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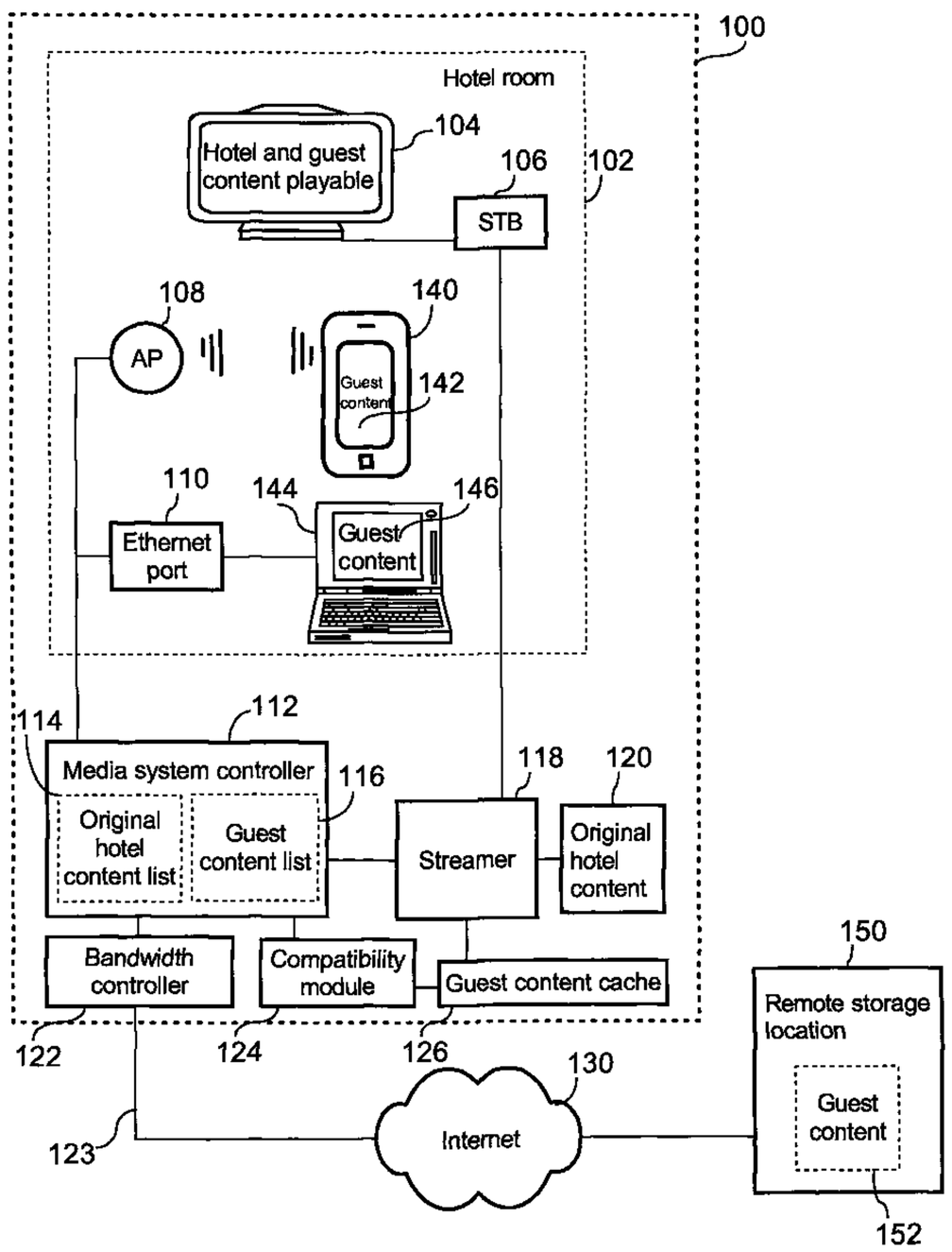
(54) Titre : METHODE D'INTEGRATION DU CONTENU D'UN DISPOSITIF HOTE AVEC SYSTEME DE FLEXIBILITE MEDIATIQUE, ET SYSTEME MEDIATIQUE DE FLEXIBILITE CONNEXE

(54) Title: METHOD OF INTEGRATING CONTENT ON GUEST DEVICE WITH HOSPITALITY MEDIA SYSTEM, AND HOSPITALITY MEDIA SYSTEM THEREOF



(57) Abrégé/Abstract:
A hospitality media system includes a first content list being available for use by a media function of the hospitality media system, and a connection port for establishing a connection with a guest device. A media system controller catalogues guest content

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available on the guest device to form a guest content list including the guest content, and performs the media function according to the guest content list and the first content list. Compatibility of the guest content may also be ensured and the guest content may be cached within the media system. Sharing of the guest content between different rooms or other users may be configured by the guest or automatically by the system. The guest device may be local within the hotel or at a remote location accessed via an external network. Upon guest check out or another condition, the guest content may be removed from the media system.

Abstract

A hospitality media system includes a first content list being available for use by a media function of the hospitality media system, and a connection port for establishing a connection with a guest device. A media system controller catalogues guest content available on the guest device to form a guest content list including the guest content, and performs the media function according to the guest content list and the first content list. Compatibility of the guest content may also be ensured and the guest content may be cached within the media system. Sharing of the guest content between different rooms or other users may be configured by the guest or automatically by the system. The guest device may be local within the hotel or at a remote location accessed via an external network. Upon guest check out or another condition, the guest content may be removed from the media system.

Method of integrating content on guest device with hospitality media system, and hospitality media system thereof

The invention pertains generally to hospitality media and entertainment systems. More specifically, the invention relates to integrating content on a guest device with a hospitality media system.

Background of the Disclosure

Guests often bring personal electronic devices with them when they stay at hotels, and these devices typically have stored therein movies, music, and other media content. One problem is there is no easy way to utilize the full capabilities of the hotel's media system to play the media stored on the guest's device. One typical solution is to use various hardware adaptor cables to reroute the analog output of the guest's device to analog input ports of speakers or the hotel TV. In this way, some limited use of the hotel's media system can be achieved. However, rerouting analog signals does not allow full integration of guest content with the hotel media system. For example, on-screen interactive media functions, screensavers, special effects, remote controls, wake-up and other alarms, and time based functions are examples of capabilities typically present on hotel media systems, but these functions cannot be performed using media content stored on a guest's own device.

Summary of the Invention

According to an aspect of the invention there is provided a method of integrating content with a hospitality media system. A plurality of media devices is located in a plurality of rooms, each room having one or more in-room media devices located therein. A first content list includes first content available for use by a media function of the hospitality media system. The media function is performed utilizing content selected from the first content list on the media devices. A user of a room establishes a

connection between the hospitality media system and a guest device. Guest content available on the guest device is catalogued to thereby form a guest content list. The guest content is associated with one or more particular rooms at least including the user's room. The media function utilizes content further selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

According to another aspect of the invention there is provided a hospitality media system including a media system controller and a plurality of media devices located in a plurality of rooms and coupled to the media system controller, each room having one or more in-room media devices located therein. A first content list includes first content available for use by a media function of the hospitality media system, and a connection port allows a user of a room to establish a connection between the media system controller and a guest device. The media system controller is coupled to the connection port and configured to perform the media function utilizing content selected from the first content list on the media devices, catalogue guest content available on the guest device to thereby form a guest content list, associate the guest content with one or more particular rooms at least including the user's room, and perform the media function utilizing content further selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

According to yet another aspect of the invention there is provided a hospitality media system including a plurality of media devices located in a plurality of rooms, each room having one or more in-room media devices located therein. Means is provided for cataloguing guest content available on a guest device to thereby form a guest content list, where the connection with the guest device is established by a user of a room. Means is provided for associating the guest content with one or more particular rooms at least including the user's room. Means is also provided for performing a media function utilizing content selected from a first content list on the media devices, the first content list including first content available for use by the media function of the hospitality media system, and for performing the media function utilizing content further selected from the

guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

According to yet another aspect of the invention there is provided a method of integrating content with a hospitality media system. A plurality of media devices is located in a plurality of rooms, each room having one or more in-room media devices located therein. A user of a room establishes a connection between the hospitality media system and a guest device. Guest content available on the guest device is catalogued to thereby form a guest content list. The guest content is associated with one or more particular rooms at least including the user's room. A media function utilizes content selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

According to yet another aspect of the invention there is provided a hospitality media system including a media system controller and a plurality of media devices located in a plurality of rooms and coupled to the media system controller, each room having one or more in-room media devices located therein. A connection port allows a user of a room to establish a connection between the media system controller and a guest device. The media system controller is coupled to the connection port and configured to catalogue guest content available on the guest device to thereby form a guest content list, associate the guest content with one or more particular rooms at least including the user's room, and perform a media function utilizing content selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

According to yet another aspect of the invention there is provided a hospitality media system including a plurality of media devices located in a plurality of rooms, each room having one or more in-room media devices located therein. Means is provided for cataloguing guest content available on a guest device to thereby form a guest content list, where the connection with the guest device is established by a user of a room. Means is provided for associating the guest content with one or more particular rooms at least including the user's room. Means is also provided for performing a media function utilizing content selected from the guest content list only on the in-room media devices

located within the one or more particular rooms with which the guest content is associated.

Brief Description of the Drawings

FIG. 1 is a block diagram of a hotel media system integrating guest content stored on a plurality of guest devices including a mobile phone, a laptop computer, and a remote storage location according to an exemplary configuration of the present invention;

FIG. 2 is a simplified block diagram of a hotel media system illustrating how, according to one configuration of the present invention, guest content from guest devices in different rooms is only available in the particular room for which each guest device is associated;

FIG. 3 is a simplified block diagram of a hotel media system illustrating how guest content may be shared with different rooms according to another configuration of the present invention;

FIG. 4 illustrates a user interface that may be displayed on the television in room C of FIG. 3 to allow the media system function of playing movies to be performed according to the hotel original content list and the guest content list;

FIG. 5 illustrates a UI screen for configuring a hotel media system to integrate content from a guest device according to an exemplary configuration of the present invention; and

FIG. 6 and FIG. 7 together illustrate an exemplary operational flowchart of operations performed by the hotel media system of FIG. 1.

Detailed Description of the Invention

FIG. 1 is a block diagram of a hotel media system 100 integrating guest content 142, 146, 152 stored on a plurality of guest devices including a mobile phone 140, a laptop computer 144, and a remote storage location 150 according to an exemplary configuration of the present invention. In this example, a hotel room 102 includes a widescreen hospitality television 104 for playing both original hotel content 120 and compatible guest content 142, 146, 152 stored and made available by the guest devices 140, 144, 150. A media system controller 112 utilizes a wireless access port (AP) 108 and a wired Ethernet port 110 to establish data connections with the mobile phone 140 and laptop 144, respectively. Additionally, the media system controller 112 is coupled to the remote storage location 150 via a virtual connection 123 across the Internet 130. A bandwidth controller 122 sets an appropriate bandwidth for the virtual connection 123 to support playback requirements of the guest content 152. The media system controller accesses the guest devices 140, 144, 150 through these connection ports 108, 110, 123 and catalogues guest content 142, 146, 152 to form a guest content list 116. A compatibility module 124 checks each media asset of the guest content 142, 146, 152 to ensure it is compatible with the media system 100 and to convert the format of incompatible guest content to a compatible format. To allow on-demand playback from guest devices 140, 144, 150 and/or data connections 108, 110, 123 that may not operate at speeds sufficient for real-time playback or may not be physically connected at the time playback is desired, in this example, guest content 142, 146, 152 is cached within a guest content cache 126 until the guest checks out of the hotel. Media functions of the hotel media system 100 are thereafter performed in the hotel room 102 according to both an original hotel content list 114 and the guest content list 116. For example, when a movie

playback function is selected, the STB 106 allows the guest in the hotel room 102 to play movies listed on either the guest content list 116 or the hotel's original content list 114. A streamer 118 coupled to the guest content cache 126 and the original hotel content 120 streams the selected audio/video (AV) content to the in-room television 104. All other media system functions including but not limited to video playback, audio playback, screensavers, wake up calls, alarms, timers, messaging functions, remote control operations, special effects, on-screen interactive functions, etc, may also utilize the guest content 142, 146, 152 in a similar way. The guest content 142, 146, 152 is fully integrated with the hotel media system 100. Although the mobile phone 140 and the laptop 144 are shown for convenience of illustration in FIG. 1. as being within the hotel media system 100, it should be noted they do not necessarily belong to the hotel media system 100 and may instead belong to a guest staying in the hotel room 102.

FIG. 2 is a simplified block diagram of a hotel media system 200 illustrating how, according to one configuration of the present invention, guest content 218, 228 from guest devices 216, 226 in different rooms is only available in the particular room 210, 220 for which each guest device 216, 226 is associated. For example, as shown in FIG. 2, guest content A 218 is only available on the television 212 in hotel room A 210, and guest content B 228 is only available on the television 222 in hotel room B 220. Also, since there is no guest device associated with room C 230, only the original hotel content is available on the television 232 in hotel room C 230.

In this configuration, a room detector 240 automatically detects in which hotel room 210, 220, 230 a guest device is located in order to associate each guest device with a particular room. The detection may be done in many ways according to different implementations. One implementation involves port detection and mapping ports to known rooms. For example, as shown in FIG. 2 each room has its own AP 214, 224, 234 and therefore by detecting from which AP 214, 224 the connection to the guest device 216, 226 is established, the room detector 240 can associate each guest device 216, 226 to a particular room. Note that, in another example, the in-room AP 214, 224, 234 may also be integrated within an in-room STB (not shown). Similar mechanisms may also be provided for wired connection ports such as Ethernet, universal serial bus (USB), FireWire, etc. In another embodiment, guest devices 216, 226 may be automatically

associated with a particular room 210, 220 by an authentication process. For example, a passkey may be displayed on the television 212 in room 210, and a user of the mobile phone 216 enters the same passkey via a web interface with the hotel media system 200 to thereby confirm the user is in the room. A cookie may be stored on the mobile phone 216 or a unique identification (ID) such as the phone's global system for mobile communication (GSM) subscriber identification module (SIM) number or media access controller (MAC) address may be stored within the room detector 240. In this way, the room detector 240 is able to automatically associate the mobile phone 216 with room 210, and associate the laptop computer 226 with room 220. A similar technique may be used to associate other guest devices within other rooms.

The media system controller 250 catalogues media assets in guest content A 218 available from the mobile phone 216 and forms guest content list 254. Similarly, the media system controller 250 catalogues media assets in guest content B 228 available from the laptop 226 and forms guest content list 256. Guest content list 254 corresponds to hotel room A 210, and guest content list 256 corresponds to hotel room B 220. Thereafter, a guest in room A 210 may perform media functions such as playing video content on the television 212 according to any media asset listed on either the hotel original content list 252 or guest content list 254; and a guest in room B 220 may perform media functions such as playing video content on television 222 according to any content listed on either the hotel original content list 252 or guest content list 256. To protect the privacy of the guests, in this configuration the media system controller does not allow the guest in hotel room B to play any of the guest content A 218 because it is not listed on the guest content list 256, and vice versa. Additionally, as there is no guest content list associated with room C 230, neither guest content A 218 nor guest content B 226 is available in room C 230.

FIG. 3 is a simplified block diagram of a hotel media system 300 illustrating how guest content A and B (218, 228 in FIG. 2) may be shared with different rooms according to another configuration of the present invention. FIG. 3 is very similar to FIG. 2 with new numerical labels indicating elements having differences and unlabelled elements having the same functionality as previously described in FIG. 2. As shown in FIG. 3, both guest content A and B have now been shared with hotel room C 330. Therefore, media system controller

350 includes a guest content list 358 for room C 330 including both guest content A and guest content B. In this way, a guest in room C 330 may perform media functions such as playing video content on the television 332 according to any media asset listed on either the hotel original content list 252 or guest content list 358, which includes both guest content A and B.

FIG. 4 illustrates a user interface (UI) 400 that may be displayed on the television 332 of FIG. 3 to allow the media function of playing movies to be performed according to both the hotel original content list 252 and the guest content list 358. Buttons for original hotel (Hollywood) content 402, guest videos from room A 404, and guest videos from room B 406 are available on the UI 400. Using a remote such as an in-room Infrared remote controller, a guest may select any of the buttons 402, 404, 406 to choose a desired content group. Subsequent UI screens may then list all the various media assets in the chosen content group. For example, if the guest selects the "Guest Videos (Room A)" button 404, a subsequent screen may list all the content available from the mobile phone 216.

By default, the hotel media system 300 may keep guest content private and only available in the room for which it is associated. However, as shown in FIG. 3, guest content may also be associated and shared with other rooms.

In the simplified block diagrams of FIG. 2 and FIG. 3, there is no guest content caching or compatibility checking. For example, in order to play content listed on guest content list 254 (i.e., Guest content A 218), the mobile phone 216 must be presently connected and support speeds sufficient to transfer media content data in real-time to enable playback. The media assets in guest content A 218 must also be compatible with the hotel media systems 200, 300. In another configuration, in order to overcome these limitations, a more detailed implementation supporting guest content caching and compatibility checking / conversion such as that shown in FIG. 1 may be utilized. Additionally, virtual connections across an external network such as the Internet 130 shown in FIG. 1 may be utilized to integrate content stored on remote guest devices 150 with the media systems 200, 300.

FIG. 5 illustrates an exemplary UI screen 500 for configuring a hotel media system 100 to integrate content from a guest device. A first parameter setting 502 allows

the user to select a connection type. Various connection types may be supported by the media system including but not limited to USB, FireWire, file transfer protocol (FTP), Windows shares, HTTP shares, proprietary online storage providers, etc. According to the connection type selected, other parameters such as a location universal resource identify (URL) or internet protocol (IP) address location 504, user name 506, and password 508 may be configured in order to allow the hotel media system to automatically authenticate itself with the guest device. Sharing parameters 510 allow the content on the guest device to be associated with only the guest's own room (private), all rooms (public), or with an individually specified list of rooms. Since, in the example shown in FIG. 5, the connection type is a virtual connection 123 to a remote storage location 150, an option 512 is provided to upgrade the bandwidth available to connect to the Internet in order to support the transfer speeds necessary to transfer data from the remote location in a reasonable amount of time. A final option 514 is provided to allow the configuration of internal caching of the content until guest check out. This may be useful to allow real-time playback without requiring a constant connection to the guest device or high transfer speeds. However, due to privacy concerns, some guests may not wish to cache content within the hotel media system so the user is given the option 514.

FIG. 6 and FIG. 7 together illustrate an exemplary operational flowchart of operations performed by the hotel media system 100 of FIG. 1. The steps of the flowchart are not restricted to the exact order shown, and, in other configurations, shown steps may be omitted or other intermediate steps added. In this configuration, the hotel media system 100 performs the following operations:

Step 600: The process starts when the hotel media system 100 receives a request or attempt to establish a connection to a guest device 140, 144, 150. This connection request could come from a guest staying in a particular hotel room who wishes to play content available on a device 140, 144 the guest brought to the hotel premises or that is located at a remote storage location 150. In one configuration, the connection with the hotel media system 100 may be provided at the STB 106 in the guest's room 102. In this configuration, the guest would either physically plug in an portable device such as a mobile phone 140 to the STB 106 using an available port such as USB (not shown).

Alternately, the hotel media system 100 may provide Wi-Fi capabilities at AP 108 and the guest will connect to STB 106 either directly or via an available access point 108 in the hotel. In another configuration, the guest's device may not be physically in the hotel room, and instead a virtual connection 123 to an offsite storage location 150 may be requested with the media system controller 112, which itself may be physically located somewhere else in the hotel such as a server room or at a remote location. As shown in FIG. 5, the user may request the virtual connection 123 by configuring the media system controller 112 using the STB 106 UI 500 provided on the television screen 104 in the guest's room 102. When the user selects this functionality they can enter an online location of their files such as public URL or IP address 504. They can also select and configure the type of storage location 502 such as HTTP, FTP, Windows shares, NTFS shares, proprietary online storage services etc. Authentication information such as a user name 506 and password 508 can be entered as well if required.

Step 602: If the guest device is a remote storage location 150, control proceeds to step 604; otherwise, control proceeds to step 606.

Step 604: Because the guest device 150 is remotely located and accessed using an external network 130, it may be desired to upgrade the bandwidth capacity of the virtual connection 123 with the external network 130 in order to support transfer throughput speeds sufficient to download the guest content 152 from the remote location 150. In some configurations, the bandwidth may be upgraded by a bandwidth controller 122 to support real-time playback, and, in other configurations, the bandwidth may be upgraded to allow the guest content 152 to be downloaded and cached within a guest content cache 126 in the hotel media system 100. For example, if the remote location 150 is accessible via the Internet 130, the guest may have an option 514 to pay an additional fee in order to upgrade the bandwidth available for the virtual connection 123 in order to download the guest content 152 from the remote storage location 150.

Step 606: A connection with the guest device is established by the hotel media system 100. As previously mentioned, the connection may be made through a wired access port 110 such as USB, FireWire, Ethernet, etc; a wireless coupling 108 such as via Bluetooth, WLAN, and Wi-Fi, etc; or a virtual coupling 123 such as connecting to an offsite storage location 150 via an external network that is not a part of the hotel media system such as the Internet 130. In general, any type of connection may be established between the hotel media system 100 and the guest device 140, 144, 150. Passwords and configuration may also be utilized to establish the connection as required. Although FIG. 1 shows the connection being established between the guest device 140, 144, 150 and the media system controller 112, in another configuration, the connection may be established directly between a local guest device 140, 144 and an in-room STB 106. In another configuration, the STB 106 may include functionality to access the remote storage location 150 and the media system controller 112 simply passes packets from the STB 106 directly to the Internet 130. Therefore, the connection with the guest device may be established utilizing any available connection port 108, 110, 123 in the hotel media system 100 whether it is wired, wireless, or virtual, and may be made by any component such as the STB 106, the media system controller 112 via a network or other connection 108, 110, the television 104 having integrated set-top box functions, etc.

Step 608: At this step, the hotel media system 100 detects the type of guest device 140, 144, 150 and confirms it can access the guest device 140, 144, 150 utilizing the configuration parameters that may have been previously entered by a user (e.g., in FIG. 5). Examples of detecting device types include detecting whether the guest device 140, 144, 150 is a USB mass storage drives, a music player, a laptop, a mobile phone, an FTP directory, etc. Examples of confirming the accessibility includes detecting if the guest device 140, 144, 150 is acting as a master or slave, whether it needs and accepts authentication, the version of the device's operating system, etc. For example, the hotel media system 100 may be pre-configured by an administrator to automatically establish connections

with popular types of guest devices 140, 144, 150 that are likely to be brought to the hotel by guests.

Step 610: If the guest device 140, 144, 150 is supported and can be accessed by the hotel media system 100, control proceeds to step 614; otherwise, control proceeds to step 612.

Step 612: Because the guest device 140, 144, 150 cannot be accessed, an appropriate error message is provided. For example, if the type is unknown and no default access techniques succeed, this would mean the guest device 140, 144, 150 is not supported and cannot be accessed. In another case, if the device type is supported but refused to authenticate the hotel media system 100 with the user supplied username 506 / password 508, this would also mean the guest device 140, 144, 150 cannot be accessed. In these types of situations, the hotel media system 100 is unable to integrate content from the guest device 140, 144, 150 and displays an appropriate error message to the user such as on the television screen 104. Helpful information to correct the error may also be provided according to why the problem occurred. For example, that the username 506 / password 508 were not accepted, the location 504 timed out, etc.

Step 614: The hotel media system 100 now accesses the guest device 140, 144, 150 and catalogues guest content 142, 146, 152 it can detect on the guest device 140, 144, 150 to form a guest content list 116 including the guest content available on the guest device 140, 144, 150. This may involve recursing through the directory structure on the guest device 140, 144, 150 to detect and catalogue all supported and compatible media content files. Alternately, some guest devices such as media players like an IPod® or proprietary online storage systems may already provide an index of all content available on the device, and the hotel media system 100 may simply read this index to catalogue the guest content 142, 146, 152.

Step 616: The guest content 142, 146, 152 found on the guest device 140, 144, 150 during step 614 is checked for compatibility with the hotel media system 100. For example, the hotel media system may include a compatibility module 124 for determining which media assets of the guest content 142, 146, 152 are

compatible (and therefore usable/viewable) either before, during or after the cataloguing in step 614. The playback compatibility could be a combination of pre-determined lists/rules and on-the-fly playback testing. It's worthwhile noting that a particular media asset may not be compatible with a particular hotel media system 100 due to servers and devices within the hotel media system 100 other than a STB 106. For example, incompatibilities with internal devices such as a video server, network infrastructure, or even room-specific devices like the TV model. Playback compatibility may be important because incompatible guest content could prevent a guest from using or configuring a media asset to obtain expected results. In these situations, an error may be caused or unexpected behaviour encountered. For example setting a wakeup alarm to an unsupported audio/video type may prevent the wakeup alarm from operating as expected and may cause a guest to miss an important business meeting. Likewise, setting a screensaver to an unsupported graphic format may prevent the screensaver from operating as expected and may cause burn-in or other damage to the television 104. If incompatible guest content is found, control proceeds to step 618; otherwise, control proceeds to step 624.

Step 618: If the compatibility module 124 can fix the incompatibility, control proceeds to step 622; otherwise, control proceeds to step 620.

Step 620: If there is no conversion solution available, the media asset is considered incompatible and not catalogued for use by the hotel media system 100. Therefore, incompatible guest content is skipped and not included on the guest content list to thereby prevent the problems described in step 616.

Step 622: In many cases incompatibilities may be overcome by converting, transcoding, or simply playing the media asset in a different manner than its native format. For example playing a video at 720p rather than 1080p, or compressing a large JPEG photo so it will fit on the screen. Audio/video files may be converted to a format supported by playback modes of the in-room STB 106. Other format conversions may be applied according to the content playback requirements of the hotel media system 100.

Step 624: In order to support on-demand playback and not require the connection with the guest device to be maintained, the guest content 142, 146, 152 may be cached within a guest content cache 126 in the hotel media system 100. If implemented, this step may also be user configurable to allow the user control over caching of their private content. In one configuration, the hotel media system 100 would automatically cache all the available guest content 142, 146, 152. However, since this may involve huge amounts of data, in another configuration, the guest may manually choose particular media assets of the guest content 142, 146, 152 to cache. For example, if they are planning to use the hotel media system 100 to watch a particular movie that is stored on their mobile phone 140, they may only choose to cache that particular movie in the guest content cache 126. Then, at a later time when they are ready to watch the movie, they do not need to connect the mobile phone 140 because the movie is already cached by the hotel media system 100 and is ready for playback, bookmarking, sharing, etc. In this way, a guest may "load up" the hotel media system 100 with personal content for use during the guest's stay in the hotel. Additional fees may apply for the use of caching. Also, in other configurations, caching may be automatically performed to temporarily store media assets that were converted in step 622 to a format being compatible with the media system 100.

Step 626: Sharing options for the guest content 142, 146, 152 may be configured by the guest, by hotel staff, or automatically by the hotel media system 100. Different levels of sharing and authentication may be employed according to different configurations. In one configuration, by default, the hotel media system 100 only associates guest content 142, 146, 152 with the particular room 102 for which the guest device 140, 144, 150 is associated. This ensures that guest privacy is maintained because a guest's personal movies and other content will only be playable by equipment in the guest's own room. In another configuration, the hotel media system 100 may also allow the guest to mark all or any media asset of the guest content 142, 146, 150 stored on their device 140, 144, 150 as accessible in one or more rooms in the hotel. For

example, a family that has children staying in one room and parents staying in another may wish for family home movies stored on the father's mobile phone 140 to be accessible on the hotel media system 100 in both rooms. A sharing options UI 500 of the hotel media system 100 may allow content to be associated with other rooms with guest configurable sharing options 510 such as private (default), public, or only shared with specific room(s). Genres and other sharing settings may also be included to help guests browse the available content from the other guests or to automatically associate particular types of content with certain rooms. In another configuration, password(s) may be configured for all or any media asset of the guest content 142, 146, 150 and the password protected content will only be associated with and available in other rooms if the guest in the other room knows the password. Also, although the sharing options 510 illustrated in FIG. 5 are combined with the connection request UI 500, in other configurations, the sharing options 510 may be done in other UIs either before or after the content has been catalogued in step 614.

Step 628: The hotel media system 100 offers its regular UI control to the guest to operate the hotel's media system. The difference is that the total content available for the guest is expanded to include the guests own content 142, 146, 152. This means, when the guest wants to watch a movie or listen to music, the available choices on the hotel media system 100 will include both original hotel audio/video content 120 and the guest provided movie and audio content as is available on the guest's devices 140, 146, 152. It should be noted that the word "original" in this sense does not necessarily mean new or unique to that hotel. As shown in FIG. 4, the original hotel content 120 may include popular Hollywood movies 402. Also, if other guests had shared their content with this room, the original hotel content may also include guest content from other rooms and devices. Therefore, the media system 100 performs media functions according to both the guest content list 116 and a first content list formed by original hotel content list 114 and any other guest content that may already be shared with or available in this hotel room 102. In other words, the first content list includes all the content that is available before the guest

integrates their own guest content with the hotel media system 100. After integrating guest content 142, 146, 152, all the advanced features of the hotel media system 100 may utilize said guest content 142, 146, 152. For example, a screensaver on the TV could utilize an image stored on the guest's laptop 144, a room wake-up alarm could be configured to play a video or audio file stored on the guest's mobile phone 140, a movie could be played from the guest's offsite storage location 150, etc. In this way, all media related functions of the hotel media system 100 are integrated with the guest's own content 142, 146, 152 available on the guest's device. Additionally, if content sharing is enabled, some or all of the guest's content may also be made available to other guests in other rooms according to the sharing configuration as described in step 626.

Step 630: The hotel media system 100 continues to operate with access to the guest's device 140, 144, 150 until detecting a predetermined deletion event. In one embodiment, the predetermined deletion event may occur when a guest staying in a room 102 for which the guest device 140, 146, 150 is associated checks out. In this way, the guest's own content 142, 146, 152 will be integrated with the hotel media system 100 and available to the guest until the guest checks out of the hotel. In other configurations, the deletion event may be deemed to have occurred if the connection established in step 606 is broken such as would occur if the laptop computer 144 is removed from the Ethernet port 110, was shut off, or ran out of batteries. In other examples, the predetermined deletion event may occur when hotel staff disconnect or otherwise forbid the device, a predetermined time limit is reached, a predetermined amount of data is transferred to/from the guest device 140, 144, 150, a copyright violation is detected, etc. Combinations and permutations of the above conditions may also be utilized to define the predetermined deletion requirement. A timer may be available on a media system UI that indicates how much time until the predetermined deletion event occurs. Once the predetermined deletion event occurs, control proceeds step 632; otherwise, the

media system 100 continues to integrate the guest content 142, 146, 152 by returning to step 628.

Step 632: After the predetermined deletion event, in one configuration, the media system controller 112 removes from the guest content list 116 the guest content that is not longer available, deletes the same from the guest content cache 126, and performs media functions according to only the first content list (e.g., content that was available before the guest integrated their own content). For example, if the predetermined deletion event is defined as occurring when the guest checks out of the hotel, upon checkout, all the guest content 142, 146, 152 would be deleted from the guest content list 116 and removed from the guest content cache 126. Other rooms or users for which the content 142, 146, 152 may have been shared will also no longer be able to see or utilize the guest content 142, 146, 152 with the hotel media system 100. In another configuration, if the predetermined deletion event is defined as occurring when a guest device is disconnected from the hotel media system 100, upon disconnecting the laptop 144, guest content 146 would be deleted from the guest content list 116 and the cache 126; however, guest content 142, 152 available from the mobile phone 140 and offsite storage 150 would still be available on the guest content list 116 and included in the cache 126. In another configuration, for frequent travelers to a particular hotel, the predetermined deletion event may be defined as a predetermined amount of time since their last stay in the hotel. In this way, as long as the guest continues to frequently stay of the hotel, the guest's content will be maintained and available within the hotel. Additional fees for this content storage may apply. For privacy reasons, sharing may be disabled while the guest is not staying in the hotel (current guests will not be able to see or use the stored content); however, it may be maintained in the cache 126 and a personalized guest content list 116 to be ready for when the guest returns to the hotel.

Because the hotel media system 100 fully integrates the guest's own content 142, 146, 152 as available on one or more guest devices 140, 144, 150, all the advanced functions of the media system 100 can be configured to use the guest provided content 142, 146, 152. This is advantageous because the guest devices 140, 144, 150 may not support many of the features available on the hotel media system 100 such as wide screen playback and surround sound. Additionally, because the media system 100 may also integrate content from remote online storage devices 150, guests do not need to bring any portable electronic device with them as they travel. This could be advantageous to guests that are trying to travel light or are worried they may lose portable devices they bring or risk them being stolen. Content sharing options between different rooms and guests further enhance the guest experience.

In summary, a hospitality media system includes a first content list being available for use by a media function of the hospitality media system, and a connection port for establishing a connection with a guest device. A media system controller catalogues guest content available on the guest device to form a guest content list including the guest content, and performs the media function according to the guest content list and the first content list. Compatibility of the guest content may also be ensured and the guest content cached within the media system. Sharing of the guest content between different rooms or other users may be configured by the guest or automatically by the system. The guest device may be local within the hotel or at a remote location accessed via an external network. Upon guest check out or another condition, the guest content may be removed from the media system.

In the above description, the word "guest" actually means current guests in the hotel, people who are attending a conference or meeting in the hotel, staff members at the hotel, or any other person who may need or want to integrate content with a hotel media system. Future guests that have reservations, potential future guests that don't yet have reservations, and other users may also be given access to integrate their own content. For example, a demonstration of the technology may be available in the hotel lobby and all users would be able to integrate content from their own devices with the media system 100 and play the content on a television in the lobby to test out the system 100.

Although the invention has been described in connection with a preferred embodiment, it should be understood that various modifications, additions and alterations may be made to the invention by one skilled in the art without departing from the broadest interpretation of the appended claims consistent with the description as a whole. For example, although the description of the invention has been described as being utilized at a hotel, the present invention is equally applicable to any hospitality related location or service wishing to provide users with a media system including but not limited to hotels, motels, resorts, hospitals, apartment/townhouse complexes, restaurants, retirement centres, cruise ships, busses, airlines, shopping centres, passenger trains, etc. The various separate elements, features, and modules of the invention described above may be integrated or combined into single units. For example, the media system controller 112 and other related elements shown in FIG. 1 may be integrated within the STB 106, which itself may be integrated within the widescreen television 104. Similarly, functions of single units may be separated into multiple units. Unless otherwise specified, features described may be implemented in hardware or software according to different design requirements. Additionally, all combinations and permutations of the above described features and configurations may be utilized in conjunction with the invention.

The Embodiments of the Invention In Which an Exclusive Property or Privilege Is Claimed Are Defined As Follows:

1. A method of integrating content with a hospitality media system having media devices located in a plurality of rooms, each room having one or more in-room media devices located therein, a first content list including first content available for use by a media function of the hospitality media system, the method comprising:

performing the media function utilizing content selected from the first content list on the media devices;

allowing a user of a room to establish a connection between the hospitality media system and a guest device;

cataloguing guest content available on the guest device to thereby form a guest content list;

associating the guest content with one or more particular rooms at least including the user's room; and

performing the media function utilizing content further selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

2. The method of claim 1, wherein associating the guest content with the user's room comprises:

detecting from which room the connection between the hospitality media system and the guest device is established; and

automatically associating the guest content with the user's room being the detected room.

3. The method of claim 1, wherein associating the guest content with the user's room comprises:

receiving authentication or identification information from the guest device; and

automatically associating the guest content with the user's room determined according to the authentication or identification information.

4. The method of claim 1 or 3, further comprising:

displaying a passkey on a display device in the user's room; and

associating the guest content with the user's room when the user enters the passkey via an interface with the hospitality media system to thereby confirm the user is in the user's room.

5. The method of any one of claims 1 to 4, further comprising:

allowing the user to configure sharing options specifying one or more shared rooms of the hospitality media system in which the guest content is to be made available; and

automatically associating the guest content with the one or more shared rooms according to the sharing options.

6. The method of any one of claims 1 to 5, further comprising deleting the guest content list after detecting a predetermined deletion event.

7. The method of claim 6, further comprising caching the guest content within the hospitality media system until the predetermined deletion event.

8. The method of any one of claims 6 to 7, wherein the predetermined deletion event occurs when the user checks out of the user's room.

9. The method of any one of claims 1 to 8, further comprising utilizing a virtual connection through an external network that is not a part of the hospitality media system for establishing the connection with the guest device.

10. The method of claim 9, further comprising upgrading an available bandwidth for the guest device to communicate through the external network to support the virtual connection.

11. The method of any one of claims 1 to 10, further comprising:

checking the guest content for compatibility with a room-specific device of the hospitality media system; and

skipping incompatible guest content on the guest content list.

12. The method of any one of claims 1 to 10, further comprising:

converting incompatible guest content into compatible guest content supported by a playback mode of an in-room media device located in a particular room with which the guest content is associated.

13. The method of any one of claims 1 to 12, further comprising:

allowing the user to enter authentication information for the guest device; and

accessing the guest device according to the authentication information.

14. The method of any one of claims 1 to 13, further comprising:

allowing the user to establish connections between the hospitality media system and a plurality of guest devices;

cataloguing the guest content available on each of the guest devices to thereby form the guest content list.

15. The method of any one of claims 1 to 14, wherein the hospitality media system is for providing media functions in guest rooms of a hotel.

16. A hospitality media system comprising:

a media system controller;

a plurality of media devices located in a plurality of rooms and coupled to the media system controller, each room having one or more in-room media devices located therein;

a first content list including first content available for use by a media function of the hospitality media system; and

a connection port for allowing a user of a room to establish a connection between the media system controller and a guest device;

wherein the media system controller is coupled to the connection port and configured to:

perform the media function utilizing content selected from the first content list on the media devices;

catalogue guest content available on the guest device to thereby form a guest content list;

associate the guest content with one or more particular rooms at least including the user's room; and

perform the media function utilizing content further selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

17. The hospitality media system of claim 16, further comprising:

a room detector for detecting from which room the connection between the hospitality media system and the guest device is established;

wherein the media system controller is configured to automatically associate the guest content with the user's room being the detected room.

18. The hospitality media system of claim 16, wherein the media system controller is further configured to:

receive authentication or identification information from the guest device; and

automatically associate the guest content with the user's room determined according to the authentication or identification information.

19. The hospitality media system of claim 16 or 18, wherein the media system controller is further configured to:

display a passkey on a display device in the user's room; and

associate the guest content with the user's room when the user enters the passkey via an interface with the hospitality media system to thereby confirm the user is in the user's room.

20. The hospitality media system of any one of claims 16 to 19, further comprising:

a user interface for allowing the user to configure sharing options specifying one or more shared rooms of the hospitality media system in which the guest content is to be made available;

wherein the media system controller is further configured to automatically associate the guest content with the one or more shared rooms according to the sharing options.

21. The hospitality media system of any one of claims 16 to 20, wherein the media system controller is further configured to delete the guest content list after detecting a predetermined deletion event.

22. The hospitality media system of claim 21, wherein the media system controller is further configured to cache the guest content within the hospitality media system until the predetermined deletion event.

23. The hospitality media system of any one of claims 21 to 22, wherein the predetermined deletion event occurs when the user checks out of the user's room.

24. The hospitality media system of any one of claims 16 to 23, being coupled to an external network, wherein the media system controller is further configured to utilize a virtual connection through the external network for establishing the connection with the guest device.

25. The hospitality media system of claim 24, wherein the media system controller is further configured to upgrade an available bandwidth for the guest device to communicate through the external network to support the virtual connection.

26. The hospitality media system of any one of claims 16 to 25, wherein the media system controller is further configured to:

check the guest content for compatibility with a room-specific device of the hospitality media system; and

skip incompatible guest content on the guest content list.

27. The hospitality media system of any one of claims 16 to 25, wherein the media system controller is further configured to convert incompatible guest content into compatible guest content supported by a playback mode of an in-room media device located in a particular room with which the guest content is associated.

28. The hospitality media system of any one of claims 16 to 27, wherein the media system controller is further configured to:

allow the user to enter authentication information for the guest device; and

access the guest device according to the authentication information.

29. The hospitality media system of any one of claims 16 to 28, further comprising:

multiple connection ports for allowing the user to establish connections between the hospitality media system and a plurality of guest devices;

wherein the media system controller is further configured to catalogue the guest content available on each of the guest devices to thereby form the guest content list.

30. The hospitality media system of any one of claims 16 to 29, being utilized to provide media functions in guest rooms of a hotel.

31. A hospitality media system comprising:

a plurality of media devices located in a plurality of rooms, each room having one or more in-room media devices located therein;

means for cataloguing guest content available on a guest device to thereby form a guest content list, a connection with the guest device being established by a user of a room;

means for associating the guest content with one or more particular rooms at least including the user's room; and

means for performing a media function utilizing content selected from a first content list on the media devices, the first content list including first content available for use by the media function of the hospitality media system, and for performing the media function utilizing content further selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

32. A method of integrating content with a hospitality media system having media devices located in a plurality of rooms, each room having one or more in-room media devices located therein, the method comprising:

allowing a user of a room to establish a connection between the hospitality media system and a guest device;

cataloguing guest content available on the guest device to thereby form a guest content list;

associating the guest content with one or more particular rooms at least including the user's room; and

performing a media function utilizing content selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

33. A hospitality media system comprising:

a media system controller;

a plurality of media devices located in a plurality of rooms and coupled to the media system controller, each room having one or more in-room media devices located therein; and

a connection port for allowing a user of a room to establish a connection between the media system controller and a guest device;

wherein the media system controller is coupled to the connection port and configured to:

catalogue guest content available on the guest device to thereby form a guest content list;

associate the guest content with one or more particular rooms at least including the user's room; and

perform a media function utilizing content selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

34. A hospitality media system comprising:

a plurality of media devices located in a plurality of rooms, each room having one or more in-room media devices located therein;

means for cataloguing guest content available on a guest device to thereby form a guest content list, a connection with the guest device being established by a user of a room;

means for associating the guest content with one or more particular rooms at least including the user's room; and

means for performing a media function utilizing content selected from the guest content list only on the in-room media devices located within the one or more particular rooms with which the guest content is associated.

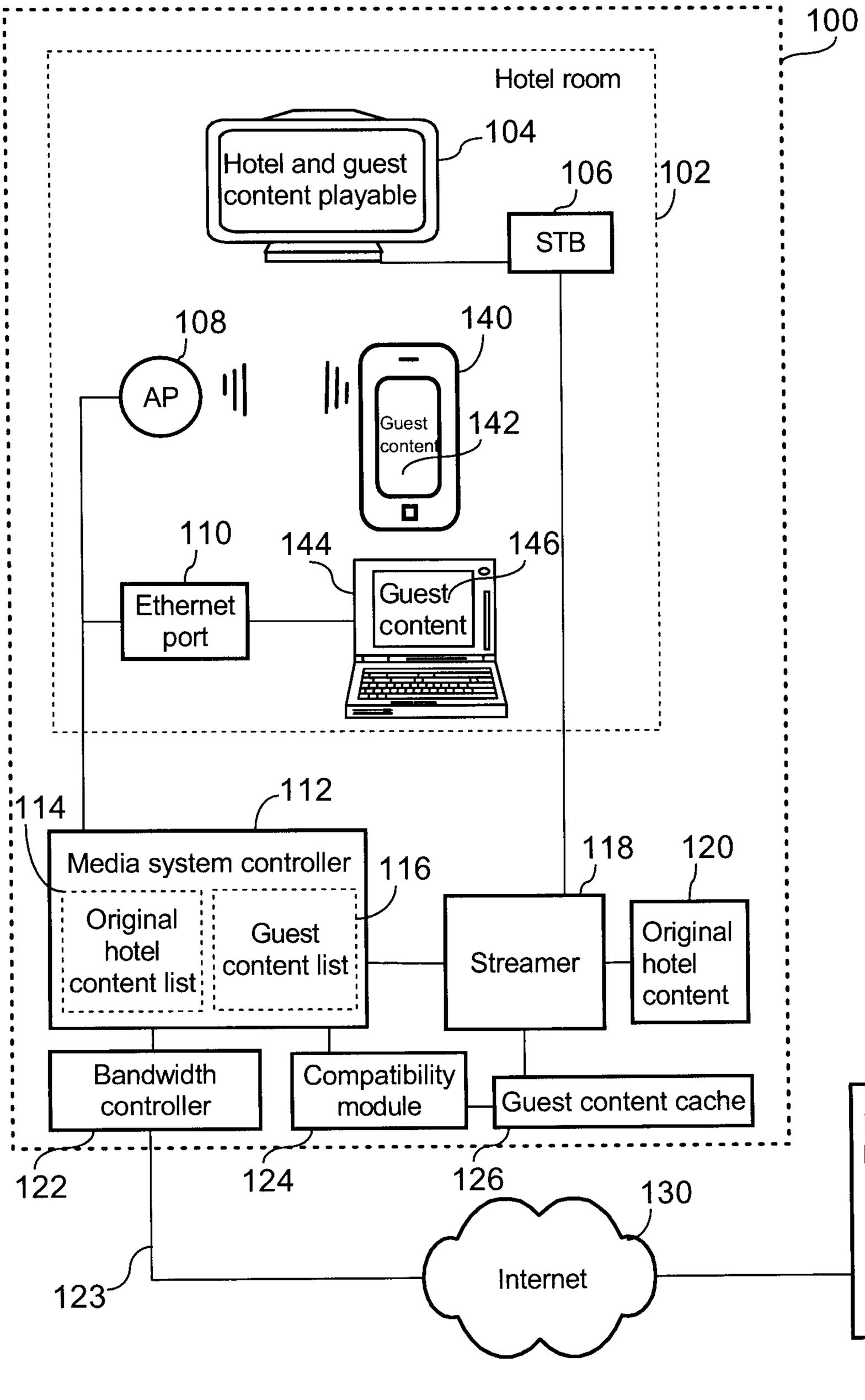

100
Hotel room
104
Hotel and guest content playable
106
102
STB
108
AP
140
Guest content
142
110
144
146
Ethernet port
Guest content
112
114
Media system controller
116
Original hotel content list
Guest content list
118
120
Streamer
Original hotel content
Bandwidth controller
Compatibility module
Guest content cache
150
Remote storage location
Guest content
152
122
124
126
130
123
Internet

FIG. 1

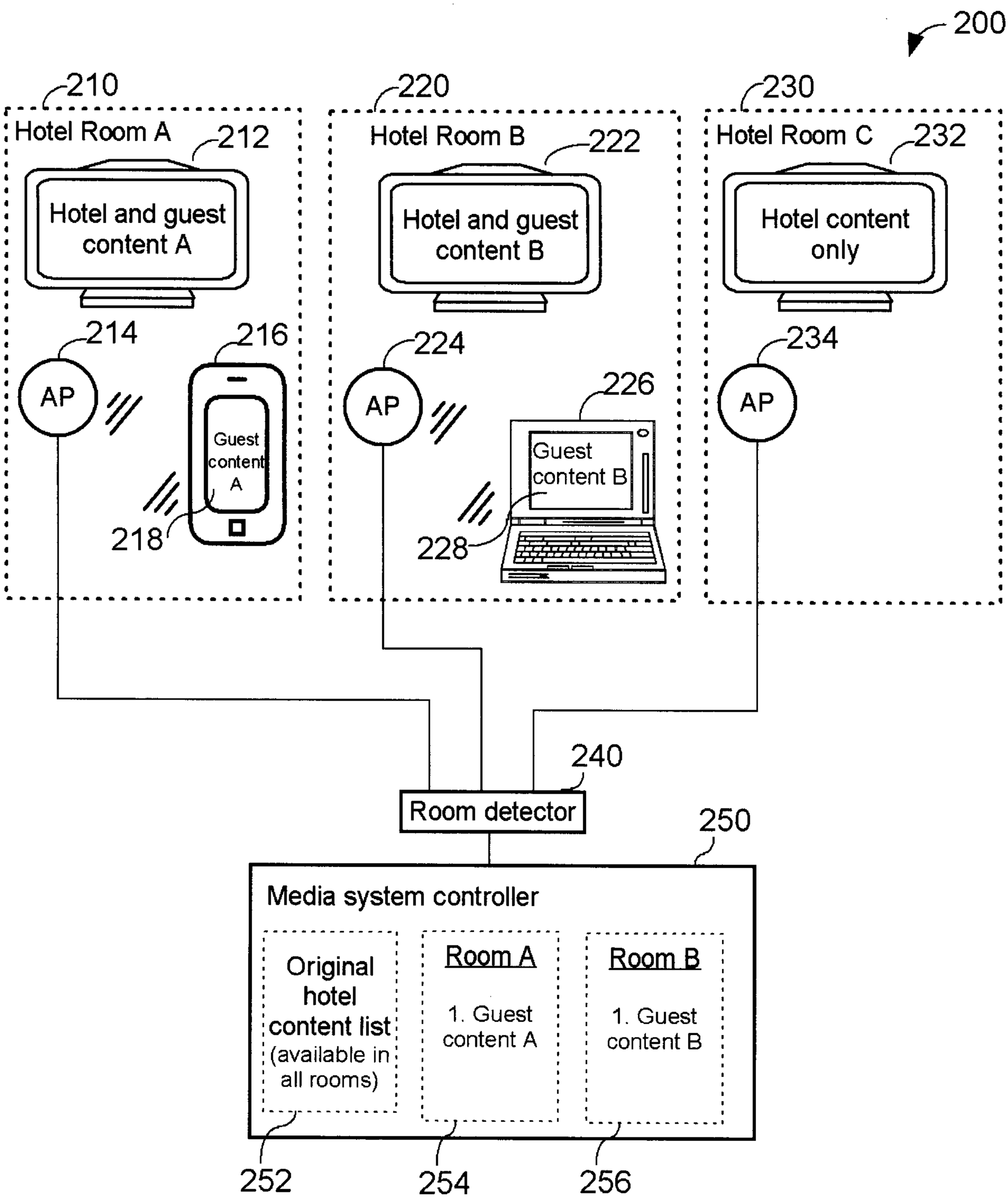

200
210
Hotel Room A
212
Hotel and guest content A
214
AP
216
Guest content A
218
220
Hotel Room B
222
Hotel and guest content B
224
AP
226
Guest content B
228
230
Hotel Room C
232
Hotel content only
234
AP
240
Room detector
250
Media system controller
Original hotel content list (available in all rooms)
Room A
1. Guest content A
Room B
1. Guest content B
252
254
256

FIG. 2

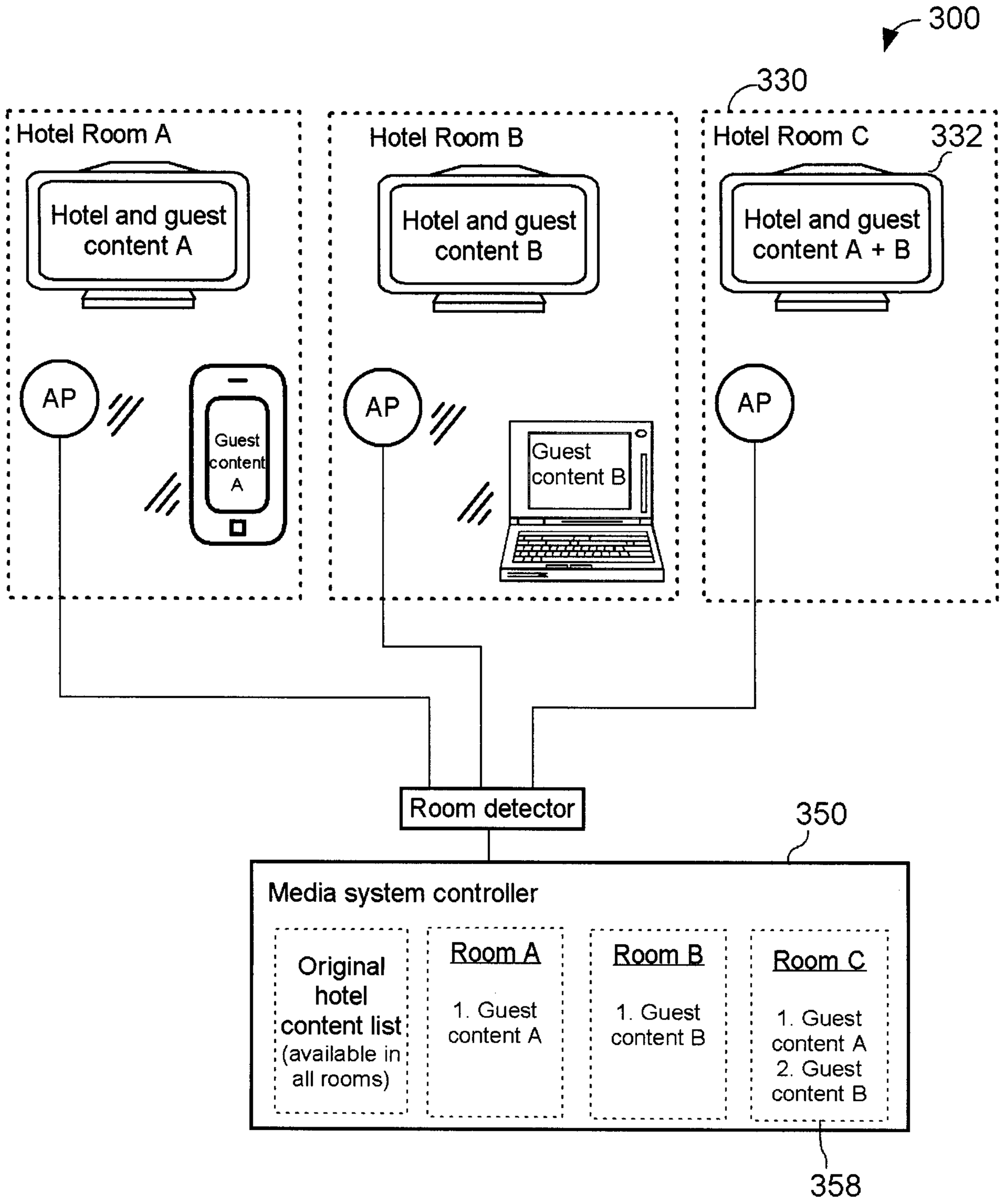

300
330
Hotel Room A
Hotel and guest content A
AP
Guest content A
Hotel Room B
Hotel and guest content B
AP
Guest content B
Hotel Room C
332
Hotel and guest content A + B
AP
Room detector
350
Media system controller
Original hotel content list (available in all rooms)
Room A
1. Guest content A
Room B
1. Guest content B
Room C
1. Guest content A
2. Guest content B
358

FIG. 3

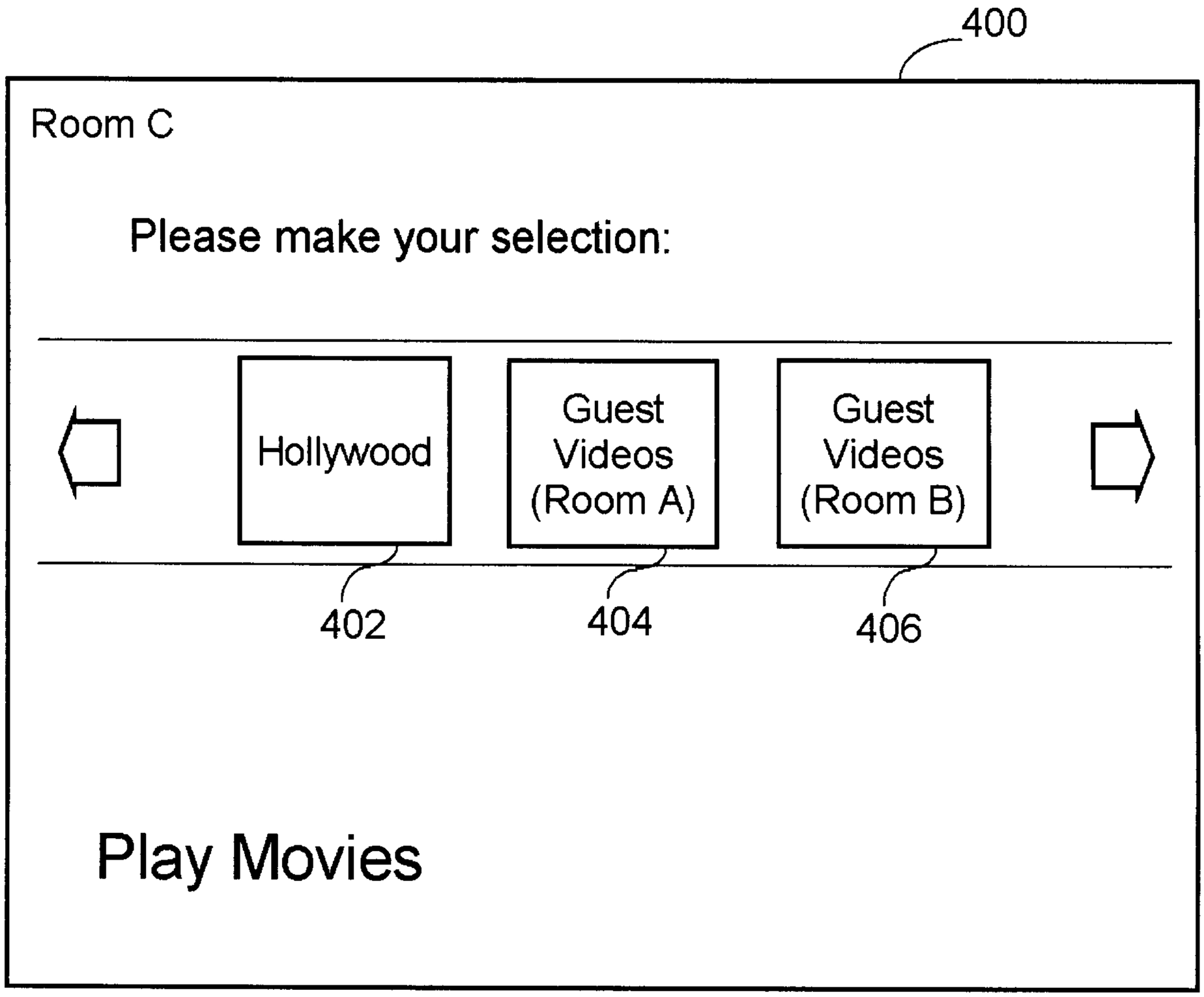

400
Room C
Please make your selection:
Hollywood
Guest Videos (Room A)
Guest Videos (Room B)
402
404
406
Play Movies

FIG. 4

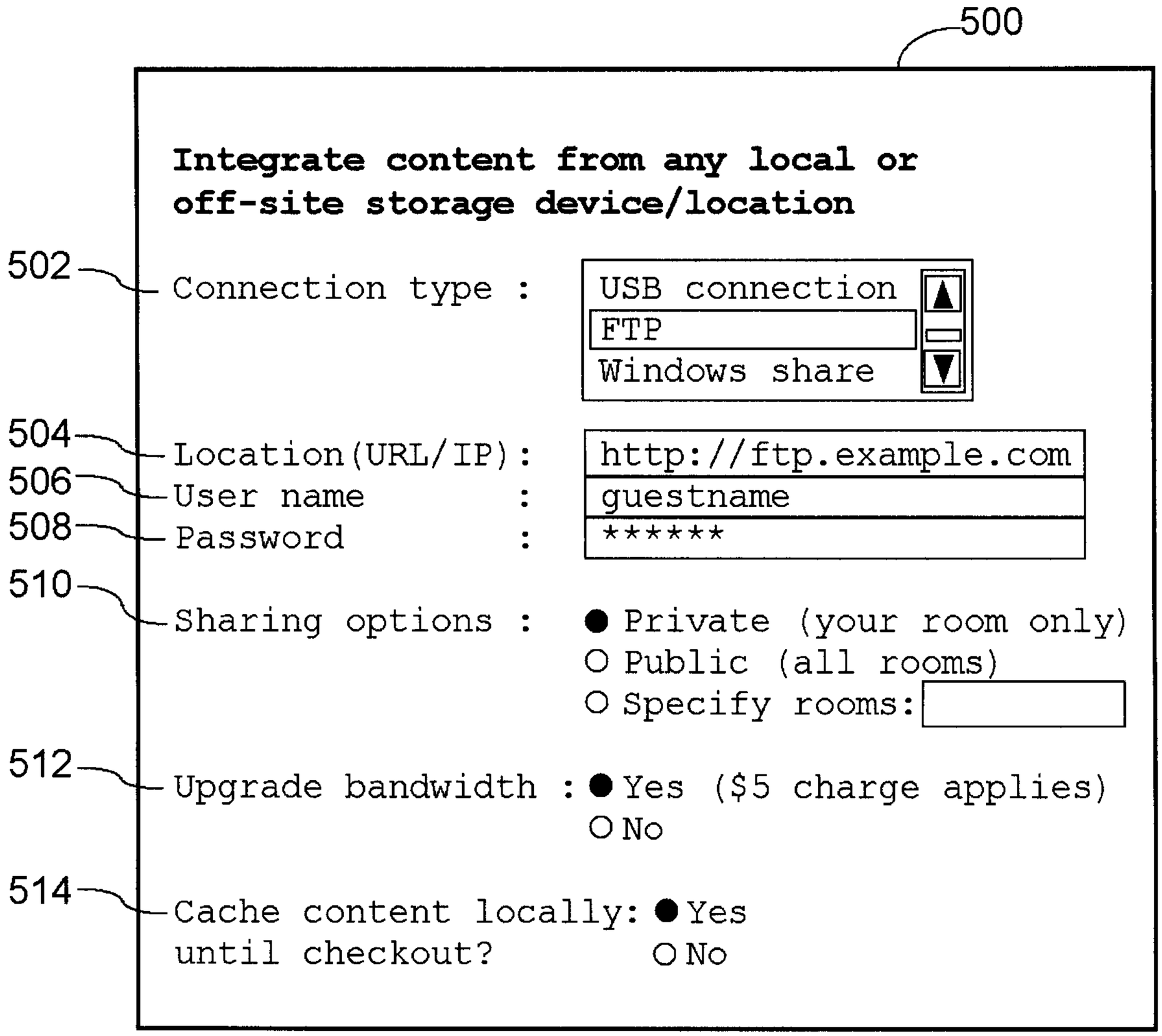

500
Integrate content from any local or off-site storage device/location
502
Connection type :
USB connection
FTP
Windows share
504
Location(URL/IP):
http://ftp.example.com
506
User name :
guestname
508
Password :
******
510
Sharing options :
● Private (your room only)
○ Public (all rooms)
○ Specify rooms:
512
Upgrade bandwidth :
● Yes ($5 charge applies)
○ No
514
Cache content locally:
until checkout?
● Yes
○ No

FIG. 5

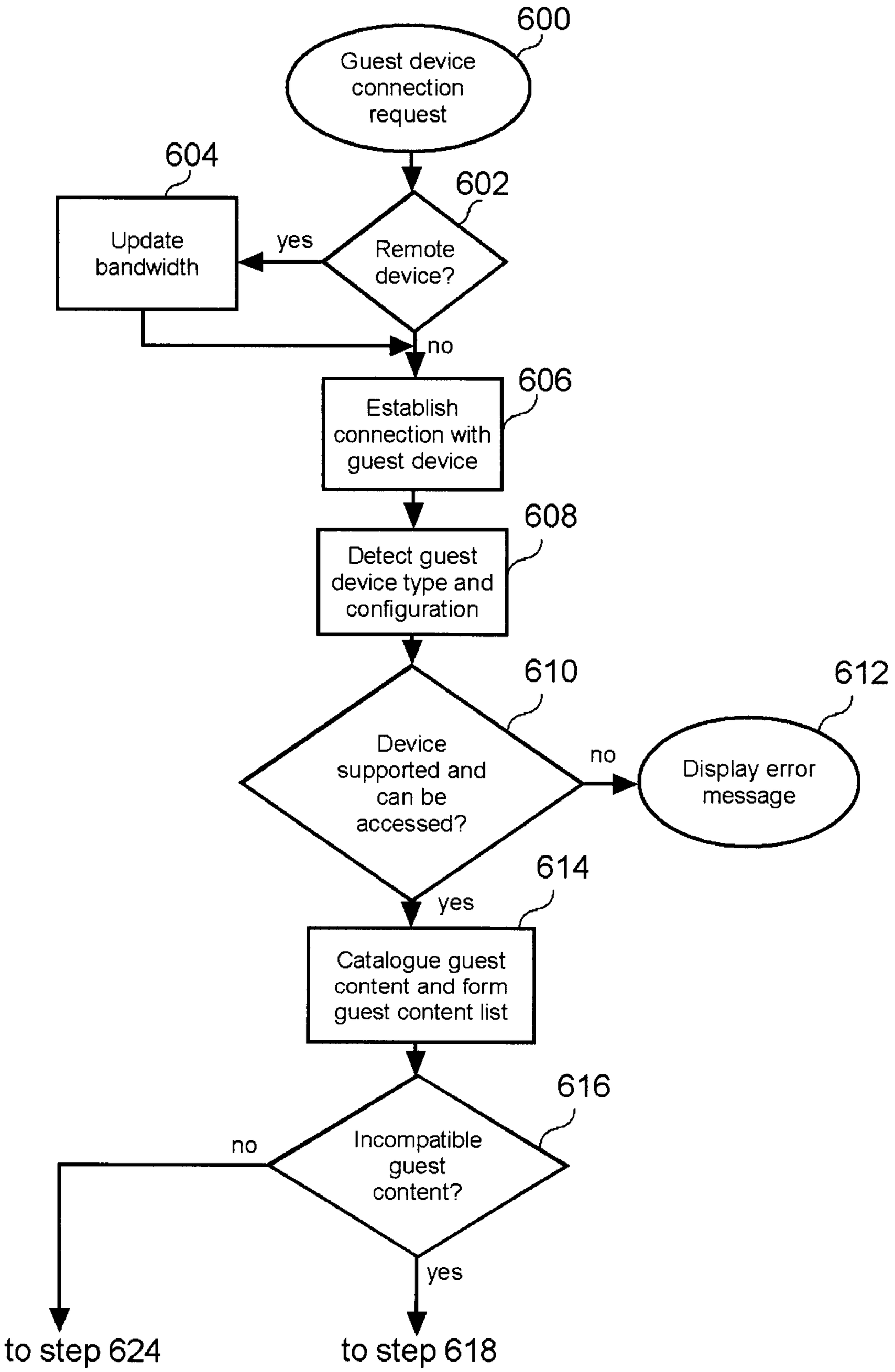

600
Guest device connection request
604
602
Update bandwidth
yes
Remote device?
no
606
Establish connection with guest device
608
Detect guest device type and configuration
610
612
Device supported and can be accessed?
no
Display error message
614
yes
Catalogue guest content and form guest content list
616
no
Incompatible guest content?
yes
to step 624
to step 618

FIG. 6

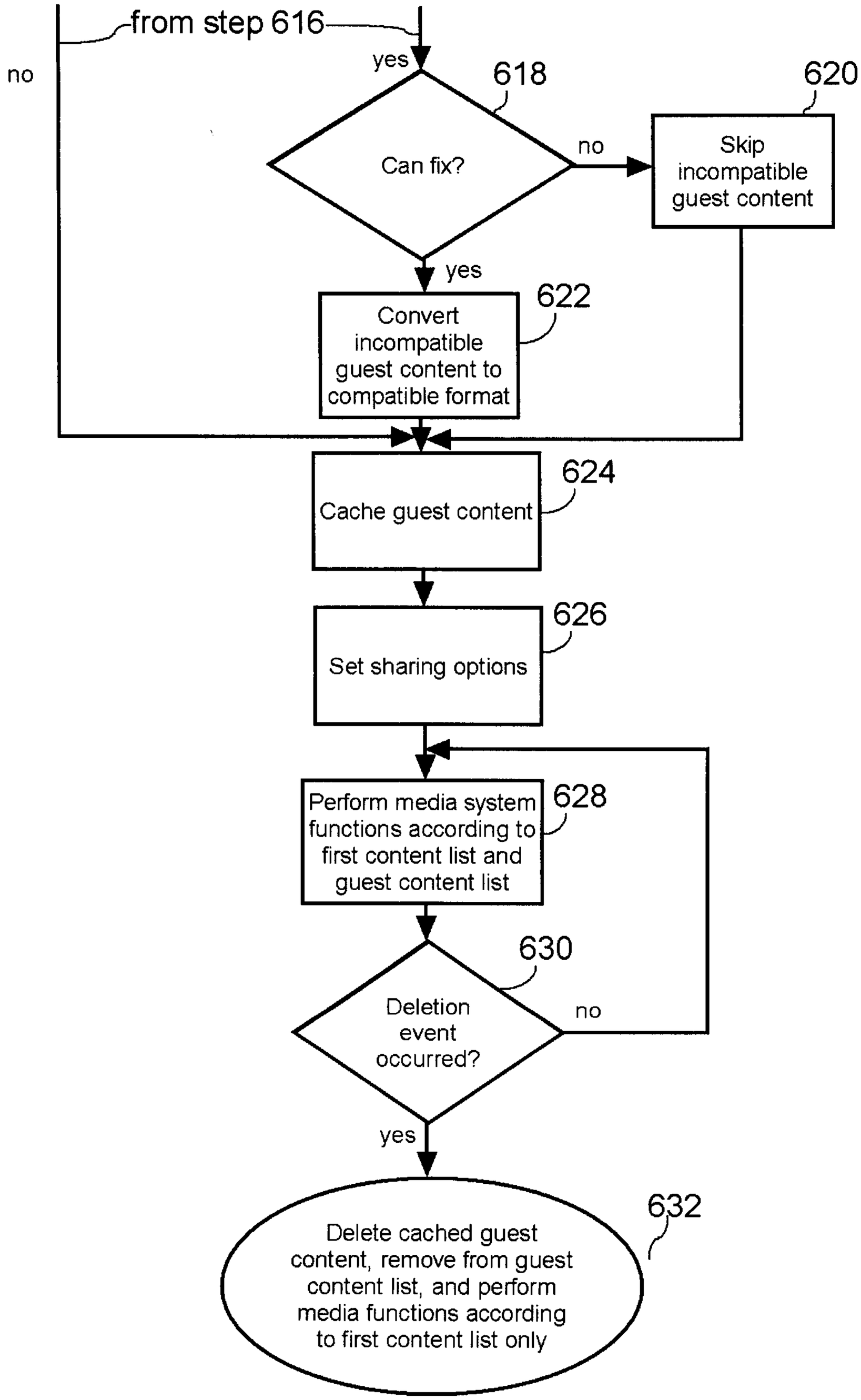
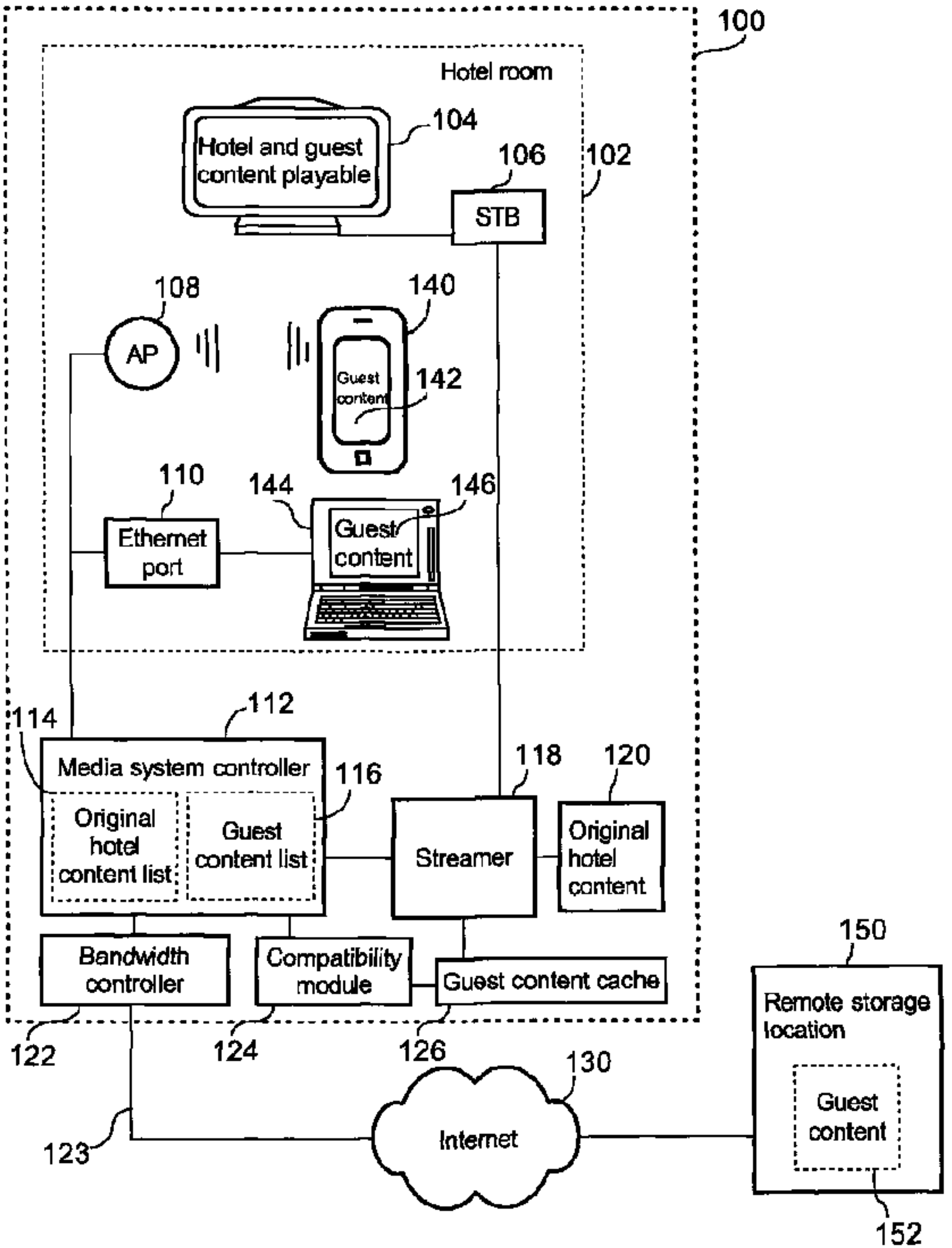

from step 616
no
yes
618
Can fix?
no
620
Skip incompatible guest content
yes
622
Convert incompatible guest content to compatible format
624
Cache guest content
626
Set sharing options
628
Perform media system functions according to first content list and guest content list
630
Deletion event occurred?
no
yes
632
Delete cached guest content, remove from guest content list, and perform media functions according to first content list only

FIG. 7


100
Hotel room
104
Hotel and guest content playable
106
102
STB
108
140
AP
Guest content
142
110
144
146
Ethernet port
Guest content
112
114
Media system controller
116
118
120
Original hotel content list
Guest content list
Streamer
Original hotel content
150
Bandwidth controller
Compatibility module
Guest content cache
Remote storage location
122
124
126
130
Guest content
Internet
123
152