1
Infringe patents: 1
Remark:
Relevant patent same as previous search.

9D Date: 11 Dec 2014, 5:29 PM
Search engine: google.com/patents
Search terms: wifi and crowd and stadium and display -"crowd control"

Total patents: 270
Reviewed patents: 270
Relevant patents: 3
Infringe patents: 2
Remark:
US20120165100, US20130109364, US20130335313

US 20120165100A1

(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2012/0165100 A1**
Lalancette et al. (43) Pub. Date: **Jun. 28, 2012**

(54) **CROWD MOBILE SYNCHRONIZATION**

(75) Inventors: **Richard Lalancette**, Ottawa (CA); **Stephen Nelson West**, Ottawa (CA)

(73) Assignee: **ALCATEL-LUCENT CANADA INC.**, Ottawa (CA)

(21) Appl. No.: **12/977,926**

(22) Filed: **Dec. 23, 2010**

Publication Classification

(51) Int. Cl.
G06F 15/16 (2006.01)
A63F 9/24 (2006.01)

(52) U.S. Cl. 463/42; 709/248

(57) **ABSTRACT**

The invention is directed to a system and method for providing a synchronized game display to a plurality of mobile communications devices which can be grouped according to one or more attributes. Game display messages are specific to each grouping and comprise dance moves, song lyrics or other instructions to users of the mobile communication devices. A synchronization mechanism is provided to synchronize the displays the groups of mobile devices.
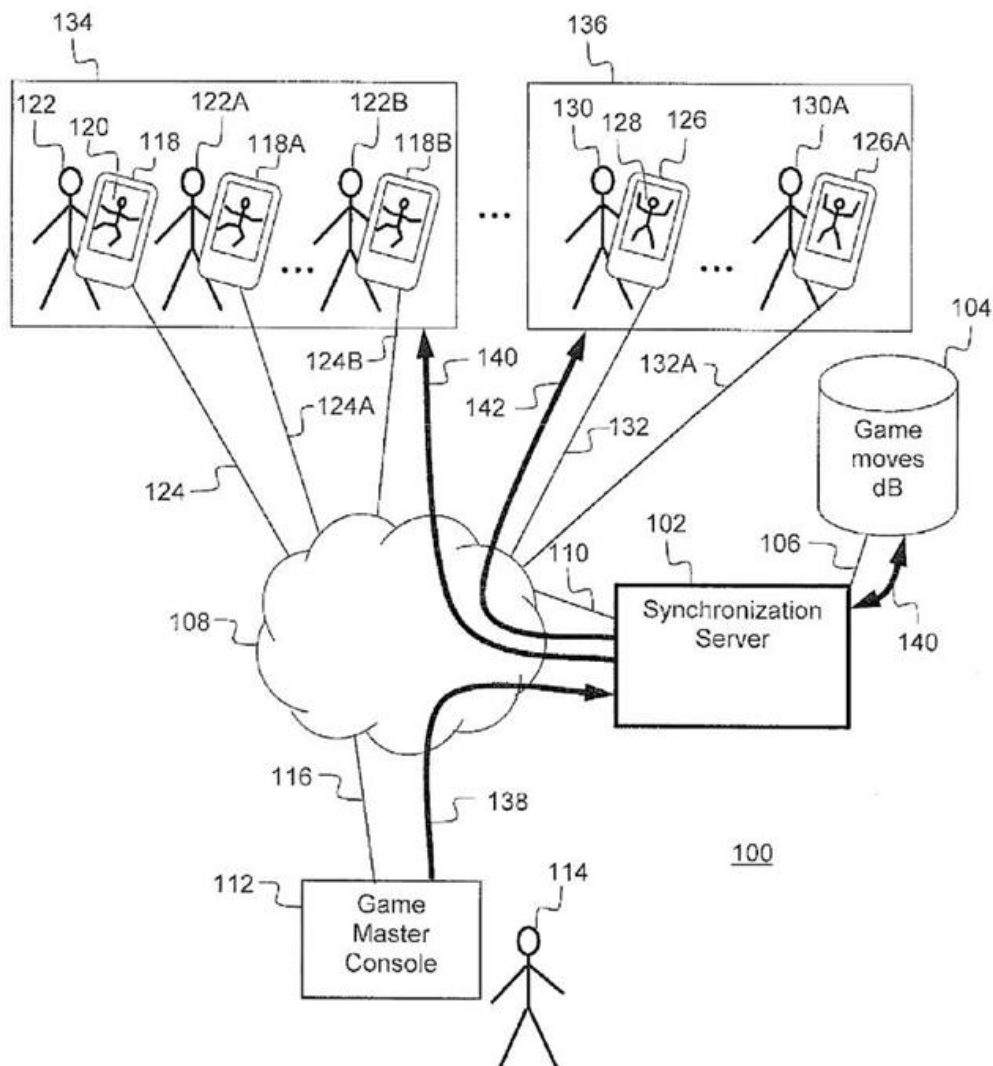
US 20130109364A1

(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2013/0109364 A1**

Mercuri et al. (43) **Pub. Date:** **May 2, 2013**

(54) **MOBILE APPLICATION FOR AD-HOC IMAGE DISPLAY**

(75) Inventors: **Marc Mercuri**, Bothell, WA (US); **James Oliver Tisdale, III**, Duvall, WA (US)

(73) Assignee: **MICROSOFT CORPORATION**, Redmond, WA (US)

(21) Appl. No.: **13/284,998**

(22) Filed: **Oct. 31, 2011**

(57) **ABSTRACT**

An ad hoc imaging capability allows a plurality of mobile devices to render an ad hoc image at a venue, such as a sports arena. A mobile ad hoc image ("MAHI") application can be downloaded to the spectators' mobile devices prior to the event. Seat location of a user is used by the MAHI application to select and display an image, which is a pixel of the ad hoc image. The ad hoc image can be animated or static. An authoring tool allows creation of an ad hoc image data structure whereby a previously created image or animation is mapped to the venue seating configuration. The ad hoc image data can be downloaded to, and cached by, the mobile device along with downloading the application, or the ad hoc image data can be streamed to the mobile device when the ad hoc image is to be displayed.
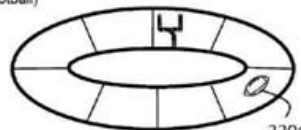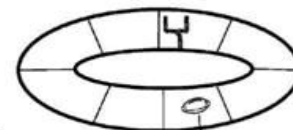
(Playing field) 100
(Message) 105
(Various sections) 115B
115A
(Sports stadium) 110
Go Team
100
115C
115E
115D

FIG. 2A
200
210 (Goal post)
220A (Football)

FIG. 2B
220B

FIG. 2C
220C
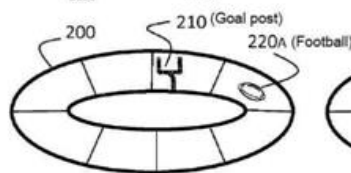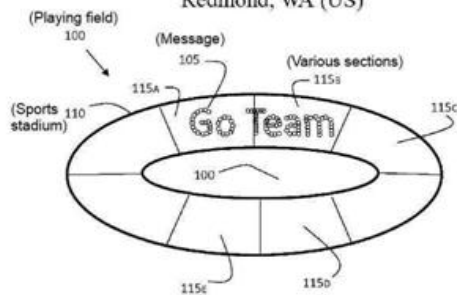
FIG. 2D
220D
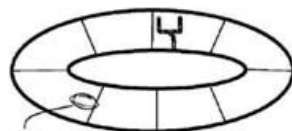
FIG. 2E
220E
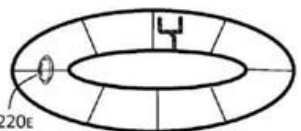
FIG. 2F
220F
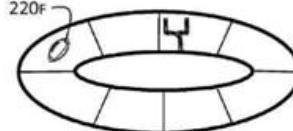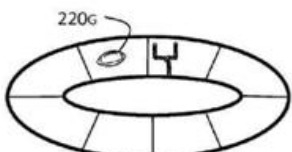
FIG. 2G
220G

FIG. 2H
220H

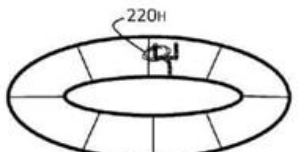FIG. 2I
220I

Description

Description

[0004] Most of the spectators engaging in cooperative crowd behavior are likely to be carrying a smart phone or mobile computing device of some sort. These devices are

generate an ad hoc image. The ad hoc image is the image formed by the aggregate display from a plurality of mobile devices when viewed as a collective display. The mobile

[0023] In this embodiment, a group of spectators are displaying their mobile phones (e.g., by holding them upwards) so that collectively a message 105 ("Go Team") is observed.

[0028] The wireless connections for the devices can be based on various readily available technologies, including the various cellular based technologies (CDMA, GSM, 4G, EDGE, etc.) originating from cellular infrastructure 370 provided by a cellular service provider or other wireless technologies (e.g., WiMax, WiFi, etc.) The wired technologies

[0033] In FIG. 4, the user downloads the MAHI application for their smart phone in operation 400. The MAHI application

[0039] In operation 415 the user enters their seat location. The location information could be a section number in the stadium or a more precise location, such as a section number, row number, and seat number. The location information is

claims.

1. A method for displaying an ad hoc image at a venue comprising:

generating an ad hoc image data structure for an image wherein the ad hoc image data structure comprises a plurality of a set of pixels, each set of pixel comprising one or more plurality of ad hoc image pixels;

providing a server configured for downloading a mobile ad hoc imaging application to a mobile device upon request to a user; and

downloading the mobile ad hoc imaging application to the user,

wherein the mobile ad hoc imaging application is configured to cause the mobile device to

receive input comprising location information of the user within the venue,

synchronize display of the set of pixels, and

display the set of pixels of ad hoc image pixels in the venue.

claims.

12. A system for providing an ad hoc image displayed in a venue comprising:

a server storing an ad hoc image data structure, where the ad hoc image data structure comprises a plurality of ad hoc image pixels, the server further storing a mobile ad hoc image application configured to

prompt the user for location information of the user within the venue,

synchronize display of one of a plurality of ad hoc image pixels on a mobile device with respect to a timing reference, and

display one of the plurality of ad hoc image pixels in the venue at a first time.

claims.

17. A computer readable medium comprising instructions that when executed cause a mobile computing device to:

prompt the user for entry of a seat location in a venue;

retrieve an ad hoc image data structure comprising an ad hoc image pixel associated with the seat location;

ascertain a time associated with displaying the ad hoc image pixel;

determine a current time is the time associated with displaying the ad hoc image pixel; and

display the ad hoc image pixel.

Jason Comment:
This patent explictly mentioned the use of smartphone, WIFI and server to create the crowd based image.
This make our invention to become "Not new" and not patentable.

US 20130335313A1

(19) **United States**

(12) **Patent Application Publication**   (10) Pub. No.: **US 2013/0335313 A1**

     DAVIS et al.   (43) Pub. Date: **Dec. 19, 2013**

(54) **PROCESS OF CREATING A DISPLAY, SYSTEM FOR CREATING A DISPLAY, AND MOBILE UNTETHERED DISPLAY DEVICE**

(75) Inventors: **Adam DAVIS**, Leola, PA (US); **Frederic Frank OPSOMER**, Kortemark (BE)

(73) Assignee: **TAIT TECHNOLOGIES, INC.**, Waardamme (BE)

(57)   **ABSTRACT**

A process of creating a display, a system for creating a display, and a mobile untethered display device are disclosed. The process includes providing image data to a first spectator display device, providing image data to a second spectator display device, and activating at least one of one or more light emitting elements based upon the image data. The first spectator display device includes one or more of the light emitting elements. The first spectator display device is a mobile untethered device positioned within a spectator region of a venue and creates a display having an illusion of a continuous image. The system includes a first spectator display device, a second spectator display device, and a controller. The device includes one of one or more light emitting elements capable of being activated upon receiving image data corresponding with a portion of the display.