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**Hodge**

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(54) **SYSTEM AND METHOD FOR PERSONALIZED VIRTUAL REALITY EXPERIENCE IN A CONTROLLED ENVIRONMENT**

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This patent is subject to a terminal disclaimer.

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***H04L 67/141*** (2022.01)
***H04L 9/40*** (2022.01)
(Continued)

(52) **U.S. Cl.**
CPC ..... ***H04L 67/141*** (2013.01); ***H04L 63/0861*** (2013.01); ***H04L 67/306*** (2013.01); ***H04W 12/065*** (2021.01); *G06F 3/011* (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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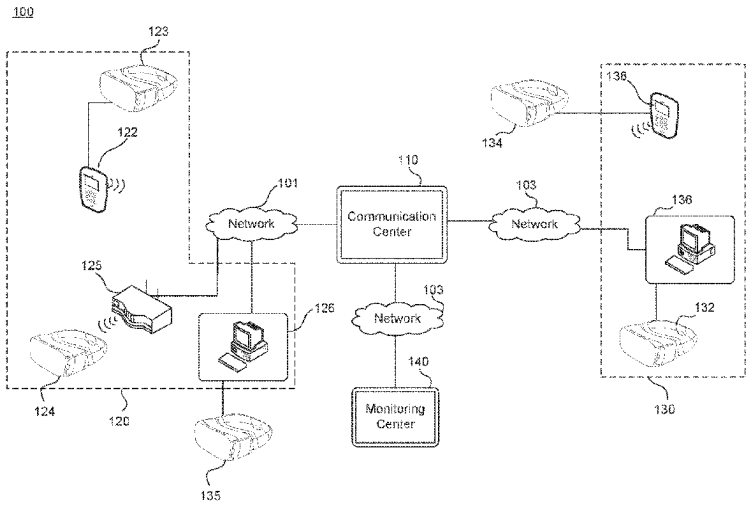
(57) **ABSTRACT**

A system and method for initiating a personalized virtual reality session via a virtual reality communication system in a controlled environment is disclosed. The system includes a profile subsystem configured to store an inmate profile of the inmate of the controlled environment. The system also includes a virtual reality subsystem that retrieves the inmate profile associated with the inmate from the profile subsystem, initiates the virtual reality session involving a first communication device used by the inmate of the controlled environment, and personalizes the virtual reality session based on the inmate profile. The system also includes a communication subsystem configured to transmit information related to the virtual reality session to a monitoring system.

**20 Claims, 10 Drawing Sheets**



**Related U.S. Application Data**

continuation of application No. 17/235,118, filed on Apr. 20, 2021, now Pat. No. 11,405,469, which is a continuation of application No. 16/558,931, filed on Sep. 3, 2019, now Pat. No. 10,986,187, which is a continuation of application No. 15/419,772, filed on Jan. 30, 2017, now Pat. No. 10,404,804.

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| | |
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| ***H04W 12/065*** | (2021.01) |
| *G06F 3/01* | (2006.01) |

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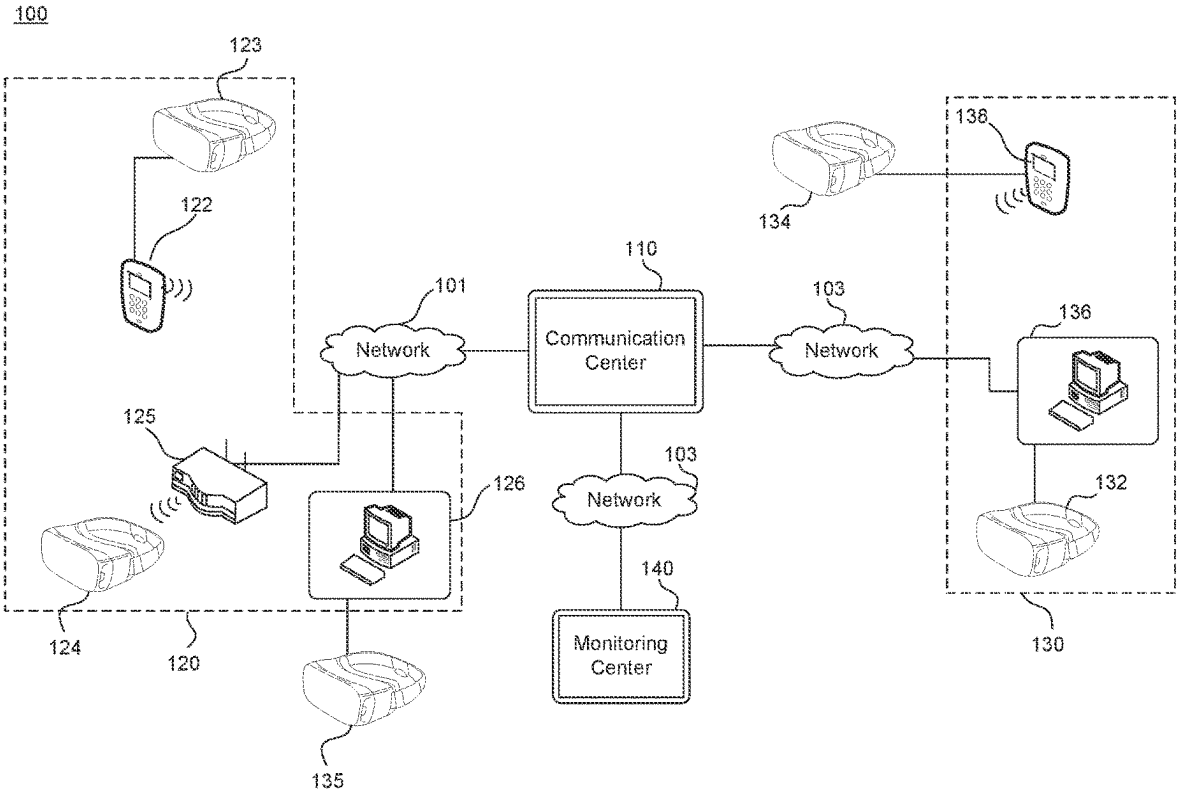
100
123
122
101
Network
110
Communication Center
103
Network
138
134
136
125
126
103
Network
132
140
Monitoring Center
124
120
135
130

FIG. 1

200

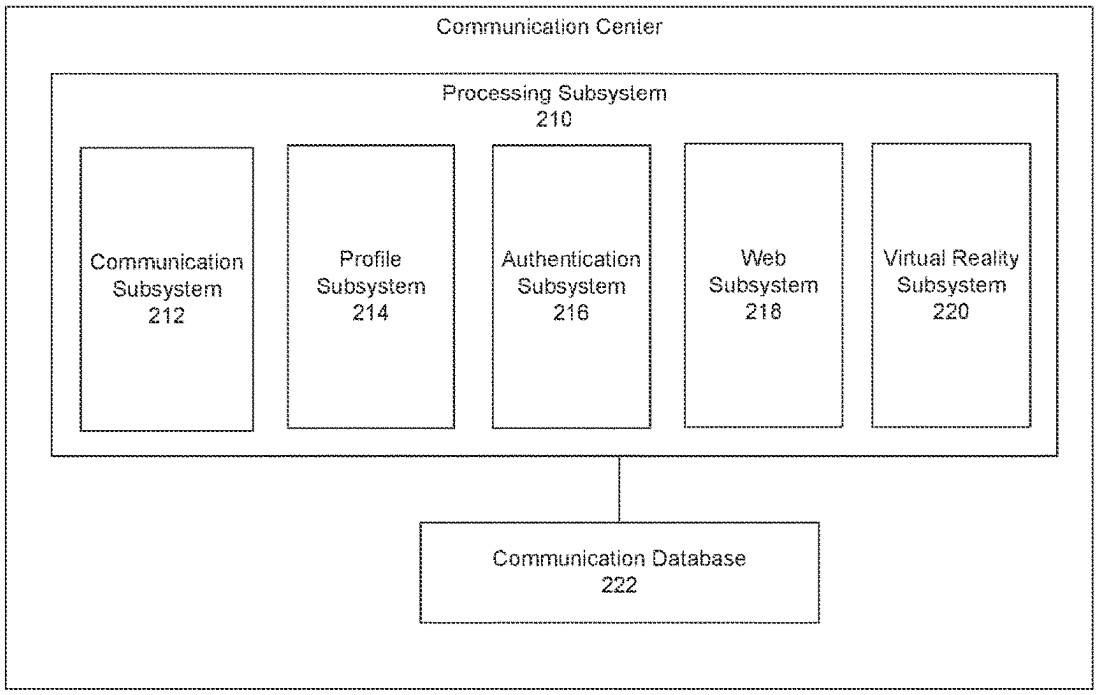
Communication Center
Processing Subsystem
210
Communication Subsystem
212
Profile Subsystem
214
Authentication Subsystem
216
Web Subsystem
218
Virtual Reality Subsystem
220
Communication Database
222

FIG. 2

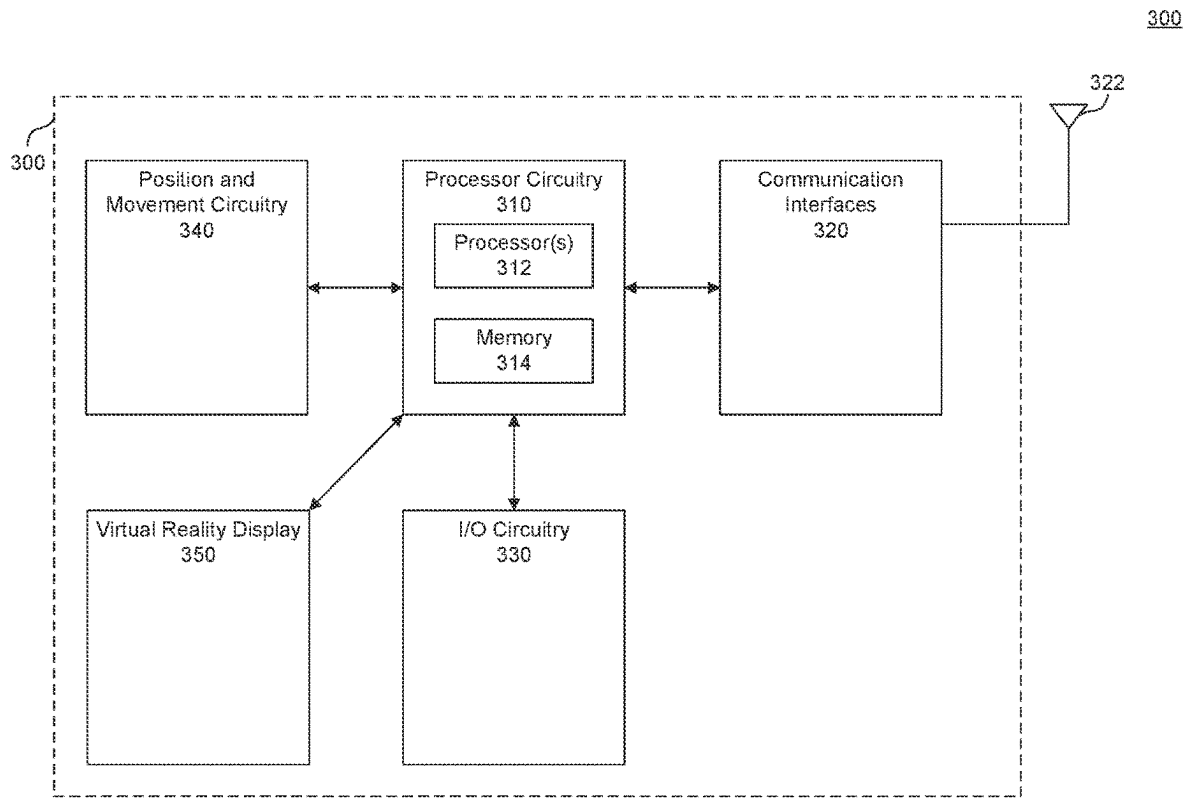
300
322
300
Position and Movement Circuitry 340
Processor Circuitry 310
Processor(s) 312
Memory 314
Communication Interfaces 320
Virtual Reality Display 350
I/O Circuitry 330

FIG. 3

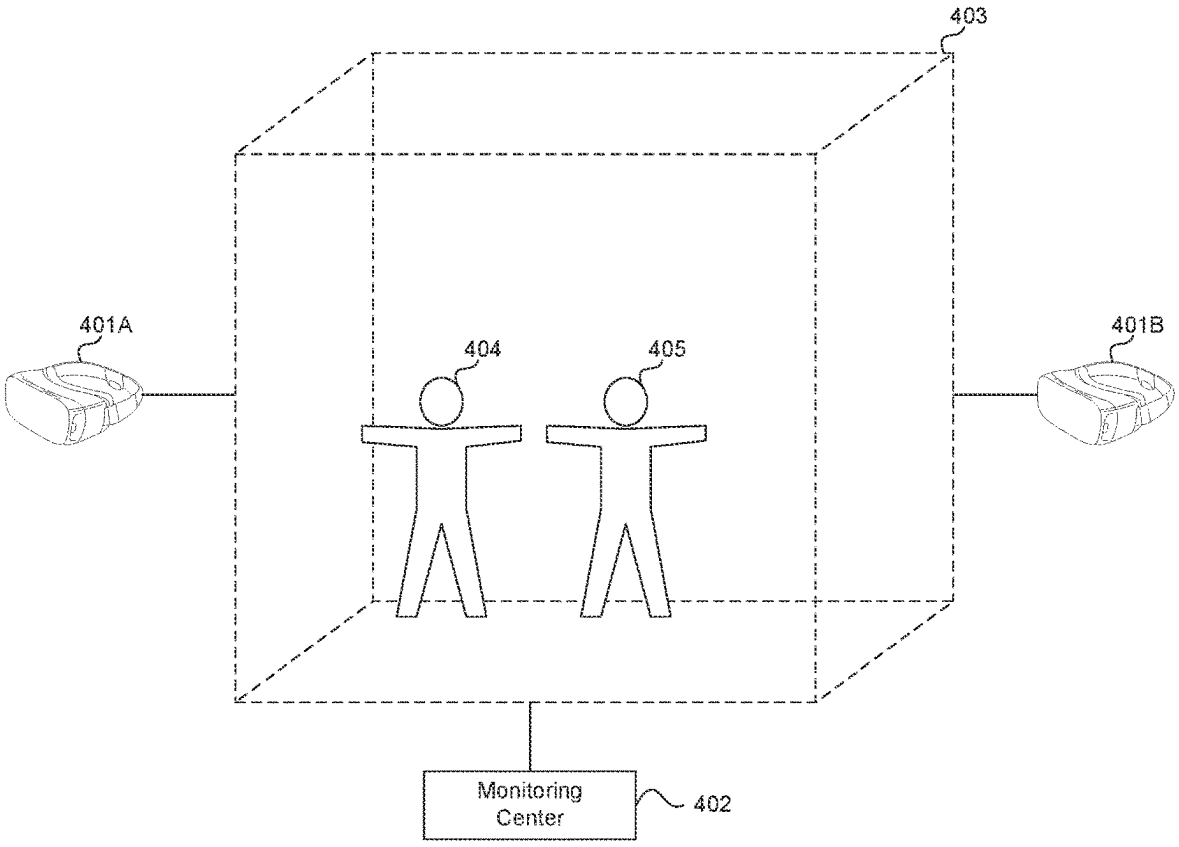


FIG. 4A

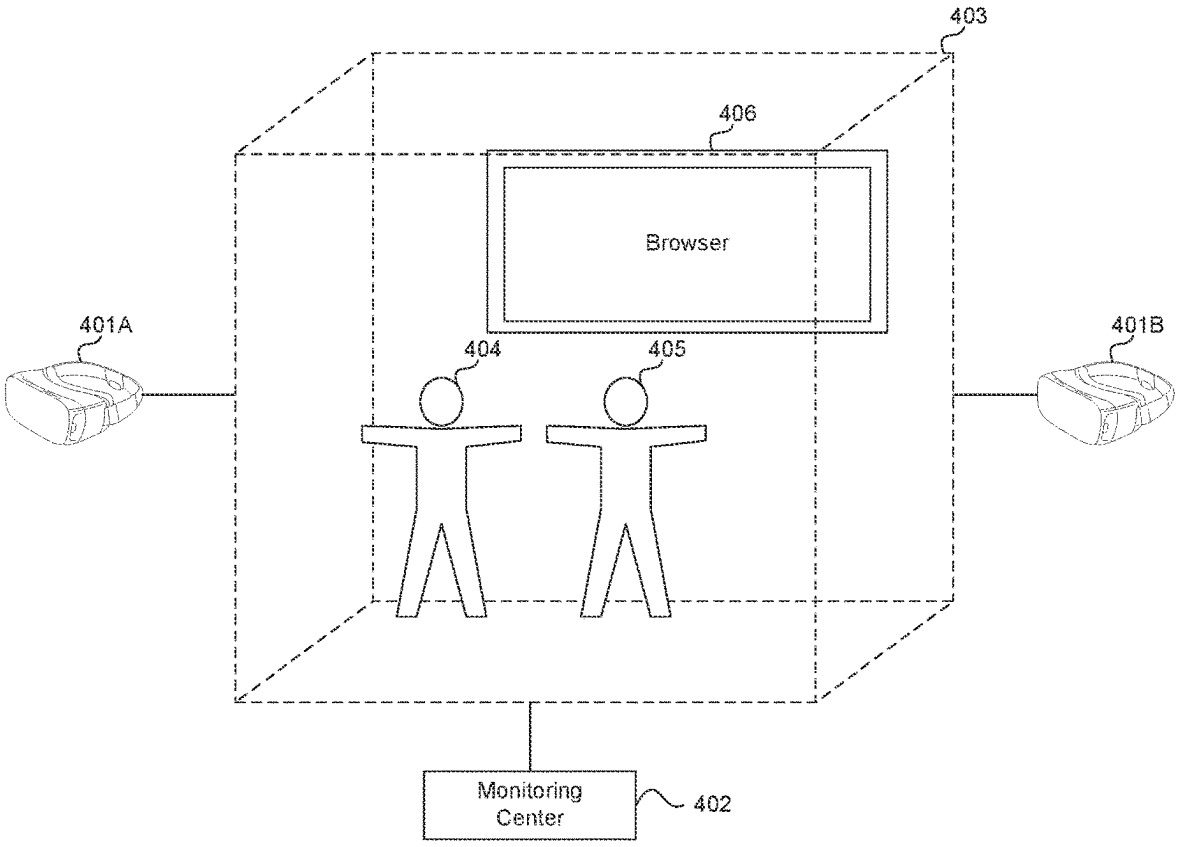


FIG. 4B

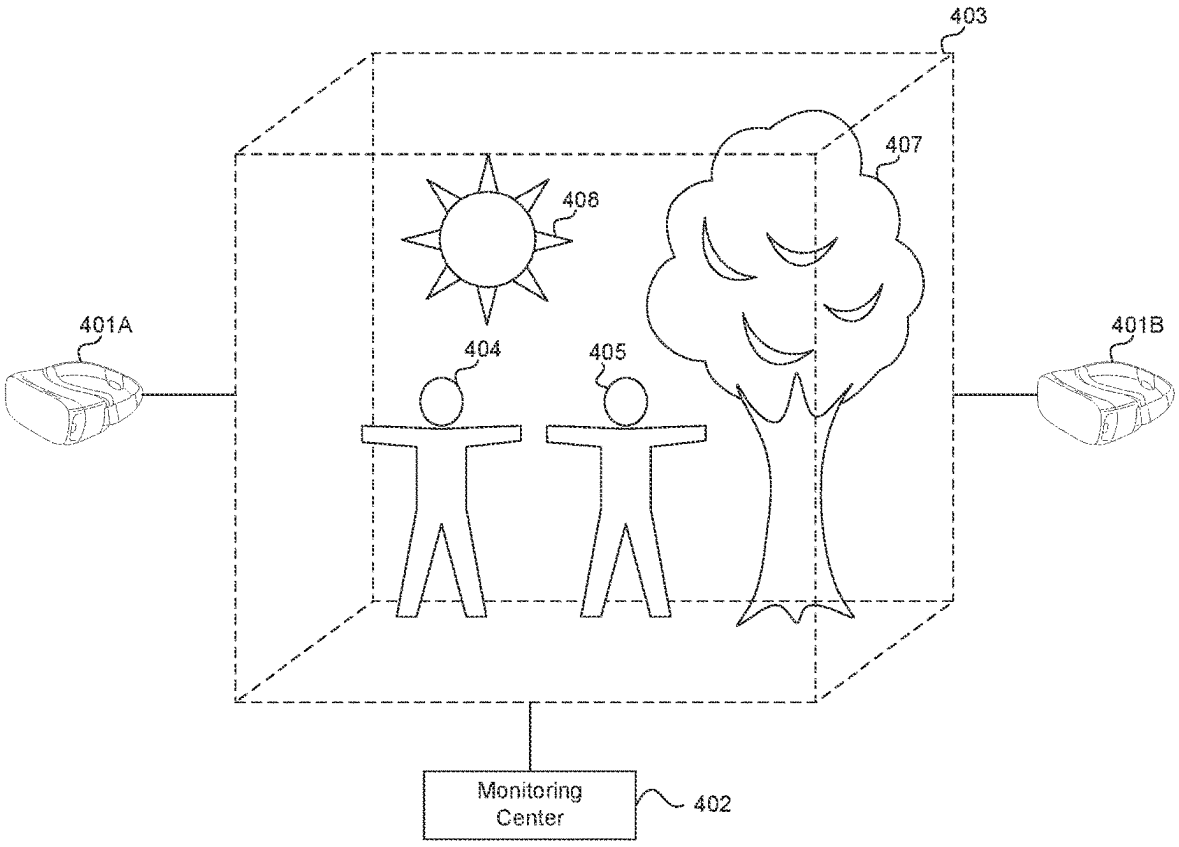


FIG. 4C

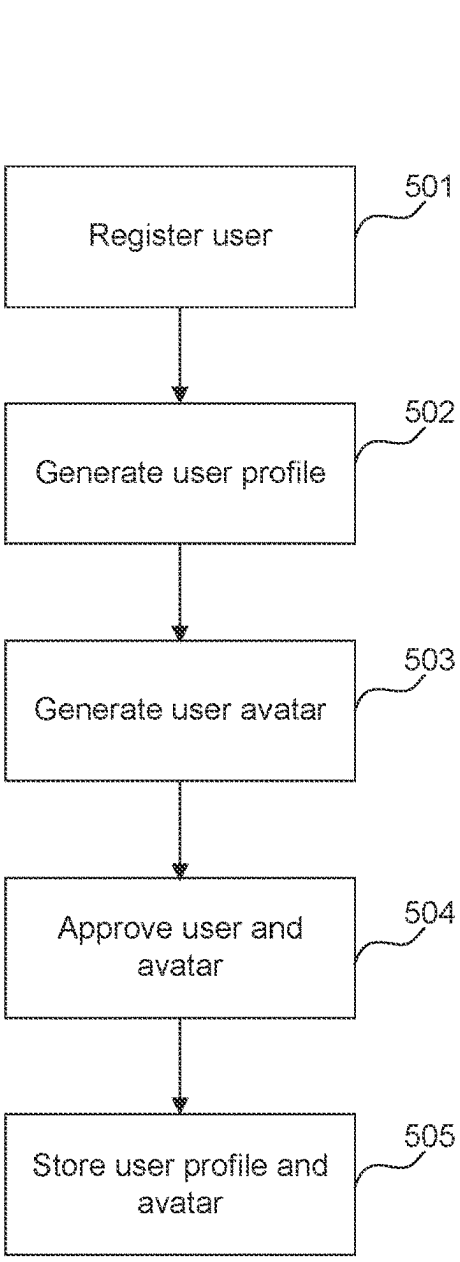
500
Register user
501
Generate user profile
502
Generate user avatar
503
Approve user and avatar
504
Store user profile and avatar
505

FIG. 5

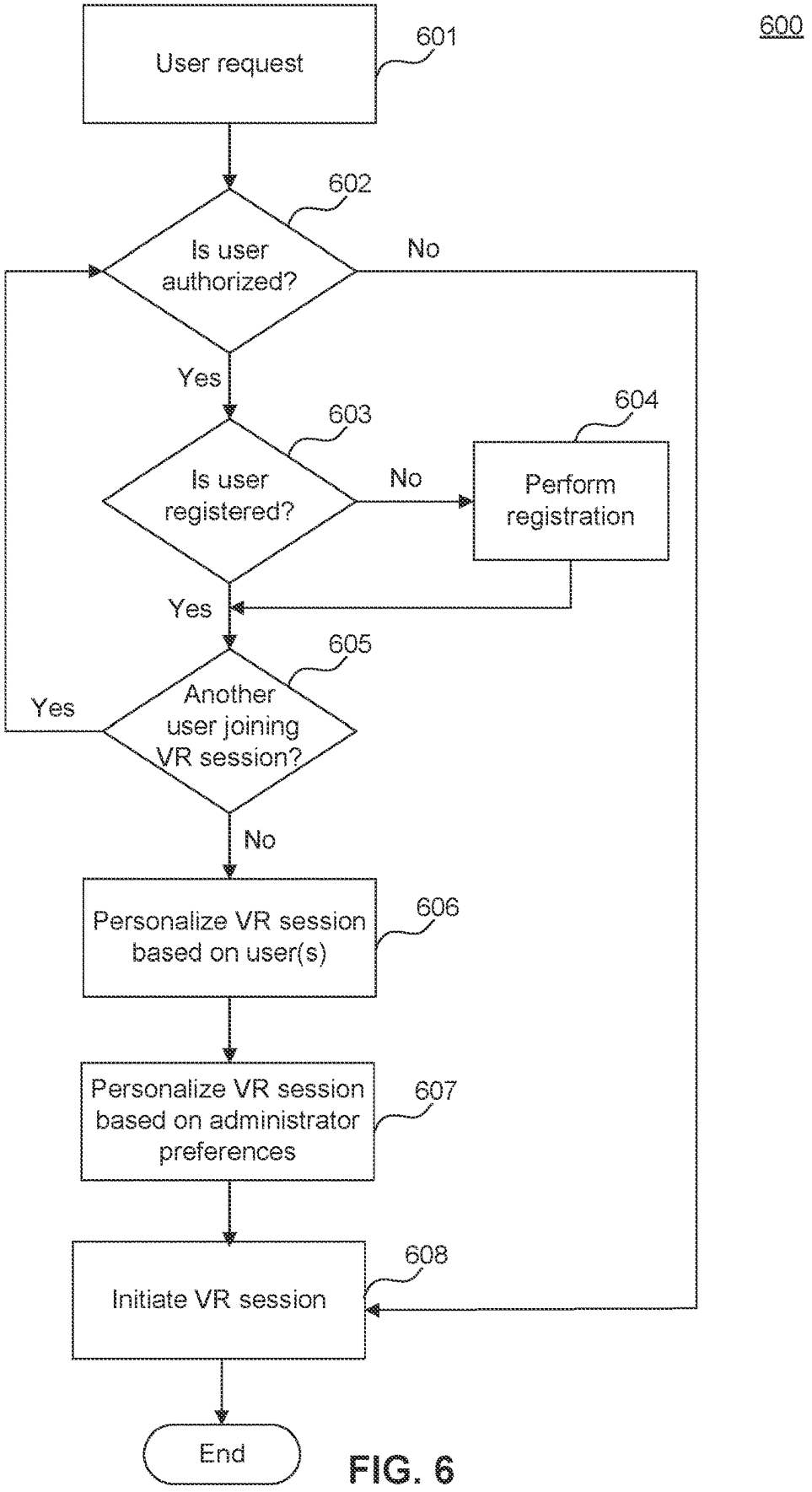
600
User request
601
Is user authorized?
602
No
Yes
Is user registered?
603
No
Perform registration
604
Yes
Another user joining VR session?
605
Yes
No
Personalize VR session based on user(s)
606
Personalize VR session based on administrator preferences
607
Initiate VR session
608
End

FIG. 6

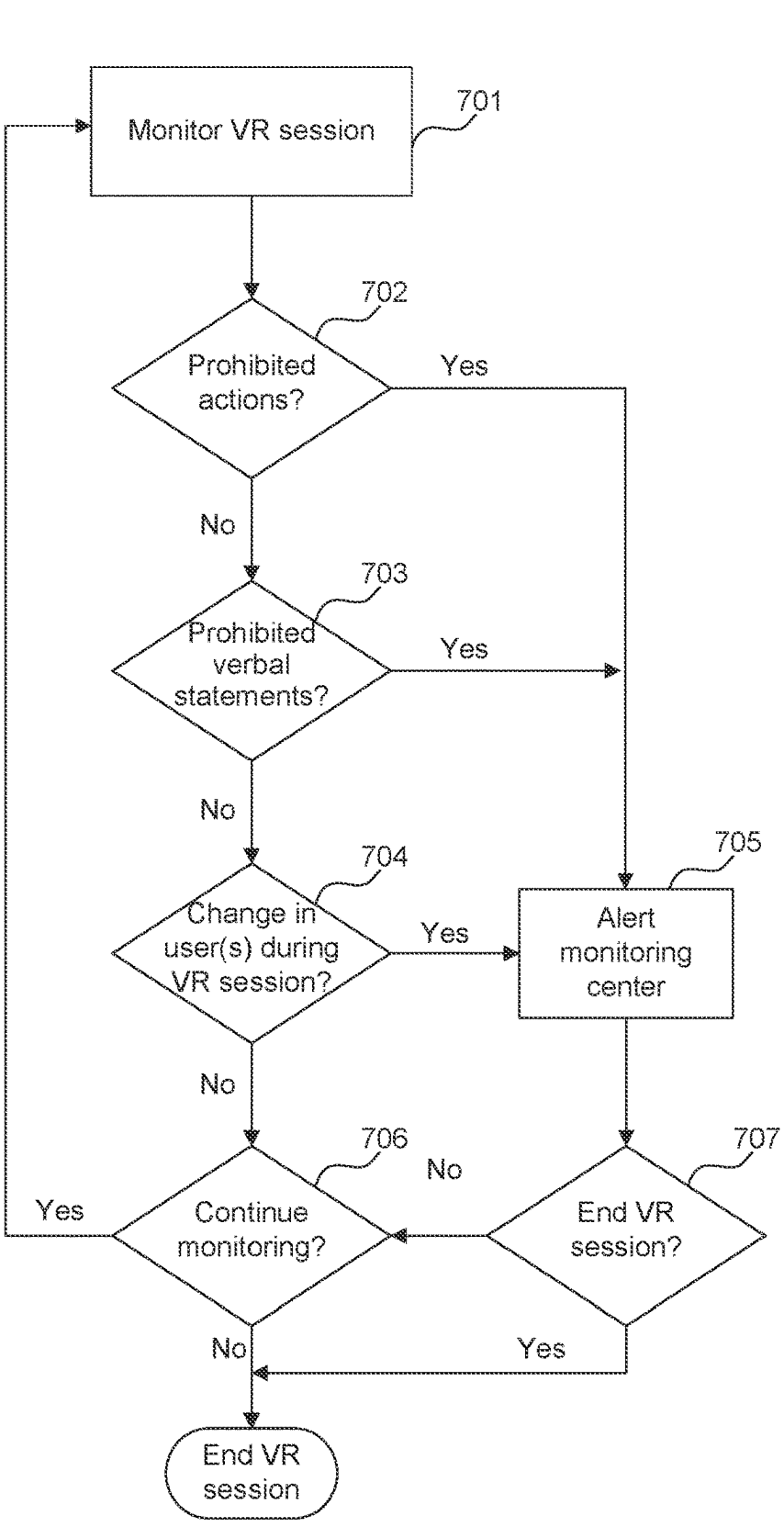
700
Monitor VR session
701
Prohibited actions?
702
Yes
No
Prohibited verbal statements?
703
Yes
No
Change in user(s) during VR session?
704
Yes
Alert monitoring center
705
No
Continue monitoring?
706
No
Yes
End VR session?
707
No
Yes
End VR session

FIG. 7

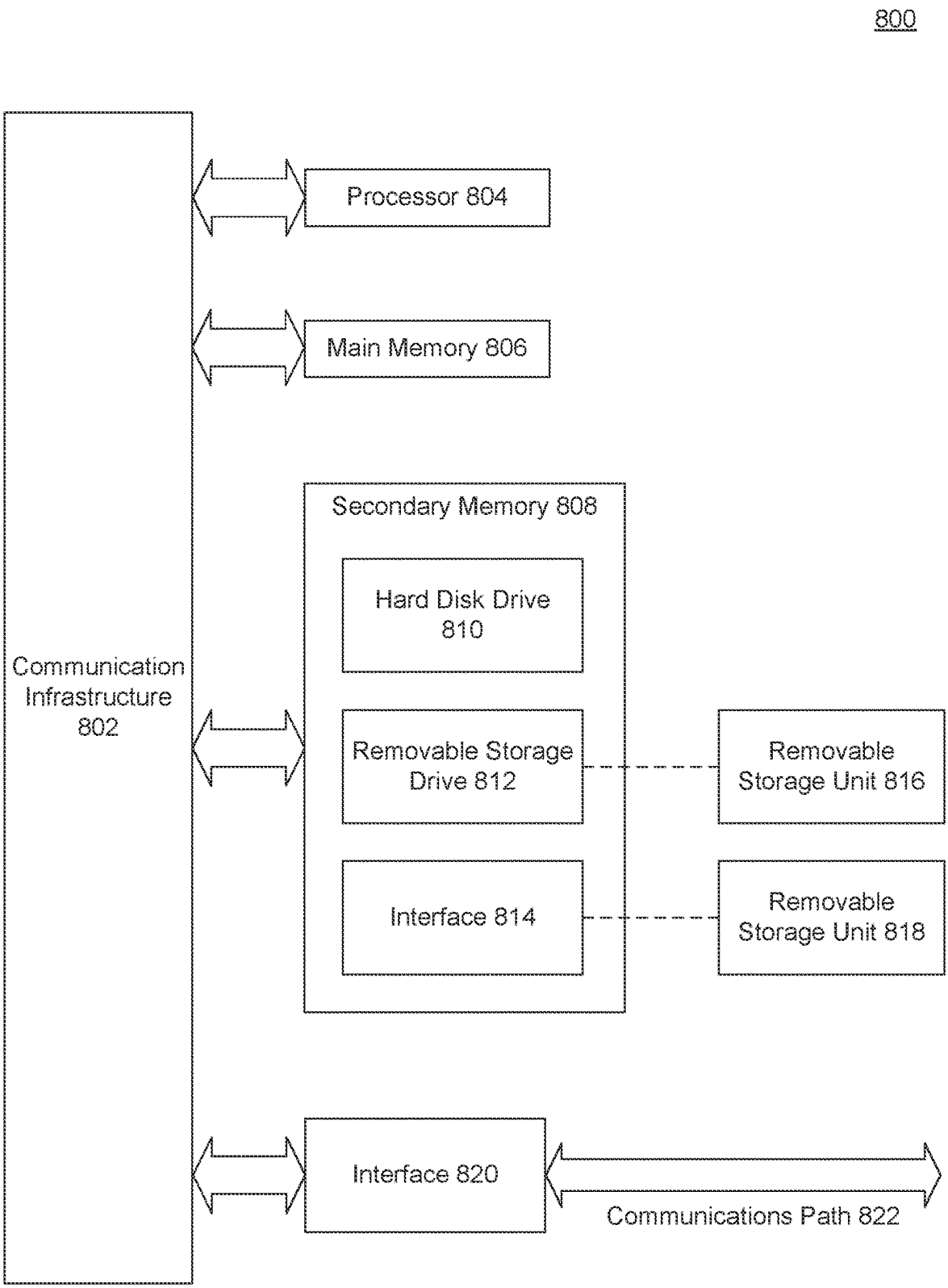
800
Processor 804
Main Memory 806
Secondary Memory 808
Hard Disk Drive 810
Removable Storage Drive 812
Interface 814
Communication Infrastructure 802
Removable Storage Unit 816
Removable Storage Unit 818
Interface 820
Communications Path 822

FIG. 8

# SYSTEM AND METHOD FOR PERSONALIZED VIRTUAL REALITY EXPERIENCE IN A CONTROLLED ENVIRONMENT

## CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. Nonprovisional patent application Ser. No. 17/878,690, filed Aug. 1, 2022, which is a continuation of U.S. Nonprovisional patent application Ser. No. 17/235,118, filed Apr. 20, 2021, now U.S. Pat. No. 11,405,469, which is a continuation of U.S. Pat. No. 10,986,187, filed Sep. 3, 2019, which is a continuation of U.S. Pat. No. 10,404,804, filed Jan. 30, 2017, and all of which are entitled "System and Method for Personalized Virtual Reality Experience in a Controlled Environment," the contents of all are hereby incorporated herein by reference in their entireties.

## BACKGROUND

### Field

This disclosure relates to a system and method for providing a monitored virtual reality experience within a controlled environment.

### Background

In a controlled environment such as a correctional facility, inmates have limited opportunities to interact with the outside world. Inmates may have opportunities to have certain communications with loved ones, browse websites using a mobile device, or interact with certain content, but these opportunities are limited to the inmate's room or cell and designated rooms within the controlled environment. In other words, an inmate's experiences are limited to one or two physical communications when conducting conventional communications in a controlled environment.

## BRIEF DESCRIPTION OF THE DRAWINGS/FIGURES

The accompanying drawings, which are incorporated herein and form a part of the specification, illustrate embodiments of the present disclosure and, together with the description, further serve to explain the principles of the disclosure and to enable a person skilled in the pertinent art to make and use the embodiments.

FIG. **1** illustrates a block diagram of a virtual reality communication system, according to embodiments of the present disclosure.

FIG. **2** illustrates a block diagram of a communication center of the virtual reality communication system of FIG. **1**, according to embodiments of the present disclosure.

FIG. **3** illustrates a block diagram of a virtual reality communication device of the virtual reality communication of FIG. **1**, according to embodiments of the present disclosure.

FIG. **4**A illustrates a block diagram of a virtual reality communication system, according to embodiments of the present disclosure.

FIG. **4**B illustrates a block diagram of a virtual reality communication system, according to embodiments of the present disclosure.



FIG. **4**C illustrates a block diagram of a virtual reality communication system, according to embodiments of the present disclosure.

FIG. **5** illustrates a flowchart diagram of a method of registering a user via the communication system of FIG. **1**, according to embodiments of the present disclosure.

FIG. **6** illustrates a flowchart diagram of a method of initiating a virtual reality session via the communication system of FIG. **1**, according to embodiments of the present disclosure.

FIG. **7** illustrates a flowchart diagram of a method of monitoring a virtual reality session via the communication system of FIG. **1**, according to embodiments of the present disclosure.

FIG. **8** illustrates a block diagram of a general purpose computer that may be used to perform various aspects of the present disclosure.

The present disclosure will be described with reference to the accompanying drawings. In the drawings, like reference numbers indicate identical or functionally similar elements. Additionally, the left most digit(s) of a reference number identifies the drawing in which the reference number first appears.

## DETAILED DESCRIPTION

The following Detailed Description refers to accompanying drawings to illustrate exemplary embodiments consistent with the disclosure. References in the Detailed Description to "one exemplary embodiment," "an exemplary embodiment," "an example exemplary embodiment," etc., indicate that the exemplary embodiment described may include a particular feature, structure, or characteristic, but every exemplary embodiment may not necessarily include the particular feature, structure, or characteristic. Moreover, such phrases are not necessarily referring to the same exemplary embodiment. Further, when a particular feature, structure, or characteristic is described in connection with an exemplary embodiment, it is within the knowledge of those skilled in the relevant art(s) to affect such feature, structure, or characteristic in connection with other exemplary embodiments whether or not explicitly described.

The exemplary embodiments described herein are provided for illustrative purposes, and are not limiting. Other exemplary embodiments are possible, and modifications may be made to the exemplary embodiments within the spirit and scope of the disclosure. Therefore, the Detailed Description is not meant to limit the disclosure. Rather, the scope of the disclosure is defined only in accordance with the following claims and their equivalents.

Embodiments may be implemented in hardware (e.g., circuits), firmware, software, or any combination thereof. Embodiments may also be implemented as instructions stored on a machine-readable medium, which may be read and executed by one or more processors. A machine-readable medium may include any mechanism for storing or transmitting information in a form readable by a machine (e.g., a computing device). For example, a machine-readable medium may include read only memory (ROM); random access memory (RAM); magnetic disk storage media; optical storage media; flash memory devices; electrical, optical, acoustical or other forms of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.), and others. Further, firmware, software, routines, instructions may be described herein as performing certain actions. However, it should be appreciated that such descriptions are merely for convenience and that such actions in fact result from com-

puting devices, processors, controllers, or other devices executing the firmware, software, routines, instructions, etc. Further, any of the implementation variations may be carried out by a general purpose computer, as described below.

For purposes of this discussion, any reference to the term "module" shall be understood to include at least one of software, firmware, and hardware (such as one or more circuit, microchip, or device, or any combination thereof), and any combination thereof. In addition, it will be understood that each module may include one, or more than one, component within an actual device, and each component that forms a part of the described module may function either cooperatively or independently of any other component forming a part of the module. Conversely, multiple modules described herein may represent a single component within an actual device. Further, components within a module may be in a single device or distributed among multiple devices in a wired or wireless manner.

The following Detailed Description of the exemplary embodiments will so fully reveal the general nature of the disclosure that others can, by applying knowledge of those skilled in relevant art(s), readily modify and/or adapt for various applications such exemplary embodiments, without undue experimentation, without departing from the spirit and scope of the disclosure. Therefore, such adaptations and modifications are intended to be within the meaning and plurality of equivalents of the exemplary embodiments based upon the teaching and guidance presented herein. It is to be understood that the phraseology or terminology herein is for the purpose of description and not of limitation, such that the terminology or phraseology of the present specification is to be interpreted by those skilled in relevant art(s) in light of the teachings herein.

Virtual Reality Communication System

FIG. **1** illustrates a block diagram of virtual reality communication system **100**, according to embodiments of the present disclosure. Virtual reality communication system **100** includes communication center **110** configured to receive and transmit virtual reality information within a virtual reality session to inmate communication system **120**. A virtual reality session allows an inmate of a controlled environment to interact with content in virtual environment and, for a brief time, imagine himself outside or away from the controlled environment.

In some embodiments, the virtual reality session can also include outsider communication system **130** if an outsider is authorized and registered and otherwise allowed to communicate with the inmate associated with inmate communication system **120**. In this disclosure, a session refers to a virtual reality communication, which may include real-time communications such as voice calls and video calls, and non-real time communications such as a text or email, between an inmate using inmate communication system **120**, communication center **110**, and an outsider using outsider communication system **130**.

In an embodiment, inmate communication system **120** includes one or more devices provided to inmates within a correctional facility and includes any or all devices such as wireless communication device **122**, virtual reality communication devices **123**, **124**, and **136**, and/or computer station **126**. In an embodiment, virtual reality communication device **135** is connected to computer station **126** and virtual reality communication device **136** is connected to wireless communication device **122**. Virtual reality communication devices **123**, **124**, and **136** have wired and/or wireless communication capabilities. In an embodiment, virtual reality communication device **124** may communicate directly with network **101** through a wireless connection, such as Bluetooth™ or Wi-Fi connections. In another embodiment, virtual reality communication device **124** may communicate directly with network **101** through a wired connection such as a USB cable.

Similarly, virtual reality communication device **123** communicates with network **101** through a connection with wireless communication devices **122**. The communication with wireless communication devices **122** may be a wireless connection, such as Bluetooth™ or Wi-Fi connections or through a wired connection such as with a USB cable.

In an embodiment, virtual reality communication device **136** communicates with network **101** through a connection with computer station **126**. The communication with computer station **126** may be a wireless connection, such as Bluetooth™ or Wi-Fi connections or through a wired connection such as with a USB cable.

In an embodiment, communication center **110** connects to wireless access point **125** (e.g., a router), which may provide connectivity to virtual reality communication device **124**. Inmate communication system **120** connects to communication center **110** via network **101**, which may include any or all of a Local-Area Network (LAN), a Wide-Area Network (WAN), or the Internet.

Outsider communication system **130** includes one or more devices available to outsiders to the controlled environment and includes any and all devices such as virtual reality communication device **132**, virtual reality communication device **134**, computer station **136**, and/or wireless communication device **138**. In an embodiment, outside communication system **130** may be located within the controlled environment, such as in a designated area or room of the controlled environment. In another embodiment, outside communication system **130** may be located outside of the controlled environment such as in the outsider's home. Outsider communication system **130** connects to communication center **110** via network **103**, which may include any or all of a WAN, the Internet, and/or a Public Switched Telephone Network (PSTN). The WAN may facilitate communications with other nearby prisons, such as those within the same county, state, etc.

In an embodiment, WebRTC may be utilized in place of a session initiation protocol (SIP) over a WAN or the Internet, each of which provides a dedicated, private link between inmate communication system **120** and outsider communication system **130**. The Internet is utilized to provide access to computer station **136** such as remotely distributed control stations, scheduling clients, and home visitation devices.

In an embodiment, virtual reality communication system **100** also includes monitoring center **140** for monitoring communications within virtual reality communication system **100** and between inmate communication system **120** and outsider communication system **130**. Monitoring by monitoring center **140** occurs both automatically and manually by a reviewer. Monitoring center **140** is configured to receive communications from communication center **110** via network **105**, which may include any or all of a LAN, a WAN, or the Internet. In an embodiment, monitoring center **140** is further configured to communicate with communication center **110** to indicate approval of starting, sending, or receiving a virtual reality session after an initial authentication of the virtual reality session has been performed. Monitoring center **140** receives information related to all virtual reality sessions that take place between devices in virtual reality communication system **100** through communication center **110**. Monitoring center **140** can then utilize

this information by recording the virtual reality session for later review and/or monitor the actions of users within the virtual reality communication system **100**. In an embodiment, recording of the virtual reality session entails recording one or more aspects of the virtual reality session. Aspects of the virtual reality session include an audio stream of the virtual reality session, a video stream of the virtual reality session, and actions performed by the users during the virtual reality session. If users perform prohibited actions or interactions, monitoring center **140** may terminate the virtual reality session or provide a warning to the users. Monitoring center **140** may provide a predetermined number of warnings to the users prior to terminating the virtual reality session. In another embodiment, monitoring center **140** is integrated into communication center **110**.

In an embodiment, monitoring center **140** provides to communication center **110** authorized content that is available for use as part of any virtual reality sessions. For example, authorized content includes a list of websites that are available to be accessed by a user within a virtual reality session, a list of websites that are not available to be accessed, a list of games, and a list of applications such as a word processing application, a text messaging application, a video calling application, and a multimedia application.

In an embodiment, content is authorized on a per user basis (i.e., applies only to a specific user or users based on, for example, the profile information) or on a global basis (i.e., applies to all virtual reality sessions through communication center **110**). In Monitoring center **140** can modify user profiles to include information that indicates the content for which the users are authorized and not authorized. For global restrictions, monitoring center **140** can send information that indicates the content that is authorized and not authorized for all users and all virtual reality sessions.

Communication Center

FIG. **2** illustrates a block diagram of communication center **200**, according to embodiments of the present disclosure. In an embodiment, communication center **200** represents an exemplary embodiment of communication center **110** of FIG. **1**. Communication center **200** includes at least processing subsystem **210** and communication database **220**, as shown by FIG. **2**. Processing subsystem **210** includes one or more processors, computers, or servers identified as subsystems and can be constructed as individual physical hardware devices, or as virtual devices, such as a virtual server. The number of processing subsystems can be scaled to match the number of simultaneous user connections desired to be supported by virtual reality communication system **100**. Processing subsystem **210** includes communication subsystem **212**, profile subsystem, **214**, and authentication subsystem **216**.

In an embodiment, communication subsystem **212** controls the routing of communications to an end destination such as one or more devices within inmate communication system **120**, one or more devices within outsider communication system **130**, or monitoring center **140**. Communication subsystem **212** performs switching required to electrically connect the one or more devices within inmate communication system **120** and one or more devices within outsider communication system **130** for a virtual reality session. Further, communication subsystem **212** logs communication information, including time of communications and parties involved in the communications, and store the logs and communications as files. The files stored by communication subsystem **212** can be stored indefinitely for use by monitoring center **140** in monitoring and investigation of an inmate and/or communication. Communication subsystem **212** also determines whether a communication should be monitored such that privileged communications such as attorney/client, doctor/client, or investigative communications are not monitored. Criteria for monitoring a communication may be based on jurisdictional requirements and/or identities of the parties.

In an embodiment, communication subsystem **212** is configured to receive contact information such as a phone number, email address, internet protocol address or other identifying data of the parties involved in the communication. The received contact information may be used by each of the subsystems of the communication center **200** for identifying respective data and processes related to the contact information, such as purported identities of parties involved in the communication.

Because there may be a variety of different communication standards employed by different audio, video, image, and text devices that wish to participate in communications, in an embodiment, communication subsystem **212** is also configured to perform format conversion of non-real time communications. Conversion of incoming and outgoing communications are performed, as needed, to be compatible with inmate communication device **120**, outsider communication device **130**, or monitoring center **140**.

Further, because communication subsystem **212** receives and transmits communications by way of a network, in an exemplary embodiment, communication subsystem **212** is configured to decrypt received communications and encrypt transmitting communications, for security purposes.

Profile subsystem **214** obtains and stores profile information on parties registered to communicate via virtual reality communication system **100**. In an embodiment, profile subsystem **214** stores inmate profiles and outsider profiles. Profile subsystem **214** obtains information related to the parties from one or more of (a) a jail management system (JMS) or an offender management system (OMS) operated by the jurisdiction of the correctional facility, (b) public database containing information on the parties, or (c) a questionnaire provided by a web page, a personal approved number (PAN) list, or booking information. Information obtained by profile subsystem **214** may include personal information such as previous residences or correctional facilities, authorized contacts, family members, languages, special needs, medication requirements, etc.

Profile subsystem **214** also performs a registration process for those parties not enrolled or registered to use virtual reality communication system **100**. During the registration process, or at a later time, profile subsystem **214** determines accommodations and settings associated with a party and/or a party is able to select preferred settings for a communication. These accommodations and settings include, but are not limited to, preferences of the virtual reality session, such as virtual locales (e.g., beach, forest) and avatar information such as the appearance of the party's virtual representation within the virtual reality session.

In an embodiment, profile subsystem **214** also receives authorization information indicating content that is authorized and not authorized for each profile. The information may be received from a monitoring system such as monitoring center **140** as illustrated in FIG. **1**. Profile subsystem **214** can store the authorization information internally or in communication database **222**. If the information is specific to a user or user(s), profile system **214** can also store the information as part of the user or user(s) profile(s). The authorization information is used to personalize the virtual reality session by limiting or allowing access to the content by users of the virtual reality session.

Authentication subsystem **216** collects and stores identity data of inmates and outsiders authorized to access virtual reality communication system **100**. Identity data includes at least one of a username and password data, challenge questions, challenge answers, biometric data, device data such as make and model of a communication device, and/or location data. Biometric data includes one or more of a finger print, a hand print, a voice sample, an iris or retinal sample, an image of the user (2D or 3D), a hand geometry, a signature identification, an infrared camera identification, or any other biometric as deemed appropriate. The challenge question form of identity data may be a series of challenge questions, or a single challenge question such as the last four digits of an inmate's social security number, mother's maiden name, and the like. Authentication subsystem **216** is further configured to facilitate a secure communication between parties receiving/transmitting a communication by performing identity verifications to authenticate identities of purported parties. The identity verification includes logon verifications, such as username and password verifications, biometric verification, response to challenge questions, device verification, and/or location verification.

In embodiment, authentication subsystem **216** continuously tracks biometric information during an on-going virtual reality session. For example, authentication subsystem **216** continuously tracks a user's eyes and provides the iris or retinal sample to a monitoring center through communication subsystem **212**. In this manner, the monitoring center may monitor the virtual reality session to insure that an authenticated user does not hand off the virtual reality communication device to another user who has not been authenticated by authentication subsystem **216**. Authentication subsystem **216** may also continuously monitor the voices during the virtual reality session and provide this voice information to the monitoring subsystem through communication subsystem **212**.

Authentication subsystem **216** performs an identity verification by receiving identity information such as one or more of a username and password, a response to a challenge question(s), a keypad or touch pad entry, dual tone multi frequency (DTMF) response, a voice sample, a fingerprint sample, a retinal sample, a facial image (2D or 3D), device information such as a make and model of the communication device, and/or a location of the communication device, from a communication device (such as a device of inmate communication system **120** or outsider communication system **130**) used by a purported party and comparing the identity information of the purported party with stored identity data. Authentication subsystem **216** also uses the collected information to register users of virtual reality communication system **100**. Once registered and entered into the system, users may log into virtual reality communication system **100** and initiate a virtual reality session.

Web subsystem **218** runs web server software such as Apache and/or Microsoft Internet Information Server and/or an interactive voice response (IVR) server software. The primary function of web subsystem **218** is to operate as a frontend and/or backend server in receiving and transmitting information to a party outside of communication center **200**. In an embodiment, web subsystem **218** serves as a maintenance point into communication center **200**, by which servicing, configuring, and updating can be performed. In an embodiment, the web subsystem **218** provides managing services for generating communications, receiving instructions from a party to send or receive communications, and coordinating and scheduling the transmission of communications. For example, web subsystem **218** can facilitate a party in generating a non-real time communication when the party uses a front-end application having a user interface.

In an embodiment, virtual reality subsystem **220** consists of any number of servers, and functions as the primary logic processing center in communication center **200**. Virtual reality subsystem **220** manages and facilitates overall communication between subsystems off the communication center **200** and devices external to the communication center, such as any device within inmate communication system **120** and outsider communication system **130**. After undergoing registration and authentication procedures as described above, virtual reality subsystem **220** initiates the virtual reality sessions for one or more virtual reality communication devices within virtual reality communication system. No matter the number of virtual communication devices, virtual reality subsystem **220** routes information regarding all virtual reality sessions to a monitoring center, such as monitoring center **140** in FIG. **1**, through communication subsystem **212**. Using this information, the monitoring center may monitor all aspects of virtual reality sessions, including the avatars, the actions taken by the avatars, the virtual reality environment such as the virtual details, and the interactions between the avatars and the virtual reality environment.

In an embodiment, virtual reality subsystem **220** initiates virtual reality sessions based on the stored profiles of the user(s) involved in the virtual reality session. An example profile is an inmate profile that includes the preferences of an inmate of a controlled environment and/or an outsider profile that includes the preferences of an outsider of the controlled environment. If a virtual reality session involves a user with a virtual reality communication device, virtual reality subsystem **220** retrieves the user profile for the user and personalizes the virtual reality session based on the preferences and information stored in the user profile. Personalizing the virtual reality session includes using a stored avatar with the stored appearance settings, setting the environment of the virtual reality session, and making available within the virtual reality session preferred content and applications such as games. If the virtual reality session involves two or more users, virtual reality subsystem **220** retrieves the user profiles for each of the users and personalizes the virtual reality session based on the preferences and information stored in the user profiles. If there are any conflicts in preferences, virtual reality subsystem **220** can prioritize certain user profiles and implement the preferences of user profiles that are prioritized higher than others.

In an embodiment, personalizing the virtual reality session also includes incorporating administrator preferences provided by an administrator of virtual reality system **100**, such as a designated employee of the controlled environment. Administrator preferences are rules or restrictions provided by the administrator and have higher priority than the preferences specified in the user profiles. In an embodiment, administrator preferences include global preferences that influence all virtual reality sessions, no matter the users involved in the virtual reality session and inmate-specific preferences that only apply to specific inmates.

Administrator preferences generally limit or allow actions that can be performed by users during a virtual reality session. For example, the administrator can restrict all inmates and outsiders from accessing websites deemed to be inappropriate or certain applications and/or specify specific websites or applications that may be accessed during a virtual reality session. As discussed above, an administrator can implement such restrictions on a global (all virtual reality sessions) or inmate-specific basis.

In an embodiment, virtual reality subsystem **220** controls content that is available to users within virtual reality sessions based on authorization information indicating authorized content and unauthorized content. The authorization information can be specific to a user or user(s) and/or applied globally to all virtual reality sessions. Authorization information can indicate that a user or user(s) are not allowed to access certain content, such as websites, games, and/or applications, while participating in the virtual reality session. For example, if a user's profile indicates that the user is not allowed to access a certain website, the user would not prevented from using a virtual reality browser within a virtual reality session, such as virtual reality browser window **406** of FIG. **4**B, to access the certain website.

Communication database **222** consists of any number of databases and/or servers, and stores and organizes data in a relational database. Communication database **222** runs a database management system, such as MYSQL™, to provide an example. Communication database **222** includes organized data such that respective identity data, authentication data, jurisdictional requirements and rules, and settings that are indexed and linked to allow access to data for each of the parties involved in a communication and data associated with each of the parties.

Virtual Reality Communication Device

FIG. **3** illustrates a block diagram of virtual reality communication device **300**, according to embodiments of the present disclosure. Virtual reality communication device **300** may be an exemplary embodiment of any of virtual reality communication devices **123**, **124**, **132**, **134**, or **135** as illustrated in FIG. **1**. In an embodiment, virtual reality communication device **300** includes processor circuitry **310** that is communicatively coupled to plurality of communication interfaces **320**, input/output circuitry **330**, positional and motion circuitry **340**, and virtual reality display **350**. Processor circuitry **310** includes one or more processors **312**, circuitry, and/or logic configured to control the overall operation of communication device **300**, including the operation of communication interfaces **320**, input/output circuitry **330**, and positional and motion circuitry **340**. Processor circuitry **310** further includes memory **314** to store data and instructions. Memory **314** may be any well-known volatile and/or non-volatile memory that is removable and/or non-removable.

Communication interfaces **320** include one or more transceivers, transmitters, and/or receivers that communicate via a wireless interface, such as through one or more antennas **322**, or a wired interface, such as through a USB cable. In an embodiment, communication interfaces **320** are configured to transmit and receive communications between an inmate and an outsider via network **101** and network **103**, as illustrated in FIG. **1**. In an embodiment, communication interfaces **320** connect virtual reality communication device **300** with other devices such as a mobile device and/or external input devices such as a keyboard, mouse, camera, or touch interface.

In an embodiment, virtual reality communication device **300** includes integrated input/output circuitry **330** includes circuitry such as a keypad, a touch interface, a microphone, and a camera. Input/output circuitry **330** may be used by a party for traditional mobile device communications such as audio, video, or text communications. Input/output circuitry **330** such as the microphone and camera are used during monitoring operations to capture audio and/or video of a party and surrounding areas.

In an embodiment, virtual reality communication device **300** may include positional and motion sensors **340** include circuitry for determining a current location and a change in location of communication device **300**. Positional and motion circuitry **340** may include such circuitry as Global Positioning System (GPS) technology, indoor positioning systems (IPS) technology, accelerometers, and/or gyroscopes to determine position and motion of virtual reality communication device **300**.

Input/output circuitry **330** and positional and motion sensors **340** can provide input to virtual reality communication device **300** through head, body, arm, eye and finger, movements. Eye movement of a user of a virtual reality communication device **300** can be monitored. Eye movement of the user can operate much like a mouse by following the eye movement moving a cursor and utilizing the blinks of the eyes to select an item (i.e., similar to a mouse click). This allows for the entry of alpha numeric or the selection of items from the display without the user having to use his fingers or hands. Lunges and direction changes can be captured with accelerometers and gyroscope devices of positional and motion sensors **340**.

Virtual reality display **350** is component for displaying virtual reality images or scenes for viewing by a user of the virtual reality communication device **300**. In an embodiment, virtual reality display **350** is a display of a standalone virtual reality device that may be worn by a user. Virtual reality display **350** provides a high-resolution and wide angle view (e.g., 115 degrees) of a virtual reality session. In another embodiment, virtual reality display **350** may be implemented as a display of a mobile device such as a mobile phone, smartphone, or tablet. The mobile device may then be attached to a headpiece that may be worn by the user.

System Operation

Exemplary usage of virtual reality communication system **100** in a correctional environment will be described with respect to FIGS. **4**A-**4**C. In an embodiment, FIG. **4**A depicts an exemplary embodiment of a virtual reality session **400**A between inmate communication device **401**A, outsider communication device **401**B, and monitoring center **402**. Virtual reality session **400**A includes virtual reality communication **403** depicts an exemplary visual environment that is simultaneously viewable by inmate communication device **401**A, outsider communication device **401**B, and monitoring center **402**. Virtual reality communication **403** is simultaneously viewable through a display of inmate communication device **401**A and a display of outsider communication device **401**B. Virtual reality communication **403** also provides an audio channel through which users of inmate communication device **401**A and outsider communication device **401**B talk with each other using for example a microphone of inmate communication device **401**A and outsider communication device **401**B or that is part of an external device connected to inmate communication device **401**A and outsider communication device **401**B. In an embodiment, virtual reality communication **403** includes an inmate avatar **404** and an outsider avatar **405**. Inmate avatar **404** is a personalized virtual representation of a user of inmate communication device **401**A and outsider avatar **405** is a personalized virtual representation of a user of outsider communication device **401**B. As further discussed with respect to FIG. **5**, a user, such as an inmate of a controlled environment or an outsider of the controlled environment, can customize his avatar as part of a registration process. Accordingly, users of inmate communication device **401**A and outsider communication device **401**B may talk with and view a virtual representation of each other as part of virtual reality communication **403**.

In an embodiment, virtual reality communication **403** is also viewable by monitoring center **402**. As will be further discussed with respect to FIG. **7**, monitoring center **402** monitors virtual reality communication **403** including the actions of users of inmate communication device **401**A and outsider communication device **401**B. Monitoring center **402** monitors virtual reality communication **403** to prevent prohibited actions from occurring within virtual reality communication **403**.

In an embodiment, inmate communication device **401**A, outsider communication device **401**B, and monitoring center **402** are implemented within a virtual reality communication system such as virtual reality communication system **100**. One of ordinary skill in the art would understand that virtual reality session **403** is merely exemplary. For example, virtual reality session is not limited to only two users within virtual reality session **400**A, which may include one user or more than two users participating in virtual reality communication **403**.

FIG. **4**B depicts an exemplary embodiment of a virtual reality session **400**B between inmate communication device **401**A, outsider communication device **401**B, and monitoring center **402**. Virtual reality session **400**B includes virtual reality communication **403** which depicts an exemplary image that is viewable by communication device **401**A, outsider communication device **401**B, and monitoring center **402**. Virtual reality communication **403** includes virtual browser window **406** that is simultaneously viewable through a display of inmate communication device **401**A, a display of outsider communication device **401**B, and a display at monitoring center **402**. Virtual browser window **406** is also controllable by users of inmate communication device **401**A and outsider communication device **401**B. Virtual browser window **406** can display information or content simultaneously to users of inmate communication device **401**A and outsider communication device **401**B. The information or content is also controllable by the users such that any user participating in virtual communication **403** to manipulate or interact with virtual browser window **406**. In an embodiment, content includes game play activity such as a game that is played by a user of inmate communication device **401**A and/or a user of outsider communication device **401**B. Other content can also include displaying multimedia such as movies or television shows, documents such as emails, or websites. Users may control and interact with content displayed on virtual reality communication window **406** using input/output circuitry of inmate communication device **401**A and/or a user of outsider communication device **401**B or external input/output devices as discussed with respect to FIG. **3**.

In an embodiment, virtual reality communication **403** provides an audio channel through users of inmate communication device **401**A and outsider communication device **401**B may talk with each other while interacting with the virtual browser window **406**. Virtual reality communication also includes an inmate avatar **404** and an outsider avatar **405**. Accordingly, users of inmate communication device **401**A and outsider communication device **401**B may talk with, view a virtual representation of each other, and interact with virtual elements of virtual reality communication **403**.

FIG. **4**C depicts an exemplary embodiment of a virtual reality session **400**A between inmate communication device **401**A, outsider communication device **401**B, and monitoring center **402**. Virtual reality session **400**C includes virtual reality communication **403** which depicts an exemplary image that is viewable by communication device **401**A, outsider communication device **401**B, and monitoring center **402**. In an embodiment, virtual reality communication **403** includes a virtual reality environment having virtual elements such as a virtual sun **308** and virtual tree **307** that is simultaneously viewable through a display of inmate communication device **401**A, a display of outsider communication device **401**B, and a display at monitoring center **402**. In an embodiment, users of inmate communication device **401**A and outsider communication device **401**B may select the virtual reality environment from a set of options pre-approved by the controlled environment. Examples of other environments include a beach, a forest, a house, or a store. In an embodiment, the virtual store environment is modeled on the controlled environment's commissary and the virtual elements include items that may be purchased by the user.

Operations of providing access, initiating communications, and monitoring communications within virtual reality communication system **100** in a correctional system will be described with respect to FIGS. **5-7**. Although the physical devices and components that form the system have largely already been described, additional details regarding their more nuanced operation will be described below with respect to FIGS. **1-3**. While FIGS. **5-7** contain methods of operation of authentication for virtual reality communication system **100**, the operations are not limited to the order described below, and various operations can be performed in a different order. Further, two or more operations of each method can be performed simultaneously with each other.

FIG. **5** illustrates a flowchart diagram of a method **500** of registering a user via a virtual reality communication system, such as virtual reality communication system **100** of FIG. **1**, according to embodiments of the present disclosure. In FIG. **5**, a registration or enrollment process is facilitated for a party by inmate communication device **120** or outsider communication device **130**. In **501**, a user registers before or during the first use of virtual reality communication system **100**. Registration may be performed via a website or IVR system, for example, when a party visits a designated website or calls a designated phone number facilitated by the controlled environment. In **501**, profile subsystem **214** (as described with respect to FIG. **2**) requests for initial information from the user via inmate communication device **120** or outsider communication device **130**. The initial information can include name, birthdate, social security number, contact information, a biometric sample, and/or other essential data needed to verify the user and obtain additional information associated with the user, as described below. The initial information can also include preferences from the user regarding the user's avatar. These preferences allow the user to customize the appearance of the avatar such as the avatar's hair, facial features, clothing, and other physical attributes. Such preferences can allow the user to create an avatar with a similar virtual appearance as the user. The initial information may be received by input/output circuitry **330** of virtual reality communication device **300** and transmitted to communication center **110** via communication interface **320**.

Once the initial information is received by communication center **110**, profile subsystem **214** generates a user profile, such as an inmate profile, based on the initial information provided by the user at **502**. Next, profile subsystem **214** generates an avatar based on the initial information provided by the user at **503**. At **504**, a component of the controlled environment, such as communication center **200**, reviews the generated profile and avatar as part of a review process to ensure that the profile and avatar meet predefined standards. After review of the initial information, the generated profile, and the generated avatar, communi-

cation center **200** may accept the registration, at **504**, or reject the registration. In an embodiment, during steps **501-503**, all gathered and generated information obtained by communication center **110** is stored at **505** in a component of the controlled environment, such as in database **220** of communication center **200**.

FIG. **6** illustrates a flowchart diagram of a method **600** for initiating a virtual reality session via a virtual reality communication system, such as virtual reality communication system **100** of FIG. **1**, according to embodiments of the present disclosure. At **601**, a method of initiating a virtual reality session begins with a user request. The user request can be from an inmate of the controlled environment or may be from an outsider of the controlled environment. The user request is transmitted by the inmate's virtual reality communication device or the outsider's virtual communication device via virtual reality communication system **100**. In an embodiment, submitting a user request requires special software provided by the controlled environment and installed on the virtual communication devices. For example, an inmate opens the special software and presses an icon to submit a request for a virtual reality session, which can be limited to only the inmate or can also include an outsider using outsider communication device **130**.

Next, at **602**, communication center **110** determines whether the user submitting the request is authorized to initiate a virtual reality session. Communication center **110** can make this determination based on information included in the user request such as the identity of the user, the virtual reality communication device from which the request is submitted, or any other information identifying the user and/or the virtual reality communication device. In an embodiment, authorizing the user includes authenticating the user's identity. Examples of authentication that may be performed include one or more of challenge questions and biometric verifications. For example, a party may be required to answer a challenge question including responding to questions regarding one or more of a previous addresses of the party, the name of the party, a birthdate of the party, a PIN, a name of someone associated with the party, or an identification number of the party. Further, a challenge question may request only a portion of the actual answer, such as only the last four digits of the party's social security number be a response. Combination of authentication processes may also occur and may include a rolling challenge question that requires the party to audibly or visually respond to the challenge question. Examples of combinations of authentication may include a response to a challenge question that requires a party to audibly state his/her mother's maiden name or for the party to respond to the answer either verbally or by touch paid while in front of a camera of inmate communication device **120** or outsider device **130** such that an audio sample, a video sample, or an image sample of the party is captured. In embodiment, authentication subsystem **216** receives required information from inmate communication device **120** or outsider communication device **130** and the received information is compared to stored identity data to determine whether the user is in fact authorized. If the user is not authorized, the method ends. If the user is authorized, communication center **110** can further determine whether the user is registered to use virtual reality communication system **100** at **603**. In an embodiment, communication center **110** can retrieve the relevant information to make this determination from profile subsystem **214**. If the user is not registered, a registration or enrollment process is performed at **604**. An exemplary registration process may include steps described above for FIG. **5**.

Upon determining that the user is authorized an registered, communication center **110** can then determine if any other users are joining the virtual reality session at **605**. Method **600** repeats steps **602-604** for any additional users joining the virtual reality session. Once all users joining the session have been authorized and registered, communication center **110** personalizes the virtual reality session based on the user(s) and their profiles at **606**. In an embodiment, personalizing the virtual reality session includes retrieving the profile(s) for each user and determining the preferences and other information related to the virtual reality session. Each profile can include information regarding the user's avatar, preferences for content such as games, applications, or virtual environments, and restrictions as to the content that is available or not available to the user and/or the virtual reality session. At **607**, the virtual reality session is further personalized based on any administrator preferences. In an embodiment, this step entails retrieving the administrator preferences and implementing the rules and restrictions on the virtual reality session. As discussed above, administrator preferences may be applied on a global or in-mate specific basis. For example, administrator preferences may include global restrictions which limit all virtual reality sessions from accessing inappropriate websites using the virtual reality browser window. Based on this information from the user profiles and the administrator preferences, communication center **110** generates and initiates the virtual reality session at **608**, and begins communicating the virtual reality session to the respective virtual reality communication devices of each user who is part of the virtual reality session.

FIG. **7** illustrates a flowchart diagram of a method **700** for monitoring a virtual reality session via a monitoring system, such as monitoring center **140** of FIG. **1**, according to embodiments of the present disclosure. At **701**, monitoring center **140** begins monitoring a virtual reality session initiated through a virtual reality communication system, such as virtual reality communication system **100** of FIG. **1**. At **702**, monitoring center **140** continuously monitors visual information of the virtual reality session for any prohibited actions performed by any user within the virtual session. Prohibited actions can include any actions performed by a user's avatar that are determined by monitoring center **140** to be inappropriate for a virtual reality session. For example, prohibited actions include violent actions and lewd actions.

At **703**, monitoring center **140** continuously monitors audio information of the virtual reality session for any prohibited verbal statements uttered by any user within the virtual session such as a session that involves more than one user. Prohibited verbal statements can include any comments stated by a user during the virtual session determined by monitoring center **140** to be inappropriate for a virtual reality session. For example, prohibited verbal statements can include curse words, lewd phrases, and/or sexual comments.

At **704**, monitoring center **140** continuously monitors biometric information obtained from any user within the virtual session to prevent authorized users from giving the virtual reality communication device to a user that has not yet been authorized for the virtual reality session. As discussed above, in an embodiment, monitoring center **140** receives biometric information from communication center **110** which retrieves the biometric information from the virtual reality communication devices that are participating in the virtual reality session. Biometric information includes

audio information, retinal or iris information, and facial information. During a virtual reality session, monitoring center **140** can compare current biometric information with original biometric information from the authorized user who initiated or joined the virtual reality session. If monitoring center **140** determines that there is difference between current biometric information and the original biometric information, monitoring center can determine that there has been a change in a user of the virtual reality communication device.

If any of the steps of **702-704** are determined to be positive, a component of monitoring center **140** generates an alert to inform an administrator or other personnel of monitoring center **140** at **705**. The alert can indicate that a prohibited action, prohibited verbal statement, or a change in the authorized user has taken place in the virtual reality session. At **707**, monitoring center **140** determines whether the positive determines of steps **702-704** triggers a termination of the virtual reality session. Finally, at **706**, monitoring center **140** determines whether to continue monitoring the virtual reality session. If so, monitoring center **140** repeats steps **702-705**.

Exemplary Computer Implementation

It will be apparent to persons skilled in the relevant art(s) that various elements and features of the present disclosure, as described herein, can be implemented in hardware using analog and/or digital circuits, in software, through the execution of computer instructions by one or more general purpose or special-purpose processors, or as a combination of hardware and software.

The following description of a general purpose computer system is provided for the sake of completeness. Embodiments of the present disclosure can be implemented in hardware, or as a combination of software and hardware. Consequently, embodiments of the disclosure may be implemented in the environment of a computer system or other processing system. For example, the methods of FIGS. **5-7** can be implemented in the environment of one or more computer systems or other processing systems. An example of such a computer system **800** is shown in FIG. **8**. One or more of the modules depicted in the previous figures can be at least partially implemented on one or more distinct computer systems **800**.

Computer system **800** includes one or more processors, such as processor **804**. Processor **804** can be a special purpose or a general purpose digital signal processor. Processor **804** is connected to a communication infrastructure **802** (for example, a bus or network). Various software implementations are described in terms of this exemplary computer system. After reading this description, it will become apparent to a person skilled in the relevant art(s) how to implement the disclosure using other computer systems and/or computer architectures.

Computer system **800** also includes a main memory **806**, preferably random access memory (RAM), and may also include a secondary memory **808**. Secondary memory **808** may include, for example, a hard disk drive **810** and/or a removable storage drive **812**, representing a floppy disk drive, a magnetic tape drive, an optical disk drive, or the like. Removable storage drive **812** reads from and/or writes to a removable storage unit **816** in a well-known manner. Removable storage unit **816** represents a floppy disk, magnetic tape, optical disk, or the like, which is read by and written to by removable storage drive **812**. As will be appreciated by persons skilled in the relevant art(s), removable storage unit **816** includes a computer usable storage medium having stored therein computer software and/or data.

In alternative implementations, secondary memory **808** may include other similar means for allowing computer programs or other instructions to be loaded into computer system **800**. Such means may include, for example, a removable storage unit **818** and an interface **814**. Examples of such means may include a program cartridge and cartridge interface (such as that found in video game devices), a removable memory chip (such as an EPROM, or PROM) and associated socket, a thumb drive and USB port, and other removable storage units **818** and interfaces **814** which allow software and data to be transferred from removable storage unit **818** to computer system **800**.

Computer system **800** may also include a communications interface **820**. Communications interface **820** allows software and data to be transferred between computer system **800** and external devices. Examples of communications interface **820** may include a modem, a network interface (such as an Ethernet card), a communications port, a PCMCIA slot and card, etc. Software and data transferred via communications interface **820** are in the form of signals which may be electronic, electromagnetic, optical, or other signals capable of being received by communications interface **820**. These signals are provided to communications interface **820** via a communications path **822**. Communications path **822** carries signals and may be implemented using wire or cable, fiber optics, a phone line, a cellular phone link, an RF link and other communications channels.

As used herein, the terms "computer program medium" and "computer readable medium" are used to generally refer to tangible storage media such as removable storage units **816** and **818** or a hard disk installed in hard disk drive **810**. These computer program products are means for providing software to computer system **800**.

Computer programs (also called computer control logic) are stored in main memory **806** and/or secondary memory **808**. Computer programs may also be received via communications interface **820**. Such computer programs, when executed, enable the computer system **800** to implement the present disclosure as discussed herein. In particular, the computer programs, when executed, enable processor **804** to implement the processes of the present disclosure, such as any of the methods described herein. Accordingly, such computer programs represent controllers of the computer system **800**. Where the disclosure is implemented using software, the software may be stored in a computer program product and loaded into computer system **800** using removable storage drive **812**, interface **814**, or communications interface **820**.

In another embodiment, features of the disclosure are implemented primarily in hardware using, for example, hardware components such as application-specific integrated circuits (ASICs) and gate arrays. Implementation of a hardware state machine so as to perform the functions described herein will also be apparent to persons skilled in the relevant art(s).

## CONCLUSION

It is to be appreciated that the Detailed Description section, and not the Abstract section, is intended to be used to interpret the claims. The Abstract section may set forth one or more, but not all exemplary embodiments, and thus, is not intended to limit the disclosure and the appended claims in any way.

The disclosure has been described above with the aid of functional building blocks illustrating the implementation of specified functions and relationships thereof. The boundaries of these functional building blocks have been arbitrarily defined herein for the convenience of the description. Alternate boundaries may be defined so long as the specified functions and relationships thereof are appropriately performed.

It will be apparent to those skilled in the relevant art(s) that various changes in form and detail can be made therein without departing from the spirit and scope of the disclosure. Thus, the disclosure should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

What is claimed is:

**1**. A method for personalizing a virtual reality session, the method comprising:

receiving, from a device located within a controlled environment, a first user request to initiate the virtual reality session, wherein the first user request includes user information for a user associated with the device;

receiving a second user request for a second device to join the virtual reality session;

responsive to receiving the first user request, retrieving a profile associated with the user information, wherein the profile includes session initiation information and a first user preference for the virtual reality session;

retrieving a second profile associated with a user of the second device, wherein the second profile includes a second user preference for the virtual reality session;

identifying, for the virtual reality session, an administrator preference for restricting at least one action that can be performed within the virtual reality session; and

initiating the virtual reality session based on the session initiation information, the first user preference, the second user preference, and the administrator preference, wherein the initiating comprises joining the device to the virtual reality session.

**2**. The method of claim **1**, further comprising:

joining the second device to the virtual reality session subsequent to initiating the virtual reality session.

**3**. The method of claim **1**, wherein the administrator preference is configured as a global preference that applies to any virtual reality session initiated within the controlled environment.

**4**. The method of claim **1**, wherein the administrator preference is configured as an inmate-specific preference that applies only to the user associated with the device.

**5**. The method of claim **1**, further comprising:

retrieving an authorization condition associated with the administrator preference;

detecting an attempted action within the virtual reality session;

determining that the attempted action is restricted based on the authorization condition; and

restricting the attempted action within the virtual reality session based on the determining.

**6**. The method of claim **5**, wherein the attempted action comprises at least one accessing a website from within the virtual reality session or accessing an application from within the virtual reality session.

**7**. The method of claim **1**, further comprising:

continuously monitoring biometric information during the virtual reality session, wherein the biometric information includes first biometric information associated with the user associated with the device;

detecting, based on the continuously monitoring, a change in the biometric information from the first biometric information to second biometric information associated with another user different from the user associated with the device; and

terminating the virtual reality session based on the detecting the change.

**8**. A system within a controlled environment for initiating a virtual reality session, the system configured to:

receive, from a device located within the controlled environment, a first user request to initiate the virtual reality session, wherein the first user request includes user information for a user associated with the device;

receive a second user request for a second device to join the virtual reality session;

responsive to receiving the first user request, retrieve a profile associated with the user information, wherein the profile includes session initiation information and a first user preference for the virtual reality session;

retrieve a second profile associated with a user of the second device, wherein the second profile includes a second user preference for the virtual reality session;

identify, for the virtual reality session, an administrator preference for restricting at least one action that can be performed within the virtual reality session; and

initiate the virtual reality session based on the session initiation information, the first user preference, the second user preference, and the administrator preference, wherein the initiating comprises joining the device to the virtual reality session.

**9**. The system of claim **8**, wherein the system is further configured to join the second device to the virtual reality session subsequent to initiating the virtual reality session.

**10**. The system of claim **8**, wherein the administrator preference is configured as a global preference that applies to any virtual reality session initiated within the controlled environment.

**11**. The system of claim **8**, wherein the administrator preference is configured as an inmate-specific preference that applies only to the user associated with the device.

**12**. The system of claim **8**, wherein the system is further configured to:

retrieve an authorization condition associated with the administrator preference;

detect an attempted action within the virtual reality session;

determine that the attempted action is restricted based on the authorization condition; and

restrict the attempted action within the virtual reality session based on the determining.

**13**. The system of claim **12**, wherein the attempted action comprises at least one accessing a website from within the virtual reality session or accessing an application from within the virtual reality session.

**14**. The system of claim **8**, wherein the system is further configured to:

continuously monitor biometric information during the virtual reality session, wherein the biometric information includes first biometric information associated with the user associated with the device;

detect, based on the continuously monitoring, a change in the biometric information from the first biometric information to second biometric information associated with another user different from the user associated with the device; and

terminate the virtual reality session based on the detecting the change.

15. A non-transitory computer-readable medium having instructions stored therein, which when executed by a processor in a wireless device cause the processor to perform operations, the operations comprising:

receiving, from a device located within a controlled environment, a first user request to initiate a virtual reality session, wherein the first user request includes user information for a user associated with the device;

receiving a second user request for a second device to join the virtual reality session;

responsive to receiving the first user request, retrieving a profile associated with the user information, wherein the profile includes session initiation information and a first user preference for the virtual reality session;

retrieving a second profile associated with a user of the second device, wherein the second profile includes a second user preference for the virtual reality session;

identifying, for the virtual reality session, an administrator preference for restricting at least one action that can be performed within the virtual reality session; and

initiating the virtual reality session based on the session initiation information, the first user preference, the second user preference, and the administrator preference, wherein the initiating comprises joining the device to the virtual reality session.

16. The non-transitory computer-readable medium of claim 15, the operations further comprising:

joining the second device to the virtual reality session subsequent to initiating the virtual reality session.

17. The non-transitory computer-readable medium of claim 15, wherein the administrator preference is configured as a global preference that applies to any virtual reality session initiated within the controlled environment.

18. The non-transitory computer-readable medium of claim 15, wherein the administrator preference is configured as an inmate-specific preference that applies only to the user associated with the device.

19. The non-transitory computer-readable medium of claim 15, the operations further comprising:

retrieving an authorization condition associated with the administrator preference;

detecting an attempted action within the virtual reality session;

determining that the attempted action is restricted based on the authorization condition; and

restricting the attempted action within the virtual reality session based on the determining.

20. The non-transitory computer-readable medium of claim 19, wherein the attempted action comprises at least one accessing a website from within the virtual reality session or accessing an application from within the virtual reality session.

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