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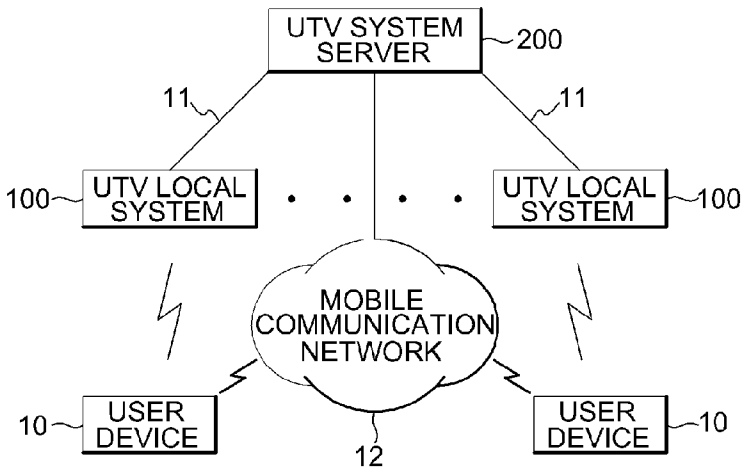
(54) **Title:** METHOD AND SYSTEM FOR PROVIDING INFORMATION ON LARGE DISPLAYING DEVICE

[Fig. 1]



(57) **Abstract:** The present invention relates to a method and system for providing information on a large-size screen. The system includes one or more local systems (100) separately installed at specific places and configured to display screen information of a user device (10) on image output device units (122), each having a large-size screen. A system server (120) is configured to generate search results in consideration of location information of the user device in response to a search request, and provide the search results. Each of the local systems performs authentication of an application installed in the user device through recognition of the application, provides the search request received from the user device to the system server, and displays the search results, received in response to the search request, on the large-size screen of the image output device unit.

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Description

METHOD AND SYSTEM FOR PROVIDING INFORMATION ON LARGE DISPLAYING DEVICE

Technical Field

[1] The present invention relates, in general, to a method and system for providing information on a large-size screen, and, more particularly, to a method and system for providing information on a large-size screen, in which local systems, separately installed at specific public places, are occupied, and control signals required to search for information or play games are generated through a user device, thus enabling the screen information of the user device to be displayed on an image output device unit, provided in each of the local systems, in a synchronization-based associative manner.

[2] The present invention provides optimal search results, in which the location information of a user device is taken into consideration, at the time of searching for information, and enables a control command from the user device to be reflected on the large-size screen of an image output device unit, thus overcoming limitations in the screen display of the user device, and enabling the large-size screen and the small-size screen of the user device to display the same content, or to display intended content as per the user's selection or control.

Background Art

[3] As well known to those skilled in the art, information searches are typically performed by accessing a portal site (Naver, Yahoo, Google, etc.) over the Internet using a Personal Computer (PC), entering a keyword into a search box provided on the portal site, searching for information matching the keyword, and receiving related search results as part of the results of the search.

[4] Further, games are typically played by executing a stored game program using a PC, or by accessing a game site, downloading a specific game, and executing the downloaded game.

[5] The reason for searching for information or playing games using a PC is that a screen required for information search and game play must always be provided. There are many restrictions in searching for information and playing games on a small-size screen, and there are many inconveniences when users use the small-size screen.

[6] Further, since a PC is installed at a fixed and specific place, the carrying of the PC is impossible, and the PC has spatial restrictions. In order to solve these problems, a notebook computer enabling wireless Internet can be used. However, even in this case, the place at which the wireless Internet is usable is limited, and the notebook computer has considerable weight and volume, thus entailing great inconvenience in carrying the

notebook computer.

[7] Meanwhile, a mobile terminal (a mobile phone, a cellular phone, a Personal Digital Assistant (PDA), etc.), which secures portability and mobility, can be used as a substitute device for information searching and game playing. When information search is performed using such a mobile terminal, the amount of information obtained by the search and displayed on the screen, is limited because the size of the screen provided by the mobile terminal is small, thus making it difficult for a user to sufficiently search for information to a desired degree in actual situations.

[8] Further, in the case of games, there are several problems in that, since the size of the screen provided by a mobile terminal is small, only a limited number of games may be executed, and in that, since a user must play games provided through such a small-size screen, the user must endure inconvenience caused by the small-size screen, and in that, since the user must concentrate and view the game displayed on the small-size screen, the user may easily feel fatigue.

[9] Therefore, the development of a system, in which portability and mobility are secured and the user can conveniently perform information searches and play games on a large-size screen, rather than a small-size screen, is required.

[10]

Disclosure of Invention

Technical Problem

[11] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide a method and system for providing information on a large-size screen, in which an image output device unit, having a large-size screen, provided in a local system can display the screen information of a user device on the large-size screen in a synchronization-based associative manner in response to a control signal output from the user device, thus overcoming the limitations of the screen display of the user device.

[12] Another object of the present invention is to provide a method and system for providing information on a large-size screen, which perform information searches in consideration of the location information of a user device, thus enabling optimal search results to be provided to a user through the large-size screen of an image output device unit.

[13] A further object of the present invention is to provide a method and system for providing information on a large-size screen, which allow one or more users to execute and play a game through an image output device unit having a large-size screen after the users secure local systems, thus increasing the users' convenience.

Technical Solution

[14] In order to accomplish the above objects, a first invention provides a system for providing information on a large-size screen, comprising one or more local systems separately installed at specific places and configured to display screen information of a user device on image output device units, each having a large-size screen; and a system server configured to generate search results in consideration of location information of the user device in response to a search request, and provide the search results, wherein each of the local systems performs authentication of an application installed in the user device through recognition of the application, provides the search request received from the user device to the system server, and displays the search results, received in response to the search request, on the large-size screen of the image output device unit.

[15] In order to accomplish the above objects, a second invention provides a system for providing information on a large-size screen, comprising a plurality of local systems separately installed at specific places, and configured to display game screen information of a user device on image output device units, each having a large-size screen; and a system server configured to manage a right to use the plurality of local systems and schedule information of the local systems, wherein each of the local systems performs authentication of an application installed in the user device through recognition of the application, inquires of the system server about schedule information in response to a request for a right of use received from the user device, obtains approval for the request for the right of use, and provides game screen information, displayed on the user device, on a large-size screen of a relevant image output device unit.

[16] In order to accomplish the above objects, a third invention provides a method of providing information on a large-size screen, comprising the steps of at least one local system recognizing an application installed in a user device and authenticating the application; assigning screen control authority to the user device, the application of which is authenticated; and when a search request event originates from the user device, which has acquired the screen control authority, the local system displaying search results, generated in consideration of location information of the user device, on a large-size screen of an image output device unit of the local system.

[17] In order to accomplish the above objects, a fourth invention provides a method of providing information on a large-size screen, comprising at least one local system recognizing an application installed in a user device and authenticating the application; when a use right request event originates from the user device, the application of which is authenticated, the local system inquiring of a system server about schedule information, and obtaining approval for the request for the right of use; the local system assigning screen control authority to the user device, which has obtained approval for the request for the right of use; and when a game execution event originates from the

user device, which has obtained the screen control authority, the local system displaying game information, executed in the user device, on the large-size screen of the image output device unit in a synchronization-based associative manner.

[18]

Advantageous Effects

[19] The method and system for providing information on a large-size screen according to the present invention are advantageous in that a user occupies local systems separately installed at specific public places, and can perform information search and game play through the large-size screen of the image output device unit of each local system by manipulating a user device in the state in which the small-size screen provided by the user device and the large-size screen of the image output device unit provided by the local system are operated in a synchronization-based associative manner, thus not only overcoming the limitations of display of the small-size screen of the user device, but also enabling optimal information search results to be provided in consideration of the location information of the user device.

[20] Further, the present invention is advantageous in that a control command from a user device is reflected on the large-size screen of an image output device unit in a synchronization-based associative manner, and the user's convenience can be increased through the provision of the large-size screen.

Brief Description of the Drawings

[21] Fig. 1 is a system configuration diagram showing a system for providing information on a large-size screen according to a first embodiment of the present invention;

[22] Fig. 2 is a functional block diagram showing a local system applied to the large-size screen information provision system of Fig. 1;

[23] Fig. 3 is a functional block diagram showing a system server applied to the large-size screen information provision system of Fig. 1;

[24] Fig. 4 is a reference diagram showing a process for providing information according to a first embodiment of the present invention;

[25] Fig. 5 is a system configuration diagram showing a system for providing information on a large-size screen according to a second embodiment of the present invention;

[26] Fig. 6 is a functional block diagram showing a local system applied to the large-size screen information provision system of Fig. 5;

[27] Fig. 7 is a functional block diagram showing a system server applied to the large-size screen information provision system of Fig. 5;

[28] Fig. 8 is a flowchart showing a method of providing information on a large-size screen according to a third embodiment of the present invention;

[29] Fig. 9 is a flowchart showing the detailed steps of an application authentication step

in the large-size screen information provision method of Fig. 8;

[30] Fig. 10 is a flowchart showing the detailed steps of a display step in the large-size screen information provision method of Fig. 8;

[31] Fig. 11 is a flowchart showing a method of providing information on a large-size screen according to a fourth embodiment of the present invention;

[32] Fig. 12 is a flowchart showing the detailed steps of an application authentication step in the large-size screen information provision method of Fig. 11;

[33] Fig. 13 is a flowchart showing the detailed steps of a use right approval step in the large-size screen information provision method of Fig. 11; and

[34] Fig. 14 is a flowchart showing the detailed steps of a display step in the large-size screen information provision method of Fig. 11.

[35] <Description of reference numerals of principal elements in the drawings>

[36] 100: local system 110: communication means

[37] 111: communication interface unit 12: wireless communication unit

[38] 113: GPS module 120: media output means

[39] 121: image screen matching unit 122: image output device unit

[40] 123: audio output device unit 130: control processing means

[41] 131: storage unit 132: user device recognition processing unit

[42] 133: control unit 200: system server

[43] 201: communication interface unit 202: communication network interface unit

[44] 203: database (DB) 204: search engine

[45] 205: control unit 300: local system

[46] 310: communication means 311: communication interface unit

[47] 312: wireless communication unit 313: GPS module

[48] 320: media output means 321: image screen matching unit

[49] 322: image output device unit 323: audio output device unit

[50] 330: control processing means 331: storage unit

[51] 332: user device recognition processing unit 333: control unit

[52] 400: system server 401: communication interface unit

[53] 402: communication network interface unit 403: database (DB)

[54] 404: control unit

Best Mode for Carrying Out the Invention

[55] Hereinafter, embodiments of the present invention will be described in detail with reference to the attached drawings. First, it should be noted that, in the assignment of reference numerals, the same reference numerals are used throughout the different drawings to designate the same or similar components as far as possible. Furthermore, in the description of the present invention, if detailed descriptions of related well-

known constructions or functions are determined to make the gist of the present invention unclear, the detailed descriptions will be omitted.

[56] First, terms used in the present invention are defined below. A media system in the present invention refers to a media system for providing a service which allows the screen information of a user to be displayed on the large-size screen of an image output device unit of a local system installed at a specific place in a synchronization-based associative manner when the user searches for information or plays games. The media system is operated in conjunction with various communication networks, such as a mobile communication network, an ultra-high speed communication network, the Internet, and wired/wireless networks.

[57] Fig. 1 is a system configuration diagram showing a system for providing information on a large-size screen according to a first embodiment of the present invention, Fig. 2 is a functional block diagram showing a local system applied to the large-size screen information provision system of Fig. 1, and Fig. 3 is a functional block diagram showing a system server applied to the large-size screen information provision system of Fig. 1.

[58] The system for providing information on a large-size screen according to a first embodiment of the present invention includes a plurality of local systems 100 and a system server 200. Further, the local systems 100 and the system server 200 are connected to each other through networks 11, and a mobile communication network 12, provided by a mobile communication service provider, is connected to the system server 200. Further, although not shown in detail, the system server 200 may be connected to the Internet. Here, the networks 11 may include various communication networks, for example, data networks, such as a wireless network, the Internet, or a dedicated line. The mobile communication network 12 may include both wired and wireless communication networks such as a KT WiBro network.

[59] The local systems 100 are separately installed at specific public places. As shown in Fig. 2, each of the local systems 100 includes an image output device unit 122 having a large-size screen. Here, the image output device unit 122 may be implemented using various types of displays, such as a screen, a transparent or translucent screen, a PDP, an LCD, an LED, a CRT, an organic EL, a TFT-LCD and a next-generation paper display (electronic paper). When the image output device unit 122 is formed of a screen, the image output device unit 122 may have the construction of a beam projector. That is, it should be appreciated that the image output device unit 122 includes both a method of acquiring and reflecting image information through projection and a method of acquiring and displaying the image information of digital signals.

[60] Each of the local systems 100 displays the screen information of a user device 10 on

the large-size screen of the image output device unit 122 in a synchronization-based associative manner.

[61] Further, the local system 100 performs authentication of an application installed in the user device 10 through recognition of the application, provides an information search request, received from the user device 10, to the system server 200, and displays information search results, received from the system server 200 in response to the information search request, on the large-size screen of the image output device unit 122.

[62] As shown in Fig. 2, the local system 100 includes a communication means 110, a media output means 120, and a control processing means 130. The communication means 110 includes one or more of a communication interface unit 111 for performing interface matching and data communication with the system server 200, a wireless communication unit 112 for performing short-range wireless communication with the user device 10, and a GPS module 113 for receiving the global standard time of a Global Positioning System (GPS) for time synchronization.

[63] Here, the wireless communication unit 112 may be implemented using one of a Bluetooth module, an Infrared Data association (IrDA) module and a Radio Frequency (RF) communication module, and it should be appreciated that, in addition to the above-described modules, all modules enabling wireless communication over a short range are included in the wireless communication unit 112.

[64] The media output means 120 includes one or more of an image screen matching unit 121 for performing image matching so that the screen information of the small-size screen of the user device 10 conforms with that of the large-size screen of the image output device unit 122, an image output device unit 122 for displaying the screen information of the user device 10, which has been processed for the large-size screen by the image screen matching unit 121, and an audio output device unit 123 for outputting audio information matching the screen information displayed on the image output device unit 122.

[65] In this case, the image screen matching unit 121 performs matching of processing the screen information characteristics of the small-size screen of the user device 10, such as the size, illuminance and resolution of the screen, so that the screen information characteristics are suitable for the large-size screen of the image output device unit 122. Further, the image screen matching unit 121 performs matching of processing the size, illuminance and resolution of the large-size screen so that they are suitable for the display standards of the user device 10 when screen information displayed on the large-size screen of the image output device unit 122 is provided to the user device 10.

[66] The control processing means 130 includes one or more of a storage unit 131 for storing a program operating in conjunction with applications, a user device recognition processing unit 132 for recognizing an application installed in the user device 10 and

authenticating the application, and a control unit 133 for performing control processing of assigning to the user device 10 screen control authority, acquired via the authentication by the user device recognition processing unit 132, and performing a control processing operation in response to a screen control command received from the user device 10.

[67] The user device 10 may be implemented as one of various wireless terminals, and is provided with an application installed therein and required for a specific function.

[68] The wireless terminals may include a Personal Digital Assistant (PDA), a mobile terminal, a portable phone, a mobile phone, a camera phone, a cellular phone, a Trunked Radio System (TRS) phone, a Personal Communication Service (PCS) phone, a Global System for Mobile (GSM) phone, a Wideband-CDMA (W-CDMA) phone, a CDMA-2000 phone, a Mobile Broadband System (MBS) phone, a Digital Multimedia Broadcasting (DMB) phone, a video terminal, a satellite terminal, a WiBro terminal, a communication-enabled mobile PC, a communication-enabled portable computer, a communication-enabled navigator, etc. The MBS phone refers to a mobile phone that will be used in the fourth generation system that is currently under discussion.

[69] The application acquires screen control authority through the authentication with the local system 100, and allows the image output device unit 122 having the large-size screen to perform browsing in a synchronization-based associative manner as the user device 10 performs browsing.

[70] That is, the application has the function of performing recognition with the local system 100 and the function of allowing a control command from the user device 10 to be reflected on the local system 100 in a synchronization-based associative manner, at the time of acquiring the screen control authority, thus allowing content displayed on the small-size screen of the user device 10 to conform with that displayed on the large-size screen of the image output device unit 122 provided in the local system 100.

[71] Further, the user device 10, with which the image output device unit 122 is synchronized, may implement synchronization through either one of full synchronization in which content displayed on the small-size screen of the user device and content displayed on the large-size screen of the image output device unit 122 completely conform with each other, and half synchronization in which part of the screen of the user device 10 is used as a control interface screen.

[72] The system server 200 implements time synchronization with the plurality of local systems 100 connected thereto over the network 11 on the basis of the global standard time of a GPS, and generates and provides search results in consideration of the location information of the user device 10 in response to a search request.

[73] For example, when a user searches for information about a beerhouse named 'Rebis', the locations and information of beerhouses 'Rebis' distributed in various areas can be

found as the results of search. At this time, since the user desires information about the beerhouse 'Rebis' closest to the location of the user, the system server 200 provides information search results optimized in consideration of the location information of the user device 10.

[74] Meanwhile, the system server 200 uses the location information of the user device 10 as a search precondition so as to provide optimized search results, but it is possible to apply, add or vary a search precondition according to the type of information search.

[75] Here, the location information may be either one of information about the location of the user device, provided by a mobile communication service provider (SKT, LGT, KTF, etc.) through the mobile communication network 12, and information about the location at which the local system 100 is installed.

[76] Further, time synchronization can be implemented using a method of performing synchronization in such a way that the system sever 200 sends the global standard time received through a GPS to the plurality of local systems 100, a method of performing synchronization in such a way as to send the standard time of the system server 200 to the plurality of local systems 100, and a method of performing synchronization in such a way that the plurality of local systems 100 performs synchronization using the global standard time received through the GPS.

[77] As shown in Fig. 3, the system server 200 includes one or more of a communication interface unit 201, a communication network interface unit 202, a database 203, a search engine 204, and a control unit 205. The communication interface unit 201 performs interface matching and data communication with the plurality of local systems 100. The communication network interface unit 202 is connected to a mobile communication network 12, provided by a mobile communication service provider, or a communication network provided by a communication service provider (KT WiBro). The database 203 stores various types of data to be provided in response to a search request received from the user device 10.

[78] Further, the database 203 may store local map information, member information, information about the location at which the local systems are installed, and schedule information of the respective local systems.

[79] The search engine 204 generates search results, in which the location information of the user device 10 is considered, in response to the search request received from the user device 10. The control unit 205 manages the plurality of local systems 100 using local machine IDs, and performs a control operation of providing search results generated by the search engine 204 to corresponding local systems 100.

[80] Fig. 4 is a reference diagram showing a process for providing information according to a first embodiment of the present invention.

[81] First, when an information search is requested by the user device 10, the local system

100 receives a user-input value selected by the manipulation of an input key on the user device 10 and transmits the user-input value to the system server 200. The system server 200 performs an information search in consideration of the location information of the user device 10 in response to the received information search request, and transmits optimal search results, obtained as the result of the search, to the local system 100.

[82] Next, the local system 100 displays the optimal search results received from the system server 200 on the large-size screen of the image output device unit 122.

[83] In this case, the search results, transmitted to the user device 10, are preferably provided to the user device 10 via the local system 100. As another communication path through which the search results are provided, the mobile communication network 12 may be used in such a way that the search results are transmitted to the user device 10 through the mobile communication network 12. Such a communication path for information provision can be variously implemented according to the option of a service provider. When the mobile communication network 12 is used, the size, illuminance, and resolution of the screen are preferably processed so that they are reduced to satisfy the display standards of the user device 10, and are then provided.

[84] Meanwhile, the first embodiment of the present invention has been described as performing searches and providing search results via the system server 200, but it is also possible for the local systems 100, separately installed in respective areas, to perform information search and provide search results.

[85] The above-described first invention provides advantages in that the user occupies the local systems, respectively installed at specific public places, and allows the screen information of the user device to be displayed on the image output device unit of each of the local systems in a synchronization-based associative manner, so that limitations imposed by the size of the small-size screen of the user device can be overcome, and information search results optimized in consideration of the location information of the user device can be provided, thus increasing the user's convenience.

[86] Fig. 5 is a system configuration diagram showing a system for providing information on a large-size screen according to a second embodiment of the present invention, Fig. 6 is a functional block diagram showing a local system applied to the large-size screen information provision system of Fig. 5, and Fig. 7 is a functional block diagram showing a system server applied to the large-size screen information provision system of Fig. 5.

[87] As shown in Fig. 5, the system for providing information on a large-size screen according to a second embodiment of the present invention includes one or more local systems 300 and a system server 400.

[88] Further, the local systems 300 and the system server 400 are connected to each other

over networks 11. The system server 400 is connected to an Internet/mobile communication network 12. A game server 20 may be connected to the Internet of the Internet/mobile communication network 12. In this case, the networks 11 include various communication networks, including data networks, such as a wireless network, the Internet, or a dedicated line. The Internet/mobile communication network 12 includes wired/wireless Internet, various communication networks and data networks, for example, KT WiBro network.

[89] The local systems 300 are separately installed at specific places, and each include an image output device unit 322 having a large-size screen, as shown in Fig. 6. The image output device unit 322 may be implemented using various types of displays, such as a screen, a transparent or translucent screen, a PDP, an LCD, an LED, a CRT, an organic EL, a TFT-LCD and a next-generation paper display (electronic paper). When the image output device unit 322 is formed of a screen, it may have the construction of a beam projector. That is, it should be appreciated that the image output device unit 322 includes both a method of acquiring and reflecting image information through projection and a method of acquiring and displaying the image information of digital signals. Further, the image output device unit 322 may be configured to have various sizes.

[90] Further, each of the local systems 300 displays the game screen information of the user device on the large-size screen of the image output device unit 322 in a synchronization-based associative manner.

[91] Further, the local system 300 performs authentication of an application installed in the user device 10 through recognition of the application, inquires of the system server 400 about schedule information in response to a request for the right of use, received from the user device 10, obtains approval for the request, and provides game screen content displayed on the user device 10 through the large-size screen of the image output device unit 322.

[92] Further, when there are a number of user devices 10 in the case where the local system 300 performs authentication through recognition of the application installed in each user device 10, the local system 300 recognizes a user device 10, which has requested the right of use and has obtained approval for the right of use, as a master, and recognizes the remaining user devices 10 as slaves. In this case, the user device 10, functioning as the master, provides an approval signal for allowing participation in a game to the user devices 10, functioning as the slaves, via the local system 300.

[93] That is, through a process in which the users of the slaves confirm the approval signal provided by the user of the master, a game played by two or more persons can be executed.

[94] The present invention can separately process control information for the game

screen, provided by the user device 10, regardless of the number of persons participating in the game, and provides the control information through the large-size screen of the image output device unit 322.

[95] As shown in Fig. 6, each of the local systems 300 includes a communication means 310, a media output means 320, and a control processing means 330.

[96] The communication means 310 includes one or more of a communication interface unit 311 for performing interface matching and data communication with the system server 400, a wireless communication unit 312 for performing short-range wireless communication with the user device 10, and a GPS module 313 for receiving the global standard time of a GPS for time synchronization.

[97] Further, the wireless communication unit 312 may be implemented using one of a Bluetooth module, an IrDA module and an RF communication module. It should be noted that, in addition to the above modules, all modules enabling wireless communication over a short range are included in the wireless communication unit 312.

[98] The media output means 320 includes one or more of an image screen matching unit 321 for performing image matching so that the game screen information of the small-size screen of the user device 10 and that of the large-size screen of the image output device unit 322 conform with each other, the image output device unit 322 for displaying the game screen information of the user device 10, which is processed to be suitable for the large-size screen by the image screen matching unit 321, and an audio output device unit 323 for outputting audio matching the game screen information displayed on the image output device unit 322.

[99] In this case, the image screen matching unit 321 performs matching for processing the screen information characteristics of the small-size screen of the user device 10, such as the size, illuminance and resolution of the screen, so that the screen information characteristics are suitable for the large-size screen of the image output device unit 322.

[100] The control processing means 330 includes one or more of a storage unit 331 for storing a program operating in conjunction with an application, a user device recognition processing unit 332 for recognizing the application installed in the user device 10 and authenticating the application, and a control unit 333 for performing control processing of assigning screen control authority, acquired via the authentication by the user device recognition processing unit 332, to the user device 10, the control unit 333 being configured such that, when there are a number of user devices 10, the control unit 333 recognizes a user device 10, which has requested the right of use and has obtained approval for the right of use, as a master, recognizes the remaining user devices 10 as slaves, and performs a control processing operation in response to a game screen control command provided through the user device 10.

[101] Meanwhile, the user device 10 may be one of various wireless terminals, and is provided with an application installed therein and required for a specific function. The wireless terminals may include a PDA, a mobile terminal, a portable phone, a mobile phone, a camera phone, a cellular phone, a TRS phone, a PCS phone, a GSM phone, a W-CDMA phone, a CDMA-2000 phone, a MBS phone, a DMB phone, a video terminal, a satellite terminal, a WiBro terminal, etc. The MBS phone refers to a mobile phone that will be used in the fourth generation system that is currently under discussion.

[102] In this case, the application installed in the user device 10 performs authentication through recognition with the local system 300, and requests the right to use the local system 300 from the local system 300 and obtains approval for the right of use therefrom.

[103] After screen control authority is acquired from the local system 300, the application allows the game screen information of the user device and the screen information of the image output device unit 322 of the local system 300 to be displayed in a synchronization-based associative manner, thus enabling the game screen information of the user device 10 to be displayed on the large-size screen of the image output device unit 322.

[104] In this case, the application executes the function of performing recognition with the local system 300 and the function of allowing the control command (user key manipulation signal) from the user device 10 to be reflected on the local system 300 in a synchronization-based associative manner at the time of acquiring the screen control authority, thus allowing content displayed on the small-size screen of the user device 10 and the large-size screen of the image output device unit 322 provided in the local system 300 to conform with each other.

[105] Further, the user device 10, with which synchronization is performed, preferably implements full synchronization in which game screen content displayed on the user device 10 conforms with game screen content displayed on the large-size screen of the image output device unit 322.

[106] The system server 400 implements time synchronization in conjunction with the plurality of local systems 300, which is connected to the system server 400 over the network 11, on the basis of the global standard time of a GPS, and manages the right to use the local systems 300 and schedule information of the local systems 300.

[107] Here, time synchronization is preferably implemented in such a way that the system server 400 periodically sends a global standard time received through the GPS to the plurality of local systems 300, thus enabling time synchronization to be implemented between system components. Alternatively, it is possible to individually implement time synchronization by mounting respective GPS modules 313 in the plurality of local

systems 300, and it is also possible to implement time synchronization by sending the standard time of the system server 400 to the plurality of local systems 300 without using the GPS.

[108] As shown in Fig. 7, the system server 400 includes one or more of a communication interface unit 401, a communication network interface unit 402, a database 403, and a control unit 404. The communication interface unit 401 performs interface matching and data communication with the plurality of local systems 300, and the communication network interface unit 402 is connected to the wired/wireless Internet or the mobile communication network 12.

[109] The database 403 may store the local machine IDs of the local systems 300, member information, the location information, schedule information and game information of the local systems 300, etc.

[110] The control unit 404 manages the local systems 300 through local machine IDs, and performs a control operation of approving the right of use depending on the schedule information of the local systems 300.

[111] The game executed in the present invention is preferably stored in the memory of the user device 10, but may be a game downloaded from a specific game server 20 through the Internet 12, a game stored in the system server 400, or a network game received through the system server 400.

[112] Further, the present invention may be configured using Internet Protocol TVs (IPTVs), instead of the local systems 300.

[113] The above-described second invention provides advantages in that the local systems are occupied, and one or more users can play games by using the manipulation signal of the user devices as an input signal through the large-size screen of the image output device unit provided in each local system, so that the users can play the games through the large-size screen without being limited by the screen size of the user devices, thus allowing the user to conveniently play games through the large-size screen.

[114] Further, the present invention provides an advantage in that the limitations of the screen size of the user device can be overcome.

[115] Fig. 8 is a flowchart showing a method of providing information on a large-size screen according to a third embodiment of the present invention, Fig. 9 is a flowchart showing the detailed steps of an application authentication step in the large-size screen information provision method of Fig. 8, and Fig. 10 is a flowchart showing the detailed steps of a display step in the large-size screen information provision method of Fig. 8.

[116] The method of providing information on a large-size screen according to a third embodiment of the present invention will be described with reference to the system configuration of the first embodiment of the present invention.

[117] First, each of the local systems 100 recognizes the application of the user device 10

and authenticates the application at step S110.

[118] As shown in Fig. 9, at the application authentication step S110, when the user device 10, which is running the application, approaches the location system 100 at step S111, the application of the user device 10 is recognized at step S112. At this time, the local system 100 stores a program capable of recognizing the application, and the program is operated in conjunction with the application installed in the user device 10, thus enabling the application and the program to mutually recognize each other.

[119] Next, the local system 10 requests user information necessary for authentication from the user device, which are running the application, and receives the user information therefrom in response to the request at step S113. The user information received at this time includes member information, a terminal number, etc.

[120] Thereafter, the local system 100 provides the received user information to the system server 200, thus performing an authentication verification operation of verifying whether the user information is correct at step S114.

[121] Next, the local system 100 assigns screen control authority to the user device 10, the application of which is authenticated, at step S120. The screen control authority assigned at this time provides the function of allowing content displayed on the large-size screen of the image output device unit 122 to be controlled in synchronization with and in association with the control screen of the user device 10.

[122] Further, through the synchronization using the screen control authority, the user device 10 implements and uses either one of full synchronization in which content displayed on the screen of the user device 10 conforms with that displayed on the large-size screen of the image output device unit 122, and half synchronization in which part of the screen of the user device 10 is used as a control interface screen.

[123] When a search request event originates from the user device 10, which has acquired the screen control authority, the local system 100 displays search results, generated in consideration of the location information of the user device 10, on the large-size screen of the image output device unit 122 at step S130.

[124] Here, as shown in Fig. 10, at the information search result display step S130, a keyword entered by the user into the input box of a search screen on the user device 10, that is, a search request event, is sensed at step S131.

[125] The sensed search request event is provided to the system server 200 at step S132, and the system server 200, having received the search request event from the local system 100, obtains the location information of the user device 10 which has requested the search, at step S133.

[126] In this case, at the location information obtainment step S133, information about the location of the user device 10 is obtained through the mobile communication network 12 provided by a mobile communication service provider, or is obtained using in-

formation about the location at which the local system 100 is installed.

[127] Further, the system server 200 detects one or more search results corresponding to the search request event at step S134, and performs optimization by matching the detected search results with the location information of the user device 10 at step S135.

[128] In this case, priority is not especially given to either one of the location information obtainment step and the search result detection step, which are both performed by the system server 200.

[129] Next, the system server 200 provides the local systems 100 with search results optimized in consideration of the location information at step S136, and the local system 100, having received the optimized search results, displays the search results on the large-size screen of the image output device unit 122 at step S137.

[130] The above-described third invention provides advantages in that the local systems are occupied, and the screen information of the user device, corresponding to the search results, is displayed on the image output device unit of a relevant local system in a synchronization-based associative manner, thus overcoming the limitations of the small-size screen of the user device, optimizing and providing information search results in consideration of the location information of the user device, and increasing the user's convenience.

[131] Fig. 11 is a flowchart showing a method of providing information on a large-size screen according to a fourth embodiment of the present invention, Fig. 12 is a flowchart showing the detailed steps of an application authentication step in the large-size screen information provision method of Fig. 11, Fig. 13 is a flowchart showing the detailed steps of a use right approval step in the large-size screen information provision method of Fig. 11, and Fig. 14 is a flowchart showing the detailed steps of a display step in the large-size screen information provision method of Fig. 11.

[132] The method of providing information on a large-size screen according to a fourth embodiment of the present invention will be described below with reference to the system configuration of the second embodiment of the present invention.

[133] First, the local system 300 recognizes the application of the user device 10 and authenticates the application at step S210.

[134] As shown in Fig. 12, at the authentication step S210, when one or more user devices 10, which are running applications, approach the local system 300 at step S211, the applications of the user devices 10 are recognized at step S212.

[135] At this time, the local system 300 stores a program capable of recognizing the applications, and the program and the applications installed in the user devices 10 are operated in conjunction with each other, and thus mutual recognition therebetween is performed.

[136] Next, the location system requests user information necessary for authentication from

the user devices, which are running the applications, and receives the user information in response to the request at step S213. The user information received at this time includes member information, a terminal number, etc., is managed by the system server 400, and may be subsequently used as information for billing.

[137] Next, the local system 300 provides the received user information about one or more users to the system server 400, and then performs authentication of verifying whether the user information is correct at step S214.

[138] Next, when a use right request event originates from the user devices 10, the applications of which are authenticated, at step S220, the local system 300 inquires of the system server 400 about schedule information, and obtains approval for the right of use at step S230.

[139] As shown in Fig. 13, at the use right approval step S230, when there are one or more user devices 10 at the time of performing authentication through recognition of the application installed in the user device 10, the local system 300 receives a request for the right of use from a specific user device 10 at step S231.

[140] The local system 300 inquires of the system server 400 about schedule information in response to the use right request at step S232, and obtains approval for the right of use at step S233.

[141] In this case, the information about the approval for the use of the local system 300 can be used as billing information for the user device 10. That is, billing processing based on the time for which the local system 300 is used is preferably implemented through the system server 400. The billing processing for the user may be implemented using various payment means. Examples of the payment means are described below. That is, payment may be performed by selecting at least one of or a combination of OK cash-bag points, various mileage points, various card points, card payment, electronic money, electronic gift certificates, gift certificates, and account transfers.

[142] Thereafter, the local system 300 recognizes the user device 10, which has obtained approval for the right of use, as a master, and recognizes the remaining user devices 10 as slaves, and thus registers the right of use at step S234.

[143] Next, the local system 300 assigns screen control authority to the user device 10, which has obtained the approval for the right use at step S240.

[144] At the screen control authority assignment step S240, when there are one or more user devices 10, a process in which the user device 10, functioning as the master, provides an approval signal for allowing participation in a game to the user devices 10, functioning as slaves, via the local system 300.

[145] That is, through the process in which the users of the slaves confirm the approval signal provided by the user of the master, two or more persons can participate in the game. At this time, billing caused by the use of the local system 300 is preferably

processed only for the user device 10 functioning as the master, which obtains approval for the right of use. Further, main control, such as the start or end of the game, is performed mainly by the user device 10, functioning as a master, depending on the screen control authority, and the user devices 10 functioning as slaves are preferably implemented to merely control the execution of a game through participation in the game.

[146] Further, the screen control authority provides the function of allowing the content displayed on the large-size screen of the image output device unit 322 to be controlled in real time in association with and in synchronization with the control screen of the user device 10.

[147] When a game execution event originates from the user device 10, having obtained the screen control authority, the local system 300 displays the game information, executed in the user device 10, on the large-size screen of the image output device unit 322 in a synchronization-based associative manner at step S250.

[148] In this case, as shown in Fig. 14, at the step S250 of displaying the game information on the large-size screen, the origination of the game execution event from the user device 10, having acquired the screen control authority, is sensed at step S251.

[149] Next, when there are one or more user devices 10, for example, two or more user devices, the local system 300 receives execution control information for the game screen, provided by users functioning as a master and slaves, at step S252, and displays game execution status information corresponding to the game screen execution control information on the large-size screen of the image output device unit 322, operated in a synchronization-based associative manner at step S253.

[150] The present invention allows one or more persons to simultaneously play the game without being limited by the number of persons participating in the game, enables the game screen control information provided by the respective user devices 10 to be separately processed, and provides the large-size screen of the image output device unit 322 in a synchronization-based associative manner. Further, the present invention may be implemented using an Internet Protocol TV (IPTV) instead of the local system 300.

[151] The above-described fourth invention provides advantages in that games can be executed on the large-size screen, without being limited by the size of the small screen provided by the user device, and the user's convenience use can be increased.

[152] Although the present invention has been described in detail through the embodiments, the present invention is not necessarily limited to the embodiments, but may be modified and practiced in various manners within a range that does not depart from the technical spirit of the present invention. Accordingly, the embodiments of the present invention are not intended to limit the technical spirit of the present invention,

but are intended to illustrate the technical spirit of the present invention. As a result, the technical spirit of the present invention is not limited by the embodiments. The range of the protection of the present invention should be interpreted based on the following claims, and all technical spirits, falling within ranges equivalent to the range of the present invention, should be interpreted as being included in the range of the right of the present invention.

[153]

Claims

[1] A system for providing information on a large-size screen, comprising:
one or more local systems separately installed at specific places and configured to display screen information of a user device on image output device units, each having a large-size screen; and
a system server configured to generate search results in consideration of location information of the user device in response to a search request, and provide the search results,
wherein each of the local systems performs authentication of an application installed in the user device through recognition of the application, provides the search request received from the user device to the system server, and displays the search results, received in response to the search request, on the large-size screen of the image output device unit.

[2] The system according to claim 1, wherein the application acquires screen control authority through authentication with each of the local systems, and allows the image output device unit having the large-size screen to perform browsing in a synchronization-based associative manner as the user device perform browsing.

[3] The system according to claim 2, wherein the synchronization is one of full synchronization in which content displayed on the user device and content displayed on the large-size screen of the image output device unit completely conform with each other, and half synchronization in which part of the screen of the user device is used as a screen for a control interface.

[4] The system according to any one of claims 1 to 3, wherein the location information is either one of information about a location of the user device provided through a mobile communication network, and information about a location at which each of the local systems is installed.

[5] The system according to claim 4, wherein time synchronization is implemented between the plurality of local systems and the system server; and
the time synchronization is implemented using any one of a method of performing synchronization in such a way that the system server sends global standard time of a GPS to the plurality of local systems, a method of performing synchronization in such a way as to send standard time of the system server to the plurality of local systems and a method of performing synchronization in such a way that the plurality of local systems perform synchronization using global standard time of the GPS.

[6] The system according to claim 1, wherein each of the local systems comprises:
communication means including a communication interface unit for performing

interface matching and data communication with the system server, a wireless communication unit for performing short-range wireless communication with the user device, and a GPS module for receiving global standard time of a GPS for time synchronization;

media output means including an image screen matching unit for performing image matching so that screen information of the user device and screen information of the large-size screen of the image output device unit conform with each other, an image output device unit for displaying screen information of the user device, which is processed to be suitable for the large-size screen by the image screen matching unit, and an audio output device unit for outputting audio matching the screen information displayed on the image output device unit; and

control processing means including a storage unit for storing a program operating in conjunction with the application, a user device recognition processing unit for recognizing the application installed in the user device and authenticating the application, and a control unit for performing control of assigning screen control authority, obtained through authentication performed by the user device recognition processing unit, to the user device, and performing a control processing operation in response to a screen control command received from the user device,

wherein the communication means includes one or more of the communication interface unit, the wireless communication unit, and the GPS module;

wherein the media output means includes one or more of the image screen matching unit, the image output device unit, and the audio output device unit; and

wherein the control processing means includes one or more of the storage unit, the user device recognition processing unit, and the control unit.

[7] The system according to claim 1, wherein the system server comprises one or more of:

a communication interface unit for performing interface matching and data communication with the plurality of local systems;

a communication network interface unit connected to the mobile communication network;

a database for storing various types of data to be provided in response to the search request received from the user device;

a search engine for generating search results, in which the location information of the user device is considered, in response to the search request received from the user device; and

a control unit for managing the plurality of local systems using local machine

IDs, and performing a control operation of providing the search results generated by the search engine to the local systems.

[8] A system for providing information on a large-size screen, comprising:
a plurality of local systems separately installed at specific places, and configured to display game screen information of a user device on image output device units, each having a large-size screen; and
a system server configured to manage a right to use the plurality of local systems and schedule information of the local systems,
wherein each of the local systems performs authentication of an application installed in the user device through recognition of the application, inquires of the system server about schedule information in response to a request for a right of use received from the user device, obtains approval for the request for the right of use, and provides game screen information, displayed on the user device, on a large-size screen of a relevant image output device unit.

[9] The system according to claim 8, wherein the application installed in the user device performs authentication through recognition with each of the local systems, requests a right to use the local system from the local system, obtains approval for the request for the right of use, acquires screen control authority from the local system, and allows screen information of the user device and screen information of the image output device unit of the local system to be displayed in a synchronization-based associative manner, thus allowing game screen information displayed on the user device to be displayed on the large-size screen of the image output device unit.

[10] The system according to claim 9, wherein the synchronization is full synchronization in which the game screen information displayed on the user device completely conforms with game screen content displayed on the large-size screen of the image output device unit.

[11] The system according to any one of claims 8 to 10, wherein time synchronization is implemented between the plurality of local systems and the system server; and the time synchronization is implemented using any one of a method of performing synchronization in such a way that the system server sends global standard time of a GPS to the plurality of local systems, a method of performing synchronization in such a way as to send standard time of the system server to the plurality of local systems and a method of performing synchronization in such a way that the plurality of local systems perform synchronization using global standard time of the GPS.

[12] The system according to claim 11, wherein the game is one of a game stored in internal memory of the user device, a game provided by the system server, and a

game provided by a specific game server.

[13] The system according to claim 12, wherein, when there are a number of user devices at a time of performing authentication of the application installed in the user device through recognition of the application, the local system recognizes a user device, which has requested a right of use and has obtained approval for the request, as a master, and recognizes remaining user devices as slaves, the local system being configured to process respective pieces of game screen control information provided by the user devices, functioning as the master and the slaves, and provide the game screen control information through the large-size screen of the image output device unit.

[14] The system according to claim 13, wherein the user device functioning as the master provides an approval signal for allowing participation in a game to the user devices, functioning as the slaves, via the local system.

[15] The system according to claim 8, wherein each of the local systems comprises:
communication means including a communication interface unit for performing interface matching and data communication with the system server, a wireless communication unit for performing short-range wireless communication with the user device, and a GPS module for receiving global standard time of a GPS for time synchronization;
media output means including an image screen matching unit for performing image matching so that game screen information of the user device and game screen information of the image output device unit having the large-size screen conform with each other, an image output device unit for displaying the game screen information of the user device, which is processed to be suitable for the large-size screen by the image screen matching unit, and an audio output device unit for outputting audio matching game screen information displayed on the image output device unit; and
control processing means including a storage unit for storing a program operating in conjunction with the application, a user device recognition processing unit for recognizing the application installed in the user device and authenticating the application, and a control unit for performing control of assigning screen control authority, obtained via authentication performed by the user device recognition processing unit, to the user device, the control unit being configured such that, when there are a plurality of user devices, the control unit recognizes a user device, which has requested a right of use and has obtained approval for the request, as a master, recognizes remaining user devices as slaves, and performs a control processing operation in response to a game screen control command provided by the user devices,

wherein the communication means includes one or more of the communication interface unit, the wireless communication unit, and the GPS module;
wherein the media output means includes one or more of the image screen matching unit, the image output device unit, and the audio output device unit; and
wherein the control processing means includes one or more of the storage unit, the user device recognition processing unit, and the control unit.

[16] The system according to claim 8, wherein the system server comprises:
a communication interface unit for performing interface matching and data communication with the plurality of local systems;
a communication network interface unit connected to Internet or a mobile communication network;
a database for storing one or more of local machine IDs, member information, location information, schedule information, and game information of the local systems; and
a control unit for managing the local systems using the local machine IDs, and performing a control operation of approving a right of use depending on the schedule information of the local systems.

[17] A method of providing information on a large-size screen, comprising the steps of:
at least one local system recognizing an application installed in a user device and authenticating the application;
assigning screen control authority to the user device, the application of which is authenticated; and
when a search request event originates from the user device, which has acquired the screen control authority, the local system displaying search results, generated in consideration of location information of the user device, on a large-size screen of an image output device unit of the local system.

[18] The method according to claim 17, wherein the authentication step comprises the steps of:
when the user device which is running the application approaches the local system, recognizing the user device;
requesting user information necessary for authentication from the user device which is running the application, and receiving the user information in response to the request; and
providing the received user information to a system server, thus performing an authentication verification operation of verifying whether the user information is correct.

[19] The method according to claim 17, wherein the search result display step comprises the steps of:
sensing a search request event input through a search screen of the user device;
providing the sensed search request event to the system server;
the system server obtaining location information of the user device, having requested the search;
the system server detecting one or more search results corresponding to the search request event;
the system server optimizing search results by matching the detected search results with the location information of the user device;
the system server providing the search results, optimized in consideration of the location information, to the local system; and
the local system displaying the received search results on the large-size screen of the image output device unit.

[20] The method according to claim 19, wherein the location information obtainment step is performed to obtain either one of information about a location of the user device, provided through a mobile communication network, and information about a location at which the local system is installed.

[21] The method according to any one of claims 17 to 20, when the screen control authority is implemented such that content displayed on the large-size screen of the image output device unit is controlled in synchronization with and in association with a control screen of the user device.

[22] The method according to claim 21, wherein the user device implements synchronization as either one of full synchronization in which content displayed on the user device completely conforms with screen content displayed on the large-size screen of the image output device unit, and half synchronization in which part of the screen of the user device is used as a screen for a control interface.

[23] A method of providing information on a large-size screen, comprising:
at least one local system recognizing an application installed in a user device and authenticating the application;
when a use right request event originates from the user device, the application of which is authenticated, the local system inquiring of a system server about schedule information, and obtaining approval for the request for the right of use;
the local system assigning screen control authority to the user device, which has obtained approval for the request for the right of use; and
when a game execution event originates from the user device, which has acquired the screen control authority, the local system displaying game information, executed in the user device, on the large-size screen of the image

output device unit in a synchronization-based associative manner.

[24] The method according to claim 23, wherein the authentication step comprises the steps of:

when one or more user devices, which are running the application, approach the local system, recognizing applications of the user devices;

requesting user information necessary for authentication from the one or more user devices, which are running the applications, and receiving the user information in response to the request; and

providing the received user information about the user devices to the system server, and performing an authentication verification operation of verifying whether the user information is correct.

[25] The method according to claim 23, wherein the use right approval obtainment step comprises the steps of:

when there are one or more user devices at a time of performing authentication of the application installed in the user device through recognition of the application, the local system receiving a request for the right of use from a specific user device;

the local system inquiring the system server about schedule information in response to the request for the right of use, and obtaining approval for the right of use; and

the local system recognizing the user device, which has obtained approval for the right of use, as a master, and recognizing remaining user devices as slaves, thus registering the right of use.

[26] The method according to claim 23, wherein the screen control authority assignment step comprises the step of, when there are one or more user devices, the user device, which functions as the master, providing an approval signal for allowing participation in a game to user devices, which function as the slaves, via the local system.

[27] The method according to claim 23, wherein the step of displaying the game information on the large-size screen comprises the steps of:

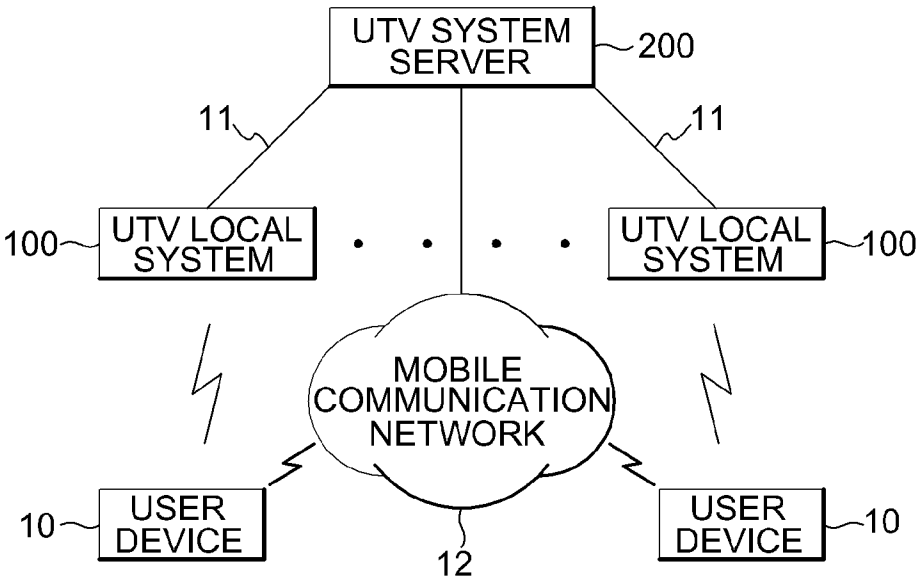
sensing origination of a game execution event from the user device, which has acquired the screen control authority;

the local system receiving execution control information for a game screen, provided through the one or more user devices; and

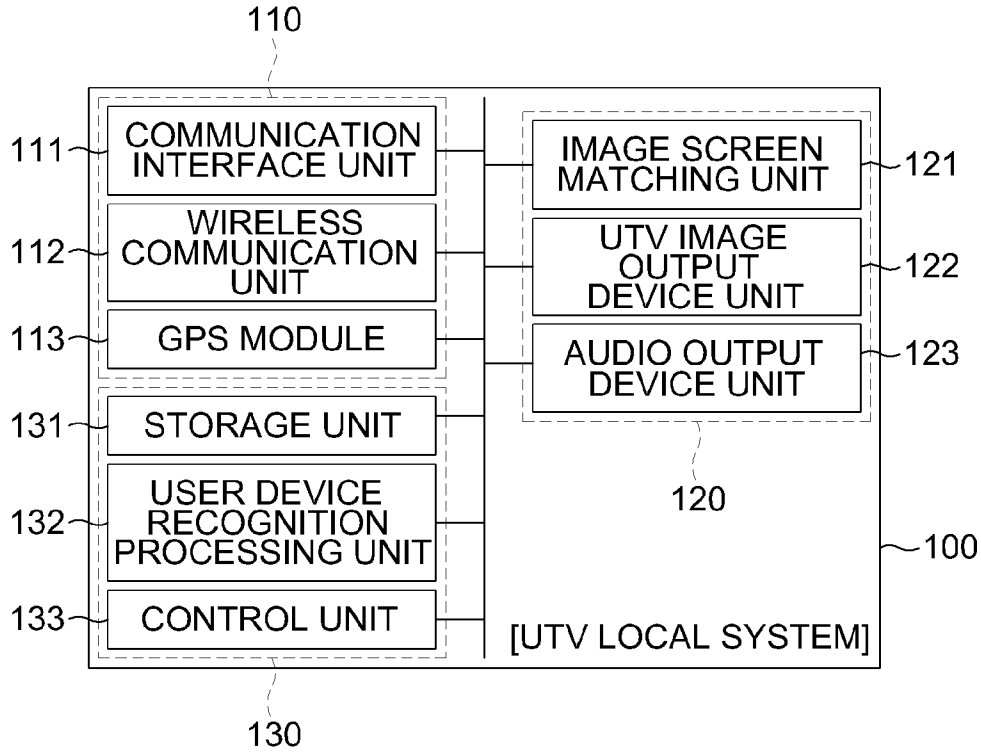
the local system displaying game execution status information, corresponding to the received game screen execution control information, on the large-size screen of the image output device unit, which operates in a synchronization-based associative manner.

[28] The method according to any one of claims 23 to 27, wherein the screen control authority is implemented such that content on the large-size screen of the image output device unit is controlled in real time in synchronization with and in association with a control screen of the user device.

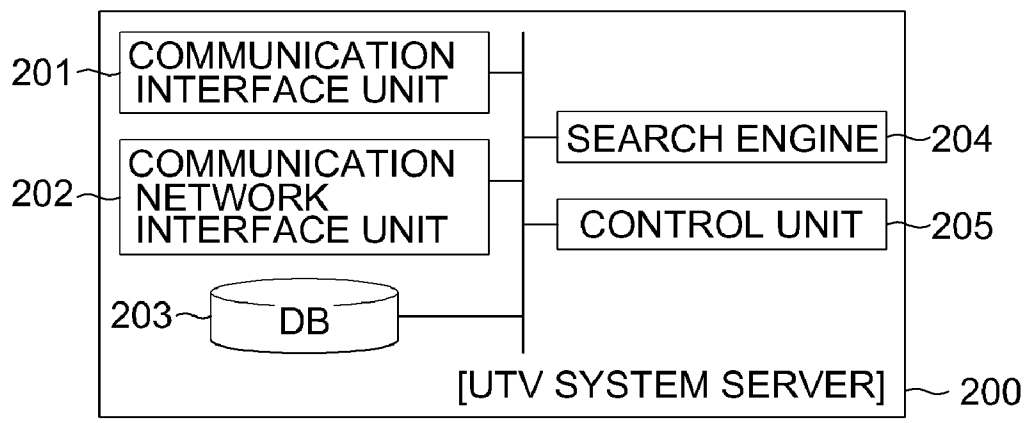
[Fig. 1]



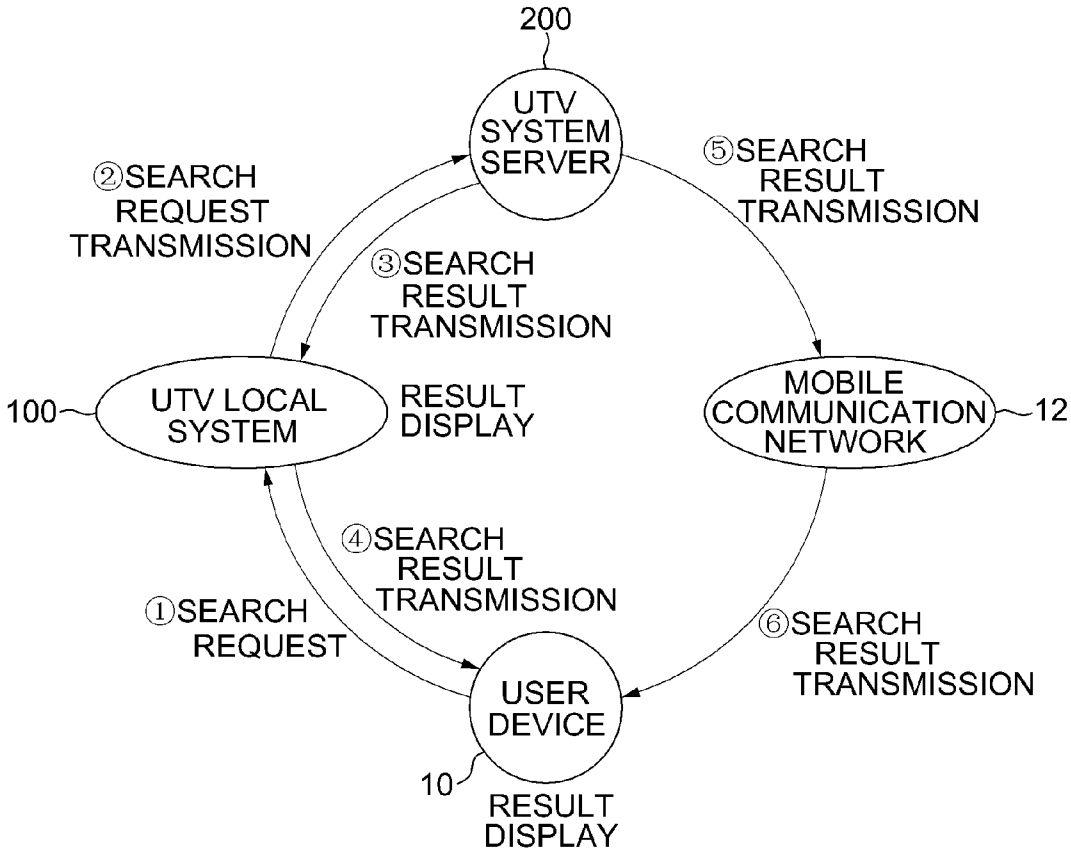
[Fig. 2]



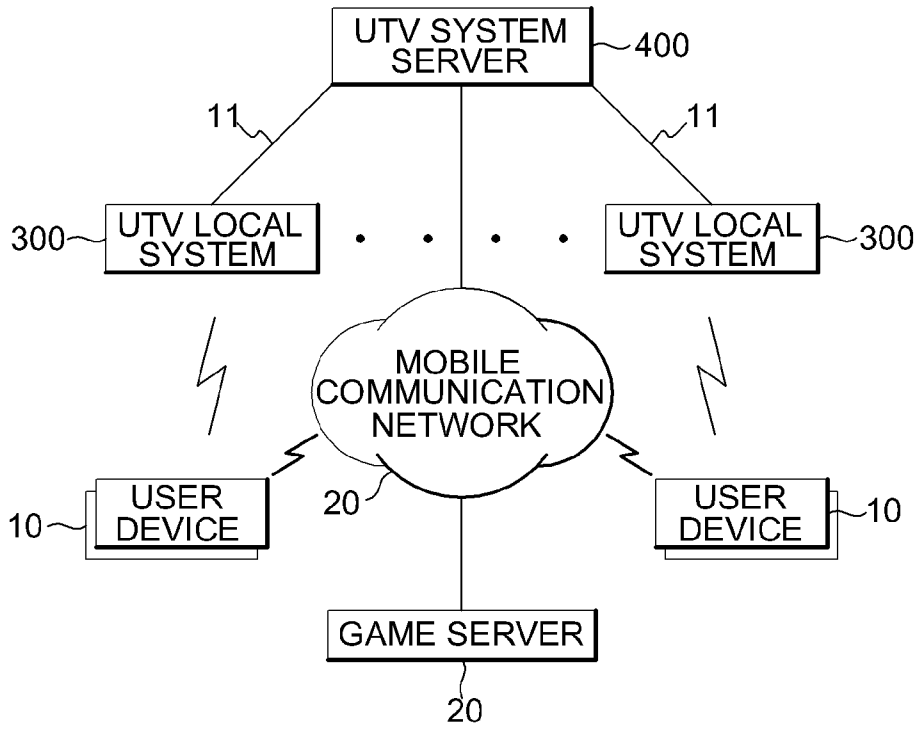
[Fig. 3]



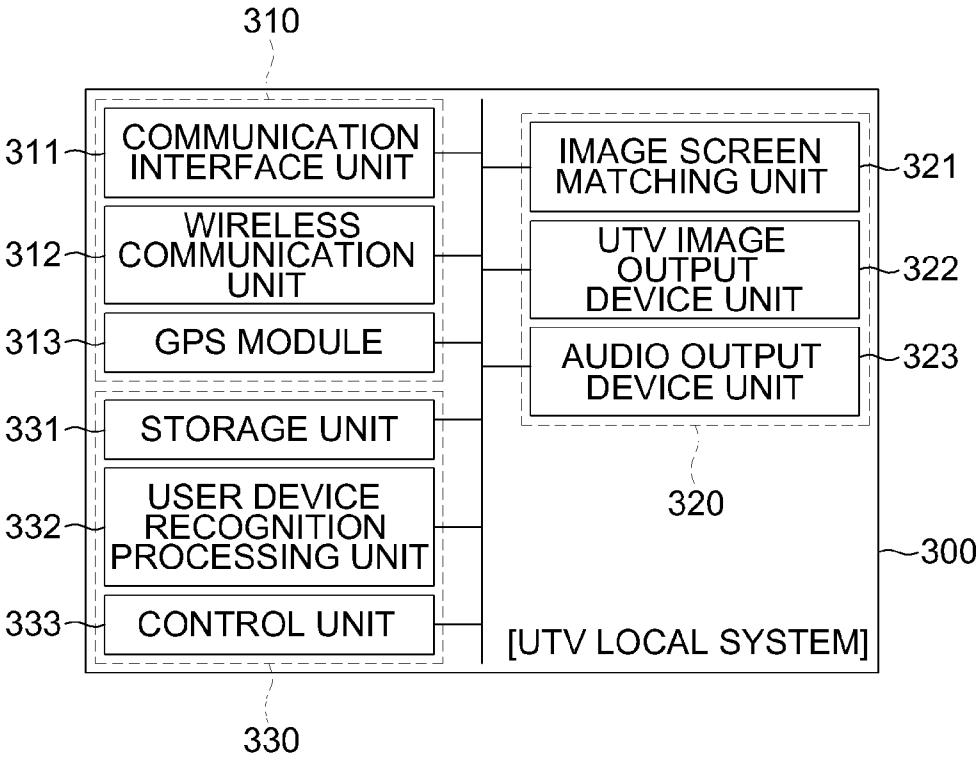
[Fig. 4]


200
UTV SYSTEM SERVER
②SEARCH REQUEST TRANSMISSION
③SEARCH RESULT TRANSMISSION
⑤SEARCH RESULT TRANSMISSION
100
UTV LOCAL SYSTEM
RESULT DISPLAY
MOBILE COMMUNICATION NETWORK
12
④SEARCH RESULT TRANSMISSION
①SEARCH REQUEST
⑥SEARCH RESULT TRANSMISSION
USER DEVICE
10
RESULT DISPLAY

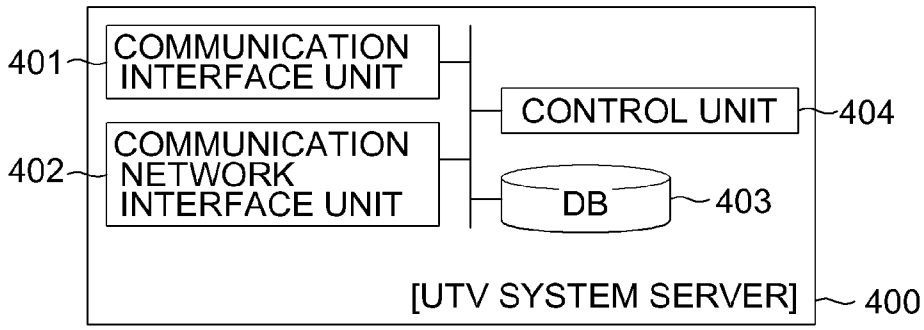
[Fig. 5]


UTV SYSTEM SERVER
400
11
11
300
UTV LOCAL SYSTEM
UTV LOCAL SYSTEM
300
MOBILE COMMUNICATION NETWORK
10
USER DEVICE
20
USER DEVICE
10
GAME SERVER
20

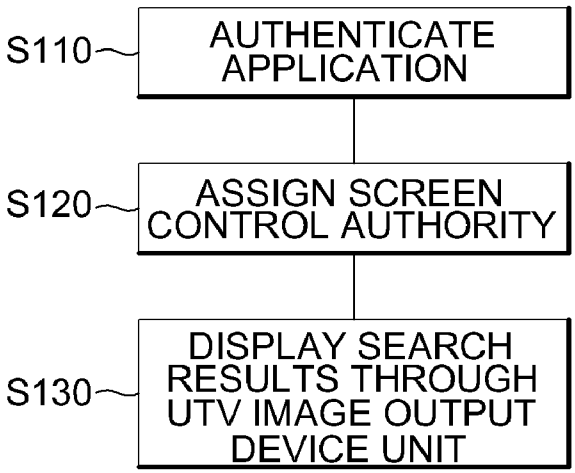
[Fig. 6]



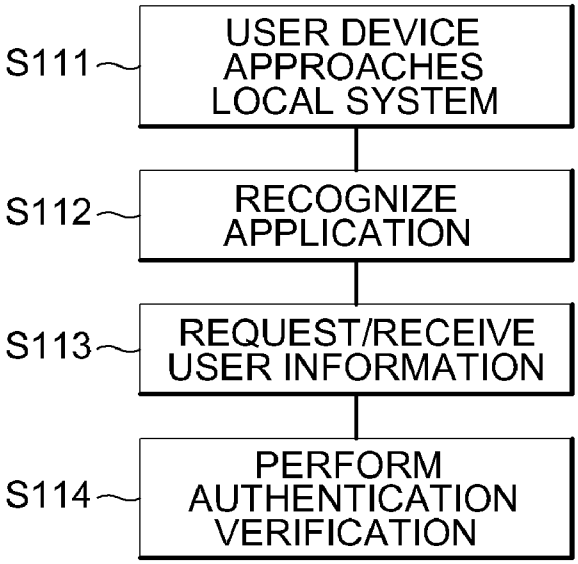
[Fig. 7]



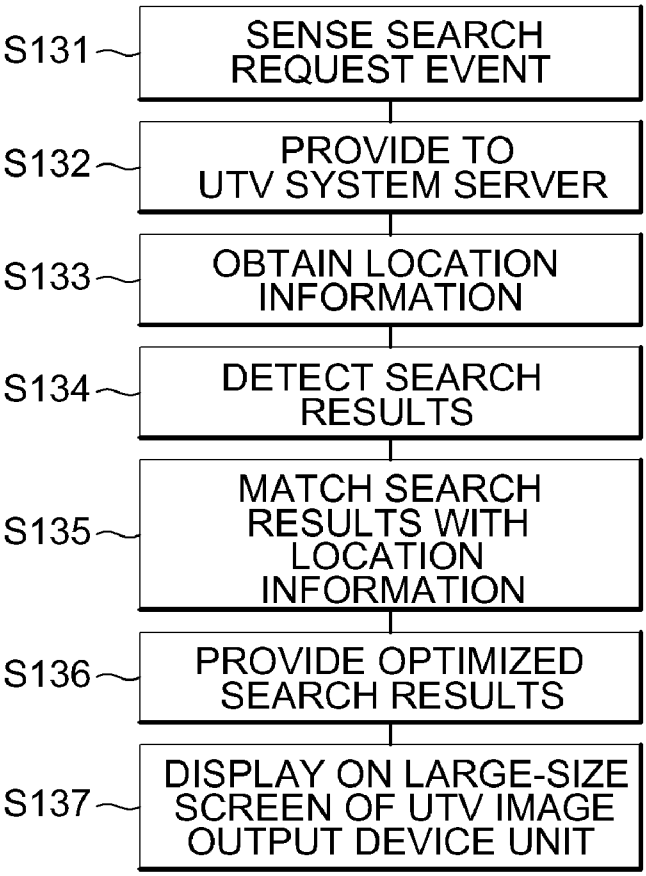
[Fig. 8]



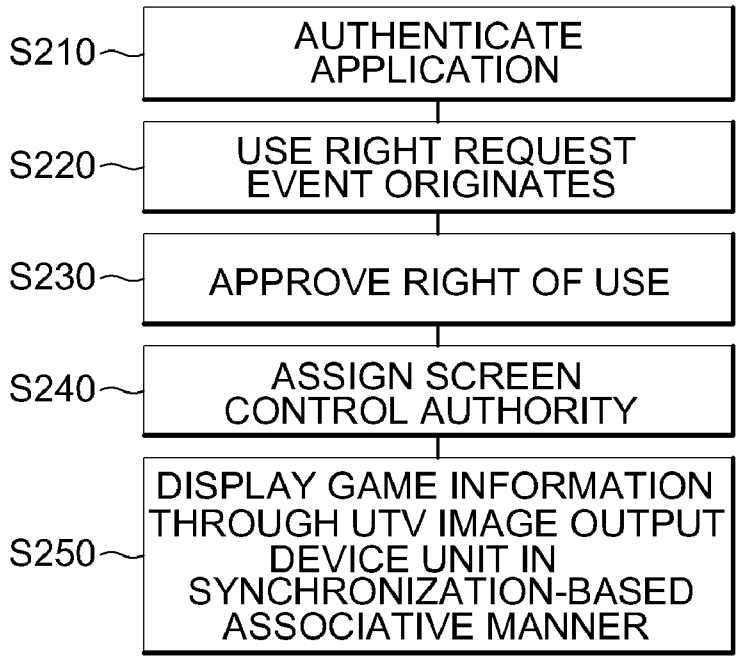
[Fig. 9]


S111
USER DEVICE APPROACHES LOCAL SYSTEM
S112
RECOGNIZE APPLICATION
S113
REQUEST/RECEIVE USER INFORMATION
S114
PERFORM AUTHENTICATION VERIFICATION

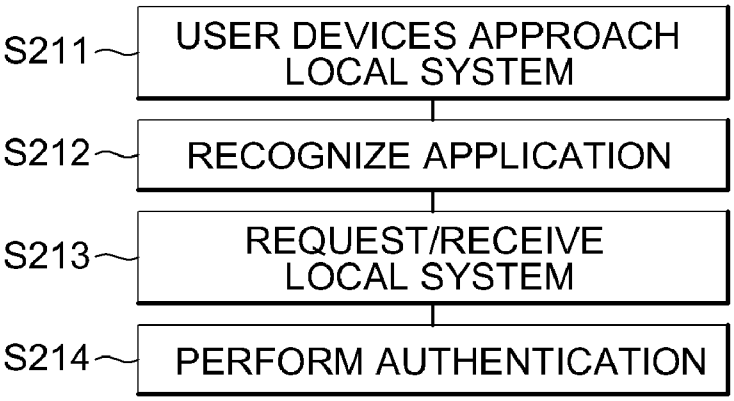
[Fig. 10]


S131
SENSE SEARCH REQUEST EVENT
S132
PROVIDE TO UTV SYSTEM SERVER
S133
OBTAIN LOCATION INFORMATION
S134
DETECT SEARCH RESULTS
S135
MATCH SEARCH RESULTS WITH LOCATION INFORMATION
S136
PROVIDE OPTIMIZED SEARCH RESULTS
S137
DISPLAY ON LARGE-SIZE SCREEN OF UTV IMAGE OUTPUT DEVICE UNIT

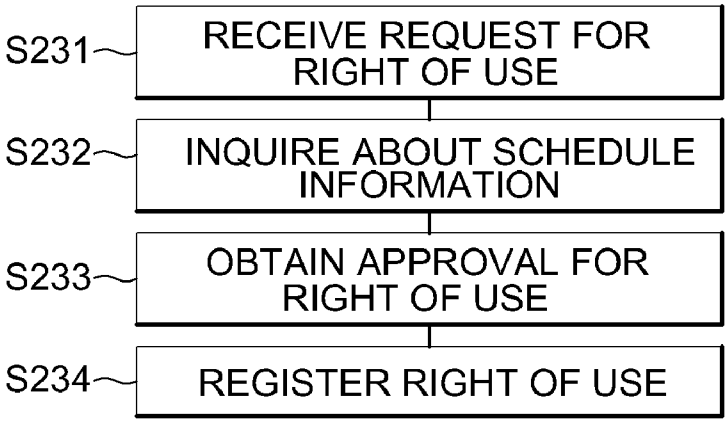
[Fig. 11]



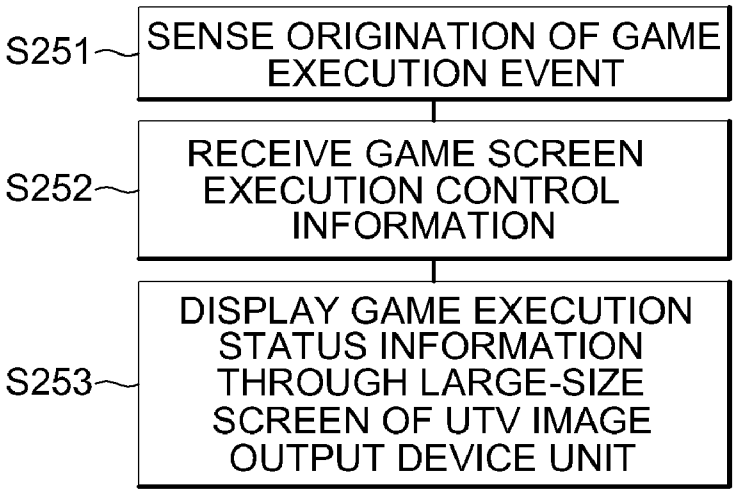
[Fig. 12]



[Fig. 13]



[Fig. 14]


S251
SENSE ORIGINATION OF GAME EXECUTION EVENT
S252
RECEIVE GAME SCREEN EXECUTION CONTROL INFORMATION
S253
DISPLAY GAME EXECUTION STATUS INFORMATION THROUGH LARGE-SIZE SCREEN OF UTV IMAGE OUTPUT DEVICE UNIT