AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas - Waco Divsion on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-573	6/3/2022	Western District of Texas - Waco Divsion

PLAINTIFF	DEFENDANT
QUANTUM IMAGING LLC	SONY GROUP CORPORATION; SONY CORPORATION OF AMERICA; SONY INTERACTIVE ENTERTAINMENT INC.; SONY INTERACTIVE ENTERT

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,458,028	6/4/2013	Frances Barbaro Altieri
2	10,255,724	4/9/2019	Frances Barbaro Altieri
3	10,846,941	11/24/2020	Frances Barbaro Altieri
4	10,991,165	4/27/2021	Frances Barbaro Altieri
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

Sony Exhibit 1003
Sony v. Quantum

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.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/833,127	11/24/2020	10846941	407.001	1088

30589 7590 11/04/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

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 0 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):

Frances Barbaro Altieri, Belmont, MA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

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.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

30589 7590 10/30/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

EXAMINER	
MESSMORE, JONATHAN R	

ART UNIT	PAPER NUMBER
2482	

NOTIFICATION DATE	DELIVERY MODE
10/30/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@dunlapcodding.com

Corrected ***Notice of Allowability***	**Application No.** 16/833,127	**Applicant(s)** Altieri, Frances Barbaro	
	Examiner JONATHAN R MESSMORE	**Art Unit** 2482	**AIA (FITF) 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 IDS filed 3 September 2020.
   ☐ 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 1-30 . 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: _____ .

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 _____.

/JONATHAN R MESSMORE/
Primary Examiner, Art Unit 2482

Sheet 1 of 1

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	2482
Examiner Name	Jonathan R. Messmore
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

EXAM INIT.	Cite No. [1]	**NON-PATENT DOCUMENTS** 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.
	NPL1	U.S. District Court, Northern District of California, San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Order Granting Motion for Judgement on the Pleadings of Invalidity Under 35 U.S.C. § 101, filed May 21, 2020.

Examiner Signature: /JONATHAN R MESSMORE/ **Date Considered:** 10/27/2020

*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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

30589 7590 09/03/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

EXAMINER
MESSMORE, JONATHAN R

ART UNIT	PAPER NUMBER
2482	

DATE MAILED: 09/03/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

TITLE OF INVENTION: INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/03/2020

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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

30589 7590 09/03/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

TITLE OF INVENTION: INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/03/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
MESSMORE, JONATHAN R	2482	348-040000

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 03-09 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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
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.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

30589 7590 09/03/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

EXAMINER	
MESSMORE, JONATHAN R	
ART UNIT	PAPER NUMBER
2482	

DATE MAILED: 09/03/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B 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 30 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.

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. 16/833,127	Applicant(s) Altieri, Frances Barbaro	
	Examiner JONATHAN R MESSMORE	Art Unit 2482	AIA (FITF) 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 claims filed 20 May 2020.
   ☐ 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 1-30 . 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: _____ .

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.
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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 _____.

/JONATHAN R MESSMORE/
Primary Examiner, Art Unit 2482

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Information Disclosure Statement

2. The information disclosure statement(s) (IDS) was/were submitted on 20 May 2020. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) is/are being considered by the examiner.

Response to Arguments

3. Applicant's arguments, see Response to Office Action mailed 29 April 2020, filed 20 may 2020, with respect to Claim Rejections under 35 USC §112 have been fully considered and are persuasive. The Claim Rejections under 35 USC §112 of Claim **1** has been withdrawn.

4. Applicant's arguments, see Response to Office Action mailed 29 April 2020, filed 20 may 2020, with respect to Claim Rejections under 35 USC §103 have been fully considered and are persuasive. The Claim Rejections under 35 USC §103 of Claims **1-30** has been withdrawn.

Allowable Subject Matter

5. Claims **1-30** are allowed.

6. The following is an examiner's statement of reasons for allowance: While processing multiple applications and interactions there-between is well-known in the art, the specific

environment and algorithm described in the independent claims has not been found in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN R MESSMORE whose telephone number is (571)272-2773. The examiner can normally be reached on Monday-Friday 9-5 EST/EDT.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. 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 https://ppair-my.uspto.gov/pair/PrivatePair. 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.

/JONATHAN R MESSMORE/
Primary Examiner, Art Unit 2482

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/833,127	Altieri, Frances Barbaro
	Examiner	**Art Unit**
	JONATHAN R MESSMORE	2482

CPC						
Symbol					**Type**	**Version**
G06T	/	19	/	006	F	2013-01-01
A63F	/	13	/	65	I	2014-09-02
A63F	/	13	/	35	I	2014-09-02
A63F	/	13	/	335	I	2014-09-02
G06Q	/	30	/	0241	I	2013-01-01
H04N	/	13	/	366	I	2018-05-01
G06Q	/	30	/	02	I	2013-01-01
G06Q	/	30	/	0257	I	2013-01-01
G06Q	/	30	/	0269	I	2013-01-01
H04N	/	13	/	363	I	2018-05-01
A63F	/	13	/	12	I	2013-01-01
A63F	/	13	/	215	I	2014-09-02
A63F	/	13	/	216	I	2014-09-02
A63F	/	13	/	217	I	2014-09-02
G03H	/	1	/	0005	I	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/JONATHAN R MESSMORE/ Primary Examiner, Art Unit 2482	28 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	5

U.S. Patent and Trademark Office — Part of Paper No.: 20200828

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/833,127	Altieri, Frances Barbaro
	Examiner	**Art Unit**
	JONATHAN R MESSMORE	2482

INTERNATIONAL CLASSIFICATION				
CLAIMED				
H04N	/	13	/	366

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/JONATHAN R MESSMORE/ Primary Examiner, Art Unit 2482	28 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	5

U.S. Patent and Trademark Office — Part of Paper No.: 20200828

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/833,127	Altieri, Frances Barbaro
	Examiner	**Art Unit**
	JONATHAN R MESSMORE	2482

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

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 30	
/JONATHAN R MESSMORE/ Primary Examiner, Art Unit 2482 (Primary Examiner)	28 August 2020 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 5

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/833,127	Altieri, Frances Barbaro
	Examiner	**Art Unit**
	JONATHAN R MESSMORE	2482

CPC - Searched*		
Symbol	**Date**	**Examiner**
G06T 19/006	04/24/2020	J.M.
A63F 13/215, 13/216, 13/217, 13/335	04/24/2020	J.M.
updated above	08/28/2020	J.M.

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
EAST Search History Attached	04/24/2020	J.M.
NPL Search	04/24/2020	J.M.
Inventor Name Search	04/24/2020	J.M.
updated above	08/28/2020	J.M.
EAST Search History Attached	08/28/2020	J.M.

/JONATHAN R MESSMORE/ Primary Examiner, Art Unit 2482	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/833,127	Altieri, Frances Barbaro
	Examiner	Art Unit
	JONATHAN R MESSMORE	2482

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
G06T	19/006	08/28/2020	J.M.
A63F	13/215, 13/216, 13/217, 13/335	08/28/2020	J.M.

/JONATHAN R MESSMORE/ Primary Examiner, Art Unit 2482	

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	5	"2002008077"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S2	3	"20030176213"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S3	2	"20030022719"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S4	10	(S1 or S2 or S3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S5	3	S4 and commercial$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S6	0	S4 and sponsor	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:34
S7	1	S4 and (paid)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:34
S8	1	S4 and advertis$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:34

S9	45,542	(commercial or advertis$5) with (requir$5 or skip$5 or view$4) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S10	3,732	(commercial or advertis$5) with (requir$5 or skip$5 or view$4) same (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S11	0	(commercial or advertis$5) with (requir$5 with skip$5 with view$4) with (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S12	0	(commercial or advertis$5) with (requir$5 with skip$5 with view$4) same (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S13	73	(commercial or advertis$5) with (requir$5 with view$4) same (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:35
S14	30	(virtual with (leave or exit) with (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 13:09
S15	564	(virtual with (object) with (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 14:51
S16	1	(virtual with (object) with grab$4 with (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 14:52
S17	3	(US-20030177248-$).did. or (US-6546309-$ or US-6057834-$).did.	US-PGPUB; USPAT	AND	ON	2017/05/10 15:27
S18	0	S17 and gps	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:27
S19	2	"20020082077"	US-PGPUB; USPAT;	AND	ON	2017/05/10 15:27

			USOCR; EPO; JPO; DERWENT			
S20	4	(US-20030177248-$ or US-20020082077-$).did. or (US-6546309-$ or US-6057834-$).did.	US-PGPUB; USPAT	AND	ON	2017/05/10 15:28
S21	0	S20 and gps	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S22	0	S20 and satelite	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S23	1	S20 and satellite	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S24	18	(virtual with gps with map) and @ad<"20021016"	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S25	2	(virtual with (object) with grab$4 same (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/10/05 09:48
S26	0	(virtual with (object) with inport same (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/10/05 09:49
S27	1	(virtual with (object) with import same (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/10/05 09:49
S28	2	"20110292167"	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/10/05 11:08
S29	58	((copy or grab) near2 (object or content)) with ((plurality or multiple) near3 (display or device or user)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 12:01
S30	22	((copy or grab) near2 (object or content)) with ((plurality or multiple)	US-PGPUB; USPAT;	AND	ON	2018/01/09 12:16

		near3 (display or device or user)) and (3d or reality or augment$4 or virtual) and @ad<"20021016"	USOCR; EPO; JPO; DERWENT			
S31	6	((copy$4 or grab$4) near2 (object or content or target)) with ((plurality or multiple) near3 (display or user)) and (3d or reality or augment$4 or virtual) and @ad<"20021016" not S30	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 15:28
S32	27	((copy$4 or grab$4) near2 (object or content or target)) with (exit with user) and (3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 15:30
S33	18	((copy$4 or grab$4) near2 (object or content or target)) and (exit with user) with (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 15:31
S34	725	((copy$4 or grab$4) near2 (object or content or target)) with new and (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:14
S35	54	((copy$4 or grab$4) near2 (object or content or target)) with new same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:14
S36	21	((copy$4 or grab$4) near2 (object or content or target)) near4 new same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:14
S37	702	(import (object or content or target)) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:18
S38	85	(import near3 (object or content or target)) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:18
S39	0	(import near3 (new near2 (object or content or target))) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:18

S40	9	(user with import near3 (object or content or target)) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:19
S41	5	"20020024517".pn. or "6020885".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:26
S42	0	S41 and gui	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:26
S43	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	AND	ON	2018/01/10 13:26
S44	2	S43 and gui	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:26
S45	9	S40 and (stor$4 or memor$4 or library or (content adj management))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:29
S46	0	S43 and physics	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:54
S47	4	S43 and nature	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:55
S48	1	S43 and (artificial or ai)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:56
S49	6	S43 and (library)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:57

S50	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	AND	ON	2018/01/10 18:15
S51	1	S50 and rule	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:15
S52	0	S50 and ("based on")	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:17
S53	12	S50 and ("based")	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:17
S54	2	S50 and (bill$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:22
S55	2	S50 and (report$4 or bug$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:23
S56	2	S50 and (compet$8)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:28
S57	12	S50 and (tim$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:29
S58	5	S50 and (credit)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:30
S59	1	S50 and (gps)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:31
S60	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-	US-PGPUB; USPAT	AND	ON	2018/05/02 12:58

		$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.				
S61	9	S60 and (web or site or website or internet)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/05/02 12:58
S62	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	OR	OFF	2018/05/25 15:49
S63	5	S62 and (geograph$4 or location) with user	USPAT	OR	OFF	2018/05/25 15:49
S64	1	S62 and (radar) with user	USPAT	OR	OFF	2018/05/25 15:52
S65	0	"20170061697"	USPAT	OR	OFF	2018/05/25 15:54
S66	2	"20170061697"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/05/25 15:54
S67	1	S62 and (radar with user)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/05/25 15:55
S69	4	S62 and updat$4	USPAT	OR	OFF	2018/05/25 16:15
S70	1	S62 and updat$4 with interval	USPAT	OR	OFF	2018/05/25 16:20
S71	227	request with updat$4 with interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:21
S72	4,202	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2018/05/25 16:22
S73	0	S72 and S71	USPAT	OR	OFF	2018/05/25 16:23
S74	1	request with updat$4 with interval same virtual and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:23

S75	0	request adj updat$4 with predetermined adj interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:24
S76	2	request near3 updat$4 with predetermined adj interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:24
S77	18	request adj updat$4 with interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:26
S78	14	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$).did.	US-PGPUB; USPAT	OR	OFF	2018/05/25 16:29
S79	2	S78 and (real adj time)	USPAT	OR	OFF	2018/05/25 16:29
S80	0	S78 and (gps or smell or (voice near recogni$8) or weather)	USPAT	OR	OFF	2018/05/25 16:37
S81	0	S78 and gps	USPAT	OR	OFF	2018/05/25 16:38
S82	12	(virtual with gps with user) and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:51
S83	16	((("ALTIERI") near3 ("Frances") near3 ("BARBARO"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/05/25 18:46
S84	15	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$).did.	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:41
S85	0	S84 and (automatic with exit)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 09:41
S86	3	S84 and (exit)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 09:42

S87	1	"20110292167"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:43
S88	211	(virtual) and (automatic$4 with (exit or return)) same (internet or server or website) and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:48
S89	4,853	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2018/11/07 09:49
S90	1	S89 and S88	USPAT	OR	OFF	2018/11/07 09:49
S91	212	(virtual or thematic) and (automatic$4 with (exit or return)) same (internet or server or website) and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:51
S92	1	(thematic) and (automatic$4 with (exit or return)) same (internet or server or website) and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:51
S93	16	((("ALTIERI") near3 ("Frances"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 10:47
S94	3	S93 and exit	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 10:48
S98	15	(virtual with update with real near6 location) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 14:54
S99	0	(virtual with update with real near6 location) and (updat$4 with increment$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 15:03
S101	0	(virtual with update with real with location) and (updat$4 with increment$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 15:03
S102	28	(virtual with real with location) and (updat$4 with increment$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 15:03

S103	78	(virtual with real with location) and (updat$4 with contin$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:02
S104	5,017	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2018/12/18 10:02
S105	4	S103 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:02
S106	0	(virtual with real with location) and (updat$4 with automatic) and @ad<"20021016" and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S107	10	(virtual with real with location) and (updat$4 with automatic) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S108	43	(virtual with real with location) and (updat$4 with automatic$4) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S110	0	S108 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S111	1,136	(updat$4 with automatic$4) same (interval) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08
S112	0	S111 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08
S113	108	(updat$4 with automatic$4) same (interval) same location and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08

S114	46	location with (updat$4 with automatic$4) same (interval) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08
S115	2	location with (updat$4 with automatic$4) same (interval) and virtual with real and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:09
S116	7	(virtual with real with location with (overlay or superimposed or imposed)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:36
S117	0	S104 and S116	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:36
S118	77	(virtual near3 environment) with selection and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:50
S119	4	S118 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:50
S120	5	(virtual near3 environment) with selection and (user with location with updat$4) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 12:16
S121	28	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-	US-PGPUB; USPAT	OR	OFF	2018/12/18 12:19

		7190331-$ or US-5175616-$ or US-5563988-$).did.				
S122	3	S121 and (smell or weather)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:19
S123	14	S121 and (voice or gps)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:20
S124	8	S121 and ((voice adj recognition) or gps)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:20
S125	26	S121 and (mini or application)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:23
S126	3	S121 and (mini)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:23
S127	4	S121 and (email)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:23
S128	2	location with (updat$4 with automatic$4) same (interval) and virtual and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 12:57
S129	2	"8458028".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 12:59
S130	2	"7373377".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 13:09

S131	5	user with (walk or move) with virtual with real with updat$4 and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 13:10
S133	0	secondary near3 application with (gui or (user near3 interface) or ui) and (different near3 devices) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:14
S134	30	secondary near3 application with (gui or (user near3 interface) or ui) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:17
S135	4	S134 and (different with device)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:30
S136	11	S134 and (voice)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:45
S137	0	S134 and (hot near click)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:46
S138	1	S134 and (hot near3 click)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:47
S139	2	S134 and (mobile or cell)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:47
S140	14	S134 and (virtual)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:48
S141	20	S134 and (laptop or phone)	US-PGPUB; USPAT; USOCR;	OR	OFF	2020/04/24 14:50

			EPO; JPO; DERWENT			
S142	33	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$).did.	US-PGPUB; USPAT	OR	OFF	2020/04/24 15:39
S143	5	S134 and (download$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:39
S144	20	S134 and (object)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:41
S145	5	S134 and (translat$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:43
S146	1	S134 and (holograph$4 or holographically)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:45
S147	2	S134 and (game)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:48
S148	2	S134 and (game or gaming)	US-PGPUB; USPAT; USOCR;	OR	OFF	2020/04/24 15:48

			EPO; JPO; DERWENT			
S149	4	S134 and (live)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:49
S150	24	S134 and (location)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:51
S151	1	S134 and (gps)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:52
S152	1	secondary near3 application with (live near3 video) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:56
S153	19	S134 and (message or messaging) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:58
S154	36	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$ or US-20020198652-$ or US-20020118272-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$ or US-6538660-$).did.	US-PGPUB; USPAT	OR	OFF	2020/04/24 15:59
S155	17	S154 and (message or messaging) and @ad<"20021016"	US-PGPUB; USPAT;	OR	OFF	2020/04/24 15:59

			USOCR; EPO; JPO; DERWENT			
S156	37	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$ or US-20020198652-$ or US-20020118272-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$ or US-6538660-$ or US-6686936-$).did.	US-PGPUB; USPAT	OR	OFF	2020/04/24 17:52
S157	23	S156 and (messaging or messages or message)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 17:52
S158	27	S156 and (messaging or messages or message or conversation or convers$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 17:53
S162	37	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$ or US-20020198652-$ or US-20020118272-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/07/15 15:51

		6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$ or US-6538660-$ or US-6686936-$).did.				
S163	7	S162 and gps	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/15 15:52
S164	8	(3D with share with device) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/15 15:56
S165	8,005	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2020/07/15 15:56
S166	0	S165 and S164	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/15 15:56
S167	23	"8228325"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/15 16:04
S168	4	simulation with secondary near3 application and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/07/15 16:14

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	15	simulation with secondary near3 application	US-PGPUB; USPAT	OR	OFF	2020/08/28 16:11
L2	20,542	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	US-PGPUB; USPAT	OR	OFF	2020/08/28 16:11

L3	0	l1 and l2	US-PGPUB; USPAT	OR	OFF	2020/08/28 16:11
L4	1,991	(virtual or thematic) and (automatic$4 with (exit or return)) same (internet or server or website)	US-PGPUB; USPAT	OR	OFF	2020/08/28 16:11
L5	24	l4 and l2	US-PGPUB; USPAT	OR	OFF	2020/08/28 16:12
L6	0	l1 and l4	US-PGPUB; USPAT	OR	OFF	2020/08/28 16:13
S95	13,145	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/07 10:30
S96	470	(virtual or thematic) same (exit) and S95	US-PGPUB; USPAT	OR	OFF	2018/11/07 10:32
S97	23	(virtual or thematic) same (exit) and S95 and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 10:32
S132	1	"Term Removed"	USPAT	OR	OFF	2018/12/18 12:19
S159	1	"Term Removed"	USPAT	OR	OFF	2020/04/24 15:39
S160	1	"Term Removed"	USPAT	OR	OFF	2020/04/24 15:59
S161	1	"Term Removed"	USPAT	OR	OFF	2020/04/24 17:52
S169	1	"Term Removed"	USPAT	OR	OFF	2020/07/15 15:51

8/28/2020 4:13:45 PM
C:\Users\jmessmore\Documents_Applications\16000000\16833127\16833127 EAST.wsp

Sheet 1 of 1

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	2482
Examiner Name	
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

EXAM INIT.	Cite No. [1]	**NON-PATENT DOCUMENTS** 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.
	NPL1	U.S. District Court Northern District of California San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Niantic's Notice of Motion and Rule 12(c) Motion for Judgement on the Pleadings of Invalidity Under 35 U.S.C 101, filed April 23, 2020.

Examiner Signature: /JONATHAN R MESSMORE/ **Date Considered:** 07/15/2020

*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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	March 27, 2020
First Named Inventor	Barbaro Altieri, Frances
Art Unit	2482
Examiner Name	
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	Foreign Document No.[3] Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

NON-PATENT DOCUMENTS

EXAM INIT.	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.
	NPL1	"Microsoft Flight Simulator 2004, A Century of Flight", Sybex Official Strategies and Secrets, Microsoft Game Studios and Sybex User Manual, Copyright 2003.
	NPL2	"History of Microsoft Simulator", *Wikipedia*, retrieved from the Internet: https://en.wikipedia.org/wiki/History_of_Microsoft_Flight_Simulator on May 11, 2020.
	NPL3	NPSNET: Flight Simulation Dynamic Modeling Using Quaternions, Calhoun: The NPS Institutional Archive DSpace Repository, 1994, Cooke, Joseph M. et al.

/JONATHAN R MESSMORE/	07/15/2020
Examiner Signature:	**Date Considered:**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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Application No.	16/833,127
Filing Date	March 27, 2020
First Named Inventor	Barbaro Altieri, Frances
Art Unit	2482
Examiner Name	
Attorney Docket No.	407.001

*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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

Electronically Filed On: September 3, 2020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	16/833,127
Confirmation No.	:	1088
Applicants(s)	:	Frances Barbaro Altieri
Filed	:	03/27/2020
TC/A.U.	:	2482
Examiner	:	Jonathan R. Messmore
Title	:	Interactive Virtual Thematic Environment
Docket No.	:	407.001
Customer No.	:	30589

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT UNDER 37 CFR 1.312

Applicants submit the following amendment after allowance but on the date the issue fee was paid:

Amendments to the Claims are reflected in the **Listing of Claims** which begins on page 2 of this paper; and,

Remarks begin on page 11 of this paper.

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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(Use as many sheets as necessary)

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First Named Inventor	Frances Barbaro Altieri
Art Unit	2482
Examiner Name	Jonathan R. Messmore
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

EXAM INIT.	Cite No. [1]	**NON-PATENT DOCUMENTS** 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.
	NPL1	U.S. District Court, Northern District of California, San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Order Granting Motion for Judgement on the Pleadings of Invalidity Under 35 U.S.C. § 101, filed May 21, 2020.

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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

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By fax, send to: (571)-273-2885

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Marc A. Brockhaus	(Typed or printed name)
/Marc A. Brockhaus	(Signature)
September 3, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

TITLE OF INVENTION: INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/03/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
MESSMORE, JONATHAN R	2482	348-040000

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 03-09 or more recent) attached. **Use of a Customer Number is required.**

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(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
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☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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Authorized Signature /Marc A. Brockhaus/ Date September 3, 2020

Typed or printed name Marc A. Brockhaus Registration No. 40,923

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Electronic Patent Application Fee Transmittal

Application Number:	16833127
Filing Date:	27-Mar-2020
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Filer:	Marc Alan Brockhaus/Anne Burns
Attorney Docket Number:	407.001

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**620**

Electronic Acknowledgement Receipt

EFS ID:	40467671
Application Number:	16833127
International Application Number:	
Confirmation Number:	1088
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Anne Burns
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	407.001
Receipt Date:	03-SEP-2020
Filing Date:	27-MAR-2020
Time Stamp:	15:34:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$620
RAM confirmation Number	E202093F35087566
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1	Transmittal Letter	407001_sb21_Transmittal_09032020.pdf	170220 857ba21941aceb939fb68b6fb10e840f111c17ce	no	1
Warnings:					
Information:					
2		407001_AmendmentUnder37CFR1312_09032020.pdf	110197 27b78bdf6af4b5180de31e9984d812ce164f61f0	yes	11

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Applicant Arguments/Remarks Made in an Amendment	11	11
Claims	2	10
Amendment after Notice of Allowance (Rule 312)	1	1

Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	407001_SupplementalIDS_09032020.pdf	72866 4c77f724c0a9c01582cf5aed94180d0e27658e33	no	1
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New International Application Filed with the USPTO as a Receiving Office

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Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	16/833,127
Filing Date	March 27, 2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	2482 (conf. no. 1068)
Examiner Name	Jonathan R. Messmore
Attorney Docket Number	407.001

Total Number of Pages in This Submission

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
- ☑ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☑ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please identify below):
  See Remarks

Remarks

Electronically Transmitted: September 3, 2020

1) sb21 Transmittal (1 page);
2) Part B Issue Fee Transmittal (1 page);
3) Amendment Under 37 CFR 1.312 (11 pages); and
4) Supplemental IDS with a copy of the cited reference.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	DUNLAP CODDING, P.C.		
Signature	/Marc A. Brockhaus/		
Printed name	Marc A. Brockhaus		
Date	September 3, 2020	Reg. No.	40,923

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Signature	/Marc A. Brockhaus/		
Typed or printed name	Marc A. Brockhaus	Date	September 3, 2020

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REMARKS

Claims 1-30 are pending, with claims 1, 15, 22, and 23 being independent. Claims 6 and 23 have been amended to correct antecedent basis issues noted during a final review of the claims. No new subject matter has been added. Also submitted is a supplemental IDS.

Should the Examiner have any comments or questions regarding the foregoing, Applicants' attorney would welcome a telephonic interview with the Examiner. Consideration of the Supplemental IDS and entry of the amendments are respectfully requested.

Respectfully submitted,

/Marc A. Brockhaus/

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Attorney for Applicants

AMENDMENTS TO THE CLAIMS

The following listing of claims supersedes and replaces all prior versions in the patent application.

Listing of the Claims:

1. (Previously Presented) One or more non-transitory computer readable medium storing an interactive software application platform comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute and provide a virtual thematic environment on a visual component, the virtual thematic environment being a theme-based virtual world environment;

a primary application providing the virtual thematic environment; and a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment as second content provided by the primary application;

a graphics user interface (GUI) module including software that renders graphical display elements onto the visual component and permits a user to interact with a graphical display element within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer that receives, interprets, and manipulates the second content so as to be accessible on different types of devices for use within the virtual thematic environment, the QIE module obtaining first real-time information and second real-

time information, the QIE module supplying the first real-time information into the primary application, and supplying the second real-time information into the secondary application, the primary application configured to provide access to the first real-time information to the user within the virtual thematic environment via the first user interface, the secondary application configured to provide the second real-time information to the user within the virtual thematic environment via the second user interface; and

at least one digital content library module storing information, the information containing 2 dimensional and 3 dimensional content, and providing content management of information within the virtual thematic environment coordinated by the thematic/publishing logic module, the digital content library module being a content management application,

2. (Previously Presented) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information includes GPS information.

3. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are accessed by a user selection mechanism.

4. (Original) The one or more non-transitory computer readable medium according to claim 3, wherein said selection mechanism is a voice recognition system.

5. (Original) The one or more non-transitory computer readable medium according to claim 3, wherein said selection mechanism is a hot click button.

6. (Currently Amended) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information is information associated with a real-world geographic location of a user, and wherein the primary application uses the information to show the real-world geographic location of the user within the virtual thematic environment.

7. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are provided to the user via a mobile device.

8. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein at least one of the first real-time information and the second real-time information are downloaded from a source external to the virtual thematic environment.

9. (Original) The one or more non-transitory computer readable medium according to claim 8, wherein said first real-time information and said second real-time information are downloaded from the Internet.

10. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein at least one of said first real-time information and said second real-time information are automatically downloaded based on actions of the user within the virtual thematic environment.

11. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein the user is provided with objects within the virtual thematic environment which operate in real-time with real-time information.

12. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein the at least one secondary application includes at least one of an entertainment application, a business application, a publishing application, a game application, a financial application, a music application, a graphic application, an education application, a medical application, a word processing application, an electronic mail application, a spreadsheet application, a static purchasing application, an instant messaging application, and a video messaging application.

13. (Original) The one or more non-transitory computer readable medium according to claim 6, further comprising providing real time language translation of said first real-time information and said second real-time information.

14. (Original) The one or more non-transitory computer readable medium according to claim 6, wherein said virtual thematic environment is holographically projected.

15. (Previously Presented) One or more non-transitory computer readable medium comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual world environment;

a primary application configured to provide the virtual thematic environment;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment of the virtual thematic environment as second content provided by the

primary application, the primary application receiving and using first real-time information to provide the second content, wherein said first real-time information is information associated with a real-world location of a user, and wherein the primary application uses the information to show the real-world location of the user within the virtual thematic environment, the secondary application receiving and using second real-time information to provide the first content, the first real-time information being different from the second real-time information,

a graphics user interface (GUI) module including software rendering graphical display elements onto a visual component, the GUI module including software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer that receives, interprets, and manipulates the first content and the second content so as to be accessible on different types of devices for use within the virtual thematic environment; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment, the digital content library module being a content management application.

16. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein the virtual thematic environment is a game environment.

17. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein the first real-time information and the second real-time information include audio, video, text, or any combination thereof.

18. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein the first real-time information and the second real-time information is new or updated information.

19. (Original) The one or more non-transitory computer readable medium, according to claim 18, wherein at least one of the first real-time information and the second real-time information is live data.

20. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein a first device of the devices includes a client system, and wherein the first real-time information is location data identifying a location of the client system.

21. (Original) The one or more non-transitory computer readable medium according to claim 20, wherein the client system includes a GPS system, and wherein the location data is generated by the GPS system of the client system.

22. (Previously Presented) One or more non-transitory computer readable medium comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual world environment;

a primary application providing the virtual thematic environment;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, the secondary application being an electronic messaging component utilized within a same application environment as content provided by the primary application, the primary application receiving and using location information to provide the content based upon a real-world location of a user, and wherein the primary application uses the location information to show the real-world location of the user within the virtual thematic environment;

a graphics user interface (GUI) module, the GUI module including software that renders graphical display elements onto a visual component and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment, the digital content library module being a content management application.

23. (Currently Amended) A computer system, comprising:

a client system and a server system communicating to provide an interactive software application platform, the interactive software application platform comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual world environment;

a graphics user interface (GUI) module, the GUI module including software that renders graphical display elements onto a visual component and permits [[the]] a user to interact with the graphical display elements within [[a]] the virtual thematic environment;

a primary application providing the virtual thematic environment;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment of the virtual thematic environment as second content provided by the primary application, the primary application receiving and using first real-time information to provide the second content, the secondary application receiving and using second real-time information to provide the first content, the first real-time information being different from the second real-time information;

a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret the first content and the second content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment;

at least one digital content library module storing information and providing content management of information within the virtual thematic environment, the digital content library module being a content management application; and

wherein the GUI module includes software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user

interface associated with the secondary application and enabling the user to access the secondary application through the second user interface.

24. (Original) The computer system according to claim 23, wherein the virtual thematic environment is a game environment.

25. (Original) The computer system according to claim 23, wherein the first real-time information and the second real-time information include audio, video, text, or any combination thereof.

26. (Original) The computer system according to claim 23, wherein the first real-time information and the second real-time information is new or updated information.

27. (Original) The computer system according to claim 23, wherein at least one of the first real-time information and the second real-time information is live data.

28. (Original) The computer system according to claim 23, wherein the first real-time information is location data identifying a location of the client system.

29. (Original) The computer system according to claim 28, wherein the second real-time information includes live video.

30. (Original) The computer system according to claim 28, wherein the secondary application includes an electronic messaging component.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001

CONFIRMATION NO. 1088

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

PUBLICATION NOTICE

OC000000118515479

Title:INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

Publication No.US-2020-0226842-A1
Publication Date:07/16/2020

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The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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Applicants(s)	:	Frances Barbaro Altieri
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P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Applicants submit the following response to the Office Action mailed on April 29, 2020:

Amendments to the Claims are reflected in the **Listing of Claims** which begins on page 2 of this paper; and,

Remarks begin on page 11 of this paper.

AMENDMENTS TO THE CLAIMS

The following listing of claims supersedes and replaces all prior versions in the patent application.

Listing of the Claims:

1. (Currently Amended) One or more non-transitory computer readable medium storing an interactive software application platform comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute and provide a virtual thematic environment on a visual component, the virtual thematic environment being a theme-based virtual world environment;

a primary application providing the virtual thematic environment; and a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment as second content provided by the primary application;

a graphics user interface (GUI) module ~~configured for use with a visual component of a digital device, the GUI module~~ including software that renders graphical display elements onto the visual component and permits a user to interact with a graphical display element within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer that ~~configured to~~ receives, [[and]] interprets, and manipulates the second content ~~such that the first content and the second content is manipulated~~ so as to be accessible on different types of devices for use within the virtual thematic

environment, the QIE module obtaining **[[the]]** first real-time information and **[[the]]** second real-time information, the QIE module supplying the first real-time information into the primary application, and supplying the second real-time information into the secondary application, the primary application configured to provide access to the first real-time information to the user within the virtual thematic environment via the first user interface, the secondary application configured to provide the second real-time information to the user within the virtual thematic environment via the second user interface; and

at least one digital content library module storing information, the information containing 2 dimensional and 3 dimensional content, and providing content management of information within the virtual thematic environment coordinated by the thematic/publishing logic module, the digital content library module being a content management application,

2. (Currently Amended) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information includes GPS information ~~and said second real-time information include audio, video, chronological, text, GPS, or any combination thereof~~.

3. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are accessed by a user selection mechanism.

4. (Original) The one or more non-transitory computer readable medium according to claim 3, wherein said selection mechanism is a voice recognition system.

5. (Original) The one or more non-transitory computer readable medium according to claim 3, wherein said selection mechanism is a hot click button.

6. (Currently Amended) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information is information associated with a real-world geographic location of a user, and wherein the primary application uses the information to show the real-world location of the user ~~and said second real-time information are displayed~~ within the virtual thematic environment.

7. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are provided to the user via a mobile device.

8. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein at least one of the first real-time information and the second real-time information are downloaded from a source external to the virtual thematic environment.

9. (Original) The one or more non-transitory computer readable medium according to claim 8, wherein said first real-time information and said second real-time information are downloaded from the Internet.

10. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein at least one of said first real-time information and said second real-time information are automatically downloaded based on actions of the user within the virtual thematic environment.

11. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein the user is provided with objects within the virtual thematic environment which operate in real-time with real-time information.

12. (Original) The one or more non-transitory computer readable medium according to claim 1, wherein the at least one secondary application includes at least one of an entertainment application, a business application, a publishing application, a game application, a financial application, a music application, a graphic application, an education application, a medical application, a word processing application, an electronic mail application, a spreadsheet application, a static purchasing application, an instant messaging application, and a video messaging application.

13. (Original) The one or more non-transitory computer readable medium according to claim 6, further comprising providing real time language translation of said first real-time information and said second real-time information.

14. (Original) The one or more non-transitory computer readable medium according to claim 6, wherein said virtual thematic environment is holographically projected.

15. (Currently Amended) One or more non-transitory computer readable medium comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual world environment;

a primary application configured to provide the virtual thematic environment;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment of the virtual thematic environment as second content provided by the primary application, the primary application receiving and using first real-time information to provide the second content, wherein said first real-time information is information associated with a real-world location of a user, and wherein the primary application uses the information to show the real-world location of the user within the virtual thematic environment, the secondary application receiving and using second real-time information to provide the first content, the first real-time information being different from the second real-time information,

a graphics user interface (GUI) module ~~having~~ including software rendering graphical display elements onto a visual component, the GUI module including software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer that ~~configured to~~ receives, ~~and~~ interprets, and manipulates the first content and the second content ~~such that the first content and the second content is manipulated~~ so as to be accessible on different types of devices for use within the virtual thematic environment; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment, the digital content library module being a content management application.

16. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein the virtual thematic environment is a game environment.

17. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein the first real-time information and the second real-time information include audio, video, text, or any combination thereof.

18. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein the first real-time information and the second real-time information is new or updated information.

19. (Original) The one or more non-transitory computer readable medium, according to claim 18, wherein at least one of the first real-time information and the second real-time information is live data.

20. (Original) The one or more non-transitory computer readable medium according to claim 15, wherein a first device of the devices includes a client system, and wherein the first real-time information is location data identifying a location of the client system.

21. (Original) The one or more non-transitory computer readable medium according to claim 20, wherein the client system includes a GPS system, and wherein the location data is generated by the GPS system of the client system.

22. (Currently Amended) One or more non-transitory computer readable medium comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual world environment;

a primary application providing the virtual thematic environment;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, the secondary application being an electronic messaging component utilized within a same application environment ~~of the virtual thematic environment~~ as content provided by the primary application, the primary application receiving and using location information ~~from a GPS system~~ to provide the content based upon a real-world location of a user, and wherein the primary application uses the location information to show the real-world location of the user within the virtual thematic environment;

a graphics user interface (GUI) module ~~having a visual component~~, the GUI module including software that renders graphical display elements onto [[the]] a visual component and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment, the digital content library module being a content management application.

23. (Currently Amended) A computer system, comprising:

a client system and a server system communicating to provide an interactive software application platform, the interactive software application platform comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual world environment;

a graphics user interface (GUI) module, the GUI module including software that renders graphical display elements onto a visual component and permits the user to interact with the graphical display elements within a virtual thematic environment;

a primary application providing the virtual thematic environment;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment of the virtual thematic environment as second content provided by the primary application, the primary application receiving and using first real-time information to provide the second content, the secondary application receiving and using second real-time information to provide the first content, the first real-time information being different from the second real-time information;

a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret the first content and the second content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment;

at least one digital content library module storing information and providing content management of information within the virtual thematic environment, the digital content library module being a content management application; and

wherein the GUI module includes software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display

elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface.

24. (Original) The computer system according to claim 23, wherein the virtual thematic environment is a game environment.

25. (Original) The computer system according to claim 23, wherein the first real-time information and the second real-time information include audio, video, text, or any combination thereof.

26. (Original) The computer system according to claim 23, wherein the first real-time information and the second real-time information is new or updated information.

27. (Original) The computer system according to claim 23, wherein at least one of the first real-time information and the second real-time information is live data.

28. (Original) The computer system according to claim 23, wherein the first real-time information is location data identifying a location of the client system.

29. (Original) The computer system according to claim 28, wherein the second real-time information includes live video.

30. (Original) The computer system according to claim 28, wherein the secondary application includes an electronic messaging component.

REMARKS

Claims 1-30 are pending, with claims 1, 15, 22, and 23 being independent. Claims 1, 2, 6, 15, 22, and 23 have been amended. No new subject matter has been added. Claims 1, 15, 22 and 23 have been amended to specify:

- the virtual thematic environment is a theme-based virtual world environment (Basis in paragraph [0076]);
- the primary application provides the virtual thematic environment (Basis in paragraph [0078]);
- the QIE module being a software layer (Basis in paragraph [0092] and [0093]);
- the digital content library module being a content management application (Basis in paragraph [0139]).

Claim 2 has been amended to focus on a specific embodiment, i.e., the first real-time information includes GPS information.

Claim 6 has been amended to focus on a specific embodiment, i.e., information associated with a real-world location of a user, and wherein the primary application uses the information to show the real-world location of the user in the virtual thematic environment (Basis in paragraph [0075]).

Claim 15 has been amended in a similar manner as claim 1. Further, claim 15 has also been amended to focus on a specific embodiment, i.e., information associated with a real-world location of a user, and wherein the primary application uses the information to show the real-world location of the user in the virtual thematic environment (Basis in paragraph [0075]).

Claim 22 has been amended to specify:

- the virtual thematic environment is a theme-based virtual world environment (Basis in paragraph [0076]);
- the primary application provides the virtual thematic environment (Basis in paragraph [0078]); and
- the primary application receiving and using location information to provide the content based upon a real-world location of a user, and wherein the primary application uses the location information to show the real-world location of the user (Basis in paragraph [0075]).

Claim 23 has been amended to specify:

- the virtual thematic environment is a theme-based virtual world environment (Basis in paragraph [0076]);
- the primary application provides the virtual thematic environment (Basis in paragraph [0078]); and
- the digital content library module being a content management application (Basis in paragraph [0139]).

Claim Interpretation

Under the broadest reasonable construction, the claim terms “graphic user interface module", "quantum imaging environment module", and "digital content library module" in claims 1, 15, 22, and 23 were interpreted as being a 35 U.S.C. §112, sixth paragraph means plus function limitation. In order to overcome this construction, the Office stated that Applicant can either amend such claims to include sufficient structure to perform the function, or present a showing sufficient to show that the claim limitations recite sufficient structure to perform the claimed function.

As will be discussed below, the terms “graphic user interface module", "quantum imaging environment module", and "digital content library module" in claims 1, 15, 22 and 23 should not be interpreted under 35 U.S.C. §112, sixth paragraph.

Specifically, with respect to the term “graphic user interface (GUI) module”, structure that performs the function, i.e., “software” is specifically set forth in each of amended claims 1, 15, 22, and 23. With respect to the term “quantum imaging environment module”, structure that performs the function, i.e., “software layer” is specified in each of amended claims 1, 15, 22, and 23. With respect to the term “digital content library module”, structure that performs the function, i.e., “the digital content library module being a content management application” is specified in each of amended claims 1, 15, 22, and 23.

In light of the foregoing, it is respectfully submitted that the terms “graphic user interface module", "quantum imaging environment module", and "digital content library module" should not be interpreted under 35 U.S.C. §112, sixth paragraph, even under the Office’s broadest reasonable interpretation. If there is some particular deficiency that the Undersigned attorney has overlooked, it would be helpful if the Office noted such deficiency and such will be expeditiously addressed.

Claim Rejection – 35 U.S.C. § 112

Claim 1 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicant regards as the invention. To overcome the rejection, claim 1 has been amended to set forth

proper antecedent basis for the terms "first real-time information" and "second real-time information."

In view thereof, Applicant respectfully requests the Office to withdraw the rejection, as claim 1 particularly points out and distinctly claims the subject matter to which Applicants regard as the invention.

Claim Rejection – 35 U.S.C. § 103(a)

Claims 1-4, 6, 8-12, 15, 17, 18, 23, 25, and 26 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett (US 2002/0191019 A1) in view of Baldwin et al. (US 5877757). Although Applicant respectfully disagrees with the rejection, and in particular, that the broadest reasonable construction of the term "virtual thematic environment" includes the Microsoft™ Windows™ operating system, independent claims 1, 15, and 23 have been amended to clarify the virtual thematic environment being a theme-based virtual world environment, and the primary application providing the virtual thematic environment. In light of these amendments, it is respectfully submitted that all of the present rejections have been overcome.

Section 2143.03 of the MPEP requires the "consideration" of every claim feature in an obviousness determination. To render independent claims 1, 15, and 23 (and the claims that depend therefrom) unpatentable, however, the Office must do more than merely "consider" each and every feature. Instead, the asserted combination of Pickett and Baldwin must also teach or suggest *each and every claim feature*. *See In re Royka*, 49 F.3d 981, 180 USPQ 580 (CCPA 1974). Here, independent claims 1, 15 and 23 have been amended to specify the virtual thematic environment being a theme-based virtual

world environment, and the primary application providing the virtual thematic environment. In virtue of this feature, among others, both independent claims 1, 15 and 23, and the claims that depend therefrom are allowable.

In particular, the Office submits that the Microsoft^{tm} Windows^{tm} operating system may be considered a virtual thematic environment. Microsoft^{tm} Windows^{tm}, however, is not a "theme-based virtual world environment" as specified in amended claims 1, 15 and 23. The Office also submits that the "primary application" disclosed in Pickett is a word processing application. See Office Action, page 7. But, the word processing application, i.e., the primary application 10, does not provide the "virtual thematic environment" that is more particularly specified in such claims as a "theme-based virtual world environment."

Baldwin fails to provide the deficiencies of the Pickett reference. Generally, Baldwin teaches:

> A method and system are disclosed for providing help-data in association with applications launched from a network, such that the applications are displayed within a window of a graphical user interface. Initially, an application is selected from among a number of applications, which are constructed from data generated at a server located within the network. Next, help-data associated with that application is identified. Thereafter, the identified help-data is automatically converted to hypertext data if the identified help-data is derived from a native format other than hypertext format. Hypertext links associated with the identified help-data are then automatically displayed within a window of the graphical user interface. Thereafter, the help-data is automatically displayed within a window of the graphical user interface as a hypertext document, in response to an invocation of the hypertext link by a user of the application. Thus, the hypertext links associated with the identified help-data can be presented to the user in the form of a table and in a graphical user interface window other than the graphical user interface window in which the application is displayed. See Baldwin's abstract.

The combined teachings of Pickett and Baldwin do not teach a primary application providing a virtual thematic environment, being a theme-based virtual world environment.

Rather, Baldwin, for example, simply teaches help-data in the form of a table in a graphical user interface window.

In formulating the rejection, the Office cited to Col. 1, ll. 25-35 in support of the proposition that a gateway is the quantum imaging environment module of claims 1, 15, and 23. The gateway taught in Baldwin, however, is not the quantum imaging environment module as required in claims 1, 15, and 23. That is, the QIE module specified in claim 1, for example is a "software layer" that receives, interprets, and manipulates the second content so as to be accessible on different types of devices for use within the virtual thematic environment. Although claims 15 and 23 have different language and a different scope concerning the QIE module, this discussion is equally applicable to claims 15 and 23. Baldwin's gateway is not a "software layer that ... interprets and manipulates the second content so as to be accessible on different types of devices for use within the virtual thematic environment". Baldwin's gateway is a device for connecting dissimilar networks. See Baldwin at 1:29-31. Further, the gateway taught by Baldwin simply transfers electronic information from one network to another. The gateway does not interpret, and manipulate the second content so as to be accessible on different types of devices for use within the virtual thematic environment. Even further, the combined teachings of Pickett and Baldwin does not supply "the QIE module obtaining ... second real-time information, the QIE module ... supplying the second real-time information into the secondary application." In Pickett, the secondary application includes a proxy interface. The Office alleges that the "timer 14" is the second real-time information. But, there is no teaching in Baldwin or Pickett that would lead the skilled artisan to obtain data

for the timer, and then supply such data into the secondary application, much less via Baldwin's gateway.

With respect to claim 2, such claim has been amended to specify the first real-time information includes GPS information. Neither Pickett nor Baldwin teach any GPS information supplied to the primary application as specified in claim 2.

With respect to claim 3, as discussed above, neither Pickett nor Baldwin provide any teaching or even a suggestion to include a software layer obtaining and supplying second real-time information to a secondary application, much less accessed by a user selection mechanism as required in claim 3. Thus, the combined teachings of Pickett and Baldwin do not teach or even suggest the second real-time information specified in claim 3.

With respect to claim 6, such claim has been amended to focus on a specific embodiment, i.e., information associated with a real-world location of a user, and wherein the primary application uses the information to show the real-world location of the user within the virtual thematic environment. Basis can be found in paragraph [0075]. The combined teaching of Pickett and Baldwin does not teach the primary application providing the virtual thematic environment; the first real-time information being information associated with a real-world location of a user, or the primary application using the information to show the real-world location of the user within the virtual thematic environment.

With respect to claim 8, the combined teachings of Pickett and Baldwin does not teach at least one of the first real-time information and the second real-time information are downloaded from a source external to the virtual thematic environment. Rather,

Pickett teaches a word processor being a primary application in a Microsoft Windows or MacIntosh environment. Pickett does not provide any teaching that first real-time information or second real-time information are downloaded from a source external to the virtual thematic environment. In fact, Baldwin teaches downloading an applet into a browser, but Pickett is not browser based, and there is no indication that the "applet" is real-time information. Further, the combined teachings of Pickett and Baldwin does not teach downloading any information, (much less first and second real-time information) into a primary application providing a virtual thematic environment, or a secondary application that is launched from the primary application, as required in claim 8.

With respect to claims 9 and 10, such claims are patentable for the reasons specified above with respect to claim 8.

With respect to claim 11, neither Pickett nor Baldwin teach or even suggest the user is provided with objects within the virtual thematic environment (i.e., theme-based virtual world environment) which operate in real-time with real-time information.

With respect to claims 12 and 13, neither Pickett nor Baldwin teach the inventive concepts described above with respect to claim 1, from which claims 12 and 13 depend.

In light of the foregoing, it is respectfully submitted that the rejections of claims 1-4, 6, 8-12, 15, 17, 18, 23, 25, and 26 have been overcome. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

Claim 5 was rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claim 3 above, and further in view of Kem et al. (US 2002/0059369 Al). Claims 7, 19, and 27 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claims 1, 15, and 23

above, and further in view of Nason et al. (US 6686936 B1). Claims 14, 16, and 24 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claims 6, 15, and 23 above, and further in view of Celi et al. (US 6538660 BI). Claims 20-22, and 28 rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claim 15 and 23 above, and further in view of Hirayama et al. (US 2002/0198652 AI).

With respect to claims 7, 14, 16, 19, 20, 21, 24, 27, and 28, such claims depend upon independent claims that are patentable as discussed above. For this reason, no further comments regarding these claims is deemed necessary herein.

With respect to claim 22, it is respectfully submitted that the combined teachings of Pickett, Celi, Jr. et al., Hirayama et al., and Baldwin et al. do not teach nor render obvious the inventive concept set forth in claim 22, as amended. As discussed above, Pickett does not disclose a virtual thematic environment being a theme-based virtual world environment, or the primary application providing the virtual thematic environment.

In formulating the rejection, the Office cited Celi, Jr. et al. as supplying the claimed secondary application being an electronic messaging component. The Applicant respectfully disagrees for two reasons. First, Celi, Jr. et al. does not teach a secondary application launched by the primary application as required by claim 22. Rather, Celi, Jr. et al. teaches "prior art methods for displaying information from one application program while another application program is displaying a graphical user interface (GUI) window." This describes two separate applications, not a secondary application being launched by the primary application. If Pickett were modified as indicated with Celi, Jr., the separate graphical window 6 of Celi, Jr. would be supplied by another application, not Pickett's

secondary application. Second, the Pickett reference teaches a secondary application that may be launched from a primary application "that currently either performs the task with given settings, or presents a user interface that then requires confirmation." See Pickett at [0020]. The prior art methods taught by Celi, Jr. et al. for displaying information in the separate graphical window 6 do not meet either of these requirements for the secondary application of Pickett. Specifically, the separate graphical window 6 simply displays information from another application. It does not perform a task within a primary application, or present a user interface that requires confirmation. Thus, there is no suggestion to modify the Pickett reference to provide the separate graphical window 6 as taught by Celi, Jr. et. al.

In formulating the rejection, the Office cites to Hirayama for the proposition that it teaches receiving and using location from a GPS system to provide the content. See Hirayama at paragraph [0108]. Although Hirayama teaches a GPS system, such GPS system is taught as part of a navigation system (see Hirayama at paragraph [0023]) not "the primary application uses the location information to show the real-world location of the user within the virtual thematic environment" as required in claim 22.

In formulating the rejection, the Office cites to Baldwin as disclosing the QIE module being a software layer configured to receive and interpret content. As discussed above, Baldwin teaches a gateway, rather than a software layer configured to receive and interpret content as set forth in amended claim 22.

In light of the foregoing, it is apparent that the proposed combination of Pickett, Baldwin, Celi, Jr. et al. and Hirayama does not teach or even suggest claim 22 within the

meaning of 35 U.S.C. §103. Reconsideration and withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

Statement Regarding Related Litigation

U.S. Patent Nos. 7,373,377 and 8,228,325 are currently being asserted by Barbaro Technologies, LLC against Niantic, Inc. in Case No. 3:18-cv-02955-RS (DMR) pending in the United States District Court for the Northern District of California, San Francisco Division. Documents from such litigation have been previously supplied to the Office in the Information Disclosure Statement filed on March 27, 2020, and have already been considered by the Office. A second supplemental Information Disclosure Statement including an additional document from the litigation was filed on April 28, 2020, but has not yet been considered by the Office.

Third Supplemental Information Disclosure Statement

Submitted herewith is a third supplemental information disclosure statement including what appears to be a user manual associated with a computer program named "Microsoft Flight Simulator 2004" (hereinafter "User Manual"). The User Manual specifies "Copyright© 2003 SYBEX, Inc." on page 4. Applicant does not admit that this User Manual is prior art to the present application under 35 U.S.C. 102 or 103, or was published on any particular date.

The User Manual discloses GPS navigation in Chapter 6. On page 133 of the User Manual, the User Manual indicates that Flight Simulator 2004 features two GPS modules, the "portable" Garmin 295 and the panel mounted Garmin 500. This User Manual,

however, does not teach the limitation "information associated with a real-world location of a user, and wherein the primary application uses the information to show the real-world location of the user in the virtual thematic environment" as required in claims 6, 15 and 22. Rather, the User Manual teaches a simulated GPS providing a simulated geographic location of a simulated airplane within a flight simulation program for the purpose of simulating GPS navigation. Thus, the User Manual does not teach the first real-time information required in claims 6, 15 and 22. Further, the User Manual does not use the first real-time information to show the real-world location of the user within a virtual thematic environment. Rather, the User Manual teaches "[y]ou can choose to simulate any flight in any aircraft in any part of the world." See User Manual at Page 186. For example, the User Manual teaches the creation of flight plans to set "start and destination airports" and the route of the flight. See the User Manual at page 109, and Chapter 5 generally.

The Examiner's consideration of the references in the second and third supplemental Information Disclosure Statements is respectfully requested.

CONCLUSION

The foregoing is intended to be a complete response to the Office Action mailed April 29, 2020. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reason for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this response should be construed as intent to concede any issue with regard to any claim, except as specifically stated in this paper.

Should the Examiner have any comments or questions regarding the foregoing, Applicants' attorney would welcome a telephonic interview with the Examiner. For the reasons stated above, reconsideration and withdrawal of the rejections is respectfully requested.

Respectfully submitted,

/Marc A. Brockhaus/

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Electronic Patent Application Fee Transmittal

Application Number:	16833127
Filing Date:	27-Mar-2020
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Filer:	Marc Alan Brockhaus/Lori Martin
Attorney Docket Number:	407.001

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**120**

Electronic Acknowledgement Receipt

EFS ID:	39497553
Application Number:	16833127
International Application Number:	
Confirmation Number:	1088
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Lori Martin
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	407.001
Receipt Date:	20-MAY-2020
Filing Date:	27-MAR-2020
Time Stamp:	17:05:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$120
RAM confirmation Number	E20205JH06075889
Deposit Account	
Authorized User	

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	407001_Transmittal.pdf	151913 50d6682e1b09d0f57f5b0bebebdd5366b6d6a32d	no	1
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	407001_IDS.pdf	96659 5c35be92a7083d7d540f25febbd6fe62524f5221	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	NPL1.pdf	6814281 8eae64cffae331d9822b3d8c05a750f076d3e626	no	274
Warnings:					
Information:					
4	Non Patent Literature	NPL2.pdf	491791 f56fdc379a3823e69dd941399f06119e541f3ef2	no	12
Warnings:					
Information:					
5	Non Patent Literature	NPL3.pdf	10761224 8cdc5a686efb3a97550df2eaaf3c728587e952c9	no	18
Warnings:					
Information:					
6		407001_Response.pdf	170274 eb3ff68754fd2e6f16b5a4c1844bce2bb06495fd	yes	24

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	11
	Applicant Arguments/Remarks Made in an Amendment	12	24

Warnings:					
Information:					
7	Fee Worksheet (SB06)	fee-info.pdf	30094 f33a898daef5bb3ff7dc3a1a7e2ae69f0bce1971	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	18516236		

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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.

Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	

Application Number	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	2482
Examiner Name	Jonathan R. Messmore
Attorney Docket Number	407.001

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☑ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please Identify below):
  See Remarks

Remarks

ELECTRONICALLY TRANSMITTED:
1. SB21 Transmittal Form (1 pg);
2. Response to OA (24 pgs);
3. Information Disclosure Statement (2 pgs); and
4. Cited Non-Patent Documents.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	DUNLAP CODDING, P.C.		
Signature	/Marc A. Brockhaus/		
Printed name	Marc A. Brockhaus		
Date	05/20/2020	Reg. No.	40,923

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	/Marc A. Brockhaus/		
Typed or printed name	Marc A. Brockhaus	Date	05/20/2020

This collection of information is required by 37 CFR 1.5. 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 and1.14. This collection is estimated to 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.**

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Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	March 27, 2020
First Named Inventor	Barbaro Altieri, Frances
Art Unit	2482
Examiner Name	
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]	

NON-PATENT DOCUMENTS

EXAM INIT.	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.
	NPL1	"Microsoft Flight Simulator 2004, A Century of Flight", Sybex Official Strategies and Secrets, Microsoft Game Studios and Sybex User Manual, Copyright 2003.
	NPL2	"History of Microsoft Simulator", *Wikipedia*, retrieved from the Internet: https://en.wikipedia.org/wiki/History_of_Microsoft_Flight_Simulator on May 11, 2020.
	NPL3	NPSNET: Flight Simulation Dynamic Modeling Using Quaternions, Calhoun: The NPS Institutional Archive DSpace Repository, 1994, Cooke, Joseph M. et al.

Examiner Signature:	**Date Considered:**

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	March 27, 2020
First Named Inventor	Barbaro Altieri, Frances
Art Unit	2482
Examiner Name	
Attorney Docket No.	407.001

*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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

30589 7590 04/29/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

EXAMINER	
MESSMORE, JONATHAN R	

ART UNIT	PAPER NUMBER
2482	

NOTIFICATION DATE	DELIVERY MODE
04/29/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@dunlapcodding.com

Office Action Summary	Application No. 16/833,127	Applicant(s) Altieri, Frances Barbaro	
	Examiner JONATHAN R MESSMORE	Art Unit 2482	AIA (FITF) Status No

-- 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 MONTHS 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 27 March 2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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) 1-30 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) 1-30 is/are rejected.

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

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

* If any claims have been determined allowable, 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.**

Application Papers

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

11)☑ The drawing(s) filed on 27 March 2020 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).

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).

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)).

** 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) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Information Disclosure Statement

2. The information disclosure statement(s) (IDS) was/were submitted on 27 March 2020 and 30 March 2020. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) is/are being considered by the examiner.

Claim Interpretation

The following is a quotation of 35 U.S.C. 112(f):

> (f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

3. The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

(A) the claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;

(B) the term "means" or "step" or the generic placeholder is modified by functional language, typically, but not always linked by the transition word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that"; and

(C) the term "means" or "step" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word "means" (or "step") in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word "means" (or "step") in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word "means" (or "step") are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word "means" (or "step") are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

4. This application includes one or more claim limitations that do not use the word "means," but are nonetheless being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because the claim limitation(s) uses a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitation(s) is/are: "graphic user interface module", "quantum imaging environment module", and "digital content library module" in claims **1, 15, 22, and 23**.

Because this/these claim limitation(s) is/are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, it/they is/are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

If applicant does not intend to have this/these limitation(s) interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, applicant may: (1) amend the claim limitation(s) to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph (e.g., by reciting sufficient structure to perform the claimed function); or (2) present a sufficient showing that the claim limitation(s) recite(s) sufficient structure to perform

the claimed function so as to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

Claim Rejections - 35 USC § 112

Claim Rejections - 35 USC § 112

5. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim **1** recites the limitation "the first real-time information" and "the second real-time information" in lines 23-24 (not counting blank lines). There is insufficient antecedent basis for this limitation in the claim. Examiner suggests amending the claims to match the other independent claims and recite -- obtaining ~~the~~ first real-time information and ~~the~~ second real-time information --.

Claim Rejections - 35 USC § 103

7. The following is a quotation of pre-AIA 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, 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.

8. 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 pre-AIA 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.

9. Claims **1-4, 6, 8-12, 15, 17, 18, 23, 25, and 26** is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Picket (US 2002/0191019 A1) in view of Baldwin et al. (US 5877757).

10. **Regarding Claims 1, 15, and 23**, Pickett discloses one or more non-transitory computer readable medium storing an interactive software application platform comprising: at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute and provide a virtual thematic environment, the virtual thematic environment being a theme-based virtual environment **[Pickett: ¶ [0004]: Most computer users interact with their computer through a graphical user interface (GUI), either through the Microsoft™ Windows™ line of products, Macintosh™ computers or similar applications on other types of workstations and computers; wherein a computer running windows may be considered a virtual thematic environment which is theme-based on Windows according to computer environment rules (32bit vs 64bit OS)]**; a primary application and a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment as second content provided

by the primary application **[Pickett: ¶ [0016]: The interface for the secondary application is a proxy interface, as it is not the actual user interface for that application. Instead, it presents the default or current settings for the secondary application with no input fields or other features of a typical user interface. It may or may not also display a timer 14 that notifies the user of the intention to start the second application once a predetermined time period expires. This may be better understood with a simple example]**; a graphics user interface (GUI) module configured for use with a visual component of a digital device, the GUI module including software that renders graphical display elements onto the visual component and permits a user to interact with a graphical display element within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface **[Pickett: ¶ [0017]: A user writes a document in a word processing application, which is the primary application displayed in the main window 10. The user wishes to print the document. Currently, the user could click on a small printer icon. This prints the document with whatever the default settings are, but the user does not get to see the default settings prior to the task being performed. The task in this example is the print job. Alternatively, the user may go to the `File` menu and select `Print.` As mentioned before, this then requires the user to confirm the settings, once they have been reviewed, even if no changes are made]**; a quantum imaging environment (QIE) module, the QIE module obtaining the first real-time information **[Pickett: ¶ [0017]: A user writes a document in a word processing application]** and the second real-time information **[Pickett: ¶ [0016]: timer]**, the QIE module supplying first

real-time information into the primary application, and supplying second real-time information into the secondary application, the primary application configured to provide access to the first real-time information to the user within the virtual thematic environment via the first user interface, the secondary application configured to provide the second real-time information to the user within the virtual thematic environment via the second user interface **[Pickett: ¶ [0016] through ¶ [0017]]**; and at least one digital content library module storing information and providing content management of information within the virtual thematic environment **[Pickett: ¶ [0020]: It must be noted that the example of a printer is only an example and should not be read to limit the scope of the invention in anyway. There are several examples of secondary applications that may be launched from a primary application that currently either perform the task with given settings, or present a user interface that then requires confirmation. Examples include printing, desktop faxing, sending a file by e-mail from within an application that creates or views the file, file operations such as saving or `saving as,` among many others]**.

Pickett may not explicitly disclose the QIE module configured to receive and interpret content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment.

However, Baldwin discloses a client system and a server system communicating to provide an interactive software application platform **[Baldwin: Abstract: A method and system are disclosed for providing help-data in association with applications launched from a network, such that the applications are displayed within a window of a graphical user interface. Initially, an application is selected from among a number of applications, which are constructed from data generated at a server located within the network]**; a QIE module

configured to receive and interpret content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment **[Baldwin: Col. 1, ll. 25-35: In communications, a set of computer networks which are possibly dissimilar from one another are joined together by "gateways" that handle data transfer and the conversion of messages from the sending network to the protocols used by the receiving network, with packets if necessary. A gateway is a device used to connect dissimilar networks (i.e., networks utilizing different communication protocols) so that electronic information can be passed from one network to the other. Gateways transfer electronic information, converting such information to a form compatible with the protocols used by the second network for transport and delivery]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date or time of invention to combine the multi-application window of Pickett with the multi-application window which teaches the well-known process of sharing data on different devices of Baldwin in order to provide data to multiple recipients which may have a variety of devices so all may access said data, improving quantity of recipients able to receive said data.

11. **Regarding Claim 2**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein said first real-time information and said second real-time information include audio, video, chronological, text, GPS, or any combination thereof **[Pickett: ¶ [0016]: timer]**.

12. **Regarding Claim 3**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein said first real-time information and said second real-time information are accessed by a user selection mechanism **[Pickett: ¶ [0017]: select]**.

13. **Regarding Claim 4**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 3, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein said selection mechanism is a voice recognition system **[Baldwin: Col. 6, ll. 15-17: Other technologies also can be utilized in conjunction with CPU 22, such as touch-screen technology or human voice control]**.

14. **Regarding Claim 6**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein said first real-time information **[Pickett: ¶ [0017]: writes document]** and said second real-time information **[Pickett: ¶ [0016]: timer]** are displayed within the virtual thematic environment **[Pickett: Title]**.

15. **Regarding Claim 8**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein at least one of the first real-time information and the second real-time information are downloaded from a source external to

the virtual thematic environment **[Baldwin: Col. 10, ll. 35-40: An applet resides on the server associated with a Web page, such as sample Web page 152, and is downloaded to the client browser after a link is established to the Web page. The browser includes an engine for executing the downloaded applets]**.

16. **Regarding Claim 9**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 8, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein said first real-time information and said second real-time information are downloaded from the Internet **[Baldwin: col. 10, ll. 35-40]**.

17. **Regarding Claim 10**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein at least one of said first real-time information and said second real-time information are automatically downloaded based on actions of the user within the virtual thematic environment **[Baldwin: Col. 10, ll. 35-40]**.

18. **Regarding Claim 11**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein the user is provided with objects within the virtual thematic environment which operate in real- time with real-time information **[Baldwin: Col. 9, ll. 10-16: A primary window is a graphical user interface window in which the main interaction between a user and an object takes place]**.

19. **Regarding Claim 12**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses wherein the at least one secondary application includes at least one of an entertainment application, a business application, a publishing application, a game application, a financial application, a music application, a graphic application, an education application, a medical application, a word processing application, an electronic mail application, a spreadsheet application, a static purchasing application, an instant messaging application, and a video messaging application **[Pickett: ¶ [0016] through ¶ [0017]]**.

20. **Regarding Claim 13**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 6, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin discloses further comprising providing real time language translation of said first real-time information and said second real-time information **[Baldwin: Col. 9, ll. 3-7: As depicted at block 142, the help information is translated from its native format via a scripting language and placed into an HTML-style Web page. Note that only a native format other than a hypertext format need be translated into an HTML-style Web page]**.

21. **Regarding Claims 17 and 25**, Pickett in view of Baldwin disclose(s) all the limitations of Claims 15 and 23, respectively, and is/are analyzed as previously discussed with respect to those claims.

Furthermore, Pickett in view of Baldwin discloses wherein the first real-time information and the second real-time information include audio, video, text **[Picket: ¶ [0016] through ¶ [0017]]**, or any combination thereof.

22. **Regarding Claims 18 and 26**, Pickett in view of Baldwin disclose(s) all the limitations of Claims 15 and 23, respectively, and is/are analyzed as previously discussed with respect to those claims.

Furthermore, Pickett in view of Baldwin discloses wherein the first real-time information and the second real-time information is new or updated information **[Picket: ¶ [0016] through ¶ [0017]]**.

23. Claim **5** rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claim 3 above, and further in view of Kern et al. (US 2002/0059369 A1).

24. **Regarding Claims 5**, Pickett in view of Baldwin disclose(s) all the limitations of Claims 3, respectively, and is/are analyzed as previously discussed with respect to those claims.

Pickett in view of Baldwin may not explicitly disclose wherein said selection mechanism is a hot click button **[Kern: ¶ [0055]: If the subscriber navigates by use of the local browser to a WEB page requiring a secure log-in, such as his/her on-line banking destination, when the subscriber is presented with an input window for ID and Password, the plug in may be activated by a predetermined user input, such as a hot key or right click of the mouse device]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the hotkey of Kern with the user initiated actions of Pickett in view of Baldwin in order to decrease time user requires to perform standard, repeated task.

25. Claims **7, 19, and 27** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claims 1, 15, and 23 above, and further in view of Nason et al. (US 6686936 B1).

26. **Regarding Claim 7**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 1, and is/are analyzed as previously discussed with respect to that claim.

Pickett in view of Baldwin may not explicitly disclose wherein said first real-time information and said second real-time information are provided to the user via a mobile device.

However, Nason discloses wherein said first real-time information and said second real-time information are provided to the user via a mobile device **[Nason: Col. 19, ll. 55-63: Under the appropriate emergency conditions, an alarm monitor could cause the secondary GUI to present the "911?" to the user by overwriting the copy of the primary display stored in the secondary GUI memory. Alternatively, a database of photographs may be stored and one recalled in response to an incoming phone call in which caller ID identified a phone number associated with a database photo entry]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the multi-application display system of Pickett in view of Baldwin with the mobile application of Nason in order to utilize the system in more devices for more users.

27. **Regarding Claims 19 and 27**, Pickett in view of Baldwin disclose(s) all the limitations of Claims 18 and 23, respectively, and is/are analyzed as previously discussed with respect to those claims.

Pickett in view of Baldwin may not explicitly disclose wherein at least one of the first real-time information and the second real-time information is live data.

However, Nason discloses wherein at least one of the first real-time information and the second real-time information is live data **[Nason: Col 17. ll. 56-58: Initiating alternate display content controller 6 as a browser would include a simple window to display the URL as a live HTML document with all conventional functionality]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the multi-application display system of Pickett in view of Baldwin with the live application of Nason in order to allow multiple users to access and update a document at once, improving usability.

28. Claims **14, 16, and 24** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claims 6, 15, and 23 above, and further in view of Celi et al. (US 6538660 B1).

29. **Regarding Claim 14**, Pickett in view of Baldwin disclose(s) all the limitations of Claim 6, and is/are analyzed as previously discussed with respect to that claim.

Pickett in view of Baldwin may not explicitly disclose wherein said virtual thematic environment is holographically projected.

However, Celi discloses wherein said virtual thematic environment is holographically projected **[Celi: Col. 6, ll. 5-11: The term "article of manufacture" (or alternatively,**

"computer program product") as used herein is intended to encompass one or more computer programs and/or data files accessible from one or more computer-readable devices, carriers, or media, such as magnetic storage media, "floppy disk," CD-ROM, optical disks, holographic units, volatile or non-volatile electronic memory, etc.].

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the multi-application system of Pickett in view of Baldwin with the holographic media of Celi in order to utilize multiple varieties of media, enhancing usability.

30. **Regarding Claims 16 and 24**, Pickett in view of Baldwin disclose(s) all the limitations of Claims 15 and 23, respectively, and is/are analyzed as previously discussed with respect to those claims.

Pickett in view of Baldwin may not explicitly disclose wherein the virtual thematic environment is a game environment.

However, Celi discloses wherein the virtual thematic environment is a game environment **[Celi: Col. 3, ll. 1-3: The computer system 2 would include an operating system capable of displaying GUI windows, e.g., Microsoft Windows 95, 98, NT, and CE; OS/2; Red Hat Linux; MAC OS, etc.** The application program 4 may comprise any application program capable of executing in the computer system 2, e.g., wordprocessor, spreadsheet, calendar, game, etc.]**.

31. Claims **20-22, and 28** rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin as applied to claim 15 and 23 above, and further in view of Hirayama et al. (US 2002/0198652 A1).

32. **Regarding Claims 20 and 28**, Pickett in view of Baldwin disclose(s) all the limitations of Claims 15 and 23, respectively, and is/are analyzed as previously discussed with respect to those claims.

Pickett in view of Baldwin may not explicitly discloses wherein a first device of the devices includes a client system, and wherein the first real-time information is location data identifying a location of the client system.

However, Hirayama discloses wherein a first device of the devices includes a client system, and wherein the first real-time information is location data identifying a location of the client system **[Hirayama: ¶ [0108]: A present position of the terminal is detected by a communication function provided in the secondary terminal 3. For example, a memory card having a GPS function is loaded in the card interface 3Ac of the secondary terminal 3 and the GPS function is used for detecting the present position]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the multi-application system of Pickett in view of Baldwin with the location determination via GPS of Hirayama in order to improve information the system or user may use or display, improving overall functionality.

33. **Regarding Claim 21**, Pickett in view of Baldwin and Hirayama disclose(s) all the limitations of Claim 20, and is/are analyzed as previously discussed with respect to that claim.

Furthermore, Pickett in view of Baldwin and Hirayama discloses wherein the client system includes a GPS system, and wherein the location data is generated by the GPS system of the client system **[Hirayama: ¶ [0108]]**.

34. Claim **22** is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Picket (US 2002/0191019 A1) in view of Celi, Jr. et al. (US 6538660 B1), Hirayama et al. (US 2002/0198652 A1), and Baldwin et al. (US 5877757).

35. **Regarding Claim 22**, Pickett discloses one or more non-transitory computer readable medium comprising: at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual environment **[Pickett: ¶ [0016]]**; a primary application; a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application **[Pickett: ¶ [0017]]**; a graphics user interface (GUI) module having a visual component, the GUI module including software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display elements within the virtual thematic environment,, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface **[Picket: ¶ [0016] – [0017]]**; and at least one digital content library module storing information and providing content management of information within the virtual thematic environment **[Picket: ¶ [0020]]**.

Pickett may not explicitly disclose the secondary application being an electronic messaging component utilized within a same application environment of the virtual thematic environment as content provided by the primary application, the primary application receiving and using location information from a GPS system to provide the content; a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment.

However, Celi discloses the secondary application being an electronic messaging component utilized within a same application environment of the virtual thematic environment as content provided by the primary application **[Celi: Col. 1, ll. 21-24: While the window 4 is being displayed, another application program displays information, such as a message in a dialog box or separate graphical window]**.

Celi may not explicitly disclose the primary application receiving and using location information from a GPS system to provide the content.

However, Hirayama discloses the primary application receiving and using location information from a GPS system to provide the content **[Hirayama: ¶ [0108]]**.

Hirayama may not explicitly disclose a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment.

However, Baldwin discloses a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret content such that the content is

manipulated so as to be accessible on different types of devices for use within the virtual thematic environment **[Baldwin: Col. 1, ll. 25-35]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date or time of invention to combine the multi-application window of Pickett with the holographic media of Celi in order to utilize multiple varieties of media, enhancing usability, as well as with the location determination via GPS of Hirayama in order to improve information the system or user may use or display, improving overall functionality, and also with the multi-application window which teaches the well-known process of sharing data on different devices of Baldwin in order to provide data to multiple recipients which may have a variety of devices so all may access said data, improving quantity of recipients able to receive said data.

36. Claim **29** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin and Hirayama as applied to claim 28 above, and further in view of Bruce-Smith (US 2002/0118272 A1).

37. **Regarding Claim 29**, Pickett in view of Baldwin and Hirayama disclose(s) all the limitations of Claim 28 and is/are analyzed as previously discussed with respect to that claim.

Pickett in view of Baldwin Hirayama may not explicitly disclose wherein the second real-time information includes live video.

However, Bruce-Smith discloses wherein the second real-time information includes live video **[Bruce-Smith: ¶ [0016]: In the conventional system it is known to run the web browser (or other application) for display on the secondary monitor 28 and the conferencing application, in combination with live video, on the primary monitor]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the live video-conferencing of Bruce-Smith with the multi-application display system of Pickett in view of Baldwin and Hirayama in order to provide more tools to a user, improving overall usability.

38. Claim **30** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Pickett in view of Baldwin and Hirayama as applied to claim 28 above, and further in view of Kern et al. (US 2002/0059369 A1).

39. **Regarding Claim 30**, Pickett in view of Baldwin and Hirayama disclose(s) all the limitations of Claim 28, and is/are analyzed as previously discussed with respect to that claim.

Pickett in view of Baldwin and Hirayama may not explicitly disclose wherein the secondary application includes an electronic messaging component.

However, Kern discloses wherein the secondary application includes an electronic messaging component **[Kern: ¶ [0159]: In other example of a high degree of non-sensitivity, a user may have a message within summary block 225 concerning an e-mail account. It may read simply that the user has received 10 e-mails within the past 3 hrs. If a lower degree of non-sensitivity were applied to this example, the message may include partial identifiers of the e-mail authors, as well as, a non-sensitized summary of the first few lines of each message. There are many possibilities]**.

It would have been obvious to one having ordinary skill in the art before the effective filing date to combine the multi-application display system of Pickett in view of Baldwin and

Hirayama with the messaging application of Kern in order to increase possible uses for the system by the user.

Conclusion

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN R MESSMORE whose telephone number is (571)272-2773. The examiner can normally be reached on Monday-Friday 9-5 EST/EDT.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. 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.

/JONATHAN R MESSMORE/
Primary Examiner, Art Unit 2482

Notice of References Cited	Application/Control No. 16/833,127	Applicant(s)/Patent Under Reexamination Altieri, Frances Barbaro	
	Examiner JONATHAN R MESSMORE	Art Unit 2482	Page 1 of 1

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	R					
	S					
	T					

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*		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
	16/833,127	Altieri, Frances Barbaro
	Examiner	Art Unit
	JONATHAN R MESSMORE	2482

CPC - Searched*		
Symbol	**Date**	**Examiner**
G06T 19/006	04/24/2020	J.M.
A63F 13/215, 13/216, 13/217, 13/335	04/24/2020	J.M.

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
EAST Search History Attached	04/24/2020	J.M.
NPL Search	04/24/2020	J.M.
Inventor Name Search	04/24/2020	J.M.

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

/JONATHAN R MESSMORE/ Primary Examiner, Art Unit 2482	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/833,127	Altieri, Frances Barbaro
	Examiner	Art Unit
	JONATHAN R MESSMORE	2482

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

CLAIMS

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

CLAIM		DATE								
Final	Original	04/24/2020								
	1	✓								
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Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	
Filing Date	Herewith
First Named Inventor	Frances Barbaro Altieri
Art Unit	
Examiner Name	
Attorney Docket No.	407.001

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PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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Application No.	
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Art Unit	
Examiner Name	
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PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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(Use as many sheets as necessary)

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Application No.	
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First Named Inventor	Frances Barbaro Altieri
Art Unit	
Examiner Name	
Attorney Docket No.	407.001

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	NPL1	Final Office Action issued in U.S. Patent Application No. 15/348,438 on December 26, 2018.
	NPL2	Non-Final Office Action issued in U.S. Patent Application No. 15/348,438 on May 31, 2018.
	NPL3	Non-Final Office Action issued in U.S. Patent Application No. 13/137,299 on July 8, 2014.
	NPL4	Final Office Action issued in U.S. Patent Application No. 13/137,299 on January 15, 2015.
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	NPL9	USPTO PATENT TRIAL AND APPEAL BOARD, *Niantic, Inc. v. Barbaro Technologies, LLC*; Petition for *Inter Partes* Review of U.S. Patent No. 7,373,377, IPR2019-00668, filed February 12, 2019.
	NP10	USPTO PATENT TRIAL AND APPEAL BOARD; *Niantic, Inc. v. Barbaro Technologies, LLC*; Case No. IPR2019-00668, Patent Owner Preliminary Response, filed May 22, 2019.
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	NPL30	Response to Restriction Requirement dated August 16, 2005 regarding U.S. Patent Application No. 10/805,415, filed September 13, 2005.
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	NPL38	Response to the Final Office Action dated May 3, 2007 regarding U.S. Patent Application No. 10/805,415, filed August 1, 2007.
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	NPL40	Response to Notice of Non-Compliant Amendment dated November 14, 2007 regarding U.S. Patent Application No. 10,805,415, filed November 21, 2017.
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	NPL47	Preliminary Amendment regarding U.S. Patent Application No. 13/137,299, filed June 12, 2012.
	NPL48	Amendment in Response to the Non-Final Office Action dated July 8, 2014 regarding U.S. Patent Application No. 13/137,299, filed October 7, 2014.

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	NPL49	Amendment in Response to the Final Office Action dated January 15, 2015 regarding U.S. Patent Application No. 13/137,299, filed April 8, 2015.
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	NPL53	Amendment in Response to the Final Office Action dated May 19, 2016 regarding U.S. Patent Application No. 13/137,299, filed August 18, 2016.
	NPL54	USPTO Advisory Action regarding U.S. Patent Application No. 13/137,299 (Atty. Dkt. No. 71457.0014), mailed September 1, 2016.
	NPL55	Amendment in Response to the Advisory Action dated September 1, 2016 regarding U.S. Patent Application No. 13/137,299, filed September 16, 2016.

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	NPL56	Supplemental Amendment in Response to the Advisory Action dated September 1, 2016 regarding U.S. Patent Application No. 13/137,299, filed October 14, 2016.
	NPL57	Amendment in Response to the Non-Final Office Action dated May 15, 2017 regarding U.S. Patent Application No. 13/137,299, filed October 16, 2017.
	NPL58	Amendment in Response to the Final Office Action dated January 18, 2018 regarding U.S. Patent Application No. 13/137,299, filed April 18, 2018.
	NPL59	USPTO Advisory Action regarding U.S. Patent Application No. 13/137,299 (Atty. Dkt. No. 71457.0014), dated May 7, 2018.
	NPL60	Amendment in Response to the Final Office Action dated January 18, 2018 and the Advisory Action dated May 7, 2018 regarding U.S. Patent Application No. 13/137,299, filed June 15, 2018.
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	NPL63	Preliminary Amendment regarding U.S. Patent Application No. 15/348,438, filed November 10, 2016.
	NPL64	Amendment in Response to the Non-Final Office Action dated May 31, 2018 regarding U.S. Patent Application No. 15/348,438, filed September 27, 2018.
	NPL65	Response to the Final Office Action dated December 26, 2018 regarding U.S. Patent Application No. 15/348,438, filed March 11, 2019.
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	NPL70	Preliminary Amendment regarding U.S. Patent Application No. 13/875,908, filed May 2, 2013.
	NPL71	USPTO Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated August 25, 2016.
	NPL72	Amendment in Response to the Non-Final Office Action dated August 25, 2016 regarding U.S. Patent Application No. 13/875,908, filed December 23, 2016.
	NPL73	USPTO Final Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated May 8, 2017.
	NPL74	Amendment in Response to the Final Office Action dated May 8, 2017 regarding U.S. Patent Application No. 13/875,908, filed September 28, 2017.
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	NPL79	USPTO Final Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated May 2, 2018.
	NPL80	Amendment in Response to the Final Office Action dated May 2, 2018 regarding U.S. Patent Application No. 13/875,908, filed October 2, 2018.
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First Named Inventor	Frances Barbaro Altieri
Art Unit	
Examiner Name	
Attorney Docket No.	407.001

NON-PATENT DOCUMENTS

EXAMINIT.	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.
	NPL84	Amendment in Response to the Non-Final Office Action dated March 19, 2019 regarding U.S. Patent Application No. 15/817,815, filed September 17, 2019.
	NPL85	USPTO Final Office Action regarding U.S. Patent Application No. 15/817,815 (Atty. Dkt. No. 71457.0028) dated December 9, 2019.
	NPL86	US District Court Northern District of California, *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 18-cv-02955-RS, Order Construing Claims, filed February 12, 2020.
	NPL87	BRUCE et al., "ARQuake: An Outdoor/Indoor Augmented Reality First Person Application", Proceedings of the Fourth International Symposium on Wearable Computers (ISWC'00), Oct. 2000.
	NPL88	US District Court Northern District of California San Francisco Division, *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Defendant Niantic, Inc.'s Amended Patent L.R. 3-3 Invalidity Contentions, filed March 21, 2019.
	NPL89	BAILLOT et al., "Authoring of Physical Models Using Mobile Computers", *Virtual Reality Laboratory, Advanced Information Technology Division, Naval Research Laboratory*, 2002.
	NPL90	JULIER et al., "Urban Terrain Modeling for Augmented Reality Applications", *3D Synthetic Environment Reconstruction*, 2001.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

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	NPL91	JULIER et al., "The Need for AI: Intuitive User Interfaces for Mobile Augmented Reality Systems", *Advanced Information Technology Naval Research Laboratory*, August 2001.
	NPL92	JULIER et al., "Information Filtering for Mobile Augmented Reality", *IEEE Computer Graphics and Applications*, Vol. 22, Issue 5, August 2002.
	NPL93	SESTITO et al., "Intelligent Filtering for Augmented Reality", *Advanced Information Technology Naval Research Laboratory*, February 2000.
	NPL94	MacIntyre et al., "Estimating and Adapting to Registration Errors in Augmented Reality Systems", *Proceedings IEEE Virtual Reality*, 2002.
	NPL95	GABBARD et al., "Usability Engineering: Domain Analysis Activities for Augmented Reality Systems", *The Engineering Reality of Virtual Reality 2002*, Proceedings in SPIE Volume 4660,February 2002.
	NPL96	HOLLERER et al., "User Interface Management Techniques for Collaborative Mobile Augmented Reality", *Computers and Graphics* 25(5), Oct. 2001.
	NPL97	AZUMA et al., "Recent Advances in Augmented Reality", *IEEE Computer Graphics and Applications*, Vol. 21, Issue 6, Nov/Dec 2001.

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PTO/SB/08A and 08B
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EXAMINIT.	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.
	NPL98	JULIER et al., "Information Filtering for Mobile Augmented Reality", *IEEE Computer Graphics and Applications*, Vol. 22, Issue 5, July 2, 2002.
	NPL99	"EverQuest: Shadows of Luclin", Sony Online Entertainment, Game Manual 2001.
	NPL100	PIEKARSKI et al., "The Tinmith System – Demonstrating New Techniques for Mobile Augmented Reality Modeling", *Australian Computer Science Communications*, January 2002.
	NPL101	PIEKARSKI et al., "Tinmith-Metro: New Outdoor Techniques for Creating City Models with an Augmented Reality Wearable Computer," Proceedings Fifth International Symposium on Wearable Computers", 2001.
	NPL102	PIEKARSKI et al., "Integrating Virtual and Augmented Realities in an Outdoor Application", *Proceedings 2nd IEEE and ACM International Workshop on Augmented Reality* (IWAR '99), 1999.
	NPL103	PIEKARSKI, "Interactive 3D Modelling in Outdoor Augmented Reality Worlds," Wearable Computer Lab, February 2004.
	NPL104	U.S. Patent No. 6,767,287 file wrapper, issued July 27, 2004.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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EXAMINIT.	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.
	NPL105	JULIER et al., "BARS: Battlefield Augmented Reality System", *Advanced Information Technology Naval Research Laboratory*, Oct. 2000.

Examiner Signature:	Date Considered:
/JONATHAN R MESSMORE/	04/24/2020

*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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	secondary near3 application with (gui or (user near3 interface) or ui) and (different near3 devices) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:14
L2	30	secondary near3 application with (gui or (user near3 interface) or ui) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:17
L3	4	l2 and (different with device)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:30
L4	11	l2 and (voice)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:45
L5	0	l2 and (hot near click)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:46
L6	1	l2 and (hot near3 click)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:47
L7	2	l2 and (mobile or cell)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:47

L8	14	l2 and (virtual)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:48
L9	20	l2 and (laptop or phone)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 14:50
L10	33	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$).did.	US-PGPUB; USPAT	OR	OFF	2020/04/24 15:39
L12	5	l2 and (download$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:39
L13	20	l2 and (object)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:41
L14	5	l2 and (translat$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:43

L15	1	l2 and (holograph$4 or holographically)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:45
L16	2	l2 and (game)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:48
L17	2	l2 and (game or gaming)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:48
L18	4	l2 and (live)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:49
L19	24	l2 and (location)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:51
L20	1	l2 and (gps)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:52
L21	1	secondary near3 application with (live near3 video) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:56
L22	19	l2 and (message or messaging) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:58

L23	36	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$ or US-20020198652-$ or US-20020118272-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$ or US-6538660-$).did.	US-PGPUB; USPAT	OR	OFF	2020/04/24 15:59
L25	17	l23 and (message or messaging) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 15:59
L26	37	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-$ or US-20020191019-$ or US-20020059369-$ or US-20020198652-$ or US-20020118272-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$ or US-7142900-$ or US-5877757-$ or US-6337717-$ or US-6538660-$ or US-6686936-$).did.	US-PGPUB; USPAT	OR	OFF	2020/04/24 17:52

L28	23	I26 and (messaging or messages or message)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 17:52
L29	27	I26 and (messaging or messages or message or conversation or convers$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2020/04/24 17:53
S1	5	"2002008077"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S2	3	"20030176213"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S3	2	"20030022719"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S4	10	(S1 or S2 or S3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S5	3	S4 and commercial$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:33
S6	0	S4 and sponsor	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:34

S7	1	S4 and (paid)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:34
S8	1	S4 and advertis$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/04/10 12:34
S9	45542	(commercial or advertis$5) with (requir$5 or skip$5 or view$4) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S10	3732	(commercial or advertis$5) with (requir$5 or skip$5 or view$4) same (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S11	0	(commercial or advertis$5) with (requir$5 with skip$5 with view$4) with (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S12	0	(commercial or advertis$5) with (requir$5 with skip$5 with view$4) same (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:34
S13	73	(commercial or advertis$5) with (requir$5 with view$4) same (internet or web or www) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2015/10/16 13:35
S14	30	(virtual with (leave or exit) with (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 13:09

S15	564	(virtual with (object) with (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 14:51
S16	1	(virtual with (object) with grab$4 with (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 14:52
S17	3	(US-20030177248-$).did. or (US-6546309-$ or US-6057834-$).did.	US-PGPUB; USPAT	AND	ON	2017/05/10 15:27
S18	0	S17 and gps	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:27
S19	2	"20020082077"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:27
S20	4	(US-20030177248-$ or US-20020082077-$).did. or (US-6546309-$ or US-6057834-$).did.	US-PGPUB; USPAT	AND	ON	2017/05/10 15:28
S21	0	S20 and gps	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S22	0	S20 and satelite	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S23	1	S20 and satellite	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28
S24	18	(virtual with gps with map) and @ad<"20021016"	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/05/10 15:28

S25	2	(virtual with (object) with grab$4 same (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/10/05 09:48
S26	0	(virtual with (object) with inport same (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/10/05 09:49
S27	1	(virtual with (object) with import same (webpage or website or web or internet)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2017/10/05 09:49
S28	2	"20110292167"	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2017/10/05 11:08
S29	58	((copy or grab) near2 (object or content)) with ((plurality or multiple) near3 (display or device or user)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 12:01
S30	22	((copy or grab) near2 (object or content)) with ((plurality or multiple) near3 (display or device or user)) and (3d or reality or augment$4 or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 12:16
S31	6	((copy$4 or grab$4) near2 (object or content or target)) with ((plurality or multiple) near3 (display or user)) and (3d or reality or augment$4 or virtual) and @ad<"20021016" not S30	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 15:28
S32	27	((copy$4 or grab$4) near2 (object or content or target)) with (exit with user) and (3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 15:30

S33	18	((copy$4 or grab$4) near2 (object or content or target)) and (exit with user) with (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/09 15:31
S34	725	((copy$4 or grab$4) near2 (object or content or target)) with new and (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:14
S35	54	((copy$4 or grab$4) near2 (object or content or target)) with new same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:14
S36	21	((copy$4 or grab$4) near2 (object or content or target)) near4 new same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:14
S37	702	(import (object or content or target)) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:18
S38	85	(import near3 (object or content or target)) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:18
S39	0	(import near3 (new near2 (object or content or target))) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:18
S40	9	(user with import near3 (object or content or target)) same (environment or 3d or reality or virtual) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:19

S41	5	"20020024517".pn. or "6020885".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:26
S42	0	S41 and gui	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:26
S43	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	AND	ON	2018/01/10 13:26
S44	2	S43 and gui	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:26
S45	9	S40 and (stor$4 or memor$4 or library or (content adj management))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/01/10 13:29
S46	0	S43 and physics	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:54
S47	4	S43 and nature	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:55
S48	1	S43 and (artificial or ai)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 14:56
S49	6	S43 and (library)	US-PGPUB; USPAT;	AND	ON	2018/01/10 14:57

			EPO; JPO; DERWENT			
S50	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	AND	ON	2018/01/10 18:15
S51	1	S50 and rule	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:15
S52	0	S50 and ("based on")	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:17
S53	12	S50 and ("based")	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:17
S54	2	S50 and (bill$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:22
S55	2	S50 and (report$4 or bug$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:23
S56	2	S50 and (compet$8)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:28
S57	12	S50 and (tim$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:29
S58	5	S50 and (credit)	US-PGPUB; USPAT;	AND	ON	2018/01/10 18:30

			EPO; JPO; DERWENT			
S59	1	S50 and (gps)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/01/10 18:31
S60	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	AND	ON	2018/05/02 12:58
S61	9	S60 and (web or site or website or internet)	US-PGPUB; USPAT; EPO; JPO; DERWENT	AND	ON	2018/05/02 12:58
S62	12	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$).did.	US-PGPUB; USPAT	OR	OFF	2018/05/25 15:49
S63	5	S62 and (geograph$4 or location) with user	USPAT	OR	OFF	2018/05/25 15:49
S64	1	S62 and (radar) with user	USPAT	OR	OFF	2018/05/25 15:52
S65	0	"20170061697"	USPAT	OR	OFF	2018/05/25 15:54
S66	2	"20170061697"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/05/25 15:54
S67	1	S62 and (radar with user)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/05/25 15:55

S69	4	S62 and updat$4	USPAT	OR	OFF	2018/05/25 16:15
S70	1	S62 and updat$4 with interval	USPAT	OR	OFF	2018/05/25 16:20
S71	227	request with updat$4 with interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:21
S72	4202	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2018/05/25 16:22
S73	0	S72 and S71	USPAT	OR	OFF	2018/05/25 16:23
S74	1	request with updat$4 with interval same virtual and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:23
S75	0	request adj updat$4 with predetermined adj interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:24
S76	2	request near3 updat$4 with predetermined adj interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:24
S77	18	request adj updat$4 with interval and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:26
S78	14	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$).did.	US-PGPUB; USPAT	OR	OFF	2018/05/25 16:29
S79	2	S78 and (real adj time)	USPAT	OR	OFF	2018/05/25 16:29
S80	0	S78 and (gps or smell or (voice near recogni$8) or weather)	USPAT	OR	OFF	2018/05/25 16:37
S81	0	S78 and gps	USPAT	OR	OFF	2018/05/25 16:38
S82	12	(virtual with gps with user) and @ad<"20021016"	USPAT	OR	OFF	2018/05/25 16:51

S83	16	((("ALTIERI") near3 ("Frances") near3 ("BARBARO"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/05/25 18:46
S84	15	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$).did.	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:41
S85	0	S84 and (automatic with exit)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 09:41
S86	3	S84 and (exit)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 09:42
S87	1	"20110292167"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:43
S88	211	(virtual) and (automatic$4 with (exit or return)) same (internet or server or website) and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:48
S89	4853	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2018/11/07 09:49
S90	1	S89 and S88	USPAT	OR	OFF	2018/11/07 09:49
S91	212	(virtual or thematic) and (automatic$4 with (exit or return)) same (internet or server or website) and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:51
S92	1	(thematic) and (automatic$4 with (exit or return)) same (internet or server or website) and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 09:51

S93	16	((("ALTIERI") near3 ("Frances"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 10:47
S94	3	S93 and exit	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/11/07 10:48
S98	15	(virtual with update with real near6 location) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 14:54
S99	0	(virtual with update with real near6 location) and (updat$4 with increment$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 15:03
S101	0	(virtual with update with real with location) and (updat$4 with increment$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 15:03
S102	28	(virtual with real with location) and (updat$4 with increment$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/17 15:03
S103	78	(virtual with real with location) and (updat$4 with contin$6) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:02
S104	5017	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	USPAT	OR	OFF	2018/12/18 10:02

S105	4	S103 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:02
S106	0	(virtual with real with location) and (updat$4 with automatic) and @ad<"20021016" and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S107	10	(virtual with real with location) and (updat$4 with automatic) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S108	43	(virtual with real with location) and (updat$4 with automatic$4) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S110	0	S108 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:06
S111	1136	(updat$4 with automatic$4) same (interval) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08
S112	0	S111 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08
S113	108	(updat$4 with automatic$4) same (interval) same location and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08

S114	46	location with (updat$4 with automatic$4) same (interval) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:08
S115	2	location with (updat$4 with automatic$4) same (interval) and virtual with real and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:09
S116	7	(virtual with real with location with (overlay or superimposed or imposed)) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:36
S117	0	S104 and S116	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:36
S118	77	(virtual near3 environment) with selection and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:50
S119	4	S118 and S104	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 10:50
S120	5	(virtual near3 environment) with selection and (user with location with updat$4) and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 12:16
S121	28	(US-20030177248-$ or US-20020082077-$ or US-20020161521-$ or US-20040034601-$ or US-20030069890-$ or US-20020024517-$ or US-20170061697-$ or US-20110292167-$ or US-20060046699-$ or US-20030222924-$ or US-20020154174-$ or US-20020140698-	US-PGPUB; USPAT	OR	OFF	2018/12/18 12:19

		$).did. or (US-6546309-$ or US-6057834-$ or US-6157380-$ or US-5608850-$ or US-6057856-$ or US-6020885-$ or US-7558578-$ or US-6657584-$ or US-6616533-$ or US-6850250-$ or US-6106399-$ or US-5850352-$ or US-5495576-$ or US-7190331-$ or US-5175616-$ or US-5563988-$).did.				
S122	3	S121 and (smell or weather)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:19
S123	14	S121 and (voice or gps)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:20
S124	8	S121 and ((voice adj recognition) or gps)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:20
S125	26	S121 and (mini or application)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:23
S126	3	S121 and (mini)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:23
S127	4	S121 and (email)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2018/12/18 12:23
S128	2	location with (updat$4 with automatic$4) same (interval) and virtual and @ad<"20021016"	US-PGPUB; USPAT; USOCR;	AND	ON	2018/12/18 12:57

			EPO; JPO; DERWENT			
S129	2	"8458028".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 12:59
S130	2	"7373377".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 13:09
S131	5	user with (walk or move) with virtual with real with updat$4 and @ad<"20021016"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2018/12/18 13:10

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L11	1	"Term Removed"	USPAT	OR	OFF	2020/04/24 15:39
L24	1	"Term Removed"	USPAT	OR	OFF	2020/04/24 15:59
L27	1	"Term Removed"	USPAT	OR	OFF	2020/04/24 17:52
S95	13145	g06t19/006.cpc. or h04n13/363.cpc. or h04n13/366.cpc. or a63f19/103.cpc. or a63f13/216.cpc. or a63f13/335.cpc. or 163f13/65.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/07 10:30
S96	470	(virtual or thematic) same (exit) and S95	US-PGPUB; USPAT	OR	OFF	2018/11/07 10:32
S97	23	(virtual or thematic) same (exit) and S95 and @ad<"20021016"	US-PGPUB; USPAT	OR	OFF	2018/11/07 10:32

S132	1	"Term Removed"	USPAT	OR	OFF	2018/12/18 12:19

4/24/2020 6:12:51 PM
C:\Users\jmessmore\Documents_Applications\16000000\16833127\16833127 EAST.wsp

Bibliographic Data

Application No: 16/833,127

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /JONATHAN R MESSMORE/ Examiner's Signature | Initials

Title: INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/27/2020	348	2482	407.001
RULE			

APPLICANTS

INVENTORS

Frances Barbaro Altieri Belmont, MA, UNITED STATES

CONTINUING DATA

This application is a CON of 15348438 11/10/2016

15348438 is a CON of 13137299 08/04/2011 PAT 10255724

13137299 is a DIV of 12073967 03/12/2008 PAT 8225220

12073967 is a DIV of 10805415 03/22/2004 PAT 7373377

FOREIGN APPLICATIONS

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Sheet 1 of 1

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Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	
Examiner Name	
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

EXAM INIT.	Cite No. [1]	**NON-PATENT DOCUMENTS** 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.
	NPL1	PIEKARSKI, "Interactive 3D Modelling in Outdoor Augmented Reality Worlds," Wearable Computer Lab, February 2004.

Examiner Signature: /JONATHAN R MESSMORE/ **Date Considered:** 04/24/2020

*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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.R.M/

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PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	2482
Examiner Name	
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

EXAM INIT.	Cite No. [1]	**NON-PATENT DOCUMENTS** 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.
	NPL1	U.S. District Court Northern District of California San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Niantic's Notice of Motion and Rule 12(c) Motion for Judgement on the Pleadings of Invalidity Under 35 U.S.C 101, filed April 23, 2020.

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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	39291831
Application Number:	16833127
International Application Number:	
Confirmation Number:	1088
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Ashley Morales
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	407.001
Receipt Date:	28-APR-2020
Filing Date:	27-MAR-2020
Time Stamp:	17:28:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	407001_sb21TransmittalForm_SecondSupplDS.pdf	144088 c40aa90ec5ab973ee283a4f79ed4e91f69ddabcf	no	1

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	407001_SecondSuppIDS.pdf	62373 10c820702b6ace127301228a04a5705dd8df5b25	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	Niantic101Motion.pdf	333384 d61bf849dc9c8253be4d2b7108f315fc563cbb56	no	22
Warnings:					
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			Total Files Size (in bytes):	539845	

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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.

Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
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(to be used for all correspondence after initial filing)

Application Number	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	2482
Examiner Name	
Attorney Docket Number	407.001

Total Number of Pages in This Submission

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
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- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
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Remarks

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1. SB21 Transmittal Form (1 pg);
2. Information Disclosure Statement (1 pg); and
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Firm Name	DUNLAP CODDING, P.C.		
Signature	/Marc A. Brockhaus/		
Printed name	Marc A. Brockhaus		
Date	04/28/2020	Reg. No.	40,923

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Signature	/Marc A. Brockhaus/		
Typed or printed name	Marc A. Brockhaus	Date	04/28/2020

This collection of information is required by 37 CFR 1.5. 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 and1.14. This collection is estimated to 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.**

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

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.
16/833,127	03/27/2020	Frances Barbaro Altieri	407.001	1088

30589 7590 04/13/2020

DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

EXAMINER	

ART UNIT	PAPER NUMBER
2482	

NOTIFICATION DATE	DELIVERY MODE
04/13/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@dunlapcodding.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 16/833,127	**Applicant(s)** Altieri, Frances Barbaro	
	Examiner JoAnne L Burke	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 27 March 2020 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to JoAnne Burke at (571)272-4584. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/JOANNE L BURKE/ Lead Paralegal Specialist, OPET	

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 16/833,127

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	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	30 minus 20 =	* 10	x 50 =	500	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x 230 =	230			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 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).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1515		TOTAL	

APPLICATION AS AMENDED - PART II

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	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	

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	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 found in the appropriate box in column 1.

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/833,127	03/27/2020		1515	407.001	30	4

CONFIRMATION NO. 1088

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

FILING RECEIPT

OC000000118043036

Date Mailed: 04/09/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Frances Barbaro Altieri, Belmont, MA;

Applicant(s)

Frances Barbaro Altieri, Belmont, MA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 15/348,438 11/10/2016
which is a CON of 13/137,299 08/04/2011 PAT 10255724
which is a DIV of 12/073,967 03/12/2008 PAT 8225220
which is a DIV of 10/805,415 03/22/2004 PAT 7373377

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/07/2020

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/833,127**

Projected Publication Date: 07/16/2020

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application No.	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	
Examiner Name	
Attorney Docket No.	407.001

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Patent Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. [1]	Publication Number Number-Kind Code [2] (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. [1]	**Foreign Document No.[3]** Country Code[4]- Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYY	T[6]

EXAM INIT.	Cite No. [1]	**NON-PATENT DOCUMENTS** 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.
	NPL1	PIEKARSKI, "Interactive 3D Modelling in Outdoor Augmented Reality Worlds," Wearable Computer Lab, February 2004.

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.
2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
6 Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	39009992
Application Number:	16833127
International Application Number:	
Confirmation Number:	1088
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Ashley Morales
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	407.001
Receipt Date:	30-MAR-2020
Filing Date:	
Time Stamp:	16:35:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	407001_sb21TransmittalForm_SupplDS_.pdf	144064 09d25d35c62d5eb3a76c6d77638ac7e9d8c364a3	no	1

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	407001_SuppIDS.pdf	54100 276b1b7e0c76d0805a879e407a54b269e0638a39	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	NPL1.pdf	6535205 30b409b7be9860110fb8ecef467bc0307a7e7e85	no	206
Warnings:					
Information:					
Total Files Size (in bytes):			6733369		

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.

Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	16/833,127
Filing Date	03/27/2020
First Named Inventor	Frances Barbaro Altieri
Art Unit	
Examiner Name	
Attorney Docket Number	407.001

Total Number of Pages in This Submission

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please identify below):

See Remarks

Remarks

ELECTRONICALLY TRANSMITTED:
1. SB21 Transmittal Form (1 pg);
2. Information Disclosure Statement (1 pg); and
3. Non-Patent Literature Document (206 pgs).

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	DUNLAP CODDING, P.C.		
Signature	/Marc A. Brockhaus/		
Printed name	Marc A. Brockhaus		
Date	03/30/2020	Reg. No.	40,923

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	/Marc A. Brockhaus/		
Typed or printed name	Marc A. Brockhaus	Date	03/30/2020

This collection of information is required by 37 CFR 1.5. 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 and1.14. This collection is estimated to 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.**

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

PTO/AIA/15 (10-17)
Approved for use through 11/30/2020. 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.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	407.001
First Named Inventor	Frances Barbaro Altieri
Title	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
Priority Mail Express® Label No.	Electronically Filed

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

1. [ ] **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. [✓] **Applicant asserts small entity status.** See 37 CFR 1.27
3. [ ] **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. [✓] **Specification** [*Total Pages* 75] Both the claims and abstract must start on a new page. *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. [✓] **Drawing(s)** (35 U.S.C. 113) [*Total Sheets* 7]
6. **Inventor's Oath or Declaration** [*Total Pages* 1] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. [ ] Newly executed (original or copy)
   b. [✓] A copy from a prior application (37 CFR 1.63(d))
7. [✓] **Application Data Sheet** ** See note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. **CD-ROM or CD-R** in duplicate, large table, or Computer Program (*Appendix*)
   [ ] Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** (*if applicable, items a. – c. are required*)
   a. [ ] Computer Readable Form (CRF)
   b. [ ] Specification Sequence Listing on:
      i. [ ] CD-ROM or CD-R (2 copies); or
      ii. [ ] Paper
   c. [ ] Statements verifying identity of above copies

ACCOMPANYING APPLICATION PAPERS

10. [✓] **Assignment Papers** (cover sheet & document(s))
    Name of Assignee _____
11. [ ] **37 CFR 3.73(c) Statement** (*when there is an assignee*) [ ] **Power of Attorney**
12. [ ] **English Translation Document** (*if applicable*)
13. [✓] **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    [✓] Copies of citations attached
14. [ ] **Preliminary Amendment**
15. [ ] **Return Receipt Postcard** (*MPEP § 503*) (*Should be specifically itemized*)
16. [ ] **Certified Copy of Priority Document(s)** (*if foreign priority is claimed*)
17. [ ] **Nonpublication Request** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. [✓] **Other:** SB424 - Request for Prioritized Examination

*Note: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

19. CORRESPONDENCE ADDRESS

[✓] The address associated with Customer Number: 30589 **OR** [ ] Correspondence address below

Name	Dunlap Codding, P.C.				
Address	P.O. Box 16370				
City	Oklahoma City	State	OK	Zip Code	73113
Country	US	Telephone	405-607-8600	Email	mbrockhaus@dunlapcodding.com

Signature	/Marc A. Brockhaus/	Date	03/27/2020
Name (Print/Type)	Marc A. Brockhaus	Registration No. (Attorney/Agent)	40,923

This collection of information is required by 37 CFR 1.53(b). 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. 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 Data Sheet 37 CFR 1.76	Attorney Docket Number	407.001
	Application Number	
Title of Invention	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
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Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Frances	Barbaro	Altieri	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Belmont	State/Province	MA	Country of Residence	US

Mailing Address of Inventor:

Address 1	58-60 Waverley Street		
Address 2			
City	Belmont	State/Province	MA
Postal Code	02478	Country i	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	30589		
Email Address	mbrockhaus@dunlapcodding.com	Add Email	Remove Email

Application Information:

Title of the Invention	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT		
Attorney Docket Number	407.001	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)	

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Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15/348438	2016-11-10

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	407.001
	Application Number	
Title of Invention	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT	

Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15/348438	Continuation of	13/137299	2011-08-04	10255724	2019-04-09
Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13/137299	Division of	12/073967	2008-03-12	8225220	2012-07-17
Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
12/073967	Division of	10/805415	2004-03-22	7373377	2008-05-13

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Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

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Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

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B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	407.001
	Application Number	
Title of Invention	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◯ Assignee	◯ Legal Representative under 35 U.S.C. 117	◯ Joint Inventor
◯ Person to whom the inventor is obligated to assign.	◯ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Applicant:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Assignee Information including Non-Applicant Assignee Information:

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Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

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Signature:

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This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Marc A. Brockhaus/			Date (YYYY-MM-DD)	2020-03-27
First Name	Marc A.	Last Name	Brockhaus	Registration Number	40,923

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Title of Invention	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT	

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

Electronically Filed: 03/27/2020

INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

Incorporation by reference

[0001] The present application is a continuation of U.S. Patent Application No. 15/348,438, filed on November 10, 2016, which is a continuation of U.S. Patent Application No. 13/137,299, filed on August 4, 2011, now U.S. Patent No. 10,255,724; which is a divisional application of U.S. Patent Application No. 12/073,967, filed on March 12,2008, now U.S. Patent No. 8,225,220; which is a divisional application of U.S. Patent Application No. 10/805,415 filed March 22, 2004, now U.S. Patent No. 7,373,377; the contents of all of which are herein incorporated by reference. The present application also incorporates by reference U.S. Patent Application No. 10/272,408, filed October 16, 2002.

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The present invention relates to an interactive software application platform which can be used in entertainment, business, publishing, and other applications to provide a virtual and real world experience to the user by integrating audio, video, two dimensional (2D), and three dimensional (3D) technology, and other applications or services.

2. Description of the Related Art

[0003] Virtual environments are increasingly of interest to users for entertainment (i.e., games) and educational purposes. Based on this increase, the business world is finding new ways to access users through the virtual environments, for product placement and to offer services. In addition, the use of virtual environments to illustrate medical procedures etc., or for business training purposes, are used routinely.

[0004] However, the virtual environments, especially those present on the internet, for example, have not provided the user with a real world experience. Accordingly, a way to

integrate audio, video, 2D, and 3D technology in order to maximize the real world experience for the user, is desired.

SUMMARY OF THE INVENTION

[0005] The present invention is directed to an interactive software application platform which can be used in entertainment, business, publishing, and other applications to provide a virtual and real world experience to the user by integrating audio, video, two dimensional (2D), and three dimensional (3D) technology, and other applications or services.

[0006] In one embodiment consistent with the present invention, a method of integrating real-time information into a virtual thematic environment using a computer system, includes downloading real-time information from a source external to the virtual thematic environment; inserting real-time information into the virtual thematic environment; and providing access to the real-time information to a user within the virtual thematic environment.

[0007] In another embodiment consistent with the present invention, the real-time information is at least one of audio, video, chronological, text, and GPS, and the real-time information is provided to the user via a mobile device.

[0008] In another embodiment consistent with the present invention, the real-time information is product placement information from a sponsor.

[0009] In another embodiment consistent with the present invention, the external source is the internet and the real-time information is retrieved via cable or satellite.

[0010] In another embodiment consistent with the present invention, the user is provided with mini-applications within the virtual thematic environment which operate in real-time with real-time information.

[0011] In another embodiment consistent with the present invention, the real-time information is language translation.

[0012] In another embodiment consistent with the present invention, the virtual thematic environment is holographically projected.

[0013] In another embodiment consistent with the present invention, a method of integrating information into a virtual thematic environment using a computer system, includes

accessing a database where the information is stored; retrieving the information from the database; inserting the information into the virtual thematic environment; and displaying the information to a user within the virtual thematic environment.

[0014] In another embodiment consistent with the present invention, the virtual thematic environment is a game.

[0015] In another embodiment consistent with the present invention, a method of providing product placement in a virtual thematic environment using a computer system, includes retrieving information on a sponsored product from a database where product information is stored; and displaying the sponsored product within the virtual thematic environment.

[0016] In another embodiment consistent with the present invention, the method further includes providing a selection mechanism to a user such that the product can be accessed by use of the selection mechanism; and automatically providing the product information on the product to the user after selection of the product.

[0017] In another embodiment consistent with the present invention, automatically providing the product information includes the step of: automatically directing the user to a website which provides information on the product.

[0018] In another embodiment consistent with the present invention, the method further includes returning the user to the virtual thematic environment at a point where the user left the virtual thematic environment.

[0019] In another embodiment consistent with the present invention, the method further includes tracking movements and purchases of the user at each website visited by the user and within the virtual thematic environment.

[0020] In another embodiment consistent with the present invention, the computer system of the present invention has a program for integrating real-time information into a virtual thematic environment, including means for downloading real-time information from a source external to the virtual thematic environment; means for inserting the real-time information into the virtual thematic environment; and means for providing access to the real-time information to a user within the virtual thematic environment.

[0021] In another embodiment consistent with the present invention, the computer system of the present invention has a program for integrating information into a virtual thematic environment using a computerized system, including means for accessing a database where the information is stored; means for retrieving the information from said database; means for inserting the information into the virtual thematic environment; and means for displaying the information to a user within the virtual thematic environment.

[0022] In another embodiment consistent with the present invention, the computer system of the present invention has a program for providing product placement in a virtual thematic environment using a computerized system, including means for retrieving information on a sponsored product from a database where product information is stored; and means for displaying the sponsored product within the virtual thematic environment.

[0023] In another embodiment consistent with the present invention, the computer system of the present invention integrates real-time information into a virtual thematic environment, and includes at least one memory containing at least one program including the steps of: downloading real-time information from a source external to the virtual thematic environment; inserting said real-time information into the virtual thematic environment; and providing access to the real-time information to a user within the virtual thematic environment; and at least one processor for running the program.

[0024] In another embodiment consistent with the present invention, the computer system of the present invention integrates information into a virtual thematic environment, and includes at least one memory having at least one program including the steps of: accessing a database where the information is stored; retrieving the information from said database; inserting the information into the virtual thematic environment; and displaying the information to a user within the virtual thematic environment; and at least one processor for running the program.

[0025] In another embodiment consistent with the present invention, the computer system of the present invention provides product placement in a virtual thematic environment, including at least one memory having at least one program including the steps of: retrieving information on a sponsored product from a database where product information is stored; and

displaying the sponsored product within the virtual thematic environment; and at least one processor for running the program.

[0026] In another embodiment consistent with the present invention, a method of integrating holographic images into a virtual thematic environment using a computerized system, includes displaying images from a virtual thematic environment; and projecting the images as holographic projections using a holographic projection system.

[0027] In another embodiment consistent with the present invention, the method further includes integrating audio and video into the holographic projections.

[0028] In another embodiment consistent with the present invention, the method further includes integrating real-time information into the virtual thematic environment.

[0029] In another embodiment consistent with the present invention, the method further includes tracking a location of a user within the holographically projected virtual thematic environment.

[0030] In another embodiment consistent with the present invention, the tracking is performed using a GPS system.

[0031] In another embodiment consistent with the present invention, the method further includes integrating at least one of a voice recognition system, a synthetic smell system, a weather system, and a GPS system into the holographically projected virtual thematic environment.

[0032] In another embodiment consistent with the present invention, a computer system having a program for integrating holographic images into a virtual thematic environment using a computerized system, includes means for displaying images from a virtual thematic environment; and means for projecting the images as holographic projections using a holographic projection system.

[0033] In another embodiment consistent with the present invention, a computer system for integrating holographic images into a virtual thematic environment using a computerized system, includes at least one memory having at least one program including the steps of: displaying images from a virtual thematic environment; and projecting the images as

holographic projections using a holographic projection system; and at least one processor for running the program.

[0034] In one embodiment consistent with the present invention, an apparatus for providing holographic images into a virtual thematic environment, includes a computer system which runs a program including displaying images from a virtual thematic environment; and a holographic projection system which projects the virtual thematic environment as holographic images.

[0035] In another embodiment consistent with the present invention, the apparatus further includes an integration of at least one of audio, video, a voice recognition system, a synthetic smell system, a weather system, and a GPS system into the holographically projected virtual thematic environment.

[0036] In another embodiment consistent with the present invention, the apparatus further includes a plurality of sensors to track movement of a user within the virtual thematic environment.

[0037] In another embodiment consistent with the present invention, real-time information is integrated into the virtual thematic environment.

[0038] In another embodiment consistent with the present invention, a computer system having an interactive software application platform for providing a virtual thematic environment, includes at least one thematic/publishing logic module which contains virtual thematic environment rules; at least one digital content library module which provides content management on the virtual thematic environment; and at least one quantum imaging environment (QIE) module which interprets content such that the content is manipulated and accessed by any device.

[0039] In another embodiment consistent with the present invention, the system further includes at least one graphical user interface (GUI) module; at least one business logic module directed to accounting, sponsor and users, transactions, and collecting content in real-time and injecting the content into the virtual thematic environment; and at least one data storage.

[0040] In another embodiment consistent with the present invention, the system further includes at least one communication module which provides access to various network services and connection options.

[0041] In another embodiment consistent with the present invention, a computer system for providing a virtual thematic environment, includes at least one memory having at least one program including the steps of: retrieving information on the virtual thematic environment; inserting said information into the virtual thematic environment; and displaying the information to a user within the virtual thematic environment; and at least one processor for running the program.

[0042] In another embodiment consistent with the present invention, there is a computer-readable medium whose contents cause a computer system to integrate real-time information into a virtual thematic environment, the computer system having a program including the steps of: downloading real-time information from a source external to the virtual thematic environment; inserting the real-time information into the virtual thematic environment; and providing access to the real-time information to a user within the virtual thematic environment.

[0043] In another embodiment consistent with the present invention, there is a computer-readable medium whose contents cause a computer system to integrate information into a virtual thematic environment, the computer system having a program including the steps of: accessing a database where the information is stored; retrieving the information from the database; inserting the information into the virtual thematic environment; and displaying the information to a user within the virtual thematic environment.

[0044] In another embodiment consistent with the present invention, there is a computer-readable medium whose contents cause a computer system to provide product placement in a virtual thematic environment, the computer system having a program including the steps of: retrieving information on a sponsored product from a database where product information is stored; and displaying the sponsored product within the virtual thematic environment.

[0045] In another embodiment consistent with the present invention, there is a computer-readable medium whose contents cause a computer system to integrate holographic images into a virtual thematic environment, the computer system having a program including the steps

of: displaying images from a virtual thematic environment; and projecting the images as holographic projections using a holographic projection system.

[0046] In another embodiment consistent with the present invention, an apparatus for providing holographic images into a virtual thematic environment, includes a computer system which runs a program including displaying images from a virtual thematic environment, the computer system including: at least one thematic/publishing logic module which contains virtual thematic environment rules; at least one digital content library module which provides content management on the virtual thematic environment; and at least one quantum imaging environment (QIE) module which interprets content such that the content is manipulated and accessed by any device; a holographic projection system which projects the virtual thematic environment as holographic images; and at least one of audio, video, a voice recognition system, a synthetic smell system, a weather system, and a GPS system into the holographically projected virtual thematic environment.

[0047] In another embodiment consistent with the present invention, an apparatus for providing holographic images into a virtual thematic environment, includes a room containing a plurality of display screens; a computer system which runs a program including displaying images from a virtual thematic environment, the computer system including: at least one thematic/publishing logic module which contains virtual thematic environment rules; at least one digital content library module which provides content management on the virtual thematic environment; and at least one quantum imaging environment (QIE) module which interprets content such that the content is manipulated and accessed by any device; a projection system which projects the virtual thematic environment as images on the displays screens; and a user-accessible control panel which provides access to the computer system.

[0048] In another embodiment consistent with the present invention, an apparatus for providing holographic images into a virtual thematic environment, includes a room containing a plurality of sensors for at least tracking movement of a user through said room; a computer system which runs a program including displaying images from a virtual thematic environment, the computer system including: at least one thematic/publishing logic module which contains virtual thematic environment rules; at least one digital content library module which provides

content management on the virtual thematic environment; and at least one quantum imaging environment (QIE) module which interprets content such that the content is manipulated and accessed by any device; and a holographic projection system which projects the virtual thematic environment as holographic images in the room.

[0049] Thus been outlined, some features consistent with the present invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features consistent with the present invention that will be described below and which will form the subject matter of the claims appended hereto.

[0050] In this respect, before explaining at least one embodiment consistent with the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. Methods and apparatuses consistent with the present invention are capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein, as well as the abstract included below, are for the purpose of description and should not be regarded as limiting.

[0051] As such, those skilled in the art will appreciate that the conception upon which this disclosure is based may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the methods and apparatuses consistent with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0052] FIG. 1 is a schematic showing one embodiment of the six-level logical architecture of an interactive software platform consistent with the present invention.

[0053] FIG. 2 is a schematic showing one embodiment of the interactive software platform consistent with the present invention, in a client-server arrangement.

[0054] FIG. 3 is a schematic of a client-side server, according to one embodiment of the interactive software platform consistent with the present invention.

[0055] FIG. 4 is a schematic showing one embodiment of the interactive software platform of the present invention, in a server-side arrangement.

[0056] FIG. 5 is a schematic showing one embodiment of the interactive software platform of the present invention, in a client-side arrangement.

[0057] FIG. 6 is a schematic showing a cinematic room according to one embodiment of the interactive software platform consistent with the present invention.

[0058] FIG. 7 is a schematic showing a warehouse environment according to one embodiment of the interactive software platform consistent with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0059] The present invention relates to an interactive software application platform which can be used in entertainment, business, publishing, and other applications to provide a virtual and real world experience to the user by integrating audio, video, 2D and 3D technology, and other technologies that may enhance the user's experience. In particular, the program of the present invention injects real time data, such as sports scores, live sports events, film, news, etc., into a virtual thematic environment which includes both audio and video, and also integrates mini-applications, such as word processing, mutual fund calculators, spreadsheets, static purchasing (i.e., static e-commerce applications, and any other type of application that can be scaled or as a demo), e-mail, and the like, into the virtual thematic environment, without a noticeable delay. The present system can be both a rich graphic environment, and may also include a holographic system and technology, mirror imaging technology, and high-level algorithms. The present invention can provide a virtual 2D and/or 3D environment, which can include not just audio, music and video, but sensitivity to touch, the sensing of odors etc., so that the user can experience a real world environment in which the user can move through in real-time.

[0060] In one embodiment consistent with the present invention, a thematic computerized environment, such as the gaming environment described in U.S. patent application Ser. No.

10/272,408, can be accessed by one or more users over the internet. The user enters the thematic environment, whether it is a game, or a particular website, such as a museum website, store, school, hospital etc., and is taken into a 3D virtual world.

[0061] For example, in the gaming environment, the 3D world can be sectioned into unique "zones" which could be geographic, related to hobbies, interest groups, or a specific game genre. In a geographic environment, for example, the program would request that the user choose a city, and the program would take the user to a starting point in that city. Real world photographs, including satellite photographs, video, and/or 2D and/or 3D graphics would provide the cityscape. Once the user, whether in first person or third person view, is at the starting point at a particular city street, the program would allow the user to move through the 2D and/or 3D and/or integrated graphical representation of the actual real world environment and interact with it.

[0062] Since product placement is one feature consistent with the present invention, as described in U.S. patent application Ser. No. 10/272,408, the storefronts viewed by the user at the starting point on a city street, for example, could be representations of actual stores, such as coffee stores, bookstores, etc., which are "rented" by the corporate sponsors. If the user decides to "enter" a bookstore by using the mouse to "hot click" on the bookstore front, for example, or by any other selection means (i.e., voice recognition mechanism, keyboard,etc.), the program can automatically direct the user to the bookstore website, where the user may purchase books, look up information and or "grab" an item to be used in the game, or gain intelligence on those products or informational data etc. The program will provide the user with an icon, URL address etc., so that the user can return to the virtual world when desired.

[0063] Alternatively, the user may "enter" a coffee store and the program will provide a representation of the actual store to the user. If the user "hot clicks" the mouse, for example, on a particular item, such as a bag of ground coffee, the user can be directed to the coffee store or coffee manufacturer website, for example, for product information and purchasing information.

[0064] Although storefronts have been discussed above with respect to product placement, product placements within the virtual environment are not just with respect to real estate, but

can be any type of real world item visible or accessible to a user, whether passive or interactive. For example, passive advertising or product placement is the use of billboards, banners, storefronts or restaurant fronts. Interactive product placement includes experiencing the product itself in the virtual world (i.e., taking and reading a newspaper from a newspaper machine, or a magazine from a magazine stand, driving an automobile parked on the street, turning on a radio to listen to a particular radio station, typing into a computer, using a PDA, turning on a TV set, flying in or piloting an aircraft, etc.).

[0065] As stated above, in the interactive product placement, the user can "hot click" on an automobile on the street, for example, and then the program will direct the user to a real world website, such as the automobile manufacturer's sponsored website, to review the latest car models, or even make a purchase. As stated above, the user can return to the virtual world via an icon, URL address, etc., to recommence in the virtual world, at the moment the user left the environment for the sponsored website.

[0066] While at the sponsor's website, the program may initiate the user to perform certain actions (i.e, visiting certain sites, being first at those sites, following certain directions, completing an educational or informational quiz, participate in an auction etc.) before returning to the virtual world, and before advancing in that world (i.e., before advancing in game play, if the virtual world is a game). Another example of actions initiated at the sponsored website and/or throughout the thematic application, such as a game, are the listing and answering of clues, etc. A timing mechanism can be added to the program such that these actions must be performed within a certain period of time or on a competitive level with one or more opponents (other users).

[0067] Depending upon the sponsors, and the thematic storyline, the points that are achieved at the sponsored website for the required actions, can be redeemed for cash rewards, prizes, coupons etc., either at the sponsor's website, and at other websites in the real world (i.e., to obtain concert tickets, clothing etc.), or within the virtual world environment.

[0068] The user is not only required to use real world credit cards to purchase items at sponsored websites accessed through the virtual world environment, but may also be directed

by the program to either a real world or a virtual world store to purchase items needed within the virtual world (i.e., supplies needed in a game environment), using a virtual credit card.

[0069] The program keeps statistical information on all the sites accessed by the user, purchases made, and tracks movement within the thematic environment and real-world websites, etc., so that the sponsors can be provided with statistical data on the users for marketing purposes.

[0070] In another embodiment consistent with the present invention, the virtual environment can be a travel website, for example, such that when the user accesses different cities, the program can take the user to that city so that the user can have the real world experience of walking down a street and seeing the actual buildings that would be represented in the real world environment. The user may be able to enter a building in a thematic environment such as a store, hotel, or museum and can view the surroundings as if walking through the real world building. The user may be able to "enter" a museum gift shop, for example, using a selection means (i.e., hot click using a mouse, voice recognition etc.), and then the program may direct the user to the website of the museum gift shop such that the user may make real world purchases, for example.

[0071] In other applications which integrate audio and video into the virtual thematic environment, the user may "enter" a store, for example, and be able to choose a DVD or a CD, and make a particular video or musical selection, and the program will show the video in the virtual thematic environment and play the audio over the user's computer system. Thus, the user may be able to watch films, movies, etc. on a screen, for example, within the thematic environment. It is also a part of the present invention that TV programs, videos, etc., are available and running within the thematic environment, and visible to the user, without any interaction from the user.

[0072] Thus, the user can choose to change the TV program being shown, or the music being played in the thematic environment, by accessing the options available (i.e., displayed on the screen). The choice of TV program or music, etc., may be through corporate sponsorship (i.e., product placement) and thematic environment setup for that particular geographic location.

[0073] In other applications, the user may "hot click" on a poster or a static photo, and the program will access a database to show the subject of the poster or photo (for example, a rock band, models in a fashion show, sports figures, racing cars, etc.) in a video, or other 3D action.

[0074] Further, in another embodiment consistent with the present invention, the user may keep, for example, a radio, Global Positioning System (GPS), clock, Personal Digital Assistant (PDA), and other devices on the user's desktop while the user is interacting with the thematic environment. Each of these devices can be turned on/off or removed by the user from the main viewing screen, or enlarged on the screen, when desired.

[0075] In another embodiment consistent with the present invention, the virtual thematic environment can interface with a GPS system, which will show the user a map showing the user's (or any other) location, and provide details down to street and house. The program will allow the user to view either real world satellite maps/street photographs, etc., or a virtual representation of the same, showing buildings, grounds, landmarks etc. The user, in a tie-in with the product placement and other information, can "hot click" on a building, for example, and information, such as description, telephone number, directions, sponsored information etc., can be provided on that building.

[0076] In other integrations between real world and virtual world environments which take place in real time, real time data is downloaded by the program and provided to the user in the virtual environment. For example, real time information, such as sports scores, stock prices, and auction information, can be provided in an appropriate manner in the virtual thematic environment (i.e., on TV screens, computer screens, by cell phone etc.). In addition, the program allows real time video to be received and viewed in the virtual environment, such as TV programs, sports games, film concerts, etc., from satellite and cable systems. Thus, in an integration of real world and virtual world environments, the user may enter a room where he can "hot click" on a radio, for example, and choose a particular radio station, and the program will allow real-time audio of that radio station to play for the user.

[0077] In another embodiment consistent with the present invention, the user can compete in real-time in a gaming environment, for example, with other players others around the world. All the players will have their own internet connections, be logged onto a world server or a set

of servers with a unique account and password, and will be able to interact with one another in the thematic environment on a real-time basis. Each player will receive dynamic content (i.e., information in real time) based on the other players' actions. For example, the other players may be directed to "pick someone's pocket" by "grabbing" an object from their competitor, and may gain points by getting to a certain location first, by opening and reading certain information first, or by "hot clicking" on an item first, to obtain points etc.

[0078] The present invention also provides the feature of allowing "mini-applications" to be accessible within the virtual world such that the user can utilize word processing programs, e-mail, spreadsheets, attend and participate in an auction, etc. In addition, these mini-applications, such as e-mail, chat rooms, video messaging, are performed by the program in real time, without a noticeable delay to the user.

[0079] The program is also designed to provide real time translations into multiple languages within the virtual environment, so that the virtual environment is international in accessibility.

[0080] In another embodiment consistent with the present invention, the thematic application can be presented in a holographic environment. In one example of a thematic application in a holographic environment, a "cinematic room" can be provided, housing large non-intelligent display screens or digital displays, plasma screens, LCD or intelligent screens/displays or the like, and chairs or other seated- or standing-accessible structures with embedded controllers. The computer system or film recorder projects images onto the display screen and the images can be manipulated via the embedded controls in the chair or through the voice recognition systems located therein or those found in a separate unit similar to a head piece, microphone, 3D helmet etc. The user may also experience the images in a 3D environment via the use of 3D goggles or other 3D devices.

[0081] In another embodiment consistent with the present invention, the interactive software application of the present invention can be connected to a holographic projection system in a gaming environment, for example. The system of the present invention could be set up in a warehouse environment, such that the holographic projections can be viewed in full size, or on a smaller scale. When the virtual world is activated, the user will be able to walk

through the environment, such as a geographic zone, and images would be projected from a particular street for the user to view and interact with.

[0082] For example, in a holographic embodiment, the user may be presented with a holographic life-size image of a singer, and the program will allow the user to experience the audio and video of that singer as if the user were attending an actual concert by the singer.

[0083] In addition, the program would allow the virtual thematic environment to react to the presence of the user. For example, in a holographic environment, the program would show holographic images of the streets of New York City, and if those holographic images are disrupted by the touch of the user, this disruption would be sensed by the program, and the program would change the image appropriately (i.e., the user touches a door to enter through it into a store, and a sensor notifies the computer system of the present invention, of the disruption in the holographic image, wherein the program changes the images projected to show the inside of the store).

[0084] In another embodiment of the holographic application, a GPS system may be connected to the computer software of the present invention, which would allow the user to see a change in environment as the user physically "walks" or moves a 3D representation (i.e., avatar) through the environment. The program may initiate automatic updates to change the environment viewed by the user, as appropriate. The GPS system can be provided in all applications for the user to access, as stated above, whether in a thematic environment on a computer screen, or in a holographic application. The data that is provided by the GPS system is recorded and the program will provide that data in a business intelligence format to sponsors for marketing purposes.

[0085] In an educational scenario, the program could project historical events as holographic images, and the user can walk through the virtual environment and experience the historical drama of the event in a first-hand way. The user could also experience other events, such as virtually "traveling through space", whether flying a virtual aircraft, or traveling through the solar system, etc., in a real-world manner. In business applications, for example, a user could use the holographic projection system to view real estate before purchasing, etc. In medical

applications, the program could allow doctors to see a virtual holographic operation, in order to advise on the conduct of certain medical procedures from a remote site, etc.

[0086] In a consumer-oriented sense, holographic images of a user can be displayed so that the user can try on clothing without ever going to a store. Books and magazines could be put into holographic images so that they are "living books". Concerts could be holographic images tied in with audio so that the user has a real-world experience of the musicians and the music. In other applications, the user may be able to view holographic images for online dating purposes, to learn dance steps from a holographic dance teacher, etc.

[0087] The present invention can also be integrated with a synthesized smell device, which can output odors such as smells for ingredients in a virtual cooking class, for example. This synthesized smell device and the present invention can be connected via the internet and currently available supportive devices.

[0088] The present invention can also be integrated with a virtual weather system (i.e., for fog, wind, or rain etc.), which can output weather patterns in a virtual environment. In a holographic environment, the virtual weather system can be tied to real-world fog or rain-producing systems such as those used on movie sets, so that a walk through a holographic thematic environment could include the actual experience of fog or rain etc.

[0089] The sheer number of applications is limitless, and it can be seen that one of ordinary skill in the art would be able to apply the basic technology of the present invention to almost any virtual or holographic environment to advance a user's thematic application experience.

[0090] Logical Architecture

[0091] The present invention is implemented in software which can be provided in a client, client and server environment, or in a distributed system over a computerized network (the physical architecture is described below), or embedded in a controller that activates both the computer system and/or other devices.

[0092] In particular, the program of the present invention is in a Quantum Imaging Environment (QIE). Thus, the logical architecture of the virtual platform of the present invention is implemented on a 6-tier modular system (i.e., six layers), and at least six (6) service area modules, which are fully distributed across the internet (see FIG. 1).

[0093] The six layers of the virtual platform include 1) a graphical user interface (GUI) 100, 2) a Thematic/Publishing Logic 101 and a Digital Content Library 102, 3) a Business Logic 103, 4) a thematic or zone application builder and interpreter (i.e., a Quantum Imaging Engine 104), 5) Communications 105, and 6) a Data Storage 106. Each level of the 6-tier system is designed around Open Source technologies, but can include custom software developed in an open standards environment. By using Open Source and proprietary technologies with generic APIs, the present invention is scalable as the numbers of users increase, and the advances can be programmed as Open Source technologies.

[0094] The six service area modules of the logical architecture of the virtual platform include 1) voice recognition 107, 2) language translation services 108, 3) business intelligence 109, 4) satellite transmission 110, (5) a synthesized smell system 111, and (6) a GPS system 112, fully distributed across the world wide web (WWW) 113. A weather system 114, can also be provided as another service area module.

[0095] Additional services are a subset of the Business Logic module, and include e-mail, chat, order entry, purchasing, billing, and sponsor fulfilment modules.

[0096] The virtual platform of the present invention may use the support of PCs, or any other type of hardware that can support specific tasks at the Business Logic and Thematic Logic levels. This may take the form of Grid, Artificial Intelligence (AI), or other technology advanced servers, or the entire system may be hosted on a very high level supercomputing system that can calculate very complicated algorithms and manage all processes supporting well over millions of users simultaneously.

[0097] In particular, the present invention may be used in a client-server context, or may be a distributed system across a number of client systems. Thus, in the present invention, a particular operation may be performed either at the client or the server, at the edge of a network or at the center, or both. Therefore, at either the client or the server, or both, corresponding programs for a desired operation/service are available.

[0098] In a client-server environment, at least one client and at least one server are each connected to a network such as a Local Area Network (LAN), Wide Area Network (WAN), and/or the Internet, over a communication link. The steps in the methods consistent with the present

invention are carried out at the client or at the server, or at both, the server (if used) being accessible by the client over for example, the Internet using a browser application or the like.

[0099] Note that at times the system of the present invention is described as performing a certain function. However, one of ordinary skill in the art would know that the program is what is performing the function rather than the entity of the system itself.

[0100] The physical architecture of the present invention may include at least one co-located hosting site having racks containing server hardware blades running operation systems, and other necessary applications. The present application's co-located hosting sites may be deployed at two additional locations, providing full geographic diversity. These sites may be near major private or public peering points. The server hardware blades may be connected to storage devices using network attached storage (NAS); but could also be a combination of local disks and a Storage Area Network (SAN), and redundant Gig-E connectivity. The racks may be connected to the co-location hosting providers switches providing direct connectivity to the Internet or contained. The present application co-location site may be fully redundant with multiple egress paths to the Internet. Interaction with the corporate sponsors and active users may be through secure and non-secure internet connectivity.

[0101] If there are separate administrative servers for billing and general customer care, they may be maintained in physically separate locations from the main servers.

[0102] The underlying technology allows for replication to various other sites. Each new site can maintain "state" with its neighbors so that in the event of a catastrophic failure, other server systems can continue to keep the application running, and allow the system to load-balance the application geographically as required.

[0103] Physical Architecture

[0104] a. Client System

[0105] As stated above, the client may be a PC, a mobile terminal, such as a mobile computing device, a mobile phone, or a mobile data organizer (PDA), operated by the user accessing the program remotely from the client (see FIG. 1), or any other digital device that has a screen and storage.

[0106] The client computer typically includes a processor as a client data processing means, the processor including a central processing unit (CPU) and an input/output (I/O) interface, a memory with a program having a data structure, all connected by a bus, as well as an input device or means, a display, and may also include a secondary storage device. The bus may be internal to the client and may include an adapter to a keyboard or input device or may include external connections.

[0107] The processor at the client may be internal or external thereto, and executes a program adapted to predetermined operations. The processor has access to the memory in which may be stored at least one sequence of code instructions comprising the program and the data structure for performing predetermined operations. The memory and program may be located within the client or external thereto.

[0108] The program can include a separate program code for performing a desired operation, or may be a plurality of modules, such as those described below, performing sub-operations of an operation, or may be part of a single module of a larger program providing the operation.

[0109] The processor may be adapted to access and/or execute a plurality of programs corresponding to a plurality of operations. An operation rendered by the program may be, for example, supporting the user interface, performing e-mail applications, etc.

[0110] The data structure may include a plurality of entries, each entry including at least a first storage area that stores the databases or libraries mentioned above with respect to the logical architecture.

[0111] The storage device stores at least one data file, such as text files, data files, audio, video files, etc., in providing a particular operation. The data storage device as storage means, may for example, be a database, including a distributed database connected via a network, for example. The storage device may be connected to the server and/or the client, either directly or through a communication network, such as a LAN or WAN. An internal storage device, or an external storage device is optional, and data may also be received via a network and directly processed.

[0112] Methods and systems consistent with the present invention are carried out by providing an input means, or user selection means, including hot clickable icons etc., selection

buttons, in a menu, dialog box, or a roll-down window of an interface provided at the client, and the user may input commands through a keyboard, pen, stylus, mouse, speech processing means, touch screen, or other input/selection means. The selection means may also be constituted by a dedicated piece of hardware or its functions may be executed by code instructions executed on the client processor, involving a display unit for displaying a selection window and a keyboard for entering a selection, for example.

[0113] In methods and systems consistent with the present invention, the client is connected to other clients or servers via a communication link as a client communication means, using a communication end port specified by an address or a port, and the communication link may include a mobile communication link, a switched circuit communication link, or may involve a network of data processing devices such as a LAN, WAN, the Internet, or combinations thereof. The communication link may be an adapter unit capable to execute various communications protocols in order to establish and maintain communication with the server, for example. The communication link may be constituted by a specialized piece of hardware or may be realized by a general CPU executing corresponding program instructions. The communication link may be at least partially included in the processor executing corresponding program instructions.

[0114] b. Server System

[0115] In one embodiment consistent with the present invention, if a server is used in a non-distributed environment, the server would include a processor having a CPU which is a server data processing means, and an I/O interface, but may also be constituted by a distributed CPU including a plurality of individual processors on one or a plurality of machines. The processor of the server may be a general data processing unit, but preferably a data processing unit with large resources (i.e., high processing capabilities and a large memory for storing large amounts of data).

[0116] The server also includes a memory with program having a data structure all connected by a bus. The bus or similar connection line can also consist of external connections, if the server is constituted by a distributed system. The server processor may have access to a storage device for storing preferably large numbers of programs for providing various operations to the users.

[0117] The data structure may include a plurality of entries, each entry including at least a first storage area which stores information on the sponsors, for example, but may also have alternative embodiments including that associated with other stored information as one of ordinary skill in the art would appreciate.

[0118] The server may be a single unit or may be a distributed system of a plurality of servers or data processing units, and may be shared by multiple users in direct or indirect connection to each other. The server performs at least one server program for a desired operation, which is required in serving a request from the client.

[0119] The communication link from the server is preferably adapted to communicate with a plurality of clients.

[0120] The server program may relate to providing a number of operations related to thematic applications.

[0121] c. Client-server Environment

[0122] Specifically, in one embodiment, the present invention may be presented in a client-server arrangement (see FIG. 3), with a client system 200 including components such as a GUI 201, and which may contain a Quantum Imaging Environment (QIE) 202, and Thematic/Application Publishing Logic Libraries 203. The client system 200 interacts with the server system 205 via an Application Interface 204.

[0123] The server system 205 includes a GUI 211 (see FIG. 4), Thematic/Publishing Logic (Engines) 206, a Communications module 207, Business Logic module 208, a Digital Content Library 209, and Data Storage 210, all interfacing with a QIE 211.

[0124] The client system 200 includes communications 212 via a wireless service connection 213. The server system 205 includes communications 214 with network/security features, via a wireless server 215, which connects to, for example, satellite 216, voice recognition 217, business intelligence 218, language translation service 219, GPS system 220, and smell system 221. However, one of ordinary skill in the art would know that other systems may be included, such as a weather system, etc.

[0125] In particular, with respect to the client system 200, the GUI 201 is a lightweight client application written to run on existing computer operating systems which may be ported to

other personal computer (PC) software, personal digital assistants (PDAs), and cell phones, and any other digital device that has a screen or visual component and appropriate storage capability. The GUI 201 contains an engine for providing graphic hardware capabilities, graphic memory and structures, controls graphic object rendering on hardware, creates/manipulates 2D and/or 3D objects, video objects, streaming video, web objects, lines, rectangles, spheres, vectors, matrices, etc., manipulates animation, colors, bitmaps, textures, images, defines coordinate system and defines world boundaries, defines frames, bounding boxes, camera angles and views, lighting and shadowing etc., provides plug-in extensions, user input stream, event triggers, error handling, management of voice, music, and other graphic and voice formats, voice recognition, and translation services drivers.

[0126] In particular, the graphics engine of the GUI 201 is responsible for manipulating graphic content including rendering 2D and/or 3D objects, avatars, and background images. The graphics engine of the GUI 201 takes such objects and renders them into a 2D/3D space for display on the output device, or it can display the objects in a system that provides a holographic environment for the manipulation of images. The graphics engine is also responsible for handling lighting, camera positioning, and shading. The graphics engine of the GUI 201 takes into consideration graphic device display capabilities and acceleration features. One side task of the graphics engine of the GUI 201 is to collect user input and provide it to the Thematic/Publishing Logic 206, for example.

[0127] The GUI engine 201 pours in real world content rendered in HTML, XML, RDF, and/or QIE-rendering format or any content format. The user interacts completely with the GUI 201, beginning with login, playing the game in a gaming environment, where applicable, in user help, and user subscription renewals. The GUI 201 also interacts or connects to the Thematic/Application Publishing Logic Libraries 203 and an object oriented database management system (ODDBM), and/or content management system. The GUI 201 also has all the data related to the user's manipulation of the selection means, including any keyboard strokes, use of a pen, joystick, interactive goggles, touch screen, or any other interactive hardware component that would allow the user the ability to move objects, people, etc.

[0128] The QIE 202/211 is both part of the client and the server components in the embodiment of FIG. 2. The QIE 202/211 includes an interpreter that will allow data to be transmitted to any device, and is the basis for the design structure and layout for applications. The QIE 202/211 allows developers to develop objects and applications from the interpreter. For gaming or other thematic environments, the representation of the layout and design may be in the representation of "zones", and the layout and design may be set up as zones and content, for medical, retail, educational purposes, etc. The QIE 202/211 pertains to the most common denominator--the application architecture, and the content. QIE 202/211 is an interpreter that will take all of the rich content, interpret the information into objects to be manipulated and accessed via any device and place these objects or information in the appropriate format that is designed or will be designed by the developer.

[0129] On the server side, the QIE 211 interacts with the Business Logic 208, Digital Content Library 209, Thematic/Publishing Logic 206, Data Storage 210, Communications 207, and via, the Communications/Network/Security 214, to the service modules 216-221. The data may be manipulated in object form or some other form that would be accessed, manipulated and interpreted on any digital device.

[0130] Two technologies that may be used in conjunction thereof or separately, to manipulate the data and access the data, are mirror imaging technology and holographic imaging technology. In addition, other technology language-based algorithms can be used in recalculating the content, shapes, graphics, images, music, and video (every type of media), in order that the data can be exposed, manipulated, and accessed on any device.

[0131] The Thematic/Application Publishing Logic Libraries 203 on the client system 200, include all the libraries that are needed for the interactive components of the applications such as animation, graphics, artwork, overall content, web content, and utilizes the services of translation, currency, satellite transmission, video, music, synthesized smell, and voice-over libraries. In addition, the Thematic/Application Publishing Logic Libraries 203 contain the profile of the active users, their current states, individual histories, associations between other active users when in a game format (i.e., team members), and associations within the virtual world, such as with non-game characters (i.e., characters within the game).

[0132] In addition, the Thematic/Application Publishing Logic Libraries 203 are designed for the sponsors in order to incorporate product placement, video feeds, and mini-applications, web sites, e-commerce, music, voice, and GPS system information into the virtual world. The Thematic/Application Publishing Logic Libraries 203 may also be used for the development of mini-applications that are dictated by the sponsor, and will allow a developer to build a simulated e-mail, spreadsheet, database, and any type of application that is sponsor-based or pertains to the overall thematic application.

[0133] The Thematic/Publishing Logic 206 on the server system 205 is accessed through the GUI 201, and contains the environmental game rules. The Thematic/Publishing Logic 206 also ties into the QIE engine 211 and Business Logic 208 layers.

[0134] The Thematic/Publishing Logic 206 is the director of all previous components by working with a pre-defined (but modifiable) set of rules and events from objects, and coordinates further actions to be taken as to what will constitute the thematic environments. In particular, the Thematic/Publishing Logic 206 initializes global memory structures, validation of thematic objects and engines, startup procedures for all engines, collects objects for all engines, initializes the default thematic environment, provides user information, interacts and validates the engines' status, provides access and execution to thematic environment rules, controls and creates events from engines, provides state change to all engines, provides scripting language for explicit object modification, and provides shutdown for all engines.

[0135] The Thematic/Publishing Logic 206 also interacts directly with the Data Storage 210, obtaining and updating information (i.e., states, profiles and history) on the active users. The Thematic/Publishing Logic 206 will interact with the Digital Content Library 209 and pass information back and forth to the specific subfolders and document management system.

[0136] The Thematic/Publishing Logic 209 also ties directly into e-mail or chat systems and other Business Logic 208 applications that are necessary to the thematic applications or which may be used directly in the thematic applications. The Thematic/Publishing Logic 206 will also tie directly to the Business Logic 209 for calculating the time, rewards, points, order, purchase, billing and shipping components. As the Thematic/Application Publishing Logic Libraries 203 need information, the Thematic/Publishing Logic 206 will pull that data from the Business Logic

208 and Digital Content 209 libraries, or the reverse, depending upon the needs of the application environment.

[0137] In a gaming environment, the Thematic/Publishing Logic 206 may be programmed to "grab" data/objects from the web to be utilized in the game. Any objects on the web will be "copied and grabbed" by maintaining the original information of the data or objects and will allow the use of that image, while maintaining the data and integrity of the object, within the application.

[0138] The Thematic/Publishing Logic 206 may be written in C, C++, C#, Java, and/or Assembler, or any another language that is suited for this type of interaction and/or libraries.

[0139] The Digital Content Library 209 ties into the QIE engine 211. The Digital Content Library 209 is a content management application or database that interacts with the Thematic/Publishing Logic 206, that will be laid out into sections or subsets and its own respective groups similar to a filing cabinet (i.e., document management system, for example, Zone 1: USA, Zone 1A: New York, Zone 1A1: New York City, etc.). Within each zone are a subset of data and another subset of data. Each will include, for example, the layout of the streets, buildings, stores, historic locations, rivers, streams, oceans, etc. It will also include the video, music, GPS information, and images relating to each city.

[0140] The Digital Content library 209 includes all information such as data, codes, binary files, web content, event notification, and other information. The Digital Content library 209 may also include scheduling directions for when the web site access and identification of where to place the web content or advertising, e-commerce, video, etc. are to be placed.

[0141] The Business Logic 208 is tied into the Thematic/Publishing Logic 206 and the Data Storage 210. The Business Logic 208 is made up of several modules, which are directed to: accounting (i.e., ordering, billing, shipping, and payment processing) for both the sponsors and users, including all member information accumulated within the application (i.e., rewards, points, time (based on time zones), stopwatch or timer); creating/maintaining user profile information; a transaction database which tracks business intelligence data, licensing, rewards, points, time, and user info; maintaining a sponsor database of business information; a member database (i.e., order configuration, encryption & compression, library data); electronic

messaging (i.e., e-mail, chat, or other applications); and interacts with the Business Intelligence service module 218.

[0142] The Business Logic 208 maintains the profiles of the active users, their current states, individual histories, associations between active users (i.e., team members), and associations with non-users (i.e., characters within the thematic virtual world). The Business Logic 208 interacts with the Thematic/Publishing Logic 206 as well as the other layers on an as-needed basis to update the profiling for the thematic applications, as well as information needed for business intelligence reporting.

[0143] The thematic virtual world interacts with the sponsors at this layer. The Business Logic 208 collects content from the real world (i.e., content from the sponsor's websites, information on time, weather, late-breaking news, etc.) and injects this content into the thematic virtual world through the Thematic/Publishing Logic 206.

[0144] The Business Logic 208 interacts with the Business Intelligence service module 218 for business intelligence data, supplying the information to the sponsor in real time offering all of the latest data which is tracked within the applications. The Business Logic 208 component interacts with the corporate sponsor, providing relevant information (i.e., raw data, canned reports, etc.) to the sponsor on the active user's consumer behaviors, including likes, dislikes, purchases, etc. Maintenance fees for upgrades and updates are automatically sent to the sponsors.

[0145] The Business Logic 208 interacts with the Data Storage 210 to update information on the active users, determining what information is relevant today vs. yesterday. The Business Logic 208 ties back into the Thematic/Application Publishing Logic Libraries 203 and then to the zone application builder and interpreter (QIE engine 202/211).

[0146] The Business Logic 103 is written in C, C++, C#, Java and/or Assembler, or any other type of language appropriate to achieve the above-described features.

[0147] The logical architecture of the present invention is designed to provide future consideration for APIs 204 at the Thematic/Publishing Logic 206 and Business Logic 208 components. Using software development kits (SDKs), corporate sponsors using professional services, are able to make customer modifications to the thematic application or game.

[0148] The Data Storage 210 includes distributed databases containing all relevant information on the active user's profile in their current state, history, and real world content. The Data Storage 210 interacts directly with the Thematic/Publishing Logic 206 and the Business Logic 208.

[0149] The database tables will be distributed using an appropriate database application that will support grid-based logical architecture or other appropriate database architecture.

[0150] The Communications module 207 of the server system 205 can handle a multiplayer network and will use standard internet communications tie into existing libraries or with custom modifications.

[0151] The client Communications 212 interface provides access to various network services required to interact with other users (such as a messaging service, system administration service, user/group administration service, chat service, thematic state tracking, and character profile service 214), and controls dynamic features as applied by the central servers. The client Communications 212 may provide alternate connection options, and controls termination of the connections.

[0152] The server Communications Network/Security 214 interface, addresses the security of the logical architecture at two levels. The integrity of the active user is maintained, and secure interaction between the system of the present invention and the corporate sponsor is maintained.

[0153] The server Communications Network/Security 214 interface provides access to various network services required to interact with other users and control dynamic features as applied by the central servers. The server Communications Network/Security 214 may include maintaining the state of the thematic environment amongst various users, providing anti-cheating mechanisms, providing messaging services between users, and passes information to and from the client applications and other internal server side applications.

[0154] The server Communications Network/Security 214 interface may require interaction with the server Business Logic 208. The server Communications Network/Security interface 214 may also require access to other client software during use, and direct access to various database information for performance reasons.

[0155] The server Communications Network/Security 214 provides security functions such as user authentication and anti-cheat algorithms, and may also provide methods for secure billing and rewarding systems to users with audit functions. Security is maintained within the virtual environment to ensure that users adhere to virtual world rules. The server Communications Network/Security 214 prevents hackers from accessing, modifying, or corrupting data (i.e., modifying their current state and history or the data of others), thus preventing sabotage for the active user population.

[0156] Security is also incorporated using encryption between the Business Logic 208 and the sponsors to ensure that there is no back-door entry into the sponsors' websites, nor that proprietary consumer data is intercepted.

[0157] With respect to the service modules 216-221, these modules are state-of-the art systems which are conventionally available.

[0158] In another embodiment consistent with the present invention, the client side system can be a server which, instead of having all the libraries etc. on a component such as the Thematic/Application Publishing Logic Libraries 203 of FIG. 2, instead are all placed on a GUI 250 of client side server 240 (see FIG. 3).

[0159] The GUI 250 of the embodiment of FIG. 3 includes a graphics library 251, a translation library 252, a film/video library 253, a mini applications library 254, a voice library 255, a physics library 256, an Artificial Intelligence (AI) library 257, a music library 258, a sponsor library 259, a thematic application/publication/game content library 260, drivers 261, a thematic application/publication/game state component 262, a networking interface 263, and a thematic application/publishing/game logic and scripting component 264.

[0160] The graphics component/library 251 is discussed in detail above. The translation library 252, the film/video library 253, mini applications library 254, and a voice library 255, are all related to the engines and/or services associated with the libraries that support both a client, such as a client-server, or server-based model. In this example, the program runs from a client only, which can be connected to a server, but in most cases is limited to the client. In this example, the translation library will include program code that will allow the translation of one language into a different language--for example, Chinese to English. The information or data of

the translations will be stored or can be located in the Thematic Application/Publishing/Game Content library 260.

[0161] The Film/Video library 253 includes programming code that will allow the present system to re-create and maintain the attributes of a number of film strips or video in its appropriate format using the appropriate code or language(s). The Film/Video library 253 will interact with the GUI 250 and Sponsor Library 259, and possibly the QIE 202 and/or the Graphics library 251 for processing and display through the appropriate drivers 261 to the screen. The information or data will be stored or can be located in the Thematic Application/Publishing/Game Content library 260.

[0162] The mini-applications library 254 will consist of programming code to create the appropriate application selected by the user. The mini-applications library will interact with the GUI 250, Sponsor Library 259, and the Graphics library 251 for processing, and possibly the QIE 202 and/or the Graphics library 251 for processing and display through the appropriate drivers 261 to the screen. The information or data will be stored or can be located in the Thematic Application/Publishing/Game Content library 260. The amount of information is determined based on the set of instructions, programming code, and sponsorship.

[0163] The Voice library 255 or audio will allow for the programming, and/or generation of the audio particular to a frame or to the 2D/3D images. The Voice library 255 will interact with the GUI 250, Sponsor Library 259 and possibly the QIE 202 and/or the Graphics library 251, and the appropriate drivers 261 will process the information for output. Voice is also used in this sense to take information via a microphone or some type of input device into the system, which is processed through the GUI 250, passed to the QIE for processing and/or to the Voice library 255 for instruction to be passed back to the Graphics library 251 and back through the GUI 250 and drivers 261 to be outputted through a set of speakers or output device. The information or data will be stored or can be located in the Thematic Application/Publishing/Game Content library 260.

[0164] The Music engine/library 258 maintains the specifications for the music, music state, and all the properties, data, logic, and rules and programming that are associated with the integration and output of music in the thematic applications. The Music library 258 will allow

for the programming, and/or generation of music particular to a frame or to the 2D/3D images. The Music library 258 will interact with the GUI 250, Sponsor Library 259, business logic, drivers, and possibly the QIE 202, and/or the Graphics library 251. After the Music library 258 finds the appropriate piece of music, the program will transfer the data back to the GUI 250 and Drivers 261, to an output device or set of speakers. The information or data will be stored or can be located in the Thematic Application/Publishing/Game Content library 260, or can be pulled from a satellite transmission via the satellite service module. The Music engine may release the memory used upon completion of its task.

[0165] Each of the libraries--Translation 252, Film/Video 253, Mini Applications 154, Voice 255, Music 258, and Sponsor 259, will obtain the appropriate information for data, voice, music etc., from the storage area or disk and/or the Thematic Application/Publication/Game content 260, and will maintain all the information for the profiling, "game" state, and business information and tracking, by accessing the Thematic Application/Publication/Game state component 262, and via connecting to the Thematic Application/Publishing/Game Logic and Scripting component 264. The libraries will process the information, voice, data, music, etc. as appropriate or through the QIE, for display on the screen or throughput to the digital devices speaker or speaker system, utilizing the drivers 261 and networking interface(s) 263. This option allows the user the use of the thematic application directly on his/her digital device without connecting to the internet.

[0166] The physics engine of the physics component/library 256 controls the behavior of objects as they would be affected by various laws of nature. The physics engine of the physics component/library 256 provides mathematical manipulation to objects as how they would react to gravity, rapid deceleration, and chaotic behaviors. The physics engine of the physics component/library 256 may inform the Thematic Application/Publishing/Game Logic & Scripting component 264 when the object should be changed given the current set of physics logic. The physics engine component/library 256 may interact directly with the Thematic Application/Publishing/Game Logic & Scripting component 264.

[0167] The physics engine component/library 256 controls releasing memory, relates physics objects to game objects, provides physics object duplication, maintains the physics object state,

and provides data on object modification due to equations and the Thematic Application/Publishing/Game Logic & Scripting 264. The physics engine component/library 256 disables the local physics code when in multi-user mode and assumes those tasks. The physics engine component/library 256 may interact directly with the Thematic Application/Publishing/Game Logic & Scripting 264 for all networked users, and also may rely on a real-time thematic database for partial and context information.

[0168] The AI engine component/library 257 interacts directly with the Thematic Application/Publishing/Game Logic & Scripting component 264. For performance reasons, it may also act directly with the Thematic Application/Publishing/Game Content component 260.

[0169] The AI engine component/library 257 controls the behavior of objects that exhibit intelligence beyond that of the user's or the thematic environment on the network. The AI 257 may be used to manipulate objects, for example, such as NPCs (non-player characters) when in a thematic/gaming context, animal characters in thematic environments, and simple games within the game. The AI 257 informs the Thematic Application/Publishing/Game Logic & Scripting component 264 when the object should be changed given the current set of AI logic. The AI engine component/library 264 disables local AI code when in multi-user mode, and assumes those tasks. The AI engine component/library 264 may interact directly with the Thematic Application/Publishing/Game Logic & Scripting component 264 for all networked users. The AI engine component/library 264 may also rely on the real-time thematic database for spatial and contextual information.

[0170] The AI engine component/library 257 may provide AI object duplication, relates AI objects to thematic environment objects, maintains the AI object state, provides data on object modification due to AI rules and thematic logic, provides secure transport of data to/from clients and servers, receives data from the server, if provided, checks for errors in data, collects thematic environment state information from the client, and makes thematic environment state information available to the Thematic Application/Publishing/Game Logic & Scripting 264, provides messaging services, and real-time file loading services.

[0171] The Sponsor library 259 maintains the specifications for the sponsor's product placement, storefronts, state, and all the properties, data, logic, and rules and programming

that are associated with the integration and output of the sponsor components or 2D/3D images in the thematic applications. The sponsor library 259 may interact directly with the Thematic Application/Publishing/Game Content component 260, the Graphics library 251, Translation library 252, Film/Video library 253, Voice library 255, Music libraries 258, mini-applications library 254, the business logic, drivers 261, and the QIE. The data may be stored in the data storage, digital content library, or pulled from a satellite transmission via the satellite service module. It will tie directly into the Thematic Application/Publishing/Game Logic & Scripting component 264, and will release the memory used upon completion of its task.

[0172] The Thematic Application/Publishing/Game Content component 260 may provide a storage facility for all thematic content required in the virtual environment. Objects may include video, audio, images, rule sets and default values for all objects used in the thematic environment. The Thematic Application/Publishing/Game Content component 260 may also provide multiple methods for accessing the objects and maintains a record of where objects are located. Other tasks may include providing caching of commonly used objects and a method to update objects.

[0173] The Thematic Application/Publishing/Game Content component 260 may control releasing memory, initialize data access protocols, provide access to objects on local hardware and remote hardware, caching services, compression services, versioning services, updating of objects, error checking, a framework for sub-AI engines, and error handling.

[0174] The Thematic Application/Publishing/Game Content component 260 may interact directly with the client server Thematic Application/Publishing/Game Logic & Scripting component 264, the graphics component 251, AI component 257, as well as the Network Interface 263.

[0175] The server drivers 261 are instructions, connections, or translation that allows the input or output of data to be recognized by certain hardware for example a screen, phone, microphone, keyboard, pen, the internet etc.

[0176] The server Thematic Application/Publishing/Game state component 262 maintains the state or information of the play. If the character moves to the right and stops, the Thematic Application/Publishing/Game state component 262 tracks the actual movements of what it

took to make that character move and stop. If the object is transformed to a different object, the component 262 tracks the steps that it took for that image to be transposed. The Thematic Application/Publishing/Game state component 262 will maintain the exact location of where the thematic application is stopped, such that the user can return to this same spot upon the user's return to the thematic application. The Thematic Application/Publishing/Game state component 262 also maintains the imaging, data, music, voice, film, etc. for that location. However, the content may indeed change depending upon other users/players/etc. and or the update of information that has been added to or removed from the main system on the server. Although the user may be able to return to the same location and begin again, the program may change the quests, questions, object(s), stores, product placement etc.

[0177] The server Networking Interface 263 provides access to various network services required to support the server 240, such as a messaging framework, etc., and includes maintaining the server component framework. The server Networking Interface 263 is responsible for extracting in real-time, real world information and normalizing it for the thematic environment. Data sources may consist of XML, SOAP, HTML, FTP, Telnet, or any other commonly available method of data transfer. Normalized rule sets are sent to the server Thematic Application/Publishing/Game Logic & Scripting component 264 for implementation in the thematic environment. The real world Networking Interface 263 is also responsible for maintaining rules that affect the thematic environment when no other real world data is available.

[0178] The server Thematic Application/Publishing/Game Logic & Scripting component 264 takes data from a rule set as well as from external sources and modifies the thematic environment. Rules may be static and retrieved from a data source, or they may be dynamically created from an application tool. External rules will come from various sources and will arrive in moralized manner. All real time modifications to the thematic environment may be routed through the Thematic Application/Publishing/Game Logic & Scripting component 264.

[0179] In another embodiment consistent with the present invention, the client system may be a basic system, and the server may include all of the components necessary to support the interactive software platform of the present invention.

[0180] In FIG. 4, for example, which shows such a system, a server 300 includes a Thematic/Publishing component 301 having a Graphics module 302, an Audio/Voice module 303, an AI module 304, a Music module 305, a Physics module 306, and a Sponsor module 307. The Thematic/Publishing component 301 interacts with a Digital Content Library 308, which includes a Document Management sub-module 309, and a Zones module 310.

[0181] The Thematic/Publishing component 301 also interacts with the Business Logic module 325 via the QIE 314. The Business Logic 325 includes a New Content information module 316, an Accounting, Billing, & Customer Support module 317, an Administration/Time Information module 318, a Points/Rewards Information module 319, a Business Rules module 320, a Reporting Tools module 321, a Gamer Profile or Character Play Information module 322, a Character State Information module 323, a Sponsor Database 324, a Member Database 325, Electronic Messaging 326, an E-mail, Chat & other applications module 327, and a Data Storage 328.

[0182] The Graphics module 302 has been discussed previously. The AudioNoice 303, AI 304, Music 305, Physics 306, and Sponsor 307 modules, and the Thematic Application/Publishing component 301 have also been discussed previously, as well as the Digital Content Library 308.

[0183] The Document management 309 and Zones 310 modules are a subset of the Digital Content Library 308. The document management application 309 allows for the actual storage of data, information, music, video, audio, film, etc. and divides the information in the appropriate sections by web content, and ZONES (geographic locations ie., country, state, city, street, etc.; genre, market, social, hobby, etc.). The Digital Content library 308 contains all the grandfather, father, son etc., level of maintaining information.

[0184] The Business Logic module 325 and QIE 314 modules have been discussed previously.

[0185] The New Content Information module 316 is the new content database which contains all new audio, video, rules and scripts for use within the thematic environment. It also maintains versioning information as well as any new security rules/code required for the thematic environment.

[0186] The Accounting, Billing, & Customer Support module 317 is a web based interface to all users' and sponsors' information. The Accounting, Billing & Customer support module 317

allows for add/change/delete of information as well as general customer support. The front end goes to the Help Desk and 1st/2nd level engineering support, for example. The Accounting, Billing & Customer Support module 317 may provide general billing information only.

[0187] The Administration/Time Information module 318, provides internal support for all thematic environments and administration. The Administration/Time Information module 318 provides for web access to the thematic environment and provides modification as necessary, and may also provide direct access to the state of each user. Other functions may include the modification of business rules and administration access.

[0188] The Points/Rewards Information module 319 is programmed to calculate and maintain the number of points that a user has accumulated or lost in the thematic application. The Points/Rewards Information module 319 also maintains the rewards that have been distributed or "awarded" to a user, and information on whether the user has accepted the award, or if the award is still available for another user to claim. The Points/Rewards Information module 319 provides the information to the GUI 302 via the thematic application, to be displayed on the screen, and also updates the sponsor and member databases 324, 325, as well as updates the business intelligence services via the QIE 314. The QIE 314 transmits the information to the Business Logic's 315 Sponsor database 324, Member database 325, and Reporting tools 321, that ties into the Business Intelligence server with the information for tracking the developments of how the points were obtained, the award(s) selected, and the partial profile of the user.

[0189] The Business Rules module 320, is a rule-based component of business processes for e-commerce, such as advertising, billing, profiling, etc., and integrates easily with all the networked components, libraries, QIE, and business intelligence. The rules are developed using Java, C, C++ or any other programming language. It includes, XML, HTML or any markup language or other method for communication to connect and communicate with the internet and it will be extensible. The Business Rules module 320 handles the translation of rules to and from heterogeneous commercially important rule systems/languages, as well as to and from the existing components and external services performing actions and testing conditions and maintains the status of the entire QIE environment and keeps its services supported. The

Business Rules component 320 consists of intelligent agents for the following: e-commerce, procurement, catalogs, storefronts, auction, configuration, financial--billing and shipping, connecting to the services etc.

[0190] The Reporting Tools module 321 is a web interface to both internal and external reporting tools. Internal reports may include online usage, system usage, network usage, system problems, billing information, marketing statistics, and other information as required. External reports may include campaign statistics, impressions, trending, and various data-mining sets. All reports are dynamically created for both internal and external use only limited by the data retained by the reporting database. The reporting database contains information required to generate reports for users/sponsors. The reporting database is schema dependent on user/sponsor needs.

[0191] The Gamer Profile or Character Play Information module 322, maintains all the data regarding the character that the user chooses to be or use within his/her application. The choice of characters and their profiles are maintained in the Digital Content Library 308. This information will be catalogued within the gamer profile or character play and can be used with another thematic application, or the user may change the selection of characters depending on the choice that the user makes for the thematic application of choice.

[0192] The Character State Information module 323 includes information on the character state of play. The Character State Information module 323 maintains all the information regarding the character moods, facial expressions, positions, modes of movement such as combat, standing, running, jumping, turning etc. The Character State Information module 323 allows the object or character to alter its behavior depending upon either an outside influence such as another user, the computer (using AI), or the actual gamer or user.

[0193] The Sponsor Database 324 and the Member Database 325 are a highly secure databases having all sponsor and user information, respectively, including contact information, which contains, for example, billing information, business rules, administration information, and ancillary information. The Sponsor and Member databases 324, 325 contain all the sponsor/user profiles such as age, sex, credit card information, market likes and dislikes, purchases, and tracking information. The Member database 325 is set up during the logging-in

process of the thematic application. As the information is updated via any purchases or tracking throughout the thematic application, the information is immediately stored for that particular user. The Sponsor database 324 maintains the information to tie into the sponsor's web site, and on the sponsor's products and product placements.

[0194] The Electronic Messaging 326 component includes conventional state-of-the-art applications that is a service that connects to the Business Logic and to the QIE for processing when a user makes the specific request through the GUI.

[0195] The E-mail, Chat & other applications module 327 includes conventional state-of-the-art applications in communications, such as e-mail, chat rooms, etc. They are all application services that transfer the information through the Business Logic and to the QIE for processing when a user makes the specific request through the GUI. The applications are based on the thematic application "storyline".

[0196] The Data Storage 328 may include, among others, a real-time thematic environment database, an auditing database, and a meta database. The real-time thematic environment database is located in the Digital Content Library 308 (also described above), and is a very efficient real-time database that maintains the state of each thematic environment, user, and the thematic virtual world. The schema is dependent on the networking tool provider. The real-time thematic environment database is tied to an Object Oriented Database that is located on the database server with connections to the Business Logic 315.

[0197] The meta Database contains all thematic environment/user/sponsor information that is not dedicated elsewhere. The meta Database includes information having data that is necessary for maintaining billing/high level secure information, and profiling or information pertaining to the thematic environment/user/sponsor.

[0198] The auditing database which handles the security system/environment, and is a near real-time database used for auditing the user's movements in the thematic environment, and security. The auditing database may also provide data to various other databases via replication in such a way as to not affect the responsiveness of the thematic schema. The auditing database may or may not be a complete replication of the thematic environment database.

[0199] In another embodiment consistent with the present invention, FIG. 5 shows a client-server arrangement similar to that of FIG. 2, with the server system 409 having the same components as that of FIG. 2 (i.e., Thematic Application/Publishing Logic (Engines) 411, QIE 410, Digital Content Library 412, Business Logic 413, Data Storage 414, and Communication 415). The client system 400 is connected to the server system 409 via Application Interface 408.

[0200] However, the client system 400 includes not only a GUI 401, Thematic Application/Publishing Logic Libraries 402, and QIE 407, but also includes components similar to that of the server (i.e., a Thematic Application/Publishing Logic (Engines) 416, Digital Content Library 403, and Data Storage 406).

[0201] In addition, as with the embodiment of FIG. 2, the client system 400 is connected to Communications 416 having a wireless service connection 417, and the server system 409 is connected to a Communications Network/Security 418 having a wireless server 419, which accesses satellite 420, voice recognition 421, business intelligence 422, language translation 423, GPS system 424, and smell system 425 modules. However, one of ordinary skill in the art would know that other modules may be accessed, such as weather system modules 426.

[0202] The present client-server system of FIG. 5 is arranged such that the client system 400 can operate independently of the server system 409, but that the server system 409 can be optionally connected. In the former situation, the additional modules 420-425 would instead be connected to the client system 400.

[0203] In the latter situation of an exemplary client side system 400 with option to connect to the server 409, the system is set up such that the user does not have the capability to interact with the WWW and does not have the capability to engage in a multiplayer environment. This set up allows the user to play the game that has been written or is on a CD or other storage medium.

[0204] For example, the CD is inserted into the CD Drive, and the user can select the loading, onto the system, of all the engine, library, content, communication, driver, and GUI, etc. Information is then transferred to the PC's hard disk. If it is one of the "boxes" of the system, information is transferred to those boxes, hard drives, disks, etc. in the same manner. The thematic application is then launched on that particular device by either pushing a button or by

selecting an icon on the screen. The user will be able to experience the thematic application with the limitations of the following: any mini-applications will be simulated, all music, video, film, content will be self contained on the system and pre-selected, and there will be no connection to any live data transferred to the PC or "box" unless connected to the internet.

[0205] In another embodiment consistent with the present invention, the client system 400 and server system 409 of FIG. 5 can be disposed in one system, rather being separated into two systems.

[0206] Although the above physical architecture has been described above as client-side or server-side components, one of ordinary skill in the art would know that the above components of the physical architecture may be in either client or server, or in a distributed environment.

[0207] Further, although the above-described features and processing operations may be realized by dedicated hardware, or may be realized as programs including code instructions executed on data processing units, it is further possible that parts of the above sequence of operations are carried out in hardware, whereas other of the above processing operations are carried out using software.

[0208] Further, although aspects of one implementation of the present invention are described as being stored in memory, one of ordinary skill in the art will appreciate that all or part of the methods and systems consistent with the present invention may be stored on or read from other computer-readable media, such as secondary storage devices, like hard disks, floppy disks, CD-ROM, a carrier wave received from a network such as the Internet, or other forms of ROM or RAM either currently known or later developed. Further, although specific components of the system have been described, one skilled in the art will appreciate that the system suitable for use with the methods and systems consistent with the present invention, may contain additional or different components.

[0209] Operation

[0210] In one embodiment consistent with the present invention, the user accesses the virtual platform which is any type of thematic environment, such as a game, and accessed in any manner, such as by a dedicated website, or via a link on a host website over the Internet (i.e., worldwide web (WWW)). In some applications, the program may request the user to log in

and enter a username, password, and to create a profile, which may include personal information, such as gender, age, address, etc., or a virtual profile, if desired. The information is stored by the program in the Business Logic database (208, see FIG. 2, for example) for use later by the Thematic/Publishing Logic 206.

[0211] Further, the program may request payment methods to enter certain types of thematic environments. Payment methods may include credit card information, invoice information (for sponsors), or a gift card. The program may then present the user with predetermined options prior to entering the thematic environment (i.e., level of difficulty, or game challenges, in a game environment).

[0212] Thus, in one embodiment consistent with the present invention, the user enters the thematic environment, such as a travel website or a geographically themed game, and the Graphics libraries of the Digital Content/thematic content system of the program displays a world map and offers the user the choice of a particular state, country, or city, and the choice of a first person or third person (i.e., avatar) perspective. The geographic thematic environment may be based on modular-based zones with different levels of content. All content in the thematic environments are updated every few months by the program.

[0213] Once the user chooses the geographical environment and user perspective, the GUI 200 of FIG. 2, for example, transmits information directly through an API to the Business Logic of the server 205, to display the avatar, for example, through specific APIs 204 to the QIE 211. (Note that although FIG. 2 is used as an example to describe the operation of the present invention, one of ordinary skill in the art would know that any of the other exemplary Figures may be used). The QIE 211 processes the information to determine the type of device and thematic environment, and may re-rasterize the information to format to that device and thematic environment.

[0214] Once the avatar and the geographical environment are chosen, the program will provide a prompt on the display screen so that the user may begin the thematic application.

[0215] Since all the graphics reside in the Digital Content system, the graphics libraries are ready to accept commands by the user once the user moves, or directs the avatar to move

through the application. The Digital Content library 209 maintains all the information in a content management database that is utilized when requested by the GUI 200.

[0216] In a specific example of the operation of the present invention, the user may choose a thematic application which includes a geographic environment, and may select the city of entry as Rome, for example. Based on this premise, the program of the thematic application may have the user face fighting lions in a scene in the Coliseum, taking a train to another part of the city, enjoying a soccer match or any other sport, visiting a museum/church or any other type of building, attending a concert, or shop etc. The user will be able to interact with the holograms, other individuals/and or avatars, and other 2D/3D images, including photos, film/video, 2D graphics and 3D graphics. The user will also be able to purchase goods from that city in real time from a store or place of choice. The user will be able to hear the music based on a city's culture, hear the people speaking in their own languages, and in a holographic warehouse environment, for example, smell the foods that are cooking in that part of the world, in order to learn everything about that particular culture, region, and/or history.

[0217] The stores that appear as the avatar walks down the street in the thematic environment, for example, are 3D models which are stored in the Digital Content library 209 and displayed by the graphics engine of the program. For example, when the user enters a street in a desired location, such as Rome, the graphics engine of the program will show the street with the actual buildings which exist on that street. If the storefronts on the street are sponsored by a corporate customer, the user may see a well-known restaurant, coffeehouse, bookstore etc. Thus, depending on the level of corporate sponsorship, the user may only be able to view a storefront or a banner, or may be able to fully access the building or a product (such as a car), to have a virtual experience with the physical environment.

[0218] Thus, as the user moves the avatar down the street, the graphics library located in the Thematic/Publishing Logic Libraries 203 allows for the avatar's simple movements such as walking, turning etc. In particular, the movement of the avatar/user is generated by the GUI 200 transmitting data through a standard communications system 212 to the server 205. The data is transmitted to the QIE 211 which processes the information and sends the information to the appropriate library for processing. In this case, it is the Thematic/Publishing Logic

Libraries 203 and within this layer, the Graphics application library, which is connected to the QIE 202 via the APIs 204, for example, for requests for information and processing.

[0219] Thus, as the user moves throughout the thematic environment, depending on the user's access of the music, video, animation, services, etc., each of the API's are seamlessly connected to the Libraries ready to either re-calculate or utilize whatever is stored in the Digital Content system or service libraries. The commands or programming are tightly coupled with each layer and with each service. If the user selects or touches a poster, for example, the program will connect the user seamlessly to the internet site that is tied to that component for either purchase, review, or any other instruction/operation. Upon completing any task at the sponsored site, the user is then exposed to a point of returning to the thematic application to continue where they had left the program or application. The entire thematic application is an integration between the internet (WWW), Business Logic, Thematic/Publishing Logic, and QIE, and the GUI. The QIE will determine the actual output as it sends information out to the device to determine its type and to re-calculate the objects from a viewing perspective to be manipulated to that specific device.

[0220] The user may move the avatar into a 3D model of a store, for example, the building which is stored in the Digital Content library. The Digital Content library maintains all the information in a content management database that is utilized when requested by the GUI. All the information in the content management database includes data, codes, binary files, web content, event notification, and other information. It may also contain scheduling directions for when the web site access and identification of where to place the web content or advertising, e-commerce, video, music, etc. are to be placed.

[0221] In one example, if the avatar enters the store and speaks to a store employee within the thematic environment, the GUI transmits the appropriate information entered by the user via a speech processing means, keyboard, or other input means, and an API, to the AI library and to the voice libraries of the thematic content for both movement, high level action, and the processing of the voice data. The GUI will transmit the information to the Thematic/Publishing Logic via an API to contact the Sponsor library. The information request is transferred through the GUI to the Thematic Application library via an API to again contact the Sponsor library for a

simulated web connection to the sponsor site. The information is then submitted back to the GUI for display showing the Sponsors web site. The Sponsor library will then send a call directly to the Digital Content library for the information requested. The voice library will then transmit this information in a recognized data form to the standard communication device for output to the screen, or to speakers or other device, and any movement of the avatar and NPC store employee will be displayed on the screen via an API to the GUI for display.

[0222] Once in the store, if the user moves the avatar to touch a product in the store (i.e., by hot click), the movement is regulated by the graphics library located in the Thematic/Application Publishing Logic Libraries 203, and the Communication component 212 will connect to an API 204 that activates the sponsor library located in the Thematic/Publishing Logic 206, and the GUI 200 of the program will automatically take the user temporarily out of the current environment to a dedicated sponsor website. The sponsored website may be connected to the thematic environment via standard internet channels. Alternatively, the sponsored website may appear within the thematic environment as a display on the screen.

[0223] In one example, once at the sponsored website, the program may request that the user purchase products utilizing conventional "shopping cart" systems and standard transaction interfaces with respect to billing, shipping, etc. The program may ask that the user pick the products for purchase, enter the quantity, complete the transaction and then enter the method of payment, using the standard "shopping cart" model and standard transaction interfaces.

[0224] Any information on purchases by the user, whether "virtual" (if part of a thematic environment task), or real-world, will be sent by the program via the QIE and APIs for processing in the accounting and billing components of the Business Logic 208. The information will be processed in the accounting, billing, user, and sponsor components of the Business Logic. The information to ship the product, and billing information, will be transferred directly to the sponsor from the Business Logic via an API that transmits the information through the Communications component and then directly to the sponsor, if this is the information that has been stored for that particular sponsor; and distributed to the billing and administration component of the Business Logic that is handled by the existing server and not by the sponsor's server environment.

[0225] Once the user makes a purchase, the program may display a prompt to return the user to the thematic environment at the point at which it was left. The user enters the information via the GUI that gets stored in the Business Logic. Thus, the user may click on the return prompt that forwards an instruction to the Graphics library to return to the previous state.

[0226] All security for purchase, rewards, points, and profile is maintained in the Communications component. As purchases are made, points are accumulated or rewards are awarded (i.e., coupons, etc.). The security system program is constantly maintaining the state of the user checking for any hackers, corruption of data, sabotage, or modification of data.

[0227] In addition, the program may be tracking the avatar's movement throughout the thematic environment in order to trigger a simulated award mechanism as the avatar moves in a predetermined direction. The award mechanism may be points to be awarded to the user based upon a predetermined calculation scheme. In order to obtain the points, the system will send a request to the Thematic Application logic via an API and to the AI Engine to determine an outcome. The AI Engine then transfers the information to the Business Logic engine via an API for calculation of the points and will submit that information back through the APIs to the GUI for display.

[0228] In one embodiment consistent with the present invention, the user may be within the thematic environment, and the program may ask the user to "grab" an item from a sponsor's website (or from a competitor in game play) for use within the thematic environment. The program will instruct the user to connect to the worldwide web (WWW) through another object or through specific sequences that are provided by the thematic application viewed on the screen, or in voice format. The program then will seamlessly connect the user to the WWW via a call that is directed from the thematic application or from a selected object within the thematic environment, to the sponsor's website. As stated above, the program may also provide the option of showing the sponsor's website on the display screen within the thematic environment.

[0229] In another embodiment consistent with the present invention, the program may provide information and instructions for the user to read while in the thematic environment by means of the AI library located in the Thematic/Publishing Logic 206 layer. The information

from the AI library is sent to the Digital Content library 209, which interfaces with the QIE 211 for interpretation and display via an API 204. Then, the API 204 sends or transmits the information to the GUI 200 which displays the information on the display via a standard communications and drivers protocol. The information displayed by the program may be read by the user for later use in the thematic application for answering questions to achieve points, for example.

[0230] The points may be calculated by the program through the Business Logic 208 and the Thematic/Publishing Logic 206 application. If points are obtained by the user, the points are calculated and held in the Business Logic 208 layer, and the data is shared with the user profile retained by the user/sponsor specific database. The points information is also transmitted via an API 204 through the QIE 202 to the display such that the user can view the points. The display of the points may be shown on a PDA, or other small electronics device that is conventional or specifically designed for this purpose.

[0231] In one example of this embodiment, the user reads the information and is provided with an object for the user to "grab" using a "hot click" or other selection means at the sponsor's website or elsewhere, and then return the user to the thematic environment for use of the object. The object may have certain characteristics that will be retained by the program, including all the meta data and any other data associated with this object in the "grabbing" of the object. The Thematic/Publishing Logic 206 of the program is associated with the "grabbing" of the object, and the Digital Content library 209 stores the information on the object. To view the component and to use it, the graphics component of the Thematic/Publishing Logic 206 will interface with the Digital Content library 209 to retrieve the object via an API 204 and pass it to the QIE 202 via an API 204 to be rasterized or transferred to the GUI 200 via another API.

[0232] In another example of this embodiment, the program may provide information to the user in the thematic environment to generate points by touching, rather than "grabbing" an object, by walking down the street, purchasing an item, using a mini-application, or any other action. The points may be "cashed in" by the user for real life rewards. The rewards are stored in the user/sponsor specific database. The program, using the GUI 200 via the APIs 204 connected to the QIE 211, can display or list the rewards for the user to view at the end of the

game. The actual "cashing in" process may be handled through the accounting function of the Business Logic 208.

[0233] As the avatar continues to move around the streets and stores of the thematic environment or at websites on the WWW, the GUI 200 transmits the data on the avatar's or user's movements to the Business Logic 208 via the WWW, which sends data/information through the API 204 to the Business Intelligence tracking service 218 and tracks the information in a database in the Business Intelligence layer 218.

[0234] For example, the user may pass by a record store and hear music and watch a video coming from the store. This audio and video is activated by the movement of the avatar and the action of passing the store. As the avatar is passing the store, an instruction is sent by the GUI to the Thematic application library to obtain the appropriate music piece for that scene. The Thematic application library transmits the request to the Digital Content or Sponsor components for the appropriate music piece and video component. The music is then transmitted via an API to the GUI to transmit the sound via the speakers and the video component information is transmitted to the screen display via the GUI. The user may either save the data to disk to return to that point, connect to the internet via standard communication channels, or log off. If the user decides to save the data, the information will be maintained in the data storage layer by the program. If the user decides to connect to the internet the information that has been tracked for that particular geographical area, for example, will be transferred and the profile information updated for that particular user by the program. This information will be transferred by the program via standard communications to the internet server and the program will update the Business logic.

[0235] In one embodiment of the present invention, the user may be in a thematic environment on the internet that is based on the QIE technology platform. Since the QIE platform is device and resolution independent, it gives the thematic applications the ability to reformat or re-rasterize its output to any device. The device may be a cell phone, projector, large screen, small display, etc. This also allows the user to continue the thematic application at the point of last interaction. The user can continue the application from any location where there is access to the internet or to a QIE platform that ties into the thematic application.

[0236] In another embodiment consistent with the present invention, real-time information can be integrated into the thematic environment. For example, the avatar/user in the thematic environment may view a screen that has a real-time televised event on display, or may use a mini-application, such as e-mail, which occurs in real time. Video transmissions, and e-mail applications, etc., may be sponsored by a corporate sponsor, or may be provided by the thematic application.

[0237] The program obtains real time information through the WWW from the satellite server service 216. For example, the server 205 will poll the satellite service 216 for any new or updated information to any of the video, live sports, live concerts, or film that is being requested by the QIE 211. The program is such that the QIE 211 will be continuously connected to and requesting updates from the satellite service 216 via an API which connects the QIE 211 to the satellite system service 216.

[0238] The request for real-time information, which will be recognized when the user sees or "hot clicks" on a television screen, or invokes a mini-application, such as e-mail, will be accomplished by the GUI 200 that transmits the information to the graphics library of the Thematic/Publishing Logic 206 via an API 204. The QIE 211 will in turn request information from the digital Thematic/Publishing Logic 206 database via an API to retrieve the existing video or short film etc. If the QIE 211 requires data that is larger than a specific size, or the time has expired for running real-time information, the program (via the QIE 211) will send a request to the satellite system 216 for the new or updated information. The new or updated information may be inputted as a pure satellite transmission tied directly to the particular screen or display that needs the information.

[0239] If the transmission is live data, the program will have the satellite transmission expire upon the completion of being televised on the display in the thematic environment. A message from the satellite system 218 will transmit the information back to the QIE 211 that the transmission is complete and the QIE 211 will submit a command or message to go to the Digital Content Library or sponsor library for stored data, information, video, or film that may be shown on the display in the thematic environment. Once the command has been accepted by the Digital Content Library to update the display, the Digital Content Library will transfer the

content to the graphics engine via an API for processing and then will pass the content to the QIE for processing, formatting, or rasterization. Upon completion, the program will show a video or film clip in place of the live satellite transmission. This can take the form of music, sports, film, etc.

[0240] In a first example of the above real-time application, the user may be within a thematic environment, and may direct an avatar to a pub in a large city. The program would present an image of the pub on the screen using the GUI 200 via the Thematic/Publishing Logic 206. The user may then direct the avatar to enter the pub. The display will show the user a pub environment with a large digital screen in the pub, where a video of a musician or a band is playing, or a game is being broadcast, or a film is being shown, or some other type of video, whether live, stored video data, or simulated.

[0241] If the pub screen is "sponsored" by a corporate sponsor, for example, depending on the "sponsorship" or the contractual agreement, when the avatar is inside the pub or within vicinity of the screen, a call for that specific sponsor's updated information will be made from the GUI 200 via an API to obtain the information from graphics library of the Thematic/Publishing Logic 206. As stated above, the program will then "pull down" or obtain the particular information that should be viewed on the screen--i.e., music video, direct satellite transmission of a sports event, film clip, movie, etc.

[0242] If new or updated information is requested by the QIE 202, this information may be received by the program as a pure satellite transmission tied directly to that particular screen in the pub, that needs the information. In this case, where the information is live data, the transmission will expire upon the completion of being televised. After live transmission has ended, the program will retrieve stored data, information, video, or film etc., from the Digital Content Library or sponsor library, and show this information on the screen. The video transmission will be displayed only as long as the user is in the vicinity of the screen, otherwise, this application will not be sent to the display for viewing.

[0243] In a second example, the user may enter the thematic environment and choose a geographical "zone" such as a particular country and city. Upon the user's choice, the program will connect to the WWW via standard internet connections or communications. The user may

then enter a "headquarters" environment that displays content for that particular city. The content could be shown by the program in the form of 2D--i.e., photographs, 3D images or a combination thereof. The program will also show a very large digital screen in the center of the user's display. In this case, the screen is not "sponsored", and thus, is available and "programmed" to accept any type of live video, film, real life sports events, or any other type of satellite transmission, etc. However, the screen may have channels associated with it that are sponsored; therefore, the transmission, video, film, satellite, sports, music etc. may be programmed to that specific sponsor. In addition, product placement can be integrated into the real-time transmissions (i.e., advertisements etc.).

[0244] As with the first example, the program is such that the GUI 200 is connected using standard network connections to the internet via the QIE 202. The user may input a request via the GUI 200 for a particular type of transmitted data to be shown in the screen, and the graphics engine of the GUI 200 will request from the QIE 202 a location for the data. The QIE 202 will in turn request information from the Thematic Publishing Logic, and/or Digital content library library or may also request information in the Data Storage area located in the Business Logic via an API, requesting input to retrieve the existing video or short film etc. If the QIE 211 does not find existing data, live data, or the data files are larger than a specific size, or the time has expired for running real-time information, the program (via the QIE 211) will send a request to the satellite system 218 for the new or updated information for display back to the QIE 202, then to the GUI 200, which places it on the display.

[0245] In one embodiment consistent with the present invention, there may be a button or channel button on the bottom of the screen in the thematic application, which allows the user to change the "channel" to a different selection--i.e., a sporting event, movie, film, or concert--or back to the thematic application menu screen. This button will be limited to the number of selections based on sponsorship, for example, and based on the thematic application. Upon the user selecting the button or "clicking" on the button by any selection means, the program will display on the screen, one or a number of channels, for the user's selection. The user may then choose a particular channel and the program will transmit this information through the GUI 200 via standard internet connections, for the QIE 211 to begin the search process once again for

the requested data either through satellite transmission or through the Business Logic 103 that ties directly to the Data Storage 106.

[0246] In another embodiment consistent with the present invention, a real-time application would be presenting a clock or other timer within the thematic application. Thus, the program would provide the user with a section in the thematic application that shows time. The clock information is tied to the user's system and operating system. If the user selects a particular country and city within the thematic application, the clock will display the information that is specific to that time zone via standard communications with the internal operating system. If the user selects a different country, the clock will display both the existing timezone from the internal clock and will forward information to the GUI 200, and will also, through standard internet connections, request information regarding the country specific timezone that is selected. The request is made to the server 205 and from the QIE 211 to obtain the clock information. The QIE 211 will then put in a request to the Business Logic 208 for the updated information and pass it back to the QIE 211 for interpretation or rasterization to a particular display or device and to the programmed or displayed 2D/3D object, image or "clock".

[0247] In another example of real-time applications, the program may also provide captions on the television screen within the thematic environment, that would translate the language of the program, for example, from Italian, into English. The information on the screen is transmitted via the WWW through a communication portal that sends the information directly to the satellite service 218 and the translation service component 219 that services the Digital Content library 209. To further this example, the information that is transmitted via the WWW routes to the Translation service component 219, services both the Digital Content library 209 and the Business Logic 208. Thus, information in one language is simultaneously translated into another language and displayed to the user.

[0248] In another embodiment consistent with the present invention, the user may be able to select audio channels (i.e., radio, talk radio, music channels etc.) to listen to while accessing and using the thematic application. The program would display a 2D or 3D interactive radio on the screen which the user can activate using any selection means, including "clicking" on the radio. A list, menu, or a knob, for example, may be displayed to the user via the GUI 200, so that the

user may change channels on the "radio",. As with the video setup, the GUI 200 connects to the internet via standard internet connections, and the QIE 211 determines the location of the requested data. The QIE 211 passes on the information to the Graphics engine via an API requesting input to retrieve existing audio files etc. The Graphics engine sends the request to the QIE 211 to obtain the information located either in the Business Logic 208 for real world data, via an API, requesting input to retrieve the audio.

[0249] If the QIE 211 does not find existing data, live data, or the data files are larger than a specific size, or the time has expired for running real-time information, the program (via the QIE 211) will send a request to the satellite system 218 for the new or updated information for display, back to the QIE 211, then to the GUI 200 and the speakers or other audio device to project the voice, music, etc. for the user to hear.

[0250] In another embodiment consistent with the present invention, a GPS system 220 is integrated with the thematic application. In this embodiment, the GPS system 220 may be integrated in stored form in a database which is updated by the satellite service 216, or the GPS system 220 may be connected to the thematic application via standard internet connections, from which information is downloaded.

[0251] In this embodiment, the program is such that the GUI 200 is connected using standard network connections to the internet via the QIE 211. The user may input a request for location information via the GUI 200, and the graphics engine of the GUI 200 will request a location for the data from the QIE 211. The QIE 211 will in turn request information from the graphics library via an API requesting input to retrieve the existing location information etc. If the QIE 211 does not find existing data, live data, or the data files are larger than a specific size, or the time has expired for obtaining real-time information, the program (via the QIE 211) will send a request to the satellite system 218 for the new or updated information for display back to the QIE 211, then to the GUI 200, which places the GPS information on the display.

[0252] The location information provided by the GPS component 220 may be incorporated into the thematic application itself, or provided within a programmed GPS-type display device that simulates a GPS system in the thematic application. The GPS images are stored in the Thematic Application/Publishing Logic Libraries 203 in the sponsorship component and the

Thematic/Publishing Logic 206 interacts in conjunction with the Digital Content Library 209 for obtaining the location information.

[0253] The program allows the GPS system 220 to either view the content in map mode, or actual 3D/Visual mode depending upon the preference of the user. The program may provide the user with a display button as a selection means, for example, to select either the map information or the visual information. Upon selecting the visual mode, for example, the GUI 200 connects to the internet via standard internet connections, and interfaces with the QIE 211 for the determination of where to obtain the location data. The QIE 211 passes on the information request to the Graphics engine via an API, and the Graphic engine sends the request to the QIE 211 to obtain the information located in the Digital Content Library 209 for that particular area, building, etc. In the visual mode, the user also has the option of obtaining live information regarding each building in the thematic application or elsewhere, including, for example, a sponsored site. The GPS information may include at least a description of the building, telephone number, and street address.

[0254] In another embodiment consistent with the present invention, the user may use a mini-application within the thematic environment, for calculating, e-mailing, purchasing, educational, and other purposes. The applications may be either simulated or live, such as e-mail. The simulated applications are written in any of the following languages or programs: C, C++, Java, PostScript, or other language which would allow the development and viewing of a simulated but interactive application that is viewed on a display.

[0255] In one example of the use of a mini-application, the user may decide to use either a thematic application that is viewed on the user's display as part of game play, for example, or a current working application. The user may also "click" on a portion of the screen that will call up or bring into view, the selected simulated application, making it accessible to the user. At this point, the AI library is activated and the program will type the request or instructions with respect to the mini-application, on the display to the user. The user then selects the mini-application that is being highlighted, pointed to, etc. The mini-application information is then transmitted to the server through the GUI 200 and through normal communication channels (over the internet, for example), activating the QIE 211 to forward or communicate the

information to the AI library for processing. The AI library processes the information and makes a request to the Thematic/Publishing library and sponsor component to send the correct graphical display and interactive mini-application in a format that the thematic application can recognize for use therein. The program rasterizes and/or processes if necessary, the mini-application for use on the desired particular display or device. This is performed by the passing of information, data, or the mini-application from the APIs that connect the QIE 202 to the GUI 200. Any information that is created in the mini-application can be stored in an area that holds information for a temporary period of time in memory, or may be closed out and not saved.

[0256] In a second example of using a mini-application within a thematic application, the program may provide an instruction on the user's display, which may request that the user utilize a certain mini-application--for example, to continue to the next level in a gaming format. The instructions are automatically programmed to appear on the user's display based on the movement of the user/avatar within the thematic application (i.e., the user/avatar arriving at a particular section of the street in a geographically-themed application). In another embodiment, instead of instructions that are displayed on the user's display, other information relaying means, such as voice commands, can be used. Thus, the written instructions and/or the voice commands may be activated in the thematic application when the user/avatar arrives at an area, or interacts with a certain device, which are programmed for the use of a particular mini-application.

[0257] As soon as the user/avatar approaches within the proximity of this "programmed" location within the thematic environment, the AI library is activated via the information/data sent over normal communication channels to the server through the internet. The AI library requests both the voice library and the Digital Content Logic database to pull or obtain specific information that is viewed on the display by the user. The information is transmitted via an API to the QIE 211 for either rasterization or passing to the GUI 200 for viewing and voice.

[0258] The QIE 211 activates and passes on the information from the AI library to the appropriate component where the mini-application is located--such as the sponsor component library located in the object server of the Thematic/Publishing Logic layer 206. The Thematic/Publishing Logic sponsor component then displays the mini-application via the QIE

211 and the GUI 200, such that the mini-application will be available for viewing etc. on the display, and available for use by the user.

[0259] Examples of mini-applications within a thematic environment include the actual use of email, chat, etc., that can be naturally integrated with the thematic application. At any time, the user may select a mini-application or part thereof, which can be interfaced with other users over standard network or internet connections. The selection of such a mini-application may require interaction with the Business Logic 208, and the program will allow the mini-application to be accessed within the thematic application by using standard communications and APIs.

[0260] In another embodiment consistent with the present invention, the thematic application can be presented in a holographic environment. In one example of a thematic application in a holographic environment, a "cinematic room" (see FIG. 6) can be provided, housing large non-intelligent display screens or digital displays 500, plasma screens, LCD or intelligent screens/displays or the like, and chairs 501 or other seated- or standing-accessible structures with embedded controllers 502. The chair, for example, provides the user with a comfortable environment that contains an area or enclosure for the head for connecting a headset with a voice recognition system 219 (i.e., microphone or speaker system leading to the computer system 503), that allow for no interference. The voice recognition systems may be open and allow the users to converse with each other. The computer system or film recorder projects images onto the display screen 500 and the images can be manipulated via the embedded controls 502 in the chair 501 or through the voice recognition systems located therein. The user may also experience the images in a 3D environment via the use of 3D goggles or other 3D devices. However, a chair is not necessary, and other devices, such as handsets and headsets, could contain the appropriate systems. Depending on the screen or display type, the configuration of the equipment may change to be appropriate to that structure.

[0261] In one embodiment consistent with the present invention, a screen display with no intelligence is used, and the thematic application is projected from a projection system connected to a computer system (i.e., in a client and/or server environment). In another embodiment, the display is a smart digital display, and the thematic application is projected directly from the smart digital display. In both embodiments, the controls for interacting with

the screen or display are embedded controllers (i.e., embedded in a chair arm), and may include a mouse, joystick, ball, pen, or any other user-controlled device that allows the user to manipulate data or images on a very large screen. The embedded controller contains the driver information or embedded QIE 211 software. The QIE 211 software will transmit the information via wireless technology or cable. The system will be connected to a film recorder or computer either via wireless technology or through cable.

[0262] In the chair arm example, for instance, the user embedded controls 502 are built directly into the chair arm having a mouse, joystick etc., and the embedded controls are connected to an interface and standard communication device or connection that will connect back to the server 205 and the GUI 200 of the thematic application platform. The smart screen may have an internet connection component that is embedded therein, that allows it to act as simply a "dumb terminal", with the standard internet connections allowing the holographic thematic application system to maintain all data and processing on the server itself, or the system may have a controller that incorporates the QIE 211 and other programs that will allow for the connection via a standard communications device, to the internet, and which allows the system to interpret information both at the display screen 500 and at the server 205 via the GUI 200.

[0263] In another option, fold up screens are provided on the chairs, the screens which are connected via a wireless or standard connection to the controller in the chair, and to the main computer system 503. The user may flip up a screen to access an application such as e-mail, or to track other thematic applications that are not on the screen, or perhaps to zoom in for a closer look at another thematic application that is currently on a larger screen within the cinematic room.

[0264] In one example of the use of a cinematic room, the room may be designed to contain as many as 50 or more users that will work together as a team on the thematic application (i.e., game), or compete with other users who may be located anywhere remotely around the world. Each of the embedded controllers 502 may also contain a chip that contains the QIE 211, allowing the chip to communicate directly to the server 205 forwarding commands to the GUI 200.

[0265] In one example, a large team of users may be working together or in competition, and the connection from the chairs to the computer system or server of the holographic thematic application may be via cable, standard communication networks, or through a wireless network. The computer system may contain the entire thematic application platform and storage information for the profiles that are being created for the large teams of users that connect to the thematic application server (which is perhaps located in a separate building). As the information is updated and tracked by the program, the program may perform profile information updates on a local sever. and then after a set period of time, the program may update the main server 205 via the GUI 200, transferring updates to the QIE 211 and then to the Business Logic 208.

[0266] Further, in the above example of a large team of users, the computer system of the cinematic room of the present invention may also be set up to communicate directly through a standard internet connection to the host server, where all the information on the profiles is stored on the server itself and tracked via the Business Logic 208 and user database. In this example, the users log into the system and select the country of game or other play. The GUI 200 then transmits a request for information through a standard internet connection to the server, to the QIE 211 and to an API connecting to the Digital Content library 209, for obtaining the requested information. Once obtained, the information is sent through an API to the QIE 211 for interpretation and display, with the information being sent or transmitted via an API to the GUI 200 which displays, via a standard communications and drivers protocol, on the display device.

[0267] In the example of the operation of the team of users, the user selects the thematic application desired, and the program may request information on the number of active players in the thematic application at that particular location. As stated above, this information is displayed on the display screen via the GUI 200, which interacts with the QIE 211 and Business Logic 208 via APIs. Each of the locations around the world where the users are located, will allow for the same configuration.

[0268] The program may allow for up to at least ten (10) main users on a team, with the others being included in a support function in directing the 10 main users in obtaining their

mission in the game, for example. Each group of main users will be able to select an avatar that is displayed on the screen. In order to select an avatar, the users are shown samples and profiles of different avatars.

[0269] Each user may be able to communicate via headsets, for example, or may be able to email/chat directly to their team mates. The email and chat applications are servicing the platform via the WWW which is connected to the Thematic/Publishing application server and Business Logic 208. The users will be able to see other players that interact with their thematic environment, on the display, via the connection of the QIE 211 and a multiplayer communications application that is licensed from an open source or standard application vendor. Each of the groups of users will be able to interact through the QIE 211 that will direct the flow of information to the multiplayer network software and back to the QIE 211 for instruction that will be delivered to the Thematic/Publishing Logic 206, Business Logic 208, GUI 200, Digital Content Library 209, and any of the services such as translation, satellite, voice, business intelligence, GPS, smell etc.

[0270] In another embodiment consistent with the present invention, the holographic thematic application platform may be provided in a warehouse environment. The holographic and/or thematic application warehouse 600 would be rented by users on a time basis, for example. The warehouse rooms 601 may be set up in a maze design, and the number of rooms are dependent on the size of the warehouse. There may be a minimum requirement of, for example, three rooms, based on the particular thematic application.

[0271] In each room 601 of the warehouse, there will be several projection systems 602 for the visualization and maneuvering of holograms. Each room 601 may contain sensors connected to embedded controllers 603 located in the walls and floors, for example, that sense touch and movement. The controllers are programmed to connect to the main computer system 604 that may be located on the premises or offsite. The sensors are designed to transmit information to the main system following the user's response (i.e., voice activated response), touch, or movement through the rooms. As the user touches the walls or moves through the rooms, the program makes the walls and floors change with the thematic

application. In effect, the user becomes the avatar and can participate in a unique and real-world way, in the thematic application.

[0272] In an alternative embodiment, personal computers (PCs, PDA's or some equivalent device) are provided in the warehouse so that the users may connect to the internet or other applications while they walk through the digital or thematic warehouse. The PCs can be connected via wireless or direct connection, cable or standard connections.

[0273] Depending on the geographic location or the thematic storyline, the program may incorporate "synthetic smells" with each room or change. A "smellerizer" 605 or other synthetic smell system can be connected to the computer system 604 and the odor emitters connected to the smellerizer 605 may be placed in the walls of the rooms 601Of the warehouse. For example, the user may be walking through the warehouse room 601 in a thematic application, viewing holographic projections of a bakery, for example, and the program will issue a smell of baked goods through the odor emitters of the smellerizer such that the user has a "real life" experience.

[0274] In other examples, an artificial weather system 606, such as those commonly used in movie-making, which can produce a fog, rain, or other weather event, may be connected to the main computer system 604 using standard communications, with the weather system outlets being provided in the warehouse rooms 601. Therefore, if the user is in a thematic application, such as London in a pea soup fog, for example, the fog will be released from the artificial weather system outlets within the warehouse rooms, so that the user has a "real life" experience. The computer system 604 can be programmed to change weather patterns based on changes in the thematic application.

[0275] In addition to the artificial weather system 606 disposed in the walls, ceilings, or floors of the warehouse, speakers 607 are placed therein to issue sounds (i.e., music, weather, background etc.) to simulate reality. The sound system 607 may operate in conjunction with the artificial weather system 606, etc.

[0276] For the warehouse application example, a separate computer system 604 is needed for the programming and maintenance of the sensors, weather system 606, synthetic smell system 605, holograms, and other technologies needed to maintain the thematic application

system. The user will completely interact with a 2D/3D world, and experience a "real life" immersion of the thematic application. The walls and floor and all of its components would act as the GUI. The warehouse holographic thematic application system may also contain the QIE environment for local storage, processing, and communication and also use mirror imaging technology to assist in the display of the 2D/3D images/video/text/graphics/etc. The system may be any size from a Grid type system up to a supercomputer for calculating all the processes. Artificial intelligence algorithms and applications may also be used for the processing and intelligence.

[0277] In operation of the warehouse example of the present invention, the user would approach the warehouse, and log into the computer system 604, the program login would connect to the main computer system via the WWW, and to the server, for example, through standard communication technology and applications. The connection is accomplished by the GUI transmitting information to the QIE via the standard internet communication channels, to update the Business Logic regarding the login. The user logging in could be either a registered individual or a newly registered individual. The main computer system 604 maintains the person's profile information, and the program will ask the user to select his/her persona (or profile). A selection of avatars and their profiles will be generated on the display, screen or wall by the program for the user to select from. This is generated by the GUI connecting to the QIE for data. The QIE makes a request to the Thematic Application/Publishing Logic for the appropriate information that is transferred back via the QIE to re-rasterize or process for its appearance on the display. This information could be a set of buildings, a street, a store, museum, historic site, etc. It also will display all sponsor based advertising, videos, movies, or any other information provided by the sponsor component. The program passes the information back to the GUI and is displayed with the correct attributes for that wall, screen, display.

[0278] Once the object or avatar has been selected by the user, the program stores this information in the main computer system 604 to update the internet thematic application play at the main computer system 604. The main computer system 604 is tied to all systems internationally via the multi-player communication application/server/etc.

[0279] Depending on the system set up (i.e., screens, weather system etc.), the GUI will be transmitting information to the server and the QIE, by connecting through specific APIs. The QIE processes the information to determine the type of device and may re-rasterize the information to format to the particular device and screen size.

[0280] In a geographic thematic application, the program may provide the user with a selection of countries before entry into the rooms 601 of the warehouse 600. Each room 601 of the warehouse 600 is programmed to continue the exploration of the thematic applications that are located on the main thematic application system server, for example, that is accessible via the internet.

[0281] Upon the completion of the login, the program may ask the user to proceed either by voice command generated by the computer system. or via a display on the display screen. The voice is transmitted through speakers that are connected to the computer system.

[0282] If voice is chosen, then the user can use voice commands to guide the object/avatar through the thematic environment (warehouse or on computer system), such as streets, stores, etc., and to communicate with other avatars or NPCs in the thematic environment. The voice process is initiated via a microphone or some type of device that will accept voice data and transmit the voice through the GUI and through normal communications channels via the internet to the voice recognition service. The information is processed and passed through the QIE for direction to the Thematic Publishing Logic to activate one of the libraries based on the command given. For example, if the command involves a physical action, such as making the avatar jump, the physics library, which handles physical rules, is activated. If the instructions are to "take a left", the graphics library is activated. The information is then passed back to the QIE via APIs and is passed to the GUI for display on the screen.

[0283] The user may then proceed to follow the program's directions for entry into the warehouse by walking on a "boardwalk" or following a path to a doorway, for example. The user may open the door and a hologram of a person may appear, greeting the user, for example. The hologram is generated by a projector that is connected to the main computer system 604 in the warehouse. The hologram is programmed to appear based on the movement/touch/voice/data entry of the user.

[0284] Thus, in the warehouse application, the user may enter the warehouse in order to have a "real life" experience, such as becoming a part of a geographical scene, by acting as an object or avatar in a thematic digital application. As the user walks through the warehouse, the sensors disposed in the floors, etc., follow the user's footsteps. The sensors are controllers containing the necessary chipsets and software to monitor movement, and they track the user's steps, sending the information to the QIE for processing. The sensors are connected to the main computer system 604 via standard communication cables and/or devices and communication software and will transfer the information to the main computer system 604 by submitting the information through an API connected to the QIE.

[0285] The QIE will take the information that is being tracked and transferred and determine if it needs to go to the Thematic/Publishing Logic, the Business Logic, the Digital Content, or all of the above. In this case, the QIE will transfer the information to both the Thematic/Publishing Logic and the Business Logic for processing. The Thematic/Publishing Logic will determine which library will be used for processing--Graphics, AI, Physics, Music, Video, Voice, etc.--or if there will be calls upon the Digital Content Library for the information stored in its database. In this example, the Thematic/Publishing Logic and its libraries will work simultaneously with the Digital Content logic databases to call on the appropriate information or data.

[0286] While this is occurring, an additional process is being managed, by sending the data to the business intelligence service engine that is servicing and monitoring the QIE for constant updates of information for storage, retrieval, report generation, etc. These operations occur in every thematic application, not just the holographic thematic applications. The data collected, which is useful for the sponsor of any part of the thematic application, will be sent via standard APIs to an intranet site and stored. This data is accessible only if the sponsor has the appropriate login and password to retrieve the information.

[0287] In the example of the warehouse holographic environment, the user/avatar may address a NPC in the thematic environment. The NPC could be a hologram generated by the footsteps, voice or position of the avatar in the thematic environment. In the background, music particular to the environment (i.e., location, city, country etc.) may be playing. The music is activated based on the thematic application storyline that is tied to specific display content or

activated by the avatar/user. The music is obtained by a request made by the GUI for information/data from the QIE to locate a music piece that either has been stored in the Digital Content database or can be accessed via the satellite service system.

[0288] The voice is generated by the GUI which requests the appropriate information via an API to the AI library and to the voice libraries for both movement, high level action, and the processing of the voice data. The voice library will then transmit this information in some type of recognized data form back through a standard communication device and output to the speakers or other device and the movement will be displayed on the screen via the GUI.

[0289] As the avatar is moving around the streets and stores in the holographic environment, an information request is made by the sensor controllers connected via cable or standard communication devices/application to the main computer system, to the GUI, which transmits the data to the Business logic via the WWW. The data/information is sent back to the client system through the API, to the Business Intelligence tracking service, which tracks the information in a database in the Business Intelligence layer.

[0290] If the user/avatar touches a bag of coffee beans, it will take the user to the sponsor website. This information is transmitted through the communication channel and connects to an API that activates the sponsor library located in the Thematic/Publishing logic. The information is processed and passed back by the program through the QIE for processing or re-rasterization depending upon the device.

[0291] To further the example, the user/avatar may view a display screen within the thematic environment that shows a game in progress, for example, being televised from a foreign country. The program will show captions on the screen that translate the broadcast language from one language to another. Again, the movement of the avatar is generated by the GUI transmitting data through a standard communications pipe to the server. The data is transmitted to the QIE, which processes the information and sends the information to the appropriate library for processing. In this case it is the Thematic Application layer and within this layer the Graphics application library connected to the QIE via APIs. The information on the screen is transmitted via the WWW through a communication portal that sends the information directly to the Satellite service component that services the Digital content library. To further

the example with respect to the translation mechanism, the information is transmitted via the WWW and routes to the Translation service component that services both the Digital content library and the Business Logic.

[0292] In another embodiment of the holographic system consistent with the present invention, the system may use holographic technology in a "globe" type of screen or terminal. A user would be able to alter or manipulate the holograms by touching the globe, and thereby change the holograms, despite where the globe is touched.

[0293] For example, the user may select an option in the globe to display a certain DNA sampling. The user may touch the globe to pull out a level of the DNA--therefore, the sampling will automatically change. The globe may also be designed for 3D simulation and may be used to move objects, to display and manipulate the objects within the globe as a terminal.

[0294] In another example of the holographic environment, one application is playing chess with holographically projected chess pieces in the digital warehouse. The user could move the chess pieces/players and compete against another person in the digital warehouse. In order for this to occur, there would be a board or large 1/2 inch type of flooring that is raised above the floor. To activate the full sized chess match, the user would select the chess game as they are walking by that area either through a voice command, selection of a menu item, or by stepping on the board and activating the sensor in the controller to allow for holographic chess players to appear. The user may then use voice activation to move his/her objects. The chess game would appear using holographic technology. If the chess game is in an enclosed "globe" like a PC, the holograms would be manipulated by the touching of the screen and the objects.

[0295] In all the above types of applications, a sponsor can place his product within the thematic application for advertisement and access by a user of the thematic application. Specifically, the sponsor is provided with a login and password by the licensor of the thematic application, and the licensor can manage the processes, generate logins and passwords, manage the security of the system, update the system, and manage the overall maintenance. These operations are all performed by the licensor through a menu generated by the program on the screen or display via the GUI. The GUI then transmits the information to the appropriate operating system, software, and hardware environments. This data is stored in the Business

Intelligence component of the QIE in the sponsors' library. The information is ready to be accessed either in a screen display format or in a report form.

[0296] Once the sponsor logs into the thematic application system, the sponsor can decide if they wish to receive a printed report or a report that is displayed on the screen. Depending upon what the sponsor selects, the information will be send through standard internet connections to the QIE and to the Business Logic and then to the Business Intelligence service for processing.

[0297] If the program is instructed to display to the screen, the information will be passed through the QIE for processing to that particular display screen and sent to the GUI for actual display.

[0298] If the information is to be printed, the information will be processed from the Business Logic connecting to the Business Intelligence service, and a printed report is requested by the program. The Business Intelligence service may send the information directly to the GUI and the drivers for a particular device that will be displayed on the screen for printing. The user now has the option of selecting the appropriate print engine and may print to that device. The information displayed or printed is constantly being updated in "real time".

[0299] It should be emphasized that the above-described embodiments of the invention are merely possible examples of implementations set forth for a clear understanding of the principles of the invention. Variations and modifications may be made to the above-described embodiments of the invention without departing from the spirit and principles of the invention. All such modifications and variations are intended to be included herein within the scope of the invention and protected by the following claims.

What is claimed is:

1. One or more non-transitory computer readable medium storing an interactive software application platform comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute and provide a virtual thematic environment, the virtual thematic environment being a theme-based virtual environment;

a primary application and a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment as second content provided by the primary application;

a graphics user interface (GUI) module configured for use with a visual component of a digital device, the GUI module including software that renders graphical display elements onto the visual component and permits a user to interact with a graphical display element within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module configured to receive and interpret content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment, the QIE module obtaining the first real-time information and the second real-time information, the QIE module supplying first real-time information into the primary application, and supplying second real-time information into the secondary application, the primary application configured to provide access to the first real-time

information to the user within the virtual thematic environment via the first user interface, the secondary application configured to provide the second real-time information to the user within the virtual thematic environment via the second user interface; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment.

2. The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information include audio, video, chronological, text, GPS, or any combination thereof.

3. The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are accessed by a user selection mechanism.

4. The one or more non-transitory computer readable medium according to claim 3, wherein said selection mechanism is a voice recognition system.

5. The one or more non-transitory computer readable medium according to claim 3, wherein said selection mechanism is a hot click button.

6. The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are displayed within the virtual thematic environment.

7. The one or more non-transitory computer readable medium according to claim 1, wherein said first real-time information and said second real-time information are provided to the user via a mobile device.

8. The one or more non-transitory computer readable medium according to claim 1, wherein at least one of the first real-time information and the second real-time information are downloaded from a source external to the virtual thematic environment.

9. The one or more non-transitory computer readable medium according to claim 8, wherein said first real-time information and said second real-time information are downloaded from the Internet.

10. The one or more non-transitory computer readable medium according to claim 1, wherein at least one of said first real-time information and said second real-time information are automatically downloaded based on actions of the user within the virtual thematic environment.

11. The one or more non-transitory computer readable medium according to claim 1, wherein the user is provided with objects within the virtual thematic environment which operate in real-time with real-time information.

12. The one or more non-transitory computer readable medium according to claim 1, wherein the at least one secondary application includes at least one of an entertainment application, a business application, a publishing application, a game application, a financial application, a music application, a graphic application, an education application, a medical application, a word

processing application, an electronic mail application, a spreadsheet application, a static purchasing application, an instant messaging application, and a video messaging application.

13. The one or more non-transitory computer readable medium according to claim 6, further comprising providing real time language translation of said first real-time information and said second real-time information.

14. The one or more non-transitory computer readable medium according to claim 6, wherein said virtual thematic environment is holographically projected.

15. One or more non-transitory computer readable medium comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual environment;

a primary application;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment of the virtual thematic environment as second content provided by the primary application, the primary application receiving and using first real-time information to provide the second content, the secondary application receiving and using second real-time information to provide the first content, the first real-time information being different from the second real-time information,

a graphics user interface (GUI) module having a visual component, the GUI module including software that renders graphical display elements onto the visual component

and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module configured to receive and interpret the first content and the second content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment.

16. The one or more non-transitory computer readable medium according to claim 15, wherein the virtual thematic environment is a game environment.

17. The one or more non-transitory computer readable medium according to claim 15, wherein the first real-time information and the second real-time information include audio, video, text, or any combination thereof.

18. The one or more non-transitory computer readable medium according to claim 15, wherein the first real-time information and the second real-time information is new or updated information.

19. The one or more non-transitory computer readable medium, according to claim 18, wherein at least one of the first real-time information and the second real-time information is live data.

20. The one or more non-transitory computer readable medium according to claim 15, wherein a first device of the devices includes a client system, and wherein the first real-time information is location data identifying a location of the client system.

21. The one or more non-transitory computer readable medium according to claim 20, wherein the client system includes a GPS system, and wherein the location data is generated by the GPS system of the client system.

22. One or more non-transitory computer readable medium comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual environment;

a primary application;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, the secondary application being an electronic messaging component utilized within a same application environment of the virtual thematic environment as content provided by the primary application, the primary application receiving and using location information from a GPS system to provide the content;

a graphics user interface (GUI) module having a visual component, the GUI module including software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display elements within the virtual

thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;

a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment; and

at least one digital content library module storing information and providing content management of information within the virtual thematic environment.

23. A computer system, comprising:

a client system and a server system communicating to provide an interactive software application platform, the interactive software application platform comprising:

at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute a virtual thematic environment, the virtual thematic environment being a theme-based virtual environment;

a graphics user interface (GUI) module, the GUI module including software that renders graphical display elements onto a visual component and permits the user to interact with the graphical display elements within a virtual thematic environment;

a primary application;

a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment

of the virtual thematic environment as second content provided by the primary application, the primary application receiving and using first real-time information to provide the second content, the secondary application receiving and using second real-time information to provide the first content, the first real-time information being different from the second real-time information;

a quantum imaging environment (QIE) module, the QIE module being a software layer configured to receive and interpret the first content and the second content such that the first content and the second content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment;

at least one digital content library module storing information and providing content management of information within the virtual thematic environment; and

wherein the GUI module includes software that renders graphical display elements onto the visual component and permits the user to interact with the graphical display elements within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface.

24. The computer system according to claim 23, wherein the virtual thematic environment is a game environment.

25. The computer system according to claim 23, wherein the first real-time information and the second real-time information include audio, video, text, or any combination thereof.

26. The computer system according to claim 23, wherein the first real-time information and the second real-time information is new or updated information.

27. The computer system according to claim 23, wherein at least one of the first real-time information and the second real-time information is live data.

28. The computer system according to claim 23, wherein the first real-time information is location data identifying a location of the client system.

29. The computer system according to claim 28, wherein the second real-time information includes live video.

30. The computer system according to claim 28, wherein the secondary application includes an electronic messaging component.

Abstract

The present disclosure describes a method of integrating information, including real-time information, into a virtual thematic environment using a computer system, including accessing the stored information from a database or downloading the real-time information from a source external to the thematic environment; inserting the real-time information into the thematic environment; and displaying the information to a user within the thematic environment. In one embodiment, the computer system is connected to a holographic projection system such that the images from the thematic environment can be projected as holographic projections. The computer system includes an interactive software application platform having at least one thematic/publishing logic module which contains thematic environment rules; at least one digital content library module which provides content management on the thematic environment; and at least one quantum imaging environment (QIE) module which interprets content such that the content is manipulated and accessed by any device.

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Attorney: Marc A. Brockhaus Dkt. No.: 407.001
SHEET 1 OF 7 FORMAL DRAWINGS

FIG. 1

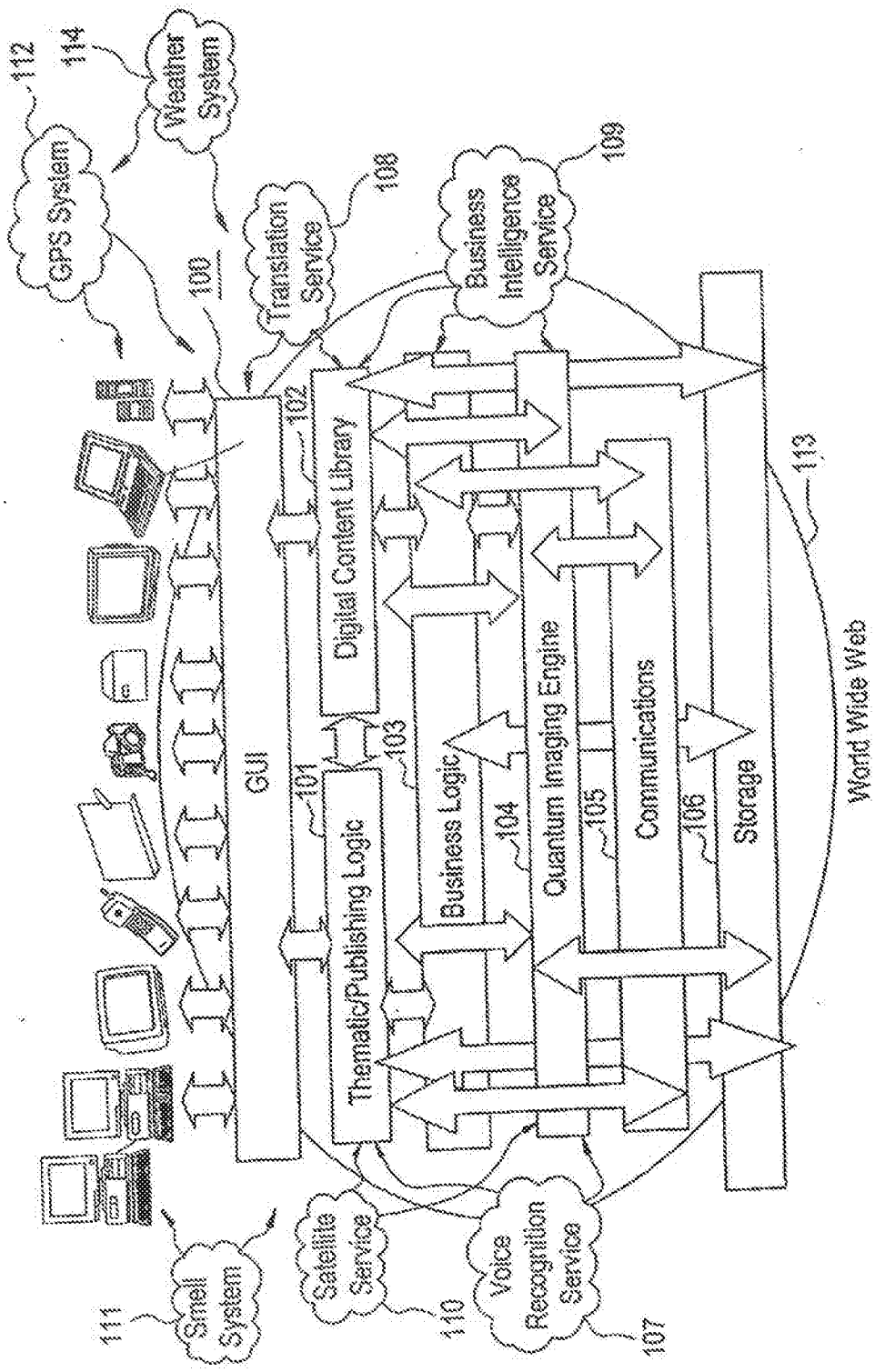


FIG. 2

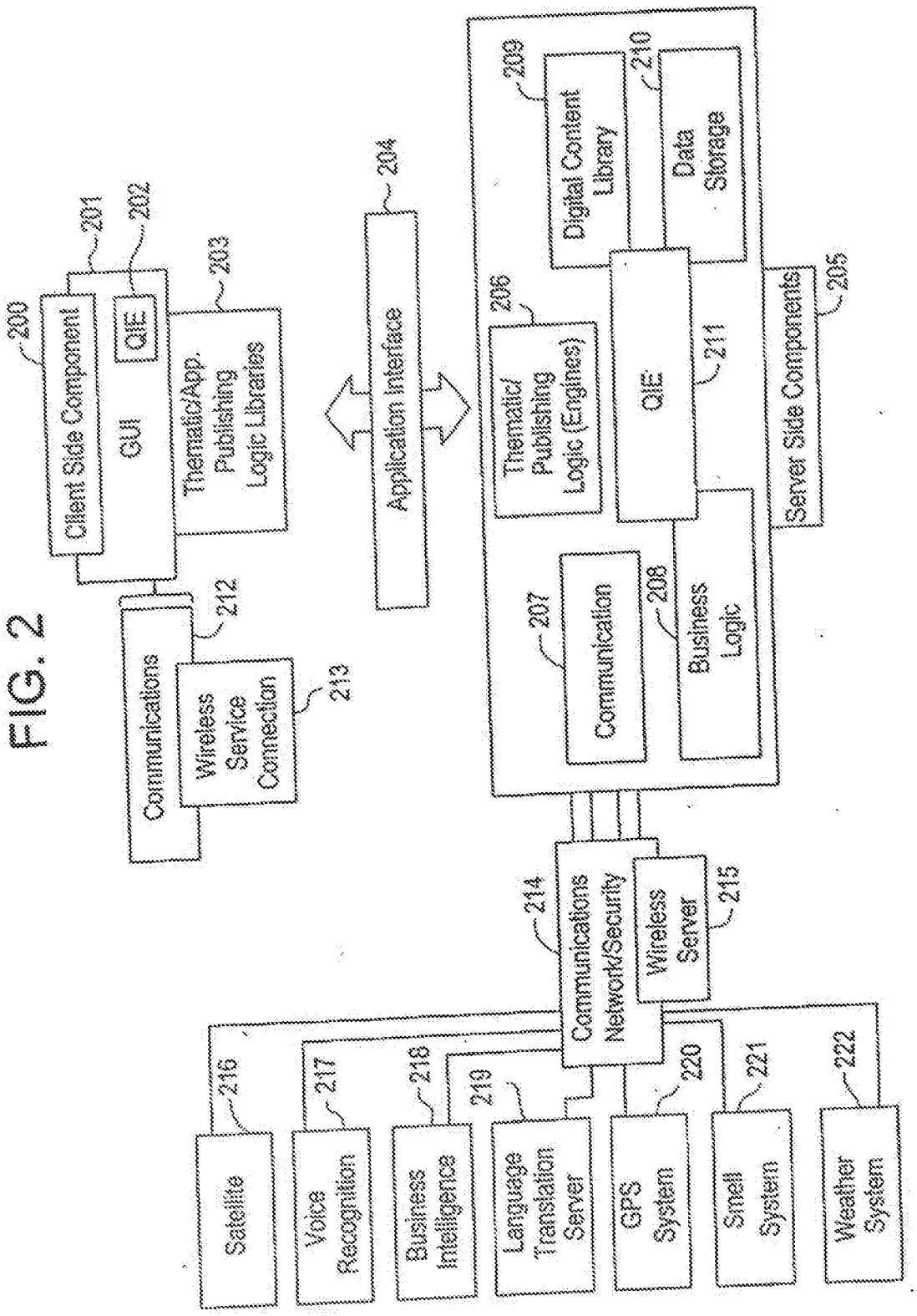

200
Client Side Component
201
GUI
QIE
202
Thematic/App. Publishing Logic Libraries
203
Communications
212
Wireless Service Connection
213
Application Interface
204
Server Side Components
205
Thematic/ Publishing Logic (Engines)
206
Digital Content Library
209
Data Storage
210
QIE
211
Communication
207
Business Logic
208
Communications Network/Security
214
Wireless Server
215
Satellite
216
Voice Recognition
217
Business Intelligence
218
Language Translation Server
219
GPS System
220
Smell System
221
Weather System
222

FIG. 3

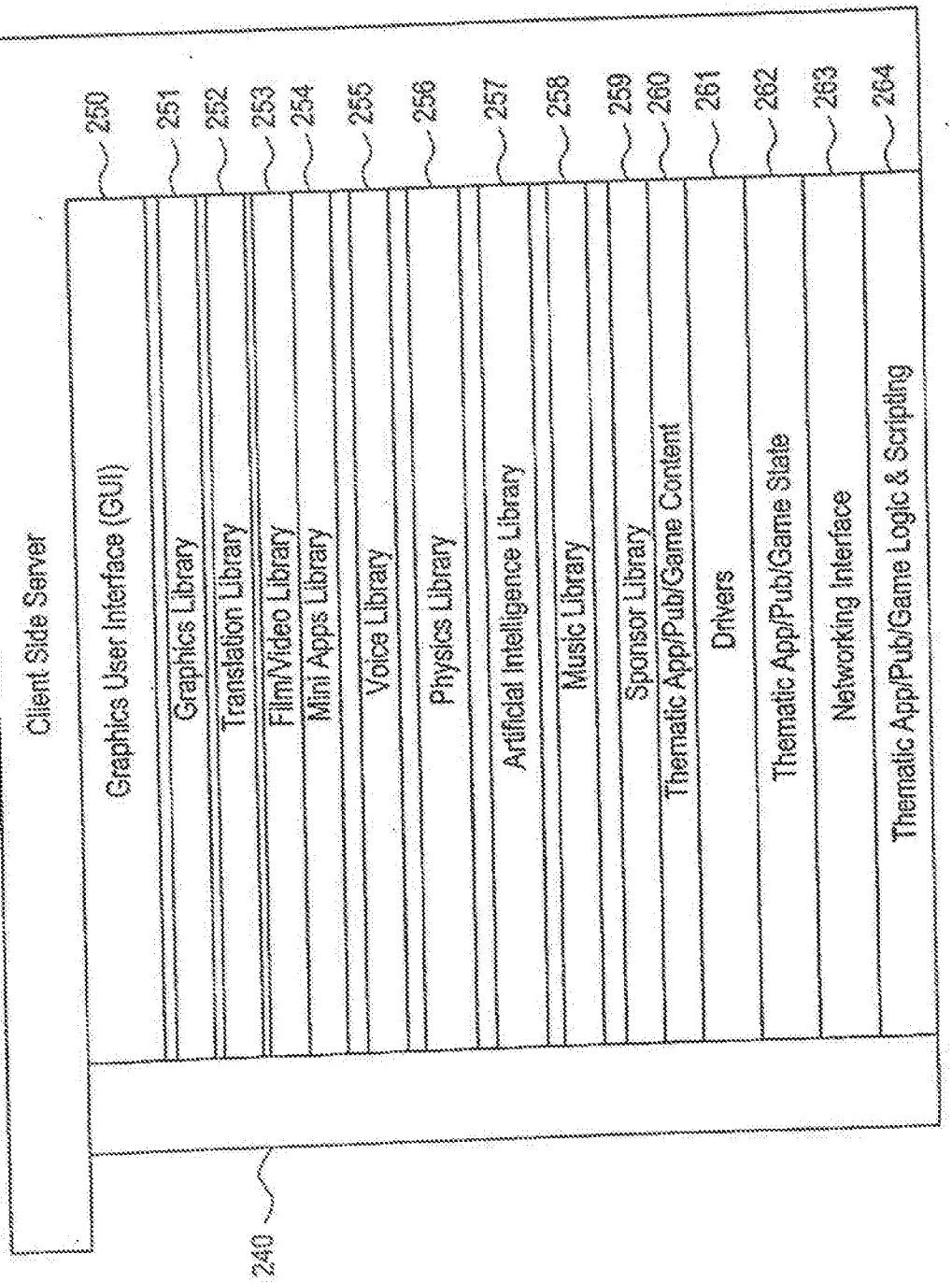

Client Side Server
Graphics User Interface (GUI)
Graphics Library
Translation Library
Film/Video Library
Mini Apps Library
Voice Library
Physics Library
Artificial Intelligence Library
Music Library
Sponsor Library
Thematic App/Pub/Game Content
Drivers
Thematic App/Pub/Game State
Networking Interface
Thematic App/Pub/Game Logic & Scripting
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
240

FIG. 4

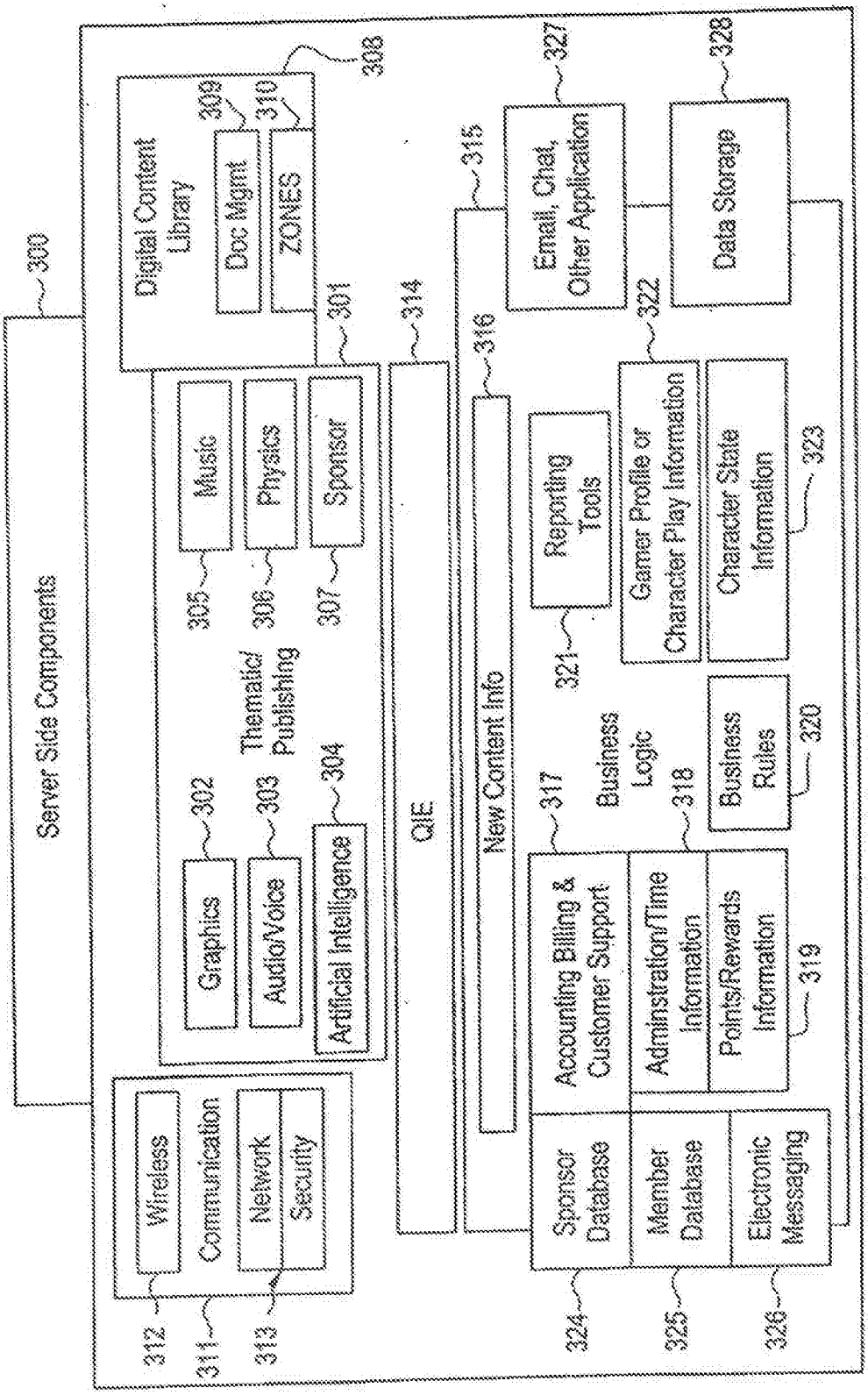

Server Side Components
300
Digital Content Library
Doc Mgmt
ZONES
309
310
308
301
Music
Physics
Sponsor
305
306
307
Thematic/ Publishing
Graphics
Audio/Voice
Artificial Intelligence
302
303
304
QIE
314
New Content Info
316
Email, Chat, Other Application
315
327
Data Storage
328
Reporting Tools
321
Gamer Profile or Character Play Information
322
Character State Information
323
Business Logic
317
318
Accounting Billing & Customer Support
Administration/Time Information
Points/Rewards Information
319
Business Rules
320
Wireless
Communication
Network
Security
312
311
313
Sponsor Database
Member Database
Electronic Messaging
324
325
326

FIG. 5

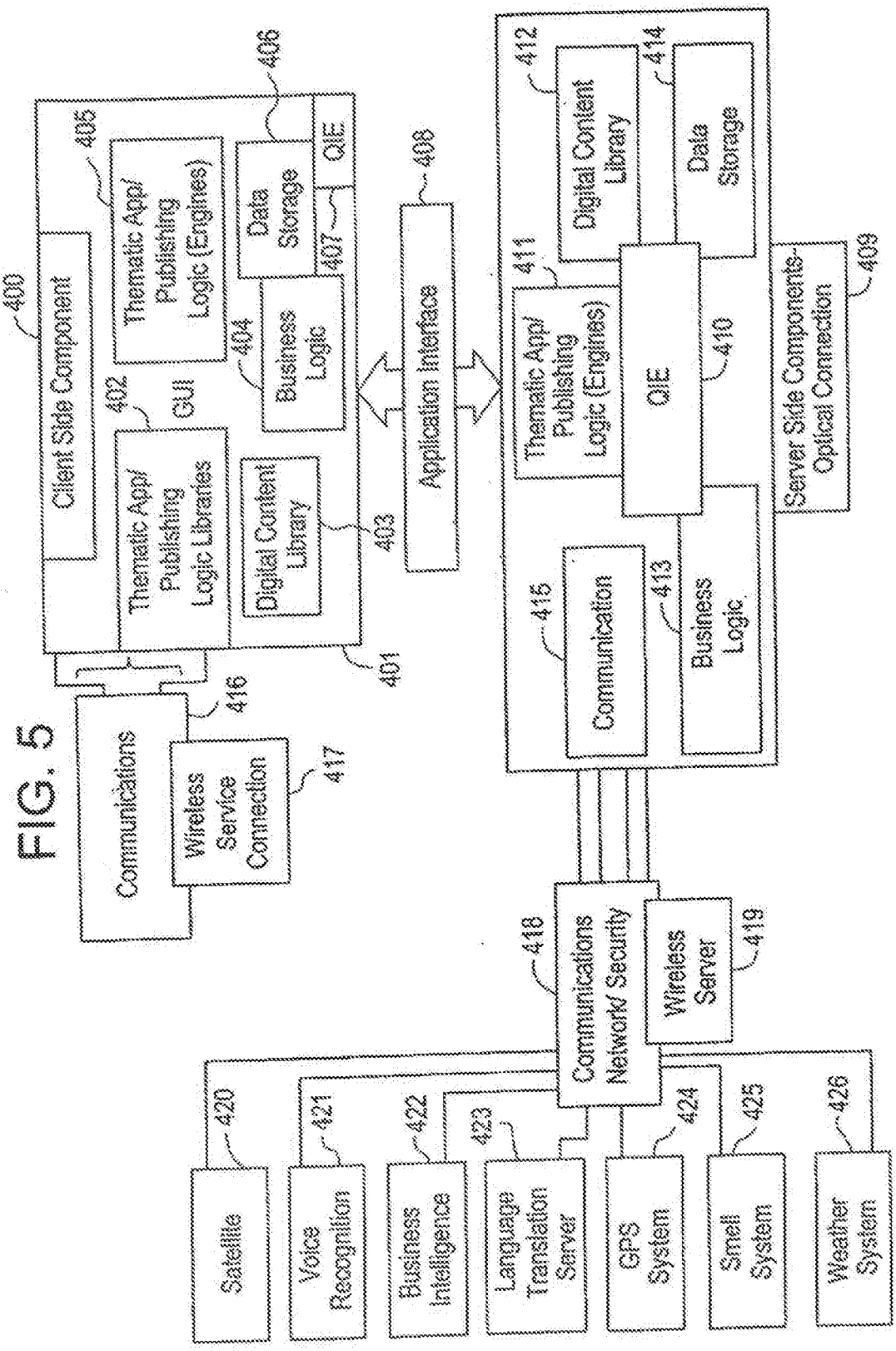

400
Client Side Component
405
Thematic App/ Publishing Logic (Engines)
406
Data Storage
QIE
407
404
Business Logic
402
GUI
Thematic App/ Publishing Logic Libraries
Digital Content Library
403
401
408
Application Interface
412
Digital Content Library
414
Data Storage
411
Thematic App/ Publishing Logic (Engines)
QIE
410
409
Server Side Components Optical Connection
415
Communication
413
Business Logic
416
Communications
Wireless Service Connection
417
418
Communications Network/ Security
Wireless Server
419
420
Satellite
421
Voice Recognition
422
Business Intelligence
423
Language Translation Server
424
GPS System
425
Smell System
426
Weather System

FIG. 6

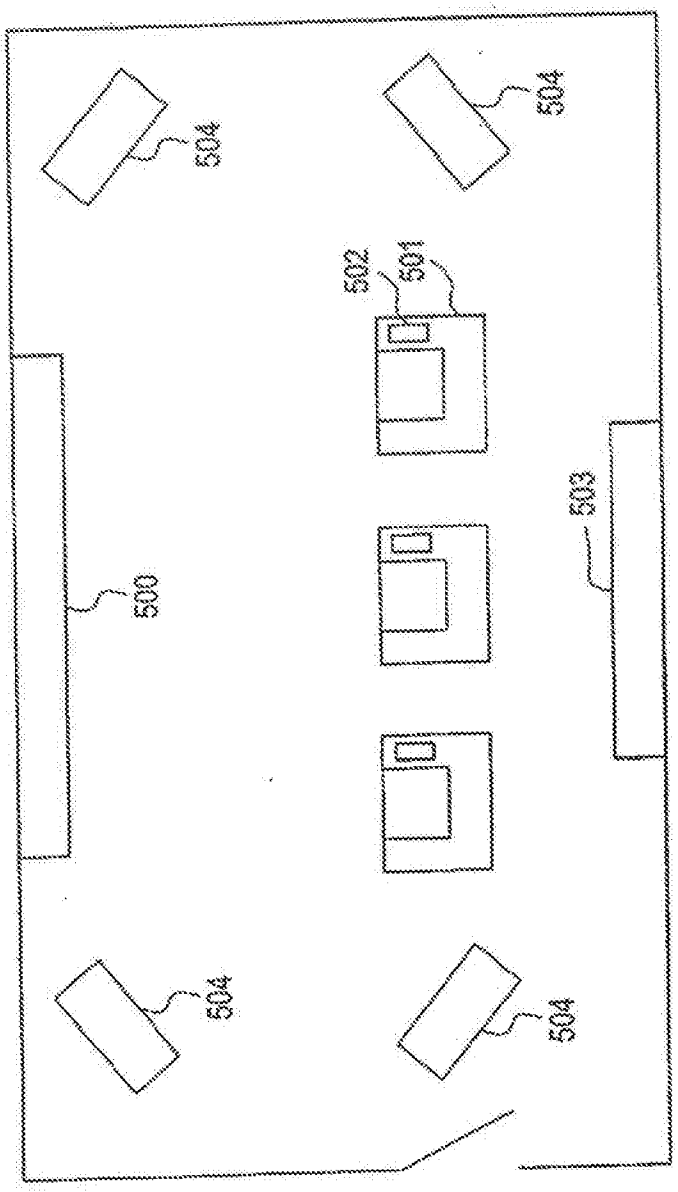
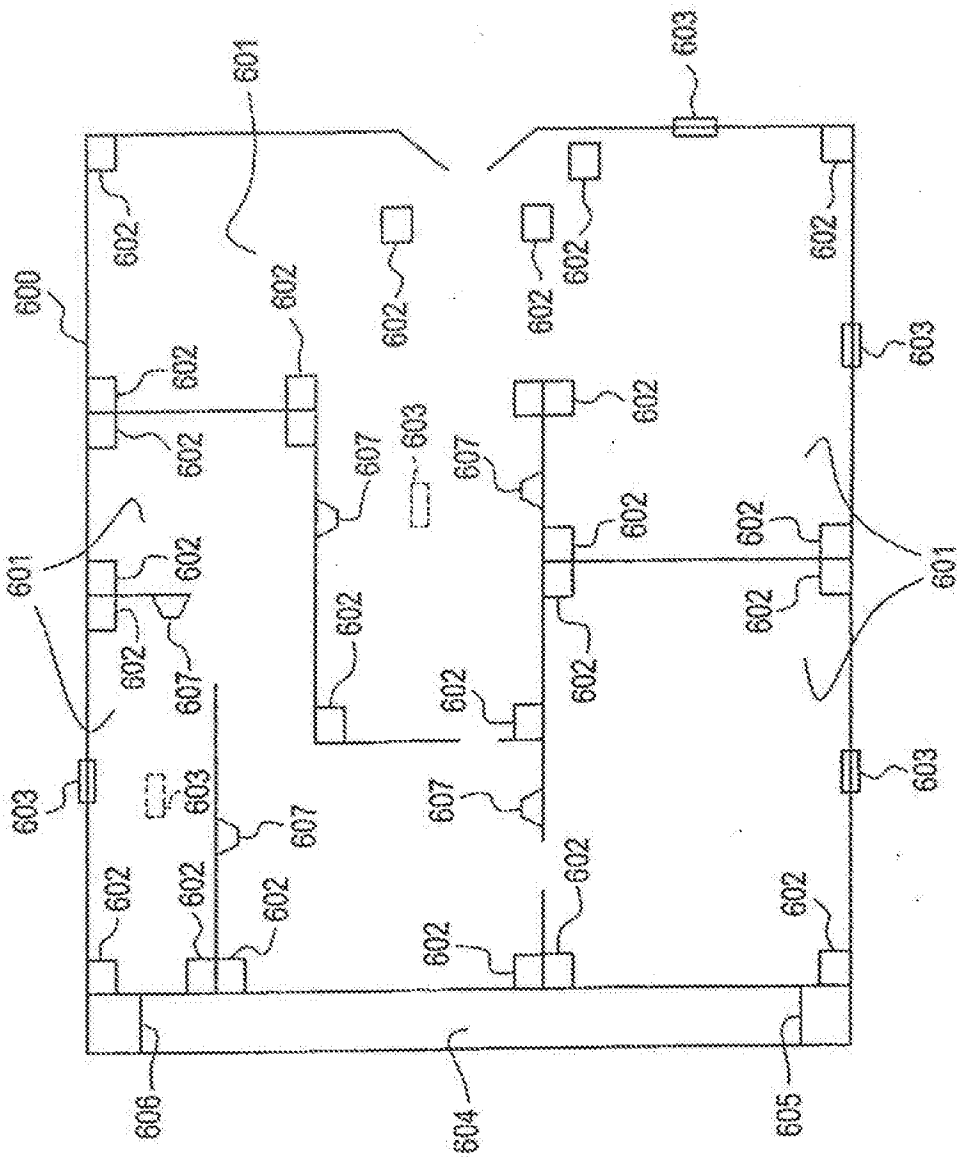


FIG. 7



This Copy of the Declaration is intended for the Continuation Application filed 03/27/2020 Atty. Docket No. 407.001

PTO/AIA/01 (06-12)
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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [■] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Frances Barbaro ALTIERI Date (Optional): 10/17/2016

Signature: _____

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

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First Named Inventor	Frances Barbaro Altieri
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Attorney Docket No.	407.001

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	NPL1	Final Office Action issued in U.S. Patent Application No. 15/348,438 on December 26, 2018.
	NPL2	Non-Final Office Action issued in U.S. Patent Application No. 15/348,438 on May 31, 2018.
	NPL3	Non-Final Office Action issued in U.S. Patent Application No. 13/137,299 on July 8, 2014.
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	NPL7	Non-Final Office Action issued in U.S. Patent Application No. 13/137,299 on May 15, 2017.
	NPL8	Final Office Action issued in U.S. Patent Application No. 13/137,299 on January 18, 2018.

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	NPL9	USPTO PATENT TRIAL AND APPEAL BOARD, *Niantic, Inc. v. Barbaro Technologies, LLC*; Petition for *Inter Partes* Review of U.S. Patent No. 7,373,377, IPR2019-00668, filed February 12, 2019.
	NP10	USPTO PATENT TRIAL AND APPEAL BOARD; *Niantic, Inc. v. Barbaro Technologies, LLC*; Case No. IPR2019-00668, Patent Owner Preliminary Response, filed May 22, 2019.
	NPL11	USPTO PATENT TRIAL AND APPEAL BOARD, *Niantic, Inc. v. Barbaro Technologies, LLC*; Petition for *Inter Partes* Review of U.S. Patent No. 7,373,377, IPR2019-00669, filed February 12, 2019.
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	NPL16	U.S. District Court for the Northern District of California San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Barbaro Technologies, LLC's Patent L.R. 4-5 (A) Opening Claim Construction Brief, filed February 12, 2019.
	NPL17	U.S. District Court Northern District of California San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Defendant Niantic, Inc.'s Responsive Claim Construction Brief, filed February 25, 2019.
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	NPL20	USPTO TRIAL AND APPEAL BOARD; *Niantic, Inc. v. Barbaro Technologies, LLC;* Declaration of Stephen Gray in Support of Petition for *Inter Partes* Review of U.S. Patent No. 8,228,325, Niantic Exhibit 1002, dated February 13, 2019.
	NPL21	Curriculum Vitae for Stephen Gray, Niantic Exhibit No. 1003

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	NPL22	USPTO Provisional Application for Patent Cover Sheet for U.S. Patent Application No. 60/496,752, Niantic Exhibit No. 1006, dated August 21, 2003.
	NPL23	District Court Northern District of California San Francisco Division; *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Barbaro Technologies, LLC's Amended Disclosure of Asserted Claims and Infringement Contentions, Niantic Exhibit No. 1010, dated September 6, 2018.
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Examiner Name	
Attorney Docket No.	407.001

NON-PATENT DOCUMENTS

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	NPL35	USPTO Office Action regarding U.S. Patent Application No. 10/805,415 (Atty. Dkt. No. 71457.0005), mailed December 21, 2006.
	NPL36	Amendment in Response to the Non-Final Office Action dated December 21, 2006 regarding U.S. Patent Application No. 10/805,415, filed March 21, 2007.
	NPL37	USPTO Final Office Action regarding U.S. Patent Application No. 10/805,415 (Atty. Dkt. No. 71457.0005), mailed May 3, 2007.
	NPL38	Response to the Final Office Action dated May 3, 2007 regarding U.S. Patent Application No. 10/805,415, filed August 1, 2007.
	NPL39	Preliminary Amendment in Response to the Final Office Action dated May 3, 2007 regarding U.S. Patent Application No. 10/805,415, filed November 13, 2007.
	NPL40	Response to Notice of Non-Compliant Amendment dated November 14, 2007 regarding U.S. Patent Application No. 10,805,415, filed November 21, 2017.
	NPL41	Response to the Notice of Allowance dated December 27, 2007 regarding U.S. Patent Application No. 10/805,415, filed March 13, 2008.

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	NPL42	Preliminary Amendment regarding U.S. Patent Application No. 12/073,967, filed March 12, 2008.
	NPL43	USPTO Office Action regarding U.S. Patent Application No. 12/073,967 (Atty. Dkt. No. 71457.0008), mailed July 11, 2011.
	NPL44	Response to Restriction Requirement dated July 11, 2011 regarding U.S. Patent Application No. 12/073,967, filed August 4, 2011.
	NPL45	USPTO Office Action regarding U.S. Patent Application No. 12/073,967 (Atty. Dkt. No. 71457.0008), mailed September 14, 2011.
	NPL46	Amendment in Response to the Non-Final Office Action dated September 14, 2011 regarding U.S. Patent Application No. 12/073,967, filed January 17, 2012.
	NPL47	Preliminary Amendment regarding U.S. Patent Application No. 13/137,299, filed June 12, 2012.
	NPL48	Amendment in Response to the Non-Final Office Action dated July 8, 2014 regarding U.S. Patent Application No. 13/137,299, filed October 7, 2014.

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	NPL49	Amendment in Response to the Final Office Action dated January 15, 2015 regarding U.S. Patent Application No. 13/137,299, filed April 8, 2015.
	NPL50	Response to the Final Office Action dated January 15, 2015 and the Advisory Action dated April 17, 2015 regarding U.S. Patent Application No. 13/137,299, filed May 5, 2015.
	NPL51	USPTO Advisory Action regarding U.S. Patent Application No. 13/137,299 (Atty. Dkt. No. 71457.0014), mailed April 17, 2015.
	NPL52	Amendment in Response to the Non-Final Office Action dated October 27, 2015 regarding U.S. Patent Application No. 13/137,299, filed January 27, 2016.
	NPL53	Amendment in Response to the Final Office Action dated May 19, 2016 regarding U.S. Patent Application No. 13/137,299, filed August 18, 2016.
	NPL54	USPTO Advisory Action regarding U.S. Patent Application No. 13/137,299 (Atty. Dkt. No. 71457.0014), mailed September 1, 2016.
	NPL55	Amendment in Response to the Advisory Action dated September 1, 2016 regarding U.S. Patent Application No. 13/137,299, filed September 16, 2016.

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	NPL56	Supplemental Amendment in Response to the Advisory Action dated September 1, 2016 regarding U.S. Patent Application No. 13/137,299, filed October 14, 2016.
	NPL57	Amendment in Response to the Non-Final Office Action dated May 15, 2017 regarding U.S. Patent Application No. 13/137,299, filed October 16, 2017.
	NPL58	Amendment in Response to the Final Office Action dated January 18, 2018 regarding U.S. Patent Application No. 13/137,299, filed April 18, 2018.
	NPL59	USPTO Advisory Action regarding U.S. Patent Application No. 13/137,299 (Atty. Dkt. No. 71457.0014), dated May 7, 2018.
	NPL60	Amendment in Response to the Final Office Action dated January 18, 2018 and the Advisory Action dated May 7, 2018 regarding U.S. Patent Application No. 13/137,299, filed June 15, 2018.
	NPL61	Non-Final Office Action issued in U.S. Patent Application No. 15/817,815 on March 19, 2019.
	NPL62	Final Office Action issued in U.S. Patent Application No. 15/817,815 on December 9, 2019.

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	NPL63	Preliminary Amendment regarding U.S. Patent Application No. 15/348,438, filed November 10, 2016.
	NPL64	Amendment in Response to the Non-Final Office Action dated May 31, 2018 regarding U.S. Patent Application No. 15/348,438, filed September 27, 2018.
	NPL65	Response to the Final Office Action dated December 26, 2018 regarding U.S. Patent Application No. 15/348,438, filed March 11, 2019.
	NPL66	USPTO Advisory Action regarding U.S. Patent Application No. 15/348,438 (Atty. Dkt. No. 71457.0025), dated May 9, 2019.
	NPL67	Appeal Brief regarding U.S. Patent Application No. 15/348,438, filed September 13, 2019.
	NPL68	USPTO Office Action regarding U.S. Patent Application No. 12/073,968 (Atty. Dkt. No. 07DCOAI021) mailed August 21, 2009.
	NPL69	Amendment in Response to the Non-Final Office Action dated August 21, 2009 regarding U.S. Patent Application No. 12/073,968, filed November 23, 2009.

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	NPL70	Preliminary Amendment regarding U.S. Patent Application No. 13/875,908, filed May 2, 2013.
	NPL71	USPTO Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated August 25, 2016.
	NPL72	Amendment in Response to the Non-Final Office Action dated August 25, 2016 regarding U.S. Patent Application No. 13/875,908, filed December 23, 2016.
	NPL73	USPTO Final Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated May 8, 2017.
	NPL74	Amendment in Response to the Final Office Action dated May 8, 2017 regarding U.S. Patent Application No. 13/875,908, filed September 28, 2017.
	NPL75	USPTO Advisory Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017), dated October 11, 2017.
	NPL76	Amendment in Response to the Final Office Action dated May 8, 2017 and the Advisory Action dated October 11, 2017 regarding U.S. Patent Application No. 13/875,908, filed November 7, 2017.

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	NPL77	USPTO Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated November 30, 2017.
	NPL78	Amendment in Response to the Non-Final Office Action dated November 30, 2017 regarding U.S. Patent Application No. 13/875,908, filed March 28, 2018.
	NPL79	USPTO Final Office Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017) dated May 2, 2018.
	NPL80	Amendment in Response to the Final Office Action dated May 2, 2018 regarding U.S. Patent Application No. 13/875,908, filed October 2, 2018.
	NPL81	USPTO Advisory Action regarding U.S. Patent Application No. 13/875,908 (Atty. Dkt. No. 71457.0017), dated October 22, 2018.
	NPL82	Preliminary Amendment regarding U.S. Patent Application No. 15/817,815, filed November 20, 2017.
	NPL83	USPTO Office Action regarding U.S. Patent Application No. 15/817,815 (Atty. Dkt. No. 71457.0028) dated March 19, 2019.

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	NPL84	Amendment in Response to the Non-Final Office Action dated March 19, 2019 regarding U.S. Patent Application No. 15/817,815, filed September 17, 2019.
	NPL85	USPTO Final Office Action regarding U.S. Patent Application No. 15/817,815 (Atty. Dkt. No. 71457.0028) dated December 9, 2019.
	NPL86	US District Court Northern District of California, *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 18-cv-02955-RS, Order Construing Claims, filed February 12, 2020.
	NPL87	BRUCE et al., "ARQuake: An Outdoor/Indoor Augmented Reality First Person Application", Proceedings of the Fourth International Symposium on Wearable Computers (ISWC'00), Oct. 2000.
	NPL88	US District Court Northern District of California San Francisco Division, *Barbaro Technologies, LLC v. Niantic, Inc.,* Case No. 3:18-cv-02955-RS, Defendant Niantic, Inc.'s Amended Patent L.R. 3-3 Invalidity Contentions, filed March 21, 2019.
	NPL89	BAILLOT et al., "Authoring of Physical Models Using Mobile Computers", *Virtual Reality Laboratory, Advanced Information Technology Division, Naval Research Laboratory*, 2002.
	NPL90	JULIER et al., "Urban Terrain Modeling for Augmented Reality Applications", *3D Synthetic Environment Reconstruction*, 2001.

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	NPL91	JULIER et al., "The Need for AI: Intuitive User Interfaces for Mobile Augmented Reality Systems", *Advanced Information Technology Naval Research Laboratory*, August 2001.
	NPL92	JULIER et al., "Information Filtering for Mobile Augmented Reality", *IEEE Computer Graphics and Applications*, Vol. 22, Issue 5, August 2002.
	NPL93	SESTITO et al., "Intelligent Filtering for Augmented Reality", *Advanced Information Technology Naval Research Laboratory*, February 2000.
	NPL94	MacIntyre et al., "Estimating and Adapting to Registration Errors in Augmented Reality Systems", *Proceedings IEEE Virtual Reality*, 2002.
	NPL95	GABBARD et al., "Usability Engineering: Domain Analysis Activities for Augmented Reality Systems", *The Engineering Reality of Virtual Reality 2002*, Proceedings in SPIE Volume 4660,February 2002.
	NPL96	HOLLERER et al., "User Interface Management Techniques for Collaborative Mobile Augmented Reality", *Computers and Graphics* 25(5), Oct. 2001.
	NPL97	AZUMA et al., "Recent Advances in Augmented Reality", *IEEE Computer Graphics and Applications*, Vol. 21, Issue 6, Nov/Dec 2001.

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	NPL98	JULIER et al., "Information Filtering for Mobile Augmented Reality", *IEEE Computer Graphics and Applications*, Vol. 22, Issue 5, July 2, 2002.
	NPL99	"EverQuest: Shadows of Luclin", Sony Online Entertainment, Game Manual 2001.
	NPL100	PIEKARSKI et al., "The Tinmith System – Demonstrating New Techniques for Mobile Augmented Reality Modeling", *Australian Computer Science Communications*, January 2002.
	NPL101	PIEKARSKI et al., "Tinmith-Metro: New Outdoor Techniques for Creating City Models with an Augmented Reality Wearable Computer," Proceedings Fifth International Symposium on Wearable Computers", 2001.
	NPL102	PIEKARSKI et al., "Integrating Virtual and Augmented Realities in an Outdoor Application", *Proceedings 2nd IEEE and ACM International Workshop on Augmented Reality* (IWAR '99), 1999.
	NPL103	PIEKARSKI, "Interactive 3D Modelling in Outdoor Augmented Reality Worlds," Wearable Computer Lab, February 2004.
	NPL104	U.S. Patent No. 6,767,287 file wrapper, issued July 27, 2004.

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	NPL105	JULIER et al., "BARS: Battlefield Augmented Reality System", *Advanced Information Technology Naval Research Laboratory*, Oct. 2000.

Examiner Signature:	**Date Considered:**

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Международное бюро

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МЕЖДУНАРОДНАЯ ЗАЯВКА, ОПУБЛИКОВАННАЯ В СООТВЕТСТВИИ С ДОГОВОРОМ О ПАТЕНТНОЙ КООПЕРАЦИИ (PCT)

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(74) Агент: «СОЮЗПАТЕНТ»; 103735 Москва, ул. Ильинка, д. 5/2 (RU) [«SOJUZPATENT», Moscow (RU)].

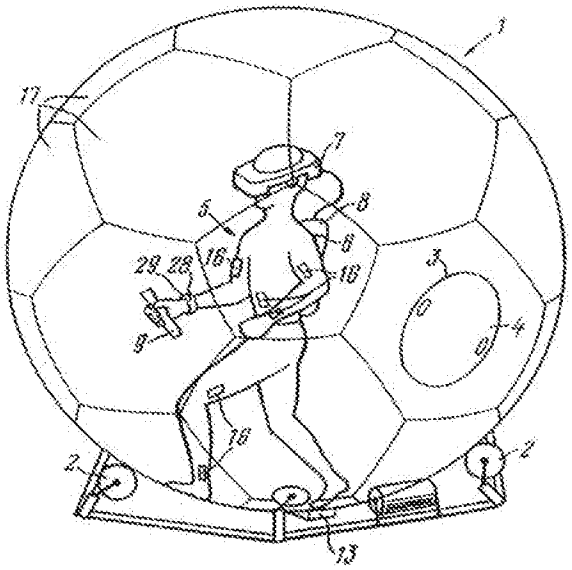
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Опубликована.

Без отчёта о международном поиске и с повторной публикацией по получении отчёта.

(54) Title: SYSTEM FOR PLACING A SUBJECT INTO VIRTUAL REALITY

(54) Название изобретения: СИСТЕМА ДЛЯ ПОГРУЖЕНИЯ ПОЛЬЗОВАТЕЛЯ В ВИРТУАЛЬНУЮ РЕАЛЬНОСТЬ



The present invention relates to a system for placing a subject into virtual reality, wherein said system includes an enclosed spherical envelope which defines a real space and is mounted on stands so as to be capable of rotation about its own centre. This envelope comprises at least one hatch with a lid for the subject to climb in or out of said envelope. This system also includes a device for generating a virtual space, as well as a device for displaying said virtual space to the user which is connected to the generation device. The system further includes a unit for modifying the virtual reality according to the physical displacements of the user within the envelope, wherein said unit is connected to a device for measuring the values and directions of the user's displacements relative to the envelope. The envelope is placed on at least three wheel stands whose rotation axes are directed towards the centre of the sphere and offset relative to rotation axis of the wheel.

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(57) Реферат

Система для погружения пользователя в виртуальную реальность содержит замкнутую оболочку в виде сферы, ограничивающую реальное пространство, размещенную на опорах с возможностью вращения вокруг своего центра, и имеющую по меньшей мере один люк, снабженный крышкой, для входа и выхода пользователя. Имеется средство для формирования виртуального пространства и средство для отображения пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства. Система содержит также блок преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, совершаемыми им внутри оболочки, и средство определения величины и направления перемещения пользователя относительно оболочки, подключенное к блоку преобразования виртуального пространства. Оболочка размещена по меньшей мере на трех колесных опорах, поворотные оси которых направлены к центру сферы и смещены относительно оси вращения колеса.

ИСКЛЮЧИТЕЛЬНО ДЛЯ ЦЕЛЕЙ ИНФОРМАЦИИ

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СИСТЕМА ДЛЯ ПОГРУЖЕНИЯ ПОЛЬЗОВАТЕЛЯ В ВИРТУАЛЬНУЮ РЕАЛЬНОСТЬ

ОБЛАСТЬ ТЕХНИКИ

Настоящее изобретение относится к компьютерным играм, космическим, спортивным военным тренажерам, а более точно - к системе для погружения пользователя в виртуальную реальность.

Изобретение может использоваться для развлечения детей и взрослых. Устройства для компьютерных игр могут быть установлены в помещении, во дворе, в залах для игровых автоматов. Широкое применение устройство имеет для обучения и тренинга военных, спортсменов, летчиков и при обучении различным специальностям, например, полицейских. Устройство может быть полезно для исследовательских целей при изучении поведения человека в виртуальном компьютерном пространстве.

ПРЕДШЕСТВУЮЩИЙ УРОВЕНЬ ТЕХНИКИ

Виртуальная реальность - это то, что позволяет перемещаться в трехмерном мире с шестью степенями свободы и обозревать его в реальном времени. Это означает, что программа задает, а аппаратура распознает шесть видов движения: вперед-назад, вверх-вниз, налево-направо, наклон вверх-вниз, крен налево-направо и вращение налево-направо. Виртуальная реальность - это имитация физической реальности.

Виртуальная реальность представляет пользователю редкую возможность почти по-настоящему ощутить свое присутствие в некоем ином мире. В нем они могут увидеть друг друга, разговаривать и взаимодействовать в трехмерном пространстве, различая цвета и звуки. Такое погружение создает впечатляющий эффект присутствия. Это достигается за счет используемого оборудования - шлема со

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встроенными наушниками и джойстика, чувствительного к пространственному передвижению.

Средства, формирующие виртуальную реальность, обычно содержат быстродействующий компьютер, включающий акселератор трехмерной графики, от простого персонального компьютера до супер-ЭВМ и программные средства виртуальной реальности, например такие, как VIRTUS VR, VIRTUS WALKTHROUGH PRO, SUFERSC APE VRT, VRCREATOR и др.

Средства отображения виртуальной реальности, т.е. средства аудио-визуализации представляют собой мониторы всевозможных типов, шлемы-дисплеи HMD (Head Mounted Display) или CAVE (Cave Automatic Virtual Environment).

Средства для интерактивного взаимодействия с виртуальной реальностью, традиционные устройства ввода-вывода, специальные трехмерные мыши, перчатки, джойстики и следящие устройства, например, перчатка CYBERGLOVE фирмы Virtual Technologies отслеживает почти любое движение, на которое способна рука.

Следящие устройства позволяют определять положение рук, ног, туловища пользователя и их ориентацию в реальном мире и отображать их в мире виртуальном. Следящие системы различаются по принципу отображения движения - с ртутными балансирами, радиоволновые, ультразвуковые, лазерные и др.

Известен простейший набор средств для формирования виртуальной реальности, который был доступен семь-восемь лет назад (см., например, игру DOOM фирмы ID Software, "Энциклопедия компьютерных игр", Санкт-Петербург, 1995 г., стр. 119-122). Этот набор содержит стационарный компьютер, цветной монитор, открывающий "окно" в виртуальный мир, который представляется лежащим по другую сторону экрана. Манипулятор типа мышь, джойстик или клавиатура дают возможность управлять передвижением, поворотом, обзором в любом горизонтальном направлении виртуального пространства.

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В указанной игре не происходит полного погружения пользователя в виртуальную реальность, т.к. виртуальное пространство видно через "окно", ограниченное границами экрана кинескопа. Передвижение управляется посредством манипулятора рукой. Система не отражает интерактивно физических движений пользователя в виртуальном пространстве.

Возросшая мощность компьютеров и появившиеся более развитые средства аудио-визуализации привели к созданию устройства для отображения виртуальной реальности типа стереоскопического монитора или проектора, которые пользователь надевает на голову как шлем или очки и получает возможность видеть объемное изображение (см., например, журнал Мир ПК. № 1, 1995 г., стр. 164-175).

В указанном устройстве виртуальный мир становится полноразмерным, выходит за рамки экрана и окружает человека. Появляется возможность кроме горизонтального обзора посмотреть под некоторым углом вверх-вниз. Манипуляторы типа трехмерной мыши, "перчатки" позволяют взаимодействовать с объектами. Они либо отвечают на это предсказуемой реакцией, либо деформируются. Такое устройство позволяет полнее погрузиться в виртуальное пространство, ощутить себя внутри этого виртуального пространства и взаимодействовать с объектами.

Однако управление объектами и передвижением происходит с помощью манипуляторов и не позволяет идентифицировать движения в виртуальном пространстве и в реальном пространстве.

В последнее время появляются разработки, которые обеспечивают почти полное погружение пользователя в виртуальное пространство.

Известна система для погружения пользователя в виртуальную реальность, содержащая замкнутую оболочку в виде сферы, ограничивающую реальное пространство, размещенную на колесных опорах с возможностью вращения вокруг своего центра, и имеющую по меньшей мере один люк, снабженный крышкой, для входа и выхода пользователя,

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средство для формирования виртуального пространства, средство для отображения пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства (см., например, патент США 5.490.784, 1996 г.).

Указанная система обладает повышенными возможностями для погружения пользователя в виртуальную реальность. По меньшей мере одно из опорных колес является приводным и обеспечивает проворачивание сферы вокруг своего центра. Внутри сферы установлены активаторы, которые выполнены в виде двух платформ для каждой из ног пользователя. Эти платформы закреплены на шарнирах, которые в свою очередь закреплены на опорной поверхности внутри сферы. Платформы позволяют лишь имитировать ходьбу пользователя на месте путем поочередного поднятия и опускания ног без перемещения вперед или назад.

Указанная система не позволяет пользователю естественным образом перемещаться по внутренней поверхности сферы, осуществляя реальное перемещение по отношению к опорной поверхности.

РАСКРЫТИЕ ИЗОБРЕТЕНИЯ

В основу настоящего изобретения поставлена задача создания системы для погружения пользователя в виртуальную реальность, в которой выполнение опоры для размещения оболочки, а также использование блока преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, позволит пользователю перемещаться внутри оболочки в любую сторону на любое количество шагов без ограничений, благодаря свободному вращению оболочки на опорах, и тем самым обеспечить более полное погружение пользователя в виртуальную реальность.

Поставленная задача решается тем, что система для погружения пользователя в виртуальную реальность, содержащая замкнутую оболочку в виде сферы,

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ограничивающую реальное пространство, размещенную на опорах с возможностью вращения вокруг своего центра, и имеющую по меньшей мере один люк, снабженный крышкой, для входа и выхода пользователя, средство для формирования виртуального пространства, средство для отображения пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства, согласно изобретению, содержит

блок преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, совершаемыми им внутри оболочки,

средство определения величины и направления перемещения пользователя относительно оболочки, подключенное к блоку преобразования виртуального пространства,

по меньшей мере три колесных опоры, поворотные оси которых направлены к центру сферы и смещены относительно оси вращения колеса.

Целесообразно, чтобы система дополнительно содержала датчик угла поворота сферы, подключенный к блоку преобразования виртуального пространства, при этом угол поворота сферы соответствует величине и направлению перемещения пользователя относительно внутренней поверхности сферы.

Полезно, чтобы датчик угла поворота сферы был выполнен в виде мыши, содержащей два валика, которые установлены перпендикулярно друг другу с возможностью вращения и контактируют с поверхностью сферы, при этом в качестве шарика мыши была использована сфера.

Выгодно, чтобы средство определения величины и направления перемещения пользователя относительно оболочки содержало множество датчиков, определяющих положение частей тела пользователя.

Целесообразно, чтобы средство определения величины и направления перемещения пользователя относительно оболочки было выполнено в виде мыши, имеющей два валика, которые были установлены перпендикулярно друг другу с

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возможностью вращения и контактировали с поверхностью сферы, при этом в качестве шарика мыши была использована сфера.

Полезно, чтобы оболочка была выполнена из набора по меньшей мере одного вида одинаковых элементов, жестко связанных между собой и имеющих кривизну поверхности, определяемую заданной кривизной сферы.

Выгодно, чтобы в качестве элементов использованы элементы, выбранные из группы, состоящей из треугольников, четырехугольников, пятиугольников и шестиугольников.

Выгодно, чтобы каждая колесная опора содержала по меньшей мере одно колесо.

Выгодно, чтобы колесные опоры были закреплены на раме.

Целесообразно, чтобы система содержала платформу, установленную в сфере на колесных опорах, поворотные оси которых были направлены к центру сферы и смещены относительно оси вращения колеса.

Полезно, чтобы система содержала

по меньшей мере одну дополнительную замкнутую оболочку в виде сферы по количеству дополнительных пользователей, ограничивающую реальное замкнутое пространство, размещенную на опорах с возможностью вращения вокруг своего центра, имеющую по меньшей мере один люк, снабженный крышкой,

по меньшей мере одно дополнительное средство для отображения дополнительному пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства для осуществления интерактивного взаимодействия пользователей.

Полезно, чтобы система содержала датчик пульса и/или датчик давления крови, подключенные к блоку преобразования виртуального пространства для коррекции виртуальной реальности, отображаемой пользователю.

Полезно, чтобы система содержала средство для регулирования температуры и состава воздуха в сфере.

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Целесообразно, чтобы оболочка была выполнена из радиопрозрачного материала.

Выгодно, чтобы система содержала драйвер, предназначенный для адаптации известных программ для погружения в виртуальное пространство с помощью сферы.

Поставленная задача решается также тем, что система для погружения пользователя в виртуальную реальность, содержащая замкнутую оболочку в виде сферы, ограничивающую реальное пространство, размещенную на опорах с возможностью вращения вокруг своего центра, и имеющую по меньшей мере один люк, снабженный крышкой, для входа и выхода пользователя, средство для формирования виртуального пространства, средство для отображения пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства, согласно изобретению содержит

блок преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, совершаемыми им внутри оболочки,

средство определения величины и направления перемещения пользователя относительно оболочки, подключенное к блоку преобразования виртуального пространства,

при этом опора для оболочки выполнена гироскопической.

КРАТКОЕ ОПИСАНИЕ ЧЕРТЕЖЕЙ

В дальнейшем изобретение поясняется описанием конкретных вариантов его воплощения со ссылками на сопровождающие чертежи, на которых:

фиг. 1 изображает систему для погружения пользователя в виртуальную реальность, согласно изобретению;

фиг. 2 а, б изображает опорное колесо, поворотная ось которого смещена относительно оси вращения колеса, согласно изобретению;

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фиг. 3 изображает датчик угла поворота сферы, выполненный в виде компьютерной мыши (вид снизу), согласно изобретению;

фиг. 4 изображает общий вид одного из элементов, из которых сформирована оболочка, согласно изобретению;

фиг. 5 изображает варианты конфигурации элементов оболочки, согласно изобретению;

фиг. 6 изображает общий вид элемента оболочки, имеющего ячеистую структуру (частичный вырыв), согласно изобретению;

фиг. 7 изображает общий вид опоры, когда она содержит одно колесо, согласно изобретению;

фиг. 8 изображает общий вид опоры, когда она содержит два колеса, согласно изобретению;

фиг. 9 изображает общий вид опоры, когда она содержит три колеса, согласно изобретению;

фиг. 10 изображает общий вид рамы, на которой закреплены пять колесных опор, согласно изобретению;

фиг. 11 изображает общий вид платформы, установленной внутри оболочки на колесных опорах, согласно изобретению;

фиг. 12 изображает две замкнутых оболочки для размещения двух пользователей, подключенных к одному средству формирования виртуального пространства, согласно изобретению;

фиг. 13 изображает оболочку, на которой размещено средство для регулирования температуры и состава воздуха, согласно изобретению;

фиг. 14 изображает гироскопическую опору для оболочки, согласно изобретению;

фиг. 15 изображает вариант выполнения подвижной опоры для закрепления дополнительного оборудования, согласно изобретению.

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ВАРИАНТЫ ОСУЩЕСТВЛЕНИЯ ИЗОБРЕТЕНИЯ

Система для погружения пользователя в виртуальную реальность содержит замкнутую оболочку 1 (фиг. 1) в виде сферы, ограничивающую реальное пространство, размещенную на опорах 2 с возможностью вращения вокруг своего центра "О". В сфере 1 имеется по меньшей мере один люк 3, снабженный крышкой 4, для входа и выхода пользователя 5.

Система содержит средство 6 для формирования виртуального пространства, размещенное на пользователе, которое представляет собой портативный компьютер. Средство 7 для отображения пользователю виртуального пространства представляет собой шлем, надетый на голову пользователя, при этом дисплей для отображения пользователю виртуального или реального трехмерного пространства, находится в шлеме перед глазами пользователя. Средство 7 подключено к средству 6 для формирования виртуального пространства.

Система содержит блок 8 преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, совершаемыми им внутри оболочки 1, который предназначен для выполнения дополнительной программы по преобразованию виртуального пространства.

В руке пользователя 5 находится джойстик 9, посредством которого пользователь манипулирует при взаимодействии с объектами виртуального пространства, отображаемого ему на экраны дисплея.

Система содержит средство определения величины и направления перемещения пользователя относительно оболочки, подключенное к блоку 8 преобразования виртуального пространства.

В качестве опор 2 (фиг. 2а) использованы по меньшей мере три колесных опоры, имеющие поворотные оси 10, размещенные в подшипниковых опорах 11. При этом геометрические оси а-а поворотных опор 10 направлены к центру "О" сферы 1 и смещены относительно оси "12" вращения колеса на величину "b", приблизительно равную

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радиусу r колеса. Это позволяет колесу разворачиваться при изменении направления вращения сферы, и вращаться в другую сторону (фиг. 2б), обеспечивая возможность качения на колесах в любую сторону.

Система дополнительно содержит датчик 13 (фиг. 1) угла поворота сферы, подключенный к блоку 8 преобразования виртуального пространства, при этом угол поворота оболочки 1 соответствует величине и направлению перемещения пользователя 5 относительно внутренней поверхности сферы.

В описываемом варианте датчик 13 (фиг. 3) угла поворота сферы выполнен в виде компьютерной мыши и содержит два валика 14, 15, которые установлены перпендикулярно друг другу с возможностью вращения и контактируют с поверхностью оболочки 1. Возможен вариант, когда валики 14 и 15 расположены под углом большим или меньшим, чем прямой угол. В качестве шарика мыши использована оболочка 1.

Средство определения величины и направления перемещения пользователя относительно оболочки содержит множество датчиков 16, размещенных на пользователе 5 и определяющих положение частей тела пользователя.

Возможен вариант, когда в качестве средства определения величины и направления перемещения пользователя относительно оболочки использован датчик 13 угла поворота сферы, выполненный в виде компьютерной мыши.

Оболочка 1 (фиг. 1) выполнена из набора по меньшей мере одного вида одинаковых элементов 17, жестко связанных между собой, например, штырями, винтами, сваркой, клеем, скобами и т.д. Элементы 17 имеют кривизну поверхности R (фиг. 4), определяемую заданной кривизной сферы.

Для формирования сферы могут быть использованы треугольники (фиг. 5), четырехугольники, пятиугольники и шестиугольники, имеющие кривизну поверхности, определяемую заданной кривизной сферы.

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Элементы 17 могут быть выполнены с перфорацией 18 (фиг. 4) для свободного прохождения воздуха внутрь сферы или для облегчения конструкции и сохранения необходимых прочностных характеристик элементы 17 могут иметь ячеистую структуру (фиг. 6).

Каждая колесная опора 2 содержит по меньшей мере одно колесо (фиг.7).Возможен вариант,когда колесная опора 2 содержит два колеса (фиг.8) или три колеса (фиг.9).

Колесные опоры 2, на которых расположена сфера, закреплены на раме 18 (фиг. 10), показан вариант, когда рама представляет пятиугольник и на ней закреплены пять колесных опор 2.

Система содержит также платформу 19 (фиг. 11), установленную в оболочке 1 на колесных опорах 20, поворотные оси 21 которых направлены к центру "О" сферы и смещены относительно оси вращения колеса на величину, приблизительно равную радиусу r колеса, аналогично тому, как показано на фиг. 2а. Платформа 19 необходима для установки дополнительного оборудования типа кресла, мотоцикла, седла, горных лыж, скейтборда и т.д.

В случае, если оболочка будет использована для изготовления игрушек, на платформе 19 может быть размещена кукла, автомобиль, игрушечное животное.

Возможен вариант, когда система содержит по меньшей мере одну дополнительную замкнутую оболочку 22 (фиг. 12) в виде сферы по количеству дополнительных пользователей 5, ограничивающую реальное замкнутое пространство. Дополнительная оболочка 22 также размещена на опорах 23 с возможностью вращения вокруг своего центра, имеет по меньшей мере один люк 24, снабженный крышкой 25.

При этом система содержит по меньшей мере одно дополнительное средство 26 для отображения дополнительному пользователю 27 виртуального пространства, подключенное к средству 6 для формирования виртуального пространства для осуществления интерактивного взаимодействия пользователей 5 и 27.

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Система содержит датчик 28 пульса (фиг. 1) и/или датчик 29 давления крови, подключенные к блоку 8 преобразования виртуального пространства для коррекции виртуальной реальности, отображаемой пользователю 5.

Система содержит также средство 30 (фиг. 13) для регулирования температуры и состава воздуха в сфере, в качестве которого в описываемом варианте использован кондиционер воздуха.

Оболочка 1 выполнена из радиопрозрачного материала для обеспечения связи с датчиками, с пользователем 27, находящимся во второй оболочке 22, для связи с сетью типа ИНТЕРНЕТ или внешним компьютером (на фиг. 1 не показан).

Система содержит драйвер - компьютерную программу, предназначенную для адаптации и совместимости новой системы для погружения в виртуальную реальность с известными программами виртуальной реальности.

Возможен вариант выполнения системы, когда опора для оболочки 1 выполнена гироскопической. В этом случае опора содержит две стойки 31 (фиг. 14), на которых закреплены полуоси 32. Рама 33, выполненная в виде кольца, закреплена с возможностью вращения на полуосях 32. На раме 33 закреплена вторая пара полуосей 34, которая смещена относительно первой пары полуосей 32 на 90 град. угловых. Оболочка 1 закреплена с возможностью вращения на полуосях 34. На раме 33 установлены датчики 35 для определения угла поворота сферы.

В оболочке 1 (фиг. 15) может быть размещена подвижная опора 36 для закрепления на ней дополнительных приспособлений.

Система для погружения пользователя в виртуальную реальность может обеспечить новый выгодный способ представления рекламы для широкого круга людей. Чаще всего сфера будет устанавливаться в удобных для обзора местах в залах игровых автоматов, в крупных магазинах, на улицах около домов. Сфера имеет большую площадь, на которой может быть нанесена реклама. Поскольку сфера

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время от времени будет вращаться, естественно привлечет внимание посетителей и прохожих.

Средство 13 для определения величины и направления вращения сферы может быть выполнено в виде датчиков, определяющих величину и направление вращения по меньшей мере одного колеса, являющегося одной из опор 2.

Для удобства входа и выхода пользователя в сферу можно снабдить систему тормозом (на фиг. 1 не показан), фиксирующим сферу на некоторое время в определенном положении.

Система для погружения пользователя в виртуальную реальность работает следующим образом.

Формируют замкнутую оболочку 1 (фиг. 1), ограничивающую реальное пространство, из элементов 17. Размещают оболочку 1 на опорах 2 с возможностью вращения вокруг своего центра "О" с тремя степенями свободы.

Помещают в оболочку 1 пользователя 5, который имеет возможность свободно перемещаться по внутренней поверхности оболочки 1.

Посредством компьютера формируют виртуальное пространство, в котором объекты и субъекты, например, стены домов, деревья, машины, животные, люди, облака и т.д. возникают и перемещаются заданным и случайным образом.

Отображают сформированное виртуальное пространство на экраны дисплея, причем пользователь видит объемное изображение виртуального мира.

Осуществляют непрерывное преобразование виртуального пространства, согласно заложенной программе. Поскольку пользователь не видит границ экрана, благодаря совершенной конструкции шлема, у него возникает иллюзия полного присутствия в виртуальном трехмерном пространстве. У него появляется желание активно взаимодействовать с объектами и субъектами этого виртуального пространства, например, потрогать руками деревья, подойти ближе к объекту, взять его в руки, потанцевать с виртуальным партнером, полетать в самолете и т.д.

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В соответствии с изменением положения объектов и субъектов в виртуальном пространстве пользователь реальными физическими движениями частей тела и глаз изменяет свое положение в реальном и виртуальном пространстве. Пользователь, делая реальные шаги, приближается к объектам и субъектам виртуального пространства. Делая шаг, пользователь ногой вращает оболочку под себя, т.е. в направлении, противоположном своему движению. Такое движение оболочки возможно потому, что она установлена на подвижных колесных опорах, которые легко и свободно повторяют повороты оболочки в любом направлении.

При перемещении пользователя относительно оболочки смещается его центр тяжести относительно вертикали, проходящей через центр оболочки. При этом возникает момент силы, стремящейся повернуть оболочку так, чтобы центр тяжести пользователя смещался к этой вертикали. При этом следует учесть, что сила трения, возникающая при ходьбе между подошвой и оболочкой, значительно превышает силу трения между оболочкой и колесной опорой.

Определяют величину и направление перемещения пользователя 5 относительно оболочки 1, в соответствии с которыми осуществляют непрерывное преобразование виртуального пространства и отображение его пользователю.

Дозирование и контроль за физическими нагрузками пользователя могут осуществляться через изменения в сюжете компьютерной игры. Например, если в соответствии с рекомендациями необходимо увеличить нагрузку на пользователя, логика программы построена таким образом, что сюжет будет заставлять пользователя активизировать свои действия. Если это игра типа "action", заставить пользователя действовать активнее может увеличение количества виртуальных противников, с которыми необходимо сражаться, наступать или отступать.

Если нагрузка в соответствии с текущим сюжетом выше рекомендуемой, то игра будет переводиться в более плавное русло. К окончанию времени оптимальной нагрузки сюжет

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игры должен корректироваться таким образом, чтобы у пользователя возникало чувство удовлетворения проведенной игрой. Он может получить поздравление с окончанием игры и приглашение поучаствовать в игре на следующий день. Нагрузка может подбираться в соответствии с возрастными и физиологическими показателями, и наиболее целесообразно с рекомендациями личного врача. Необходимо учитывать не только физическую нагрузку, но и эмоциональную и нагрузку на глаза.

Компьютерные программы виртуальной реальности могут быть рассчитаны на любой возраст и пол. Это могут быть не только игры, но и специальные развлекательные и познавательные программы. Например, прогулка или пробежка с гидом по виртуальному городу. Темп пробежки при этом может задавать виртуальный гид.

Виртуальное пространство на средство 7 отображения может загружаться не только с компьютера 6, закрепленного на пользователе, но и с устройства доступа в компьютерную сеть типа Internet по беспроводной связи.

ПРОМЫШЛЕННАЯ ПРИМЕНИМОСТЬ

При помощи системы согласно настоящему изобретению можно реализовать новый способ представления зрителю шоу, построенного на возможности естественного перемещения пользователя по виртуальному пространству на своих ногах. Зрителю может быть представлена картина перемещения пользователя по виртуальному пространству и взаимодействия с объектами и субъектами этого пространства. При этом зрителю одновременно будут отображаться естественные движения пользователя, его мимика и эмоциональное состояние. Такие телепередачи и передачи в режиме реального времени, пересылаемые в компьютерных сетях, будут иметь особую зрелищность.

В телепередачах может отображаться погружение и взаимодействие пользователей в нескольких сферах в одно виртуальное пространство. Такие шоу-программы могут быть

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тематические, например, погружение в трехмерную среду какой-либо известной компьютерной игры. Такие телепередачи являются быть выгодным способом представления пользователям новой компьютерной игры с виртуальной реальностью. Для производителей трехмерных игр это может быть способом рекламы и маркетинга своей продукции. Зрителю в таком шоу по ходу реальных действий пользователей в виртуальном пространстве могут отображать действия нескольких видов: глазами пользователей, реальные действия пользователей, их мимику, разные ракурсы виртуального пространства и сочетание реальных и виртуальных изображений.

Зрители при просмотре виртуального пространства по компьютерной сети интерактивно могли бы выбирать ракурсы для просмотра.

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ФОРМУЛА ИЗОБРЕТЕНИЯ

1. Система для погружения пользователя в виртуальную реальность, содержащая

замкнутую оболочку в виде сферы, ограничивающую реальное пространство, размещенную на опорах с возможностью вращения вокруг своего центра, и имеющую по меньшей мере один люк, снабженный крышкой, для входа и выхода пользователя,

средство для формирования виртуального пространства,

средство для отображения пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства,

отличающаяся тем, что содержит

блок преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, совершаемыми им внутри оболочки,

средство определения величины и направления перемещения пользователя относительно оболочки, подключенное к блоку преобразования виртуального пространства,

по меньшей мере три колесных опоры, при этом поворотные оси колесных опор направлены к центру сферы и смещены относительно оси вращения колеса.

2. Система по п. 1, отличающаяся тем, что дополнительно содержит датчик угла поворота сферы, подключенный к блоку преобразования виртуального пространства, при этом угол поворота сферы соответствует величине и направлению перемещения пользователя относительно внутренней поверхности сферы.

3. Система по п. 2, отличающаяся тем, что датчик угла поворота сферы выполнен в виде мыши, содержащей два валика, которые установлены перпендикулярно друг другу с возможностью вращения и контактируют с поверхностью сферы, при этом в качестве шарика мыши использована сфера.

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4. Система по п. 1, отличающаяся тем, что средство определения величины и направления перемещения пользователя относительно оболочки содержит множество датчиков, определяющих положение частей тела пользователя.

5. Система по п. 1, отличающаяся тем, что средство определения величины и направления перемещения пользователя относительно оболочки выполнено в виде мыши, имеющей два валика, которые установлены перпендикулярно друг другу с возможностью вращения и контактируют с поверхностью сферы, при этом в качестве шарика мыши использована сфера.

6. Система по пп. 1-5, отличающаяся тем, что оболочка выполнена из набора по меньшей мере одного вида одинаковых элементов, жестко связанных между собой и имеющих кривизну поверхности, определяемую заданной кривизной сферы.

7. Система по п. 6, отличающаяся тем, что в качестве элементов использованы элементы, выбранные из группы, состоящей из треугольников, четырехугольников, пятиугольников и шестиугольников.

8. Система по п. 1, отличающаяся тем, что каждая колесная опора содержит по меньшей мере одно колесо.

9. Система по пп. 1, 8, отличающаяся тем, что колесные опоры закреплены на раме.

10. Система по п. 1, отличающаяся тем, что содержит платформу, установленную в сфере на колесных опорах, поворотные оси которых направлены к центру сферы и смещены относительно оси вращения колеса.

11. Система по пп.1-10, отличающаяся тем, что содержит по меньшей мере одну дополнительную замкнутую оболочку в виде сферы по количеству дополнительных пользователей, ограничивающую реальное замкнутое пространство, размещенную на опорах с возможностью вращения вокруг своего центра, имеющую по меньшей мере один люк, снабженный крышкой,

по меньшей мере одно дополнительное средство для отображения дополнительному пользователю виртуального

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пространства, подключенное к средству для формирования виртуального пространства для осуществления интерактивного взаимодействия пользователей.

12. Система по пп. 1-11, отличающаяся тем, что содержит датчик пульса и/или датчик давления крови, подключенные к блоку преобразования виртуального пространства для коррекции виртуальной реальности, отображаемой пользователю.

13. Система по пп.1-12, отличающаяся тем, что содержит средство для регулирования температуры и состава воздуха в сфере.

14. Система по п. 1, отличающаяся тем, что оболочка выполнена из радиопрозрачного материала.

15. Система по п. 1, отличающаяся тем, что содержит драйвер, предназначенный для адаптации известных программ для погружения в виртуальное пространство с помощью сферы.

16. Система для погружения пользователя в виртуальную реальность, содержащая

замкнутую оболочку в виде сферы, ограничивающую реальное пространство, размещенную на опорах с возможностью вращения вокруг своего центра, и имеющую по меньшей мере один люк, снабженный крышкой, для входа и выхода пользователя,

средство для формирования виртуального пространства,

средство для отображения пользователю виртуального пространства, подключенное к средству для формирования виртуального пространства,

отличающаяся тем, что содержит

блок преобразования виртуального пространства в соответствии с реальными физическими движениями пользователя, совершаемыми им внутри оболочки,

средство определения величины и направления перемещения пользователя относительно оболочки, подключенное к блоку преобразования виртуального пространства,

при этом опора для оболочки выполнена гироскопической.

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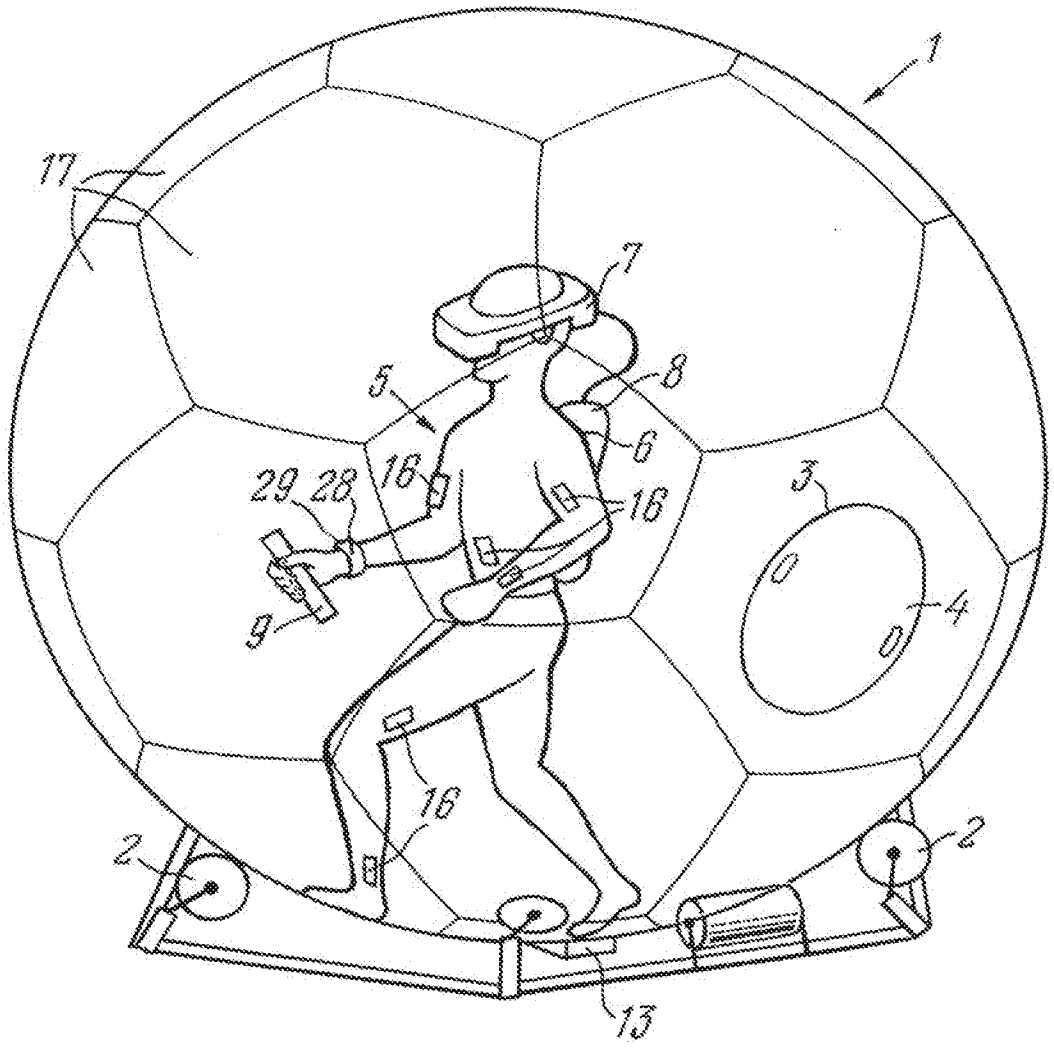


FIG.1

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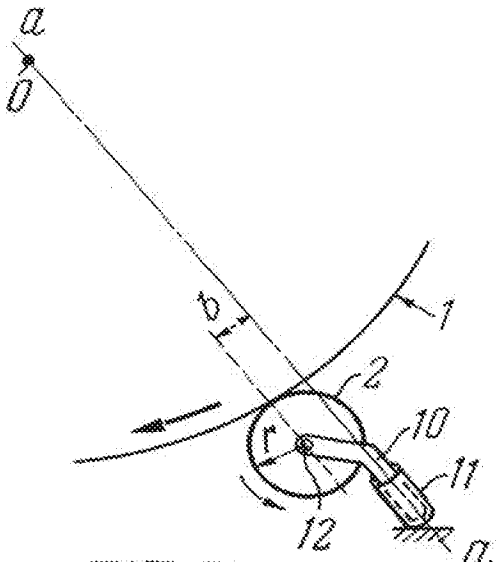


FIG. 2a

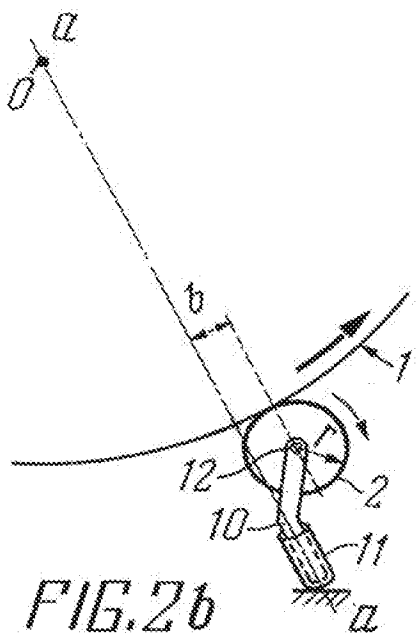


FIG. 2b

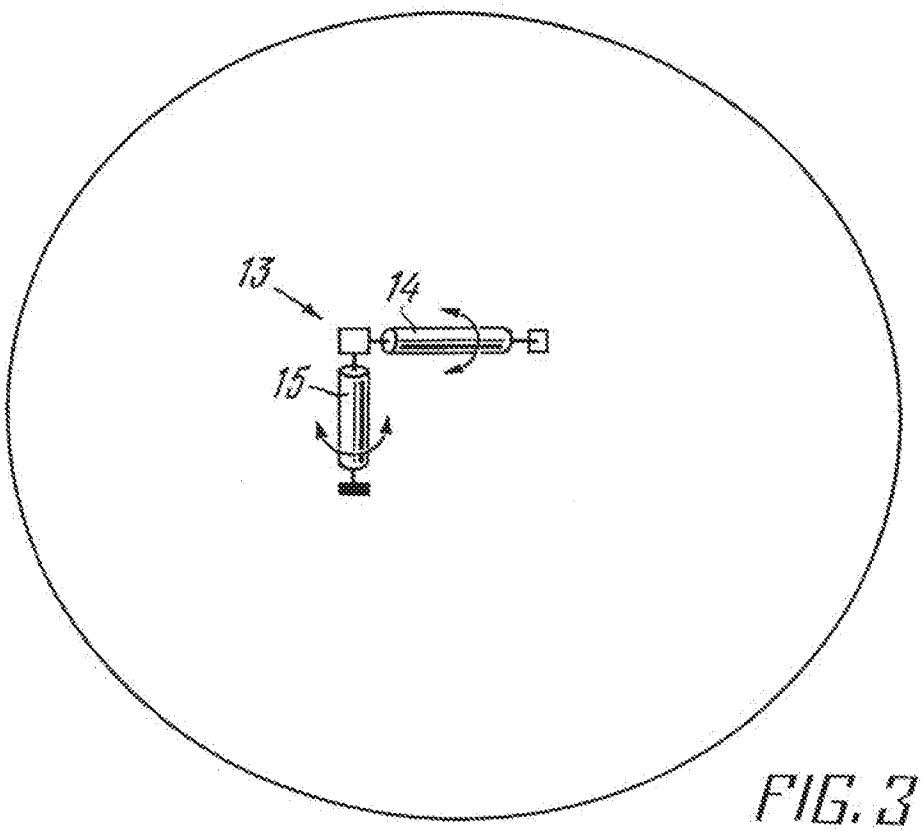


FIG. 3

NianticBarbaro00001961

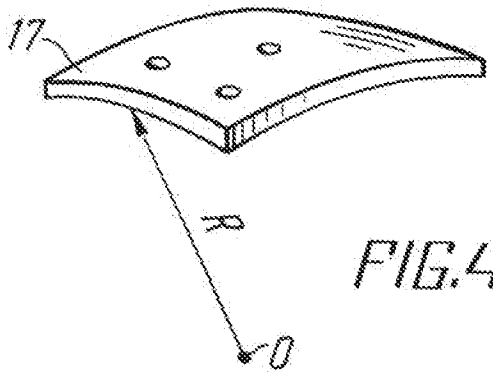


FIG.4

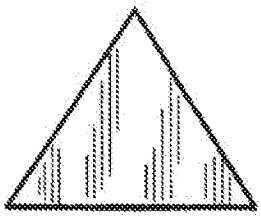


FIG.5a



FIG.5b

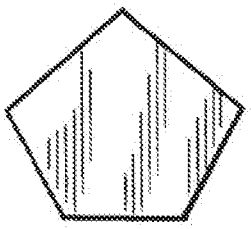


FIG.5c

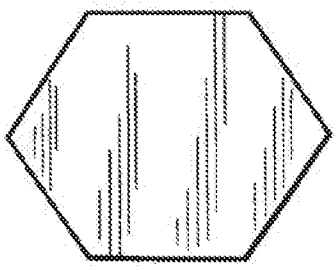


FIG.5d

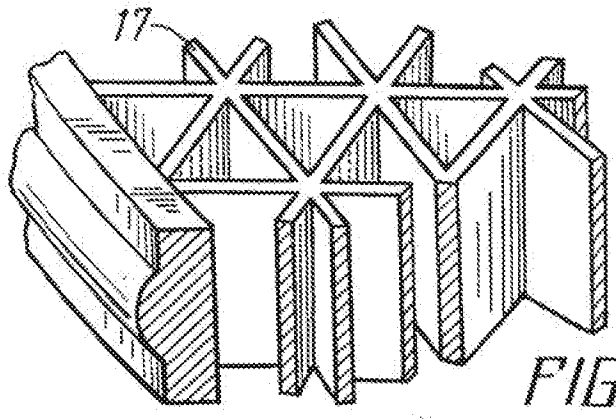


FIG.6

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FIG. 7

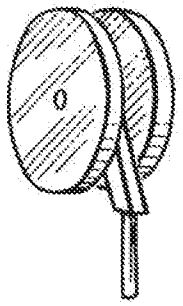


FIG. 8

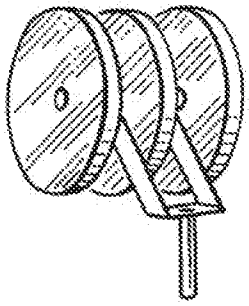


FIG. 9

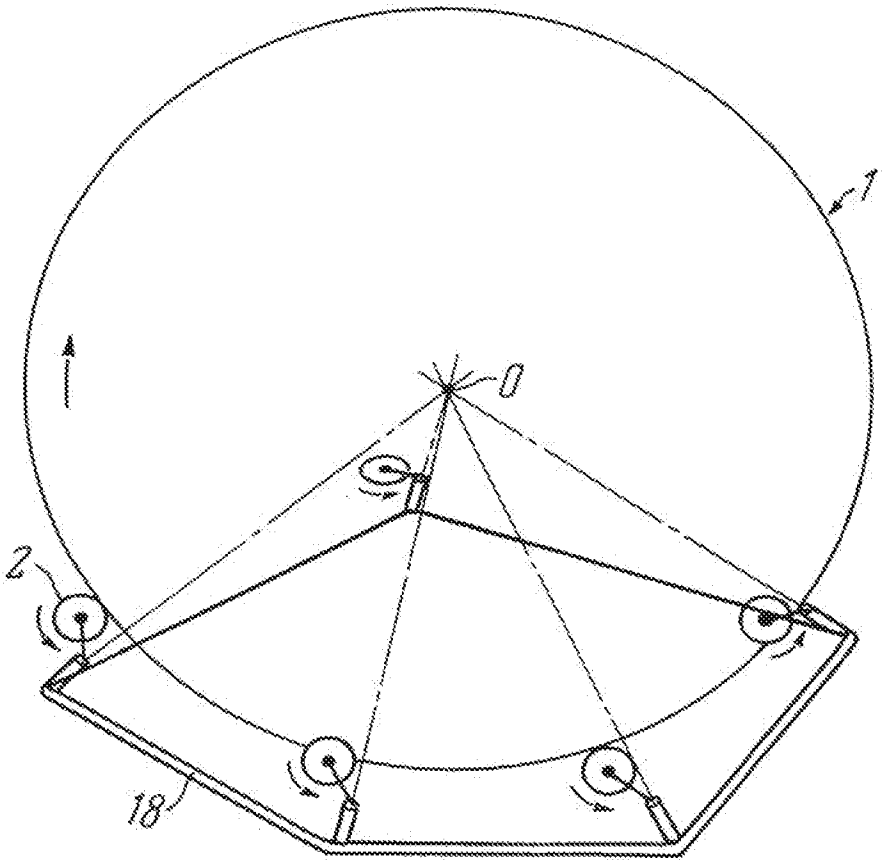


FIG. 10

NianticBarbaro00001963

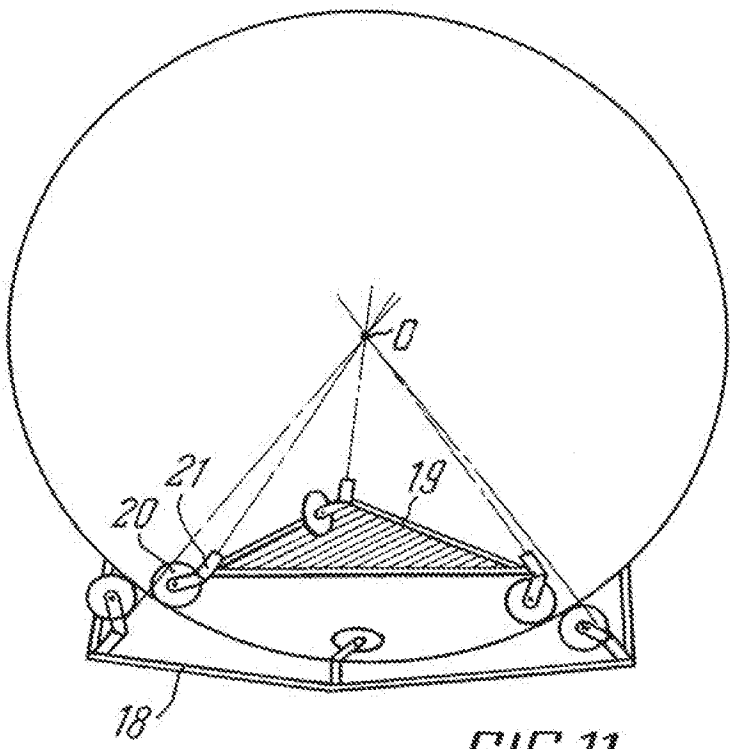


FIG.11

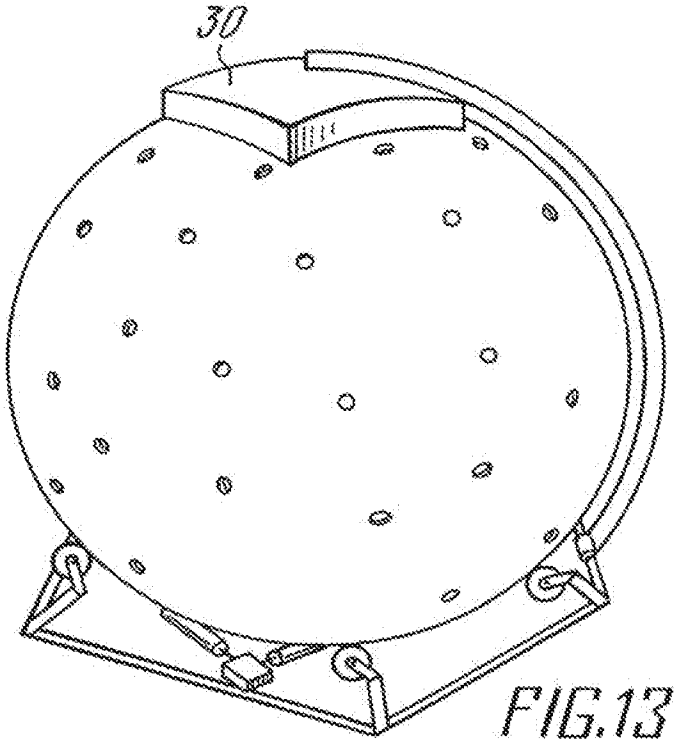


FIG.13

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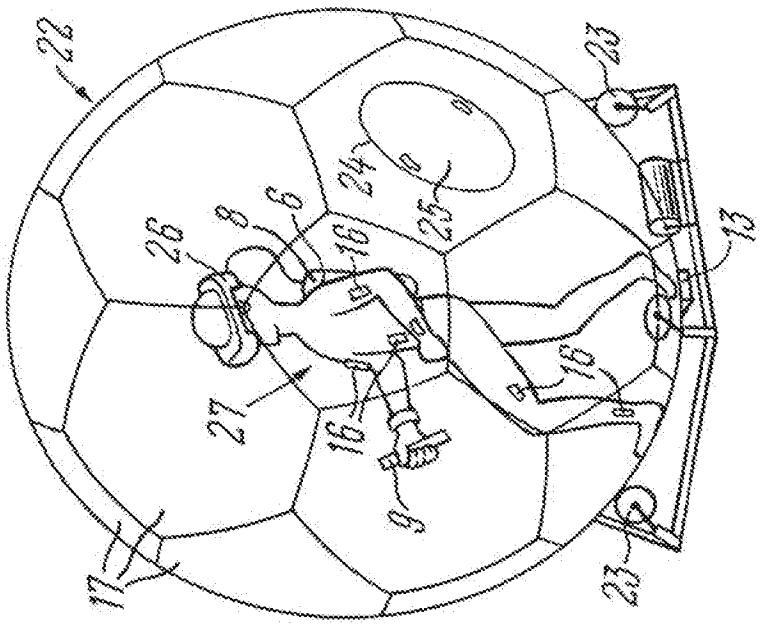


FIG.12b

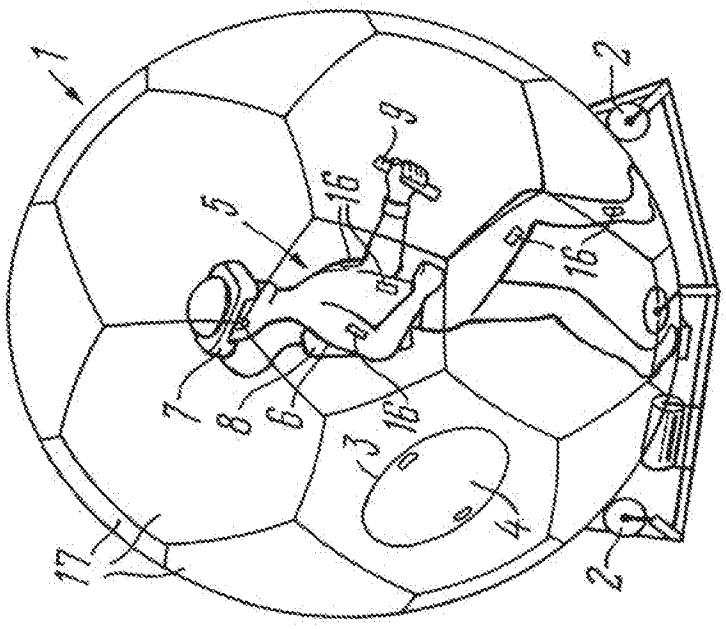


FIG.12a

NianticBarbaro00001965

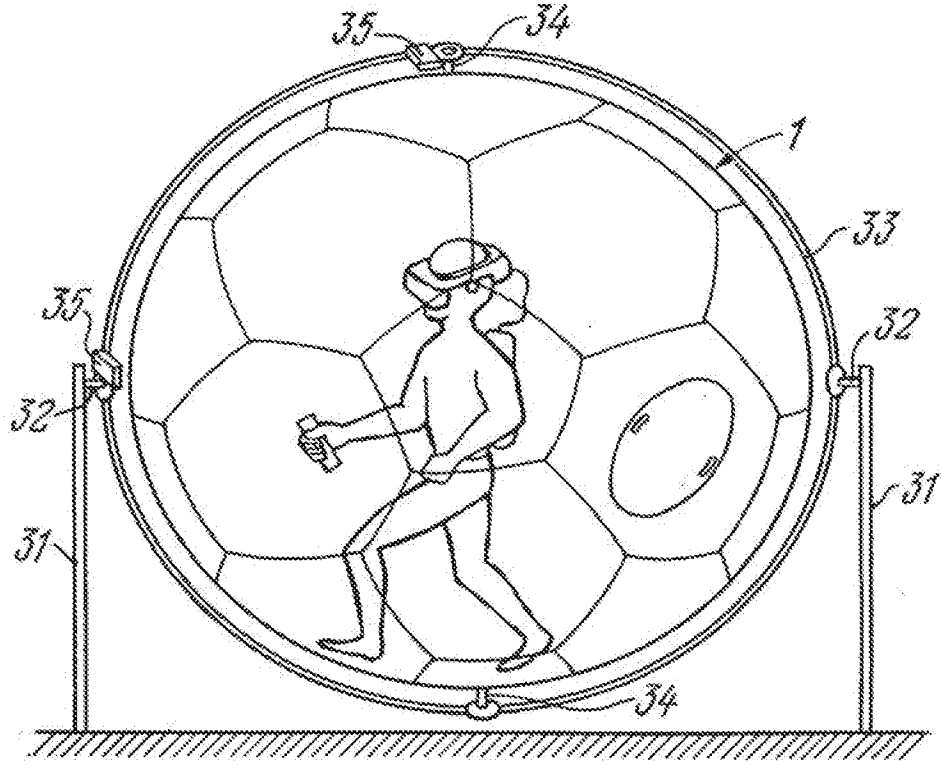


FIG. 14

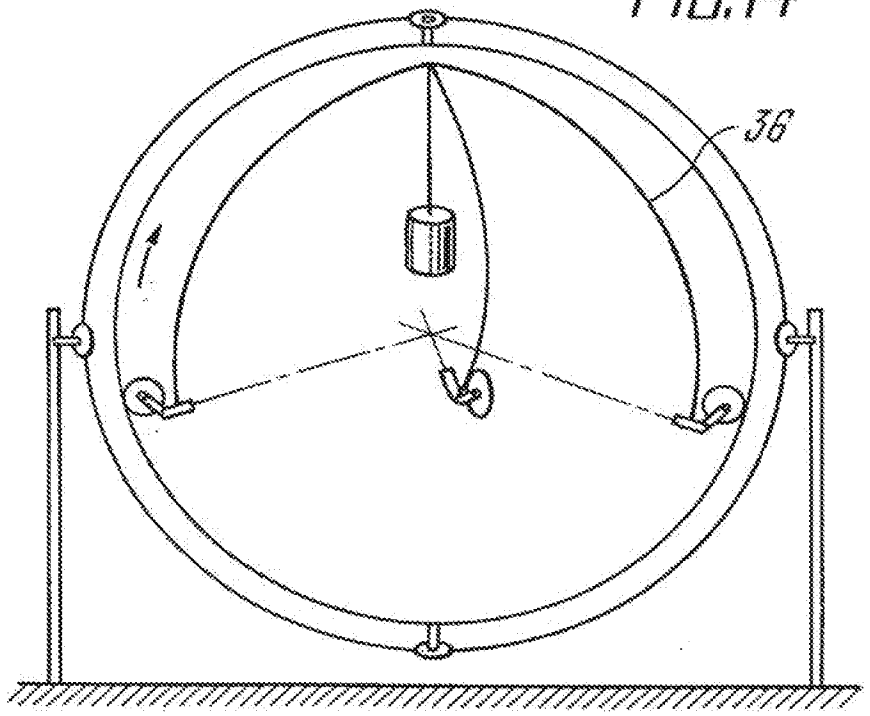


FIG. 15

NianticBarbaro00001966

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/SB/424 (09-12)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Frances Barbaro Altieri	Nonprovisional Application Number (if known):	
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, examination fee, and any required excess claims and application size fees are filed with the request or have been already been paid.

2. The application contains or is amended to contain no more than four independent claims and no more than thirty total claims, and no multiple dependent claims.

3. The applicable box is checked below:

I. ☑ **Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. The executed inventor's oath or declaration is filed with the application. (37 CFR 1.63 and 1.64)

II. ☐ **Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Marc A. Brockhaus/	Date 03/27/2020
Name (Print/Typed) Marc A. Brockhaus	Practitioner Registration Number 40,923

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

☐ *Total of _____ forms are submitted.

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Filer:	Marc Alan Brockhaus/Lori Martin
Attorney Docket Number:	407.001

Filed as Small Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
REQUEST FOR PRIORITIZED EXAMINATION	2817	1	2000	2000
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	10	50	500
INDEPENDENT CLAIMS IN EXCESS OF 3	2201	1	230	230

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous-Filing:				
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**3585**

Electronic Acknowledgement Receipt

EFS ID:	38996263
Application Number:	16833127
International Application Number:	
Confirmation Number:	1088
Title of Invention:	INTERACTIVE VIRTUAL THEMATIC ENVIRONMENT
First Named Inventor/Applicant Name:	Frances Barbaro Altieri
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Lori Martin
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	407.001
Receipt Date:	27-MAR-2020
Filing Date:	
Time Stamp:	17:58:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$3585
RAM confirmation Number	E20203QI04330791
Deposit Account	602198
Authorized User	Lori Martin

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

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 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	Transmittal of New Application	407001_Transmittal.pdf	199835 88aa44a851271b838319d23c98483557b5800a5a	no	1
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Information:					
2	Application Data Sheet	407001_ADS.pdf	116888 a5053788133468773606 0f6cad4cc97b27e2c62f	no	7
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3		407001_Application.pdf	383557 453dfbf79f756571486fa0c86499507a67f5aa32	yes	75

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	65
Claims	66	74
Abstract	75	75

Warnings:					
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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.