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(54) INTELLIGENT HOME SECURITY SYSTEM

(57) A computer network based intelligent home security system (1) is provided with monitoring assemblies (2) each including a data communication device (201), a light (202), a burglar alarm (203), a video camera (204), a transmitter (205), a sensor (206), a loudspeaker (207), a location indicator (208), an identification device (209), a projector (210), an adjustment device (211), and a power supply module (212); a fixed controller (3) including a data communicating device (31), an input device (32), a data storage device (33), a backup device (34), and a control assembly (35) including a data storage module (351), a broadcasting module (352), a two-way radio transceiver (353), an access management module (354), a monitoring module (355), a detection module (356), a burglar warning module (357), an illumination control module (358), and a projection module (359); a hand-held portable controller (4); and a terminal (5).

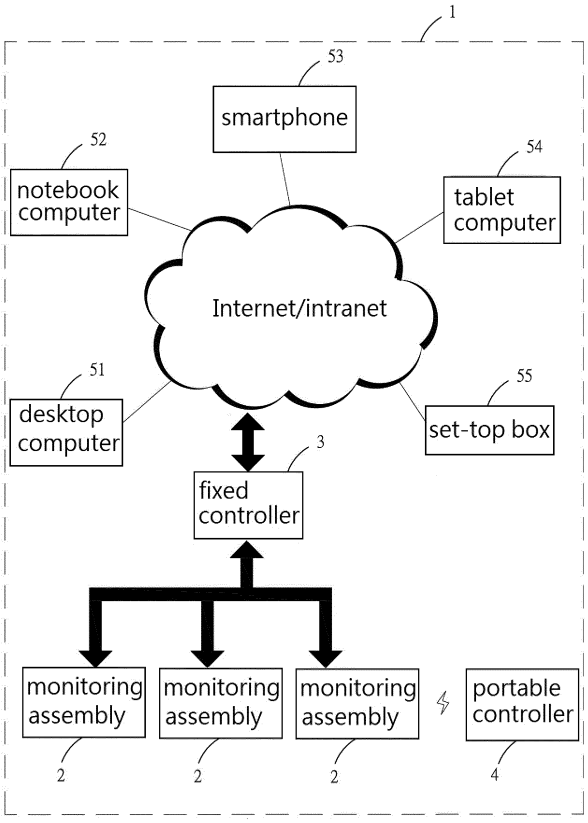

FIG.1

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The invention relates to security systems and more particularly to an intelligent home security system capable of controlling a plurality of monitoring assemblies.

2. Description of Related Art

[0002] With respect to residences, it is known that a home's locks, lights, garage doors, etc. may be controlled using a personal computer (PC) or computing system. A home sometimes comprises a surveillance system. The surveillance system may have a number of cameras positioned at strategic positions inside and outside the house.

[0003] The cameras often feed into a recording device in the home. Additionally, the system may be set up so that the home owner may observe any activity of interest (e.g., a prowler) on one or more television monitors within the home. Sensors are also incorporated into home security systems. When these sensors are tripped, audible alarms will alert the home owner of the presence of an unwelcome intruder. A signal may also be sent to an emergency response agency automatically.

[0004] However, above home security system are undesirably inaccessible to the absent home member. A home owner may have to leave work early to let in a family member who is without a key. Also, the absent home owner will have no idea an alarm has been tripped in the house until notified by, for example, a police officer.

[0005] Thus, the need for improvement still exists.

SUMMARY OF THE INVENTION

[0006] It is therefore one object of the invention to provide an intelligent home security system comprising a plurality of monitoring assemblies each comprising a data communication device including a power line communication module and a wireless communication module, a light, a burglar alarm, a video camera, a transmitter, a sensor, a loudspeaker, a location indicator, an identification device, a projector, an adjustment device for adjusting angles of the light, the video camera, and the projector, and a power supply module including an alternating current AC power supply, a power supply for light, a rechargeable battery, and a solar panel; a fixed controller comprising a data communicating device including a network communication module, a power line communication module, and a wireless communication module, an input device including a keyboard input module, a voice input module, and a touch screen input module, a data storage device, a backup device, and a control assembly including a data storage module, a broadcasting module, a two-way radio transceiver, an access management module, a monitoring module, a detection module, a burglar warning module, an illumination control module, and a projection module for projecting security messages; a hand-held portable controller comprising a wireless communication module c and a monitor adjustment module; and a terminal; wherein the fixed controller and the monitoring assemblies are interconnected by wire or wirelessly; wherein the terminal is a desktop computer, a notebook computer, a smartphone, a tablet computer, or a set-top box; and wherein the terminal is connected to the fixed controller over the Internet.

[0007] The above and other objects, features and advantages of the invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

FIG. 1 schematically depicts an intelligent home security system according to the invention; and
FIG. 2 is a block diagram of the intelligent home security system.

DETAILED DESCRIPTION OF THE INVENTION

[0009] Referring to FIGS. 1 and 2, an intelligent home security system 1 in accordance with the invention comprises a plurality of monitoring assemblies 2, a fixed controller 3, a hand-held portable controller 4, and a terminal 5. Each component will be discussed in detail below.

[0010] The fixed controller 3 and the monitoring assemblies 2 are interconnected by wire or wirelessly. The portable controller 4 comprises a wireless communication module c3 for wirelessly connecting to the monitoring assemblies 2, and a monitor adjustment module 41. The terminal 5 is connected to the fixed controller 3 over the Internet or an intranet. The terminal 5 may be a desktop computer 51, a notebook computer 52, a smartphone 53, a tablet computer 54, or a set-top box 55.

[0011] The monitoring assembly 2 is positioned at a strategic position inside or outside a house and comprises a data communication device 201 including a power line communication module c2 for communicating data via power lines, and a wireless communication module c3 for wirelessly communicating data, a light 202 for illuminating a desired position, a burglar alarm 203 for warning the intrusion of burglars, a video camera 204 for catching real time images, a transmitter 205 for transmitting radio waves, a sensor 206 for sensing the presence of any unwelcome intruders, a loudspeaker 207, a location indicator 208 for indicating the location of the intruder, an identification device 209 for identifying the validity of a person being present, a projector 210 for projecting exit routes, etc., an adjustment device 211 for adjusting angles of the light 202, the video camera 204 and the pro-

jector 210, and a power supply module 212 including an alternating current (AC) power supply 212a, a power supply 212b for light, a rechargeable battery 212c, and a solar panel 212d for supplying power to other components. The switching among these four power supplies can be done by a simple switching operation so as to be adapted to different power environments. All of the above components are electrically connected together. The sensor 206 may be implemented as a thermometer, a pressure sensor, a brightness sensor, a smoke detector, or a carbon dioxide detector. The identification device 209 may be implemented by the RFID (radio-frequency identification) technology.

[0012] The fixed controller 3 comprises a data communicating device 31 including a network communication module c1 for communicating data over the network, a power line communication module c2 for communicating data via power lines, and a wireless communication module c3; an input device 32 including a keyboard input module 321, a voice input module 322, and a touch screen input module 323; a data storage device 33; a backup device 34; and a control assembly 35 including a data storage module 351, a broadcasting module 352, a two-way radio transceiver 353, an access management module 354, a monitoring module 355 for detecting the presence of any unwelcome intruders, a detection module 356 for detecting any unusual activities, a burglar warning module 357, an illumination control module 358, and a projection module 359 for projecting security messages.

[0013] An authorized person (e.g., home owner) may use the fixed controller 3 to activate the monitoring assemblies 2 in situ (e.g., home). Alternatively, the person may use the portable controller 4 to remotely activate the monitoring assemblies 2 when the person is not in situ. Still alternatively, the person may use the terminal 5 (e.g., the desktop computer 51, the notebook computer 52, the smartphone 53, the tablet computer 54, or the set-top box 55) to operate the fixed controller 3 over the Internet or the intranet in order to activate the monitoring assemblies 2 when the person is not in situ.

[0014] While the invention has been described in terms of preferred embodiments, those skilled in the art will recognize that the invention can be practiced with modifications within the spirit and scope of the appended claims.

Claims

1. An intelligent home security system (1) comprising:

a plurality of monitoring assemblies (2) each comprising a data communication device (201) including a power line communication module (c2) and a wireless communication module (c3), a light (202), a burglar alarm (203), a video camera (204), a transmitter (205), a sensor (206), a loudspeaker (207), a location indicator (208), an identification device (209), a projector (210), an adjustment device (211) for adjusting angles of the light (202), the video camera (204), and the projector (210), and a power supply module (212) including an alternating current (AC) power supply (212a), a power supply (212b) for light, a rechargeable battery (212c), and a solar panel (212d);

a fixed controller (3) comprising a data communicating device (31) including a network communication module (c1), a power line communication module (c2), and a wireless communication module (c3), an input device (32) including a keyboard input module (321), a voice input module (322), and a touch screen input module (323), a data storage device (33), a backup device (34), and a control assembly (35) including a data storage module (351), a broadcasting module (352), a two-way radio transceiver (353), an access management module (354), a monitoring module (355), a detection module (356), a burglar warning module (357), an illumination control module (358), and a projection module (359) for projecting security messages;

a hand-held portable controller (4) comprising a wireless communication module (c3) and a monitor adjustment module (41); and

a terminal (5);

wherein the fixed controller (3) and the monitoring assemblies (2) are interconnected by wire or wirelessly;

wherein the terminal (5) is a desktop computer (51), a notebook computer (52), a smartphone (53), a tablet computer (54), or a set-top box (55); and

wherein the terminal (5) is connected to the fixed controller (3) over a computer network.

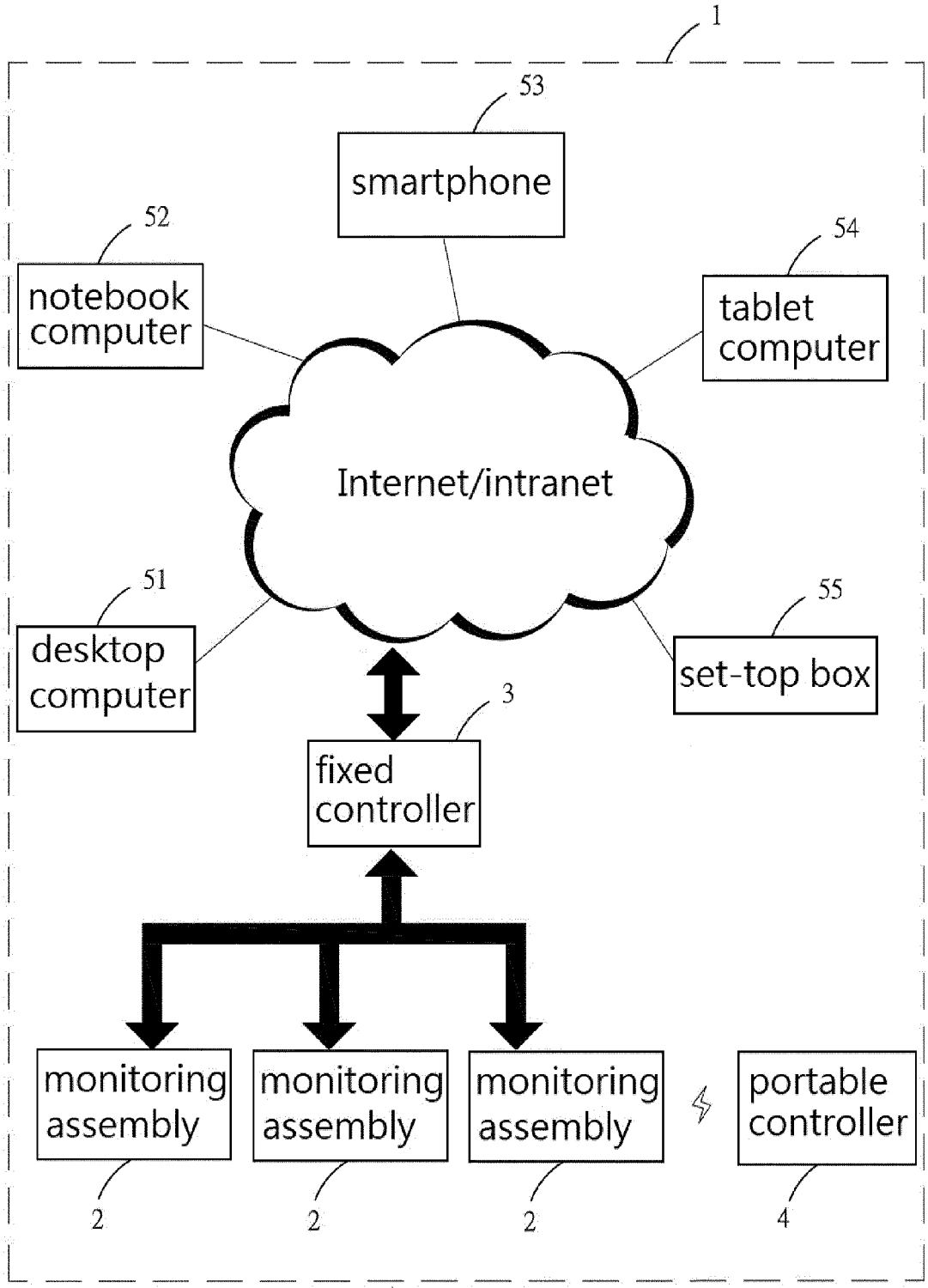
1
53
smartphone
52
notebook computer
54
tablet computer
Internet/intranet
51
desktop computer
55
set-top box
3
fixed controller
monitoring assembly
monitoring assembly
monitoring assembly
portable controller
2
2
2
4

FIG.1

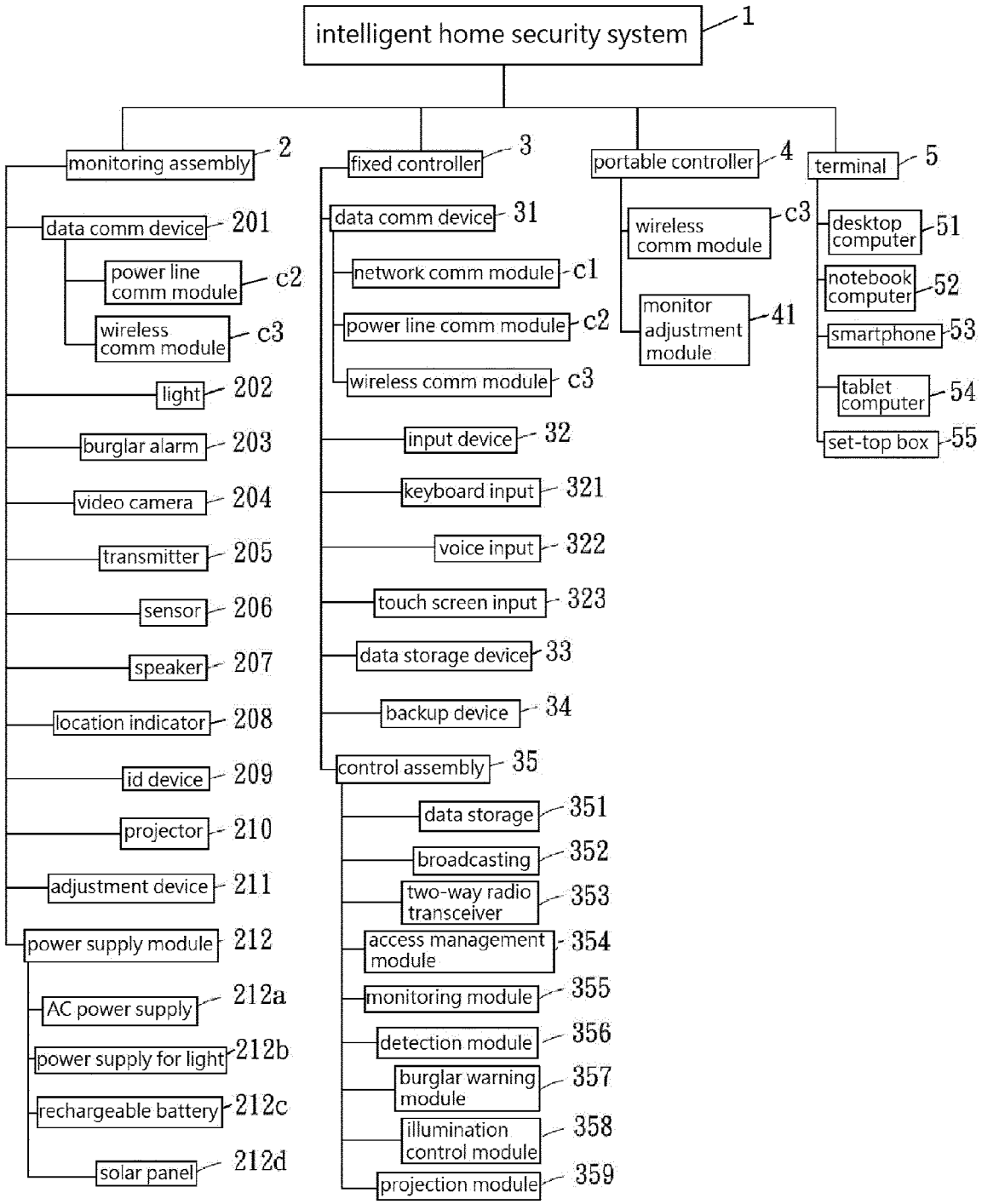
intelligent home security system
1
monitoring assembly
2
data comm device
201
power line comm module
c2
wireless comm module
c3
light
202
burglar alarm
203
video camera
204
transmitter
205
sensor
206
speaker
207
location indicator
208
id device
209
projector
210
adjustment device
211
power supply module
212
AC power supply
212a
power supply for light
212b
rechargeable battery
212c
solar panel
212d
fixed controller
3
data comm device
31
network comm module
c1
power line comm module
c2
wireless comm module
c3
input device
32
keyboard input
321
voice input
322
touch screen input
323
data storage device
33
backup device
34
control assembly
35
data storage
351
broadcasting
352
two-way radio transceiver
353
access management module
354
monitoring module
355
detection module
356
burglar warning module
357
illumination control module
358
projection module
359
portable controller
4
wireless comm module
c3
monitor adjustment module
41
terminal
5
desktop computer
51
notebook computer
52
smartphone
53
tablet computer
54
set-top box
55

FIG.2

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EUROPEAN SEARCH REPORT

Application Number
EP 15 16 2337

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2012/286947 A1 (HSU TAU-JENG [TW]) 15 November 2012 (2012-11-15) * the whole document *	1	INV. G08B19/00 G08B25/14
A	US 2007/182543 A1 (LUO HONGYUE [CA]) 9 August 2007 (2007-08-09) * paragraph [0013] - paragraph [0016] *	1	

TECHNICAL FIELDS SEARCHED (IPC)

G08B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	21 September 2015	Bourdier, Renaud

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 16 2337

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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21-09-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2012286947 A1	15-11-2012	NONE	
US 2007182543 A1	09-08-2007	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82