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G11B 31/00

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G5R RAC
U1S S1714

(56) Documents Cited:

GB 2337658 A	GB 2337175 A
GB 2285530 A	GB 2285365 A
EP 1301040 A1	WO 2002/065451 A1
WO 1998/030017 A2	US 5657380 A
US 20030013503 A1	

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(58) Field of Search:
UK CL (Edition W) **G4H, G5R**
INT CL⁷ **G11B, H04M**
Other: **WPI; EPODOC; JAPIO; TXTE**

(54) Abstract Title: **Automatic entrance station answering apparatus**

(57) Apparatus at an entrance station comprises caller input means having buttons, and means for repeatedly carrying out the following functions: (a) recognizing input made using the input means; and (b) responding by playing a pre-recorded message which may be different at each repetition. Responding messages from the caller may be recorded, and there may be means for offering the caller a choice of languages. There may be a database of expected callers so that information from a caller can be compared with data in the database to verify the identity of the caller to either approve or hinder entry to the called party's premises.

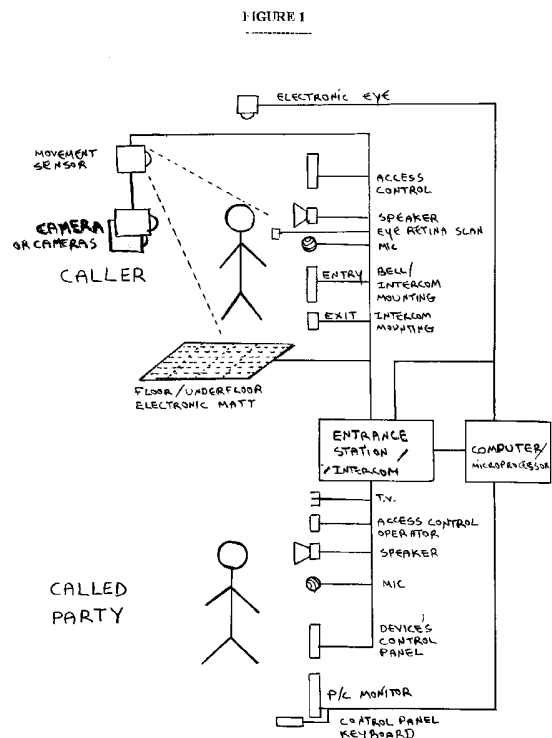


FIGURE 1/3

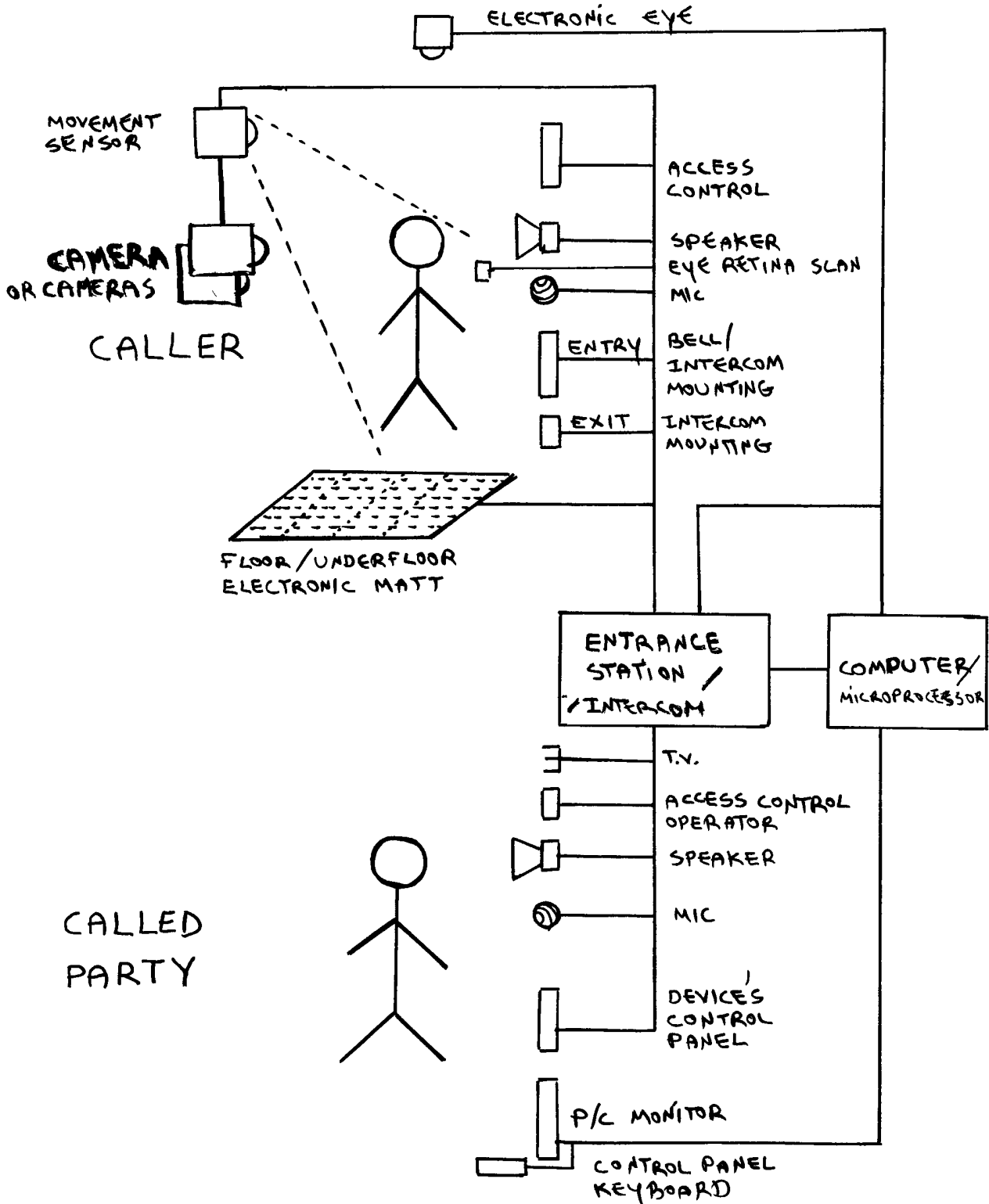


FIGURE 2/3

ENTRANCE STATION (1)

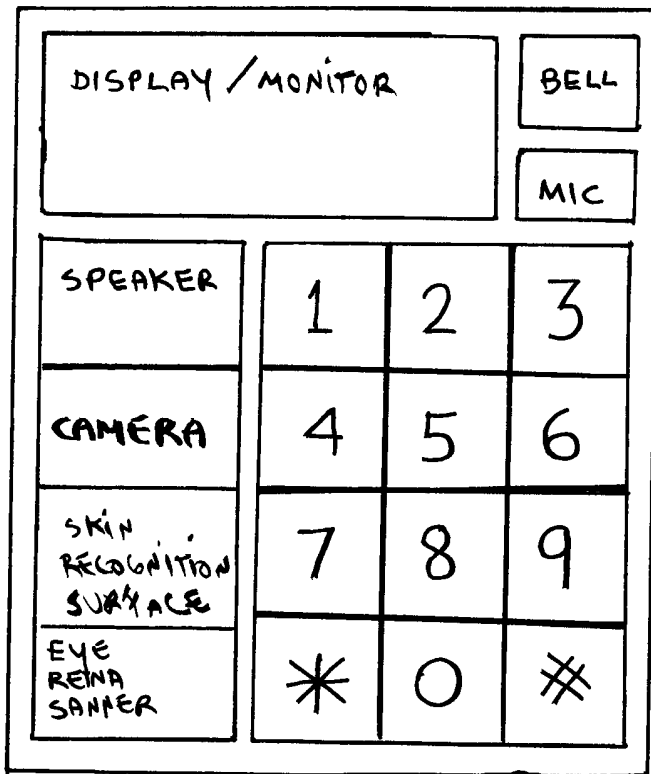
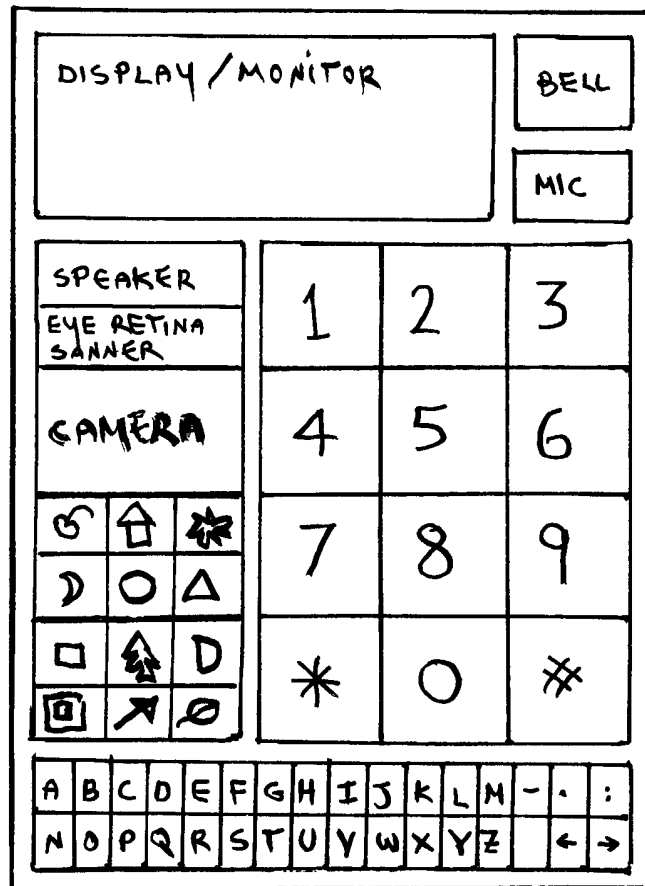


FIGURE 3/3

ENTRANCE STATION (1)



AUTOMATIC ENTRANCE STATION ANSWERING APPARATUS AND METHOD

BACKGROUND OF THE INVENTION

With the need to increase the efficiency of automatic communication systems, the introduction of automatic conversations through Intercom/ Entrance station systems has become an urgently needed new technology. This patent application addresses this need.

SUMMARY OF THE INVENTION

This invention discloses the inventive concept of automatic conversation with a visitor through an Entrance Station by the use of pre-recorded messages. This application consolidates the various features perviously disclosed in priority documents GB0416755.7, GB0416450.5, GB0410368.7, GB0319437.0, GB0320758.6, GB0322537.2, GB0400507.0 and GB0211708.3. According to the invention thereby provided an Apparatus and Method comprising an Entrance Station having Caller's input means with or without a Monitor or Display that facilitates an automatic conversation, multi level response from the Caller by employing repeatedly the following functions in the following sequence (a) Recognize each input that is produced when the Caller operates the input means on the Entrance Station; (b) Play a pre-recorded message. These documents disclose the same inventive concept but also other features such as the facility to connect the visitor to a person within the called party's premises by means of internal telephone system and the facility for the visitor to choose the language in which the automatic conversation is to take place. Another feature is the facility to permit the caller automatic access to the called party's premises at the successful completion of the automatic conversation. Another feature is the retention of information gathered about each caller, and automatically comparing information before entry or exit to improve security. Another feature is the use of display or monitor to permit a silent conversation with the caller by means of displayed messages in response to the caller pressing the caller's operated input means on the Entrance Station. The display can also be used to afford the caller to input information in response to the played pre-recorded messages or displayed messages. This invention opens new doors to future uses of Entrance based/Intercom systems in domestic ,industrial, business or institutional settings.

INTRODUCTION TO THE DRAWINGS

- Figure 1/3 Illustrates possible permutations of equipment that can be used to allow different level of control, interface and interaction between the Caller and the Entrance Station.
- Figure 2/3 Illustrates Entrance Station at the Called Party's address to be used by the Caller for Entry and or Exit.
- Figure 3/3 Illustrates Entrance Station at the Called Party's address to be used by the Caller for Entry and or Exit.

EXAMPLES

(1) The called party, a private householder, wish to welcome all visitors with a pre-recorded message when they press the Bell or Call button (or other suitable input means) on the Entrance Station at the entrance of to the residence, or by means of an invitation on the Entrance Station/Intercom Mounting display.

The visitor is asked to respond to a pre-recorded message by operating the input means on the Entrance Station to confirm the choice language:

Press (touch) 1 if you speak English,

Press (touch) 2 if you speak Welsh.

The visitor is asked to respond to a pre-recorded message by confirming the purpose of the visit: Press (touch)1 if you personally know who you are calling on

Press (touch) 2 if you do not personally know who you are calling on

If Press (touch) 1: Please state the name of the person you are calling on (allow time for recording) or type the name of the person you wish to see.

Press (touch) 1 if your wish to see this person for a business reason

Press (touch)2 if you wish to see this person for a family reason

Press (touch) 3 if you wish to see this person for a social reason

Press (touch) 4 if you wish to see this person for any other reason

If no voice was recorded repeat the pre-recorded message before aborting.

If press 1: Please state your name and the business you represent

If press 2: Please state your name and the purpose of your visit

If press 3: Please state your name and the social arrangement you have in mind

If press 4: Please state your name and the purpose of your visit

or... type your name / telephone number/ address / the purpose of your visit

(by means of the provided key board on the Intercom Mounting)

The householder is able to screen all visitors before establishing direct contact or allowing access to the property.

If press 2, follow up with options:

Press (touch)1 if your call is for business purpose

Press (touch) 2 if your call is for any other purpose

All options: Please state your name and the name of the company or organization you represent (allow time for voice recording).

Thank you for your call. If you wish your call to be returned please insert your phone number (allow for response). Please type your phone number again to confirm.(allow for response)

Please type you first name (allow for response)

Please type your surname. (allow for response)

Thank you for your call.

- (2) **The called party is a business complex that houses a few dozen tenants and has a central security and access system in place.**

All callers can avail themselves to a 'private reception cubical' that allows them to interact with the required tenants via the Entrance Station answering apparatus.

The caller can after triggering the first pre-recorded message, respond to a number of options that navigates him or her through a chain of questions (and can ask for voice recording of the caller), before connecting the caller to the relevant tenant that the caller has identified by means of 'press buttons' responses (or other suitable input means) to the pre-recorded message(s). Once the caller has been connected to the relevant tenant, the caller can speak directly and for the tenant to allow him or her access by means of remote control that annul the access control barrier that prevents entry the premises.

- (3) **The called party is a government building that houses many departments.**

The caller is directed to a 'reception cubical' in which he or she is required to interact with an Entrance Station apparatus and respond to pre-recorded message/s to ascertain which department the caller wish to visit, direct the caller by means of a pre-recorded message to the required floor and room number.

- (4) **The called party is a hospital that requires to monitor and control all visitors and to prevent any unauthorized person from leaving the hospital premisses until they were personally examined by a security guard.**

All visitors are required to pass an 'automatic interview' with an Entrance Station answering apparatuses that are located in 10 reception cubical in the hospital entrance.

The caller is required to identify himself or herself by means of voice recording and responding to the questions in the played pre-recorded message in the language of his or her choice. The message(s) also appear on Entrance Station's display. The caller is required to type the name of the person the caller wishes to visit. The hospital computerized record can be employed to ascertain if the request is genuine and permit access only after successful completion of the automatic 'reception interview' to include the obtaining and the storage of a copy of the caller's finger print/s or the scanning of the callers' eye retina and the storage of the results of the scanning.

Before departure the visitor is required to respond to another automatic conversation by means of pre-recorded messages before automatically allowed exit from the premises. If the caller failed to pass the 'exit test' he can only be allowed to leave after being assisted by a security guard.

AUTOMATIC ENTRANCE STATION ANSWERING APPARATUS OR METHOD

DETAILED DESCRIPTION OF THE INVENTION

The apparatus and method can operated through the use of the following **FEATURES** or **CONTROLS** that facilitate the required operation as contained in the description and examples previously cited. The following are the **NAMES** of the features or controls that make up the automatic Entrance Station/Intercom answering apparatus and method.

- 1-9,0,
A to Z
Symbols** Caller's operated input means on the Entrance Station of numbers, letters and or symbols. These controls on the Entrance Station can be used by the caller to respond to the pre-recorded message/s and or displayed message/s.
- Memory** Contains all instructions, programs to facilitate automatic conversations and other features of the automatic communication systems, memory cells, stored pre-recorded message/s, temporary storage of signals and responses to facilitate the link to the follow up pre-recorded and or displayed message , storage of information that the pressed button options represent, that resulted from the caller's 'press button' choices, and all other information gathered from the caller by the use of the Entry and or Exit Entrance Station(s).
- Telephone System** Allows for the integration of the apparatus and method into an internal telephone exchange.
- Language** Permit the caller to select a language of his or her choosing in which the pre-recorded messages are to be played and in which the information on the Entrance Station's monitor is to be displayed. That can be done by means of 'press button' response(s) or by the use of a keyboard or by any other means.
- Computer System** Allows for the integration of the apparatus and method into a Computer system or Microprocessor system that facilitates automatic conversations or multi level response from the caller by means of pre-recorded messages or displayed messages on the Entrance Station's or Entrance station's display or monitor. Also a computer system that make it possible to process, analyze and store the information gathered by means of the automatic Entrance Station system described in this patent application.
- Access Control** This option allows automatic or manual annulment of the access control barrier that will otherwise prevent the caller from entering and or leaving the called party's premises.
- Skin Recognition Unit** This option allows the recognition and absorption of the image/s of the skin patterns of the caller by means of skin contact with the designated surface on the Entrance Station, and the storage of these skin image/s.

Eye Retina Scanner Allows the scanning of the caller's eye retina and storage of the result.
Camera/s Auto photography or recording of the caller's body or face (can be digital)

- Options** The called party can select any of the following possible methods:
- (1) Permit the caller to select a language of his or her choosing in which the pre-recorded messages are to be played and in which the information on the Entrance Station's monitor is to be displayed.
 - (2) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by means of recording his or her own voice message, and or type a message by using the caller's operated input means on the Entrance Station.
 - (3) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by means of a single operation of input means in each response cycle.
 - (4) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by means of pressing more than one button in each response cycle.
 - (5) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by operating input means options of a single or multiple operation(s) of the input means in each response cycle of only input means marked as 'number'.
 - (6) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by operating input means options, of a single or multiple operation(s) of the input means in each response cycle of only input means marked as 'number'.
 - (7) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by operating input means options, of a single or multiple operation(s) of the input means in each response cycle of only input means marked as 'symbols'.
 - (8) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by operating input means of any combination or sequence of 'number', 'letter' and 'symbols' of either two or three types in any individual cycle.
 - (9) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond by operating input means of a single operation in each response cycle to facilitate repetition of the pre-recorded message for the benefit of the caller.
 - (10) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, and allow the caller to respond in any other way, such as skin contact or to allow for the scanning of the caller's eye retina and photograph or scan or record in order to produce and store the results skin contact or eye retina scanner or the photography or the image/s that belong to the caller and can be used to unmistakably identify him or her.

- (11) Play a pre-recorded message, and or display a message on the Entrance Station's monitor, to allow the caller to respond in any of the above mentioned manners and allow the response from the caller to trigger a further pre-recorded message, and or the display of a message on the Entrance Station's monitor, and a further response/s in repeated cycles until the last cycle as determined by the called party.

Entrance Station This instrument panel having caller's operated input means made up of any combination of numbers and or letters and or symbols, speaker/s, microphone display or monitor, skin recognition unit or camera/s or any other caller's operated input means. It can facilitate automatic or manual communication, between the caller and the called party, and also between the called party and the caller, by means of automatic pre-recorded message/s, and or the display of a message or messages on the Entrance Station's monitor, that facilitates automatic conversation or a multi level response from the caller as he or she operates the caller's operated input means, prior to entrance of the caller from the the called party's premises. It can be placed at the Entrance to or Exit from the called party's premises or in a location near or in the vicinity of the Entrance and or Exit called party premises or at both Entrance and Exit.

Automatic Message Trigger This method facilitates automatic trigger to the playing of the first pre-recorded or a displayed message in response to the presence of a caller that can be detected by means of an electronic movement sensor, electronic eye or electric Matt, or by written invitation to operate the Input means on the Entrance Station.

Automatic Traffic Controller The 'press button' choices made by the caller, in response to the pre-recorded message/s can trigger automatic communication channel with the relevant person on the called party's premises that is suitable to deal with the concern/s, requirements or needs of the caller.

AUTOMATIC ENTRANCE STATION ANSWERING APPARATUS AND METHOD
CLAIMS

1. **Apparatus and Method comprising an Entrance Station**
having Caller's input means
with or without a Monitor or Display
that facilitates an automatic conversation, multi level response from the Caller
by employing repeatedly the following functions in the following sequence
 - (a) **Recognize each input that is produced when the Caller operates the input means on the Entrance Station;**
 - (c) **Play a pre-recorded message;**
2. **An apparatus and method as claimed in claim 1 that includes the facility of a silent automatic conversation by means of displayed messages on the Entrance Station's Monitor or Display by employing repeatedly the following functions in the following sequence**
 - (a) **Recognize each input that is produced when the Caller operates the input means on the Entrance Station's;**
 - (c) **Display a message on the Entrance Station's Monitor or Display;**
3. **An apparatus and method as claimed in claim 1 or 2 that includes the facility of recording and storage of the Caller's voice.**
4. **An apparatus and method as claimed in any of the preceding claims that is able to automatically connect the Caller, by means of an Internal telephone system, to a telephone instrument, to facilitate a normal conversation.**
5. **An apparatus and method as claimed in any of the preceding claims that facilitates the storage of the information that said inputs represent.**
6. **An apparatus and method as claimed in any of the preceding claims that has Caller' operated input means made up of symbols.**
7. **An apparatus and method as claimed in any of the preceding claims that permits the Caller to choose the Language of the pre-recorded messages and or displayed messages.**
8. **An apparatus and method as claimed in any of the preceding claims that is located in the vicinity of the Entrance of the Called Party's premises.**
9. **An apparatus and method as claimed in any of the preceding claims that is located in the vicinity of the Exit from the Called Party's premises.**

10. An apparatus and method as claimed in any of the preceding claims that has the means to automatically disable an access control barrier.
11. An apparatus and method as claimed in any of the preceding claims that is able to automatically trigger the playing of a pre-recorded message and or a displayed message in response to the presence of a Caller, by means of and electronic Matt, electronic Eye or a Movement sensor.
12. An apparatus and method as claimed in any of the preceding claims that is able to Recognize any combination of inputs from the Caller.
13. An apparatus and method as claimed in any of the preceding claims that is able to Recognize and Store any combination of inputs from the Caller.
14. An apparatus and method as claimed in any of the preceding claims that is able to Recognize and Store the information represented by any combination of inputs from the Caller.
15. An apparatus and method as claimed in any of the preceding claims that is able to recognize, absorb and store image/s of the Caller's skin patterns.
16. An apparatus and method as claimed in any of the preceding claims that is able to photograph and store the images of the Caller's body or face.
17. An apparatus and method as claimed in any of the preceding claims that is able to photograph and store the images of the Callers' eye retina.
18. An apparatus and method as claimed in any of the preceding claims that is equipped with a computer system that contain the Database of all previous or expected Callers and is able to compare the data and information obtained from the Caller to verify the identity of the Caller in order to either approve or hinder automatic Entry or Exit of the Caller to and from the Called Party's premises.
19. An apparatus and method as claimed in any of the preceding claims that is equipped with an Entrance Station at the Entry or Exit of the Called Party's premises that has Caller's input means that are marked as Numbers and or Letters and or Symbols or any combination of them in displayed message or the Entrance Station's display.
21. An apparatus and method substantially the same as what is described in this patent application.

Amendments to the claims have been filed as follows :

AUTOMATIC ENTRANCE STATION ANSWERING APPARATUS AND METHOD

CLAIMS

1. **An Apparatus comprising an Entrance Station, having input means, Caller's operated buttons, with the means to recognize each signal, that is produced by pressing each button, that automatically play a pre-recorded message and facilitates a multi level response from the Caller by employing repeatedly the following functions in the following sequence:**
 - (a) **Recognize each signal**, that is produced when the Caller presses each of the buttons on the Entrance station;
 - (b) **Use the said signal to provide the link** to a pre-recorded message to be played;
 - (c) **Play the said pre-recorded message.**

2. **An Apparatus as claimed in claim 1 comprising an Entrance Station, having input means, Caller's operated buttons, with the means to recognize each signal, that is produced by pressing each button, that automatically play a pre-recorded message and facilitates a multi level response from the Caller by employing repeatedly the following functions in the following sequence:**
 - (a) **Recognize each signal**, that is produced when the Caller presses each of the buttons on the Entrance station;
 - (b) **Use the said signal to provide the link** to a pre-recorded message to be played;
 - (c) **Play the said pre-recorded message;**
 - (d) **Record and Store the voice of the Caller.**

3. **An Apparatus as claimed in claims 1 or 2 that permits the Caller to choose the language in which pre-recorded message/s is/are to be played.**

4. An Apparatus as claimed in claims 1, 2 or 3 that is able to automatically **trigger the playing of a pre-recorded message in response to the presence of a Caller**, by means of an electronic Matt, electronic Eye, Movement sensor.
5. **An Apparatus, as claimed in any of the preceding claims, comprising an Entrance Station, having input means, Caller's operated buttons and an Entrance Station's Monitor, with the means to recognize each signal, that is produced by pressing each button, that automatically display a message on the Entrance Station's Monitor and facilitates a multi level response from the Caller by employing repeatedly the following functions in the following sequence:**
 - (a) **Recognize each signal** that is produced when the Caller presses each of the buttons on the Entrance station;
 - (b) **Use the said signal to provide the link** to a message to be **displayed**;
 - (c) **Display the said message** on the Entrance Station's Monitor.
6. **An Apparatus, as claimed in claim 5, comprising an Entrance Station, having input means, Caller's operated buttons and an Entrance Station's Monitor, with the means to recognize each signal, that is produced by pressing each button, and facilitates a multi level response from the Caller by employing repeatedly the following functions in the following sequence:**
 - (a) **Recognize any combination/sequence of signal** that is produced when the Caller presses any combination/sequence of buttons on the Entrance station;
 - (b) **Use the said signals to provide the link** to a message to be **displayed**;
 - (c) **Display the said message** on the Entrance Station's Monitor.

7. An Apparatus as claimed in claims 5 or 6 that **permits the Caller to choose the language** in which message/s is/are to be displayed.
8. An Apparatus as claimed in claims 5, 6 or 7 that is able to **automatically trigger the displaying of a message**, on the Entrance Station's Monitor, **in response to the presence of a Caller**, by means of an electronic Matt, electronic Eye, Movement sensor.
9. An Apparatus, as claimed in any of the preceding claims, that is located in **the vicinity of the Entrance** to the Called Party's premises.
10. An Apparatus, as claimed in any of the preceding claims, that is located in **the vicinity of the Exit** from the Called Party's premises.
11. An Apparatus, as claimed in any of the preceding claims, that is located in **the vicinity of the Entrance to, and the Exit from**, the Called Party's premises.
12. An Apparatus as claimed in any of the preceding claims that is equipped with the means to **enable/disable an access control barrier** to permit/prevent the entry/exit of the Caller to/from the Called Party's premises.
13. An Apparatus as claimed in any of the preceding claims, having Caller's operated buttons, with the means to **recognize each signal** that is produced by pressing each button, and the **means to store the result of the signal**, the information that each signal represents.

14. An Apparatus as claimed in any of the preceding claims,
having Caller's operated buttons,
with the means to **recognize any combination/sequence of signals**
that is produced by pressing any combination/sequence of buttons,
and the **means to store the result/s of the signals**,
the information that each combination/sequence of signals represents.
15. An Apparatus as claimed in any of the preceding claims
with the means to **recognize, absorb and store**
image/s of the **Caller's skin patterns**, photograph,
absorb and store images of
the **Caller's body, the Caller's face, the Caller's eye Retina.**
16. An Apparatus as claimed in any of the preceding claims
that is able to automatically **connect the Caller**,
by means of an Internal telephone system,
to a telephone instrument,
to allow normal conversation
with a person on the Called Party's premises.
17. An apparatus or method as claimed in any of the preceding claims
that has **Caller's operated buttons**
marked with **symbols.**
18. An Apparatus as claimed in any of the preceding claims
that is **equipped with a computer/microprocessor system**,
that contains the Database of current, previous, expected Callers
that is able to compare the data and information obtained
from the Caller to the information in the said Data Base
in order to **verify the identity of the Caller**
and **automatically enable/disable an access control barrier**,
to permit/prevent the Caller's entry/exit
to/from the Called Party's premises.
19. An apparatus that is **substantially the same as what is described**
in this patent application.
20. A **method** that is **substantially the same as what is described**
in this patent application.



INVESTOR IN PEOPLE

Application No: GB0418571.6

Examiner: Donal Grace

Claims searched: All

Date of search: 24 November 2004

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-4, 6, 8-11, 16 and 17 at least	US 2003/0013503 A1 (MENARD) see [0074] to [0089]
X	1-6, 8-10, 15-17 at least	GB 2285365 A (COSMIC) see figure 5; pages 11 and 12
X	1, 3, and 8-11 at least	US 5657380 A (MOZER) see column 5 line 1 to column 6 line 27; column 7 line 43 to column 8 line 17
X	1-3, 6, 8, 9 and 11 at least	GB 2285530 A (LEIGHTON)
X	1, 2, 8, 9, 11	WO 02/065451 A1 (TECH MATS) see [0220] - [0242]; "pre-recorded" page 52, line 27
X	1, 3, 4, 7, 8 and 9	GB 2337658 A (SAYLES)

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^W :

G5R

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷



INVESTOR IN PEOPLE

The following online and other databases have been used in the preparation of this search report

WPI; EPODOC; JAPIO; TXTE



INVESTOR IN PEOPLE

Application No: GB0418571.6

Examiner: Donal Grace

Claims searched: All

Date of search: 20 April 2005

Patents Act 1977
Further Search Report under Section 17

Documents considered to be relevant:

Table with 3 columns: Category, Relevant to claims, Identity of document and passage or figure of particular relevance. Rows include EP 1301040 A1, GB 2285530 A, GB 2337175 A, WO 98/30017 A2, and GB 2337658 A.

Categories:

Table defining categories X, Y, &, A, P, and E for document relevance.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X:

G4H; G5R

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷

G11B; H04M

The following online and other databases have been used in the preparation of this search report

WPI; EPODOC; TXTE