(54) Title: CALL HANDLING

FIG. 1

(57) **Abstract**: This invention relates to an apparatus (10) for handling telephone calls. The apparatus (10) comprises means for receiving incoming telephone calls,means for identifying particular callers,means for determining a trust level associated with a caller,and means for processing the incoming call in dependence on the trust level associated with the caller. The invention also relates to a method of handling telephone calls, and to a telecommunications system incorporating the apparatus.

CALL HANDLING

This invention relates to an apparatus for handling telephone calls. This invention also relates to a method of handling telephone calls and to a telephone and a 5 telecommunications system.

According to one aspect of the invention, there is provided an apparatus for handling telephone calls, which comprises means (in the form of a receiver) for receiving incoming telephone calls to a party; means (in the form of a processor and associated memory) for 10 identifying particular callers; means (in the form of a processor and associated memory) for determining whether a caller is trusted by the called party and optionally a trust level associated with a caller; and means (in the form of a processor) for processing the incoming call in dependence on whether the caller is a trusted caller and/or optionally the trust level associated with the caller.

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Shift workers are faced with a dilemma when it comes to their telephone. If they unplug their phones while they are asleep (during the day), for example, to stop telemarketing or other nuisance calls waking them up, they then risk being un-contactable by phone in the event of an emergency.

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Shift workers are asleep when the rest of society assumes that people are awake. A single telemarketing call might cause a 'broken night's sleep' which might have a major impact on an individual's physical and mental wellbeing, their performance at work, and their journey to and from work. This is of particular concern if they are required to make 25 important judgement calls during the course of their work, for example, those who work in healthcare or for the emergency services, drivers, those who control heavy equipment, and those who have to maintain essential services during the night. Being constantly tired is detrimental to all aspects of a person's life including their health and social time, so it is not just at work that the negative effects show up.

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Telemarketers must abide by regulations that stipulate that they must not make cold calls after 9pm at night, which is a welcome protection for most, but no protection for shift

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workers.

Calls from telemarketers are not the only telephone-related issue for shift workers. Friends and family members might also be reluctant to call a shift worker in case they 5 wake them up, since shift workers typically don't work the same shifts all of the time. This tends to isolate a shift worker.

According to another aspect of the invention, there is provided an apparatus for handling telephone calls, which comprises means (in the form of a receiver) for receiving 10 incoming telephone calls; means (in the form of a processor and associated memory) for identifying particular callers; means (in the form of a processor and associated memory) for determining a trust level associated with a caller; and means (in the form of a processor) for processing the incoming call in dependence on the trust level associated with the caller.
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Preferably, the identifying means comprises means for storing identification information for at least one caller.

Preferably, the identification information includes at least one of the following: biometric 20 information relating to a caller, a voice print; an identification key; a trusted data token; and calling number identification (CNID) information.

Preferably, the apparatus further comprises means for adding identification information relating to particular callers to the storage means.
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Preferably, the adding means is adapted to add calling number identification (CNID) information to the storage means for all numbers that are dialled out via the apparatus.

Preferably, the adding means is adapted to add caller identification information to the 30 storage means for all dialled out numbers to which a selected character has been appended, and preferably to which the "star" character has been appended.

Preferably, the identifying means comprises means for comparing information received together with an incoming call request with corresponding stored information to identify a

caller.

Preferably, the identifying means comprises an interactive voice response (IVR) system.

5 Preferably, the identifying means comprises a voice recognition system.

Preferably, the apparatus further comprises means for assigning one of a plurality of trust levels to a caller.

10 Preferably, the apparatus further comprises means for storing trust levels assigned to callers.

Preferably, the apparatus further comprises means for linking a trust level assigned to a caller with identification information relating to that caller.

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Preferably, the assigning means is adapted to assign the same trust level to all callers for which the apparatus has stored identification information.

Preferably, the assigning means is adapted to assign a trust level to a caller in
20 dependence on the status within an organisation of the caller.

Preferably, the assigning means is adapted to automatically assign a particular trust level to a caller in dependence on the job title of the caller.

25 Preferably, the apparatus further comprises means for altering the trust level of a caller.

Preferably, the assigning means is adapted to assign a trust level to a caller for a specified time period.

30 Preferably, the assigning means is adapted to alter the trust level assigned to a caller in dependence on one or more of the following: the time of day; day of the week; and calendar date.

Preferably, particular call processing rules are associated with particular trust levels, and
35 preferably wherein particular call processing rules associated with certain trust levels

override default call processing rules.

Preferably, the apparatus further comprises means for activating one of a plurality of call reception modes.

Preferably, the processing means is adapted to process calls in accordance with an activated reception mode.

Preferably, particular call processing rules are assigned to particular call reception modes.

Preferably, the processing means is adapted to process calls in dependence upon the reception mode of the apparatus and/or trust level of the caller.

Preferably, the processing means is adapted to process calls in accordance with one or more call handling rules, and preferably wherein the processing means is adapted to process calls in one or more of the following ways: route a call to voice mail; divert a call; reject a call; allow a call through; and play a personalised message to a caller.

Preferably, the processing means comprises an interactive voice response (IVR) system.

Preferably, the receiving means is adapted to answer incoming calls thereby to inhibit a ringing signal from disturbing the called party, and preferably wherein the receiving means is adapted to rapidly seize the line.

Preferably, the receiving means is adapted to play an announcement to unidentified callers.

Preferably, the indentifying means comprising means for receiving a code from a caller and alerting the called party of the incoming call in dependence upon whether said code corresponds to a code stored in a memory of the apparatus.

Preferably, the apparatus further comprises means for enabling a caller having a specified trust level to request that the called party be alerted of the incoming call from said caller; and means for alerting the called party of the incoming call in dependence

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upon receipt of said request.

According to another aspect of the invention, there is provided an apparatus for handling telephone calls, which comprises means (in the form of a receiver) for receiving incoming
5 telephone calls to a party; means (in the form of a processor and associated memory) for identifying particular callers as callers trusted by the called party; means (in the form of a processor and associated memory) for enabling a trusted caller to request that the called party be alerted of the incoming call from said trusted caller; and means (in the form of a processor and associated memory) for alerting the called party of the incoming call in
10 dependence upon receipt of said request.

In this way a trusted caller is able to use their discretion as to whether or not to disturb the party they are attempting to call. Thus, a (trusted) caller can decide whether or not to wake the called party up or disturb the called party. This is particularly useful for shift
15 workers, but equally applicable to other situations in which a person might want to receive a call from a trusted party only in the case where the call was urgent, or related to an emergency.

Preferably, the enabling means comprises an interactive voice response (IVR) system.
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Preferably, the enabling means comprises means for playing an announcement to a caller to inform the caller that the called party should only be disturbed in an emergency.

Preferably, the announcement informs the caller that the called party is asleep.
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Preferably, the apparatus further comprises means for customising the announcement message.

Preferably, the enabling means comprises means for accepting a response from the
30 caller.

Preferably, the accepting means is adapted to receive a dual tone multi-frequency (DTMF) signal, and preferably wherein the DTMF signal corresponds to a non-numerical key press, and more preferably wherein the DTMF signal corresponds to the "hash" /

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"pound" key press.

Preferably, the accepting means is adapted to receive a voice response from the caller.

5 Preferably, the enabling means is adapted to prompt a caller to leave a message.

Preferably, the identifying means comprises a calling number identification (CNID) system.

10 Preferably, the identifying means comprises means for storing caller identification information for at least one caller that is trusted by the called party, and means for comparing incoming calls with said stored caller identification information.

Alternatively, or in addition, the identifying means comprises means for comparing
15 information received together with an incoming call request with corresponding stored information to identify a caller.

Preferably, the information includes biometric information relating to the caller.

20 Preferably, the information includes a data token.

Preferably, the identifying means comprises a voice recognition system.   More preferably, the identifying means comprises an interactive voice response system. In this way the system can prompt a caller to state their name and thereby identify the caller.
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Preferably, the apparatus further comprises means for adding caller identification information for trusted callers to the storage means.

Preferably, the adding means is adapted to add caller identification information to the
30 storage means for all numbers that are dialled out via the apparatus.

Preferably, the adding means is adapted to add caller identification information to the storage means for all dialled out numbers to which a selected character has been appended, and preferably to which the "star" character has been appended.
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Preferably, the receiving means is adapted to answer incoming calls thereby to inhibit a ringing signal from disturbing the called party, and preferably wherein the receiving means is adapted to rapidly seize the line.

5 Preferably, the receiving means is adapted to play an announcement to unidentified callers.

Preferably, the announcement message informs unidentified callers that the called party is unavailable and prompts unidentified callers to leave a message.

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Preferably, the indentifying means comprising means for receiving a code from a caller and alerting the called party of the incoming call in dependence upon whether said code corresponds to a code stored in a memory of the apparatus.

15 Preferably, the alerting means allows a call request signal to pass through the apparatus thereby to alert the called party of the incoming call.

Preferably, the call request signal is at least one of an auditory tone; a visual indication; and a tactile alert. More preferably, the call request signal is a ringing signal.

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Preferably, the apparatus further comprises means for selectively activating / deactivating the apparatus.

Preferably, the activating / deactivating means comprises a single pushbutton.

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Preferably, the apparatus is adapted to allow all incoming calls through when deactivated.

Preferably, the apparatus further comprises a timer for automatically activating the
30 apparatus during certain time periods. More preferably, the timer is programmable.

Preferably, the apparatus is adapted to be incorporated within a telephone handset. More preferably, the apparatus is adapted to be incorporated within a mobile telephone.

35 Preferably, the apparatus is in the form of a standalone device adapted to be

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connectable between a telephone and a telephone line.

Preferably, the apparatus further comprises means for connecting the apparatus to a telephone and means for connecting the apparatus to a telephone line.

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According to another aspect of the invention, there is provided a telephone which comprises an apparatus as herein described.

Preferably, the telephone is in the form of a corded landline telephone, a DECT
10 telephone or a mobile telephone.

Preferably, the functionality of the apparatus is implemented within software adapted to be executed within the memory of the telephone.

15 According to a further aspect of the invention, there is provided a method of handling telephone calls, which comprises processing incoming telephone calls to a party; identifying particular callers as callers trusted by the called party; providing means for enabling a trusted caller to request that the called party be alerted of the incoming call from said trusted caller; and alerting the called party of the incoming call in dependence
20 upon receipt of said request.

According to another aspect of the invention, there is provided a method of handling telephone calls, which comprises receiving incoming telephone calls to a party; identifying particular callers; determining a trust level associated with a caller; and
25 processing the incoming call in dependence on the trust level associated with the caller.

According to a further aspect of the invention, there is provided a computer program product comprising software code adapted, when executed on a data processing apparatus, to perform all the steps of the method as described herein.

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According to another aspect of the invention, there is provided a telecommunications system which incorporates an apparatus as described herein.

Preferably, the functionality of the apparatus incorporated within the telecommunications

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system is implemented in software.

The invention also provides a computer program and a computer program product comprising software code adapted, when executed on a data processing apparatus, to
5 perform any of the methods described herein, including any or all of their component steps.

The invention also provides a computer program and a computer program product comprising software code which, when executed on a data processing apparatus,
10 comprises any of the apparatus features described herein.

The invention also provides a computer program and a computer program product having an operating system which supports a computer program for carrying out any of the methods described herein and/or for embodying any of the apparatus features
15 described herein.

The invention also provides a computer readable medium having stored thereon the computer program as aforesaid.

20 The invention also provides a signal carrying the computer program as aforesaid, and a method of transmitting such a signal.

The invention extends to methods and/or apparatus substantially as herein described with reference to the accompanying drawings.
25
Any feature in one aspect of the invention may be applied to other aspects of the invention, in any appropriate combination. In particular, method aspects may be applied to apparatus aspects, and vice versa.

30 Furthermore, features implemented in hardware may be implemented in software, and vice versa. Any reference to software and hardware features herein should be construed accordingly.

As used herein, means plus function features may be expressed alternatively in terms of their corresponding structure, such as a suitably programmed processor and associated memory

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The invention will now be described, purely by way of example, with reference to the accompanying drawings, in which:-

10   Figure 1 shows an example of an apparatus for handling telephone calls in the form of a standalone device illustrated *in situ*;

Figure 2 shows a schematic block diagram of an apparatus for handling telephone calls;

Figure 3 shows a flow diagram of the overview of the operation of the apparatus; and

15   Figure 4 shows a flow diagram illustrating one example method of handling telephone calls using the apparatus.

As shown in Figure 1, in one example, the apparatus 10 is in the form of an electronic device that is connected between a telephone 14 and a telephone line 16 in a residential
20 setting. The apparatus 10 then acts as an intelligent answering machine. The apparatus is provided with a pushbutton 12 which enables a user to select the operating mode / call reception mode of the apparatus. Depending on the selected operating or call reception mode, the apparatus 10 processes incoming calls in a preselected fashion. In one example, the user is able to cycle through the different operating modes by repeatedly
25 pressing the button 12. The pushbutton is also used to activate / deactivate the device.

In another example, the apparatus is incorporated within a telephone, for example, within a landline telephone handset or a mobile phone.

30 As shown in Figure 2 the apparatus 10 includes a telephone line interface 18 which is connected to a means for identifying callers, in the form of detector circuitry 20. The detector circuitry 20 is connected to a processing means in the form of a microprocessor 22, which is in turn connected to storage means in the form of a memory store 24

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(including both RAM and ROM). The microprocessor 22 and the detector circuitry 20 are also connected to an interactive voice response (IVR) system or module 28. The microprocessor 22 is also connected to telephone handset interface 26 for connecting the apparatus 10 to a telephone handset.

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The memory store 24 is used to store information relating to callers together with a trust level associated with the information. In an example, the memory 24 includes the caller ID information relating to certain callers, which is stored in a database together with the trust level assigned to each of the callers. The database also stores user configurable
10 call processing rules, which specify how incoming calls should be handled when the apparatus is in particular operating modes. The processing rules also specify how calls from callers having a particular trust level should be handled.

The apparatus 10 is connectable via the telephone line 16 to a remote server, which in
15 one example is connected to the Internet. The remote server contains a copy of the information stored within the database located in the memory 24, and the server may be accessed via a user interface which is provided via a website. This website enables a user to access and configure a mirror copy of the information which is stored in their apparatus. A user is thus able to configure and/or alter the list of callers, the trust level
20 associated with each caller, and the apparatus call processing rules via the website. Any changes made online can then be downloaded to the apparatus 10. Further details in this regard are available in PCT publication number WO2006/117561 A1 (International Application Number PCT/GB2006/001623), which is hereby incorporated herein by reference in its entirety.

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Figure 3 shows a general overview of the operation of the apparatus.

In one example, in certain operating modes, the apparatus 10 will simply allow all calls to pass through and alert the user of all incoming calls. In other operating modes, the
30 apparatus 10 will instead intercept all incoming calls and then process them as illustrated in Figure 3. When intercepting an incoming call, the apparatus 10 rapidly seizes the line to avoid the handset "tinkling".

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Following the reception / interception of an incoming call, the apparatus 10 determines the identity of the caller, along with the associated trust level assigned to the caller. The apparatus 10 then processes / handles the call in accordance with the selected operating mode. The level of trust associated with the particular caller, and/or other (external) factors, like the time of day and number of previous call attempts, are also used to determine the way in which the call will be handled.

In overview, in certain examples, the apparatus provides:-

- A caller identification procedure, which uses one or more approaches to determine the identity of the caller. The apparatus employs various possible caller identification mechanisms, for example, caller ID, PIN entry, a voice recognition procedure, the reception of certain biometric information, or the reception of a trusted data token.

- A preference database associates a particular assigned trust level with each individual, organisation, or job role listed (once they have been through the caller identification process).

- The call is then processed / handled in a number of possible ways, for example, the apparatus may allow the telephone 14 to ring to alert the user of an incoming call, forward the caller to the answering machine, or inform the caller that the user is busy/sleeping and provide them with a number of alternative options, for example, to ring the phone and disturb the user, leave a message, or speak to a co-worker. The apparatus might also reject the caller and advise them to call back later.

- At any given time the apparatus is in one of a number of possible call reception modes. Each of these reception or operating modes defines the particular 'action' that should be taken by the apparatus in connection with an incoming call, that is, the way that an incoming call should be processed or handled when the call is received from a caller at each particular trust level. The following are examples of possible 'actions' / call processing options:-

- Don't disturb the user under any circumstance (not even in an emergency)

- Inform the caller that the user is busy or asleep but allow the caller to override and interrupt, say, in an emergency
- Inform the caller that the user is busy, unless the call is from someone known to the user
5 - Allow all callers through

In one example, where the apparatus 10 is employed in an organisation and connected to an employee's phone, the apparatus will operate in the following way if the employee selects a "busy" operating mode. If the Managing Director rings the employee, then the 10 apparatus 10 will allow the telephone 14 to ring regardless of the operating mode selected by the user. This is because the trust level assigned to the Managing Director will override the "busy" operating mode. However, when a co-worker attempts to call the employee, the co-worker will be informed that the employee is busy, but the apparatus will provide the co-worker with the option of interrupting the employee. Calls from 15 suppliers and customers will be redirected to another phone, and all other calls will be directed to the answering machine / voice mail system.

It is also possible to assign a particular trust level to a particular caller on a temporary basis. Thus, if a user is expecting an important call from a particular supplier on a 20 particular day, say, to find out whether or not an order has been secured, the user might prefer for this caller to be allowed to interrupt the user for the entire day, regardless of whether the user is busy and has activated a "busy" operating mode. In this case the user can assign an appropriately "high" trust level to that supplier for that day only.

25 A number of further examples of the use of the apparatus are now provided.

When a business person goes into a meeting they can set their mobile phone or their office extension (both incorporating the apparatus) to 'Do not disturb'. Unrecognised callers to the business person's phone will then be sent directly to voicemail, but trusted 30 callers will be told that the called party is in a meeting, and then provided with the option of disturbing them if the call is urgent.

When a new born baby is put down to sleep during the daytime the new mother will often take the opportunity to sleep at the same time. The mother can set her mobile phone or

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landline (incorporating or connected to the apparatus) to 'Do not disturb'. Unrecognised callers will then be sent directly to voicemail, but trusted callers are told that Mum and baby are asleep, and provided with the option of allowing their call to ring through to the phone if the call is urgent.

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In another example, the apparatus 10 may be used for example by a shift worker who works night shifts to block calls that would normally ring through during the day time when the shift worker will be asleep. In particular, while the shift worker is awake the apparatus is activated to allow the phone 14 to operate normally, that is, it allows a user

10 to make and receive calls in an unrestricted fashion. However, when a user goes to sleep, or wishes not to be disturbed, the user taps the button 12 an appropriate number of times in order to place the apparatus into a 'Do-Not-Disturb' operating mode. The apparatus 10 will then selectively control which calls are allowed to ring the phone 14.

15 Figure 4 is a flow diagram illustrating one example of a method of handling incoming calls. In particular, Figure 4 illustrates a method of handling telephone calls in a "Do-Not-Disturb" operating mode suitable for use by, for example, a shift worker. In this particular example, all callers are assigned the same trust level.

20 In the 'Do-Not-Disturb' mode, the apparatus 10 answers every call received, before letting the phone 14 ring. The apparatus 10 then checks the caller's Caller-ID.

- If the caller's Caller-ID is not recognised, if it is an international call, or a withheld number, then the apparatus 10 acts as an answering machine and asks the caller

25 to leave a message.

- If the caller is a trusted caller, such as a friend or family member, the apparatus 10 plays an announcement to the caller which, in an example, states "I'm asleep at the moment, please leave a message after the tone, or press the "hash" key to ring my phone and wake me up". The trusted caller can then choose to leave a

30 message or if it is urgent or an emergency they can press the hash key to ring the phone 14 and wake up the user / called party.

If a trusted caller needs to wake up the called party, but they are calling from a number which is not known by the apparatus 10, for example, from a payphone or someone else's phone, then when they are asked to leave a message by the apparatus 10, they can press the hash key and then enter a code (4 - 8 digits long) that the called party or

5 user has previously provided to trusted callers. If the apparatus 10 receives a code, and it matches a code stored within the apparatus, then the apparatus 10 will allow the phone to ring and wake the called party.

When the user wakes up, the button 12 on the apparatus 10 is pressed to take the

10 apparatus 10 out of the 'Do-Not-Disturb' operating mode. Pushing the button 12 to take the device out of the 'Do-Not-Disturb' mode triggers the playback of any messages left for the user and/or the playback of a received calls log.

Further features relating to various examples of the apparatus and/or method

15   -   It is possible to personalise the messages that callers will hear (both unidentified and trusted callers).

-    The apparatus 10 is adapted to learn who a user's trusted callers are as it is used. Each time a call is placed via the apparatus, a "star" (*) can be appended to the end of the number dialled, which then places their number on to a trusted callers

20   list.

-    Optionally, the apparatus incorporates a facility which enables a user to remove a trusted caller from the trusted callers list in the event that the trusted caller abuses their position. Thus, following the receipt of an "emergency" call from a trusted caller, which is in fact not an emergency, the user could press a particular key, for

25   example the hash key, on their telephone handset to remove the caller from the trusted caller list.

-    The apparatus 10 uses a Caller-ID service provided by a telecommunications company. This is usually free of charge, or available for a small charge. Other possible caller identification procedures may also be employed.

30   -   The apparatus 10 can be used on landlines, cable phone lines and telephone lines with broadband.

-    The apparatus 10 works with all types of standard corded and cordless domestic

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phones.

In one example the apparatus 10 is in the form of a standalone device (as shown in Figure 1). In another example, the apparatus is incorporated within a telephone, for
5 example, within a landline telephone handset or a mobile phone. In a further example, the apparatus is implemented within a telecommunications network, in which case there is no need for any additional customer premises equipment. The apparatus may also be incorporated within private branch exchange (PABX) equipment. In certain cases, the functionality of the apparatus is implemented in software.
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In an example, the functionality of the apparatus 10 is incorporated within the call handling apparatus and system described within PCT publication number WO2006/117561 A1 (International Application Number PCT/GB2006/001623), which is hereby incorporated herein by reference in its entirety.
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It will be understood that the present invention has been described above purely by way of example, and modifications of detail can be made within the scope of the invention.

Each feature disclosed in the description, and (where appropriate) the claims and
20 drawings may be provided independently or in any appropriate combination.

<u>CLAIMS:</u>

1.   An apparatus for handling telephone calls, which comprises means for receiving incoming telephone calls; means for identifying particular callers; means for determining
5 a trust level associated with a caller; and means for processing the incoming call in dependence on the trust level associated with the caller.

2.   An apparatus according to Claim 1, wherein the identifying means comprises means for storing identification information for at least one caller.
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3.   An apparatus according to Claim 2, wherein the identification information includes at least one of the following: biometric information relating to a caller, a voice print; an identification key; a trusted data token; and calling number identification (CNID) information.
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4.   An apparatus according to Claim 2 or 3, further comprising means for adding identification information relating to particular callers to the storage means.

5.   An apparatus according to Claim 4, wherein the adding means is adapted to add
20 calling number identification (CNID) information to the storage means for all numbers that are dialled out via the apparatus.

6.   An apparatus according to Claim 5, wherein the adding means is adapted to add caller identification information to the storage means for all dialled out numbers to which
25 a selected character has been appended, and preferably to which the "star" character has been appended.

7.   An apparatus according to any of the preceding claims, wherein the identifying means comprises means for comparing information received together with an incoming
30 call request with corresponding stored information to identify a caller.

8.   An apparatus according to any of the preceding claims, wherein the identifying means comprises an interactive voice response (IVR) system.

35 9.   An apparatus according to any of the preceding claims, wherein the identifying

means comprises a voice recognition system.

10.   An apparatus according to any of the preceding claims, further comprising means for assigning one of a plurality of trust levels to a caller.

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11.   An apparatus according to Claim 10, further comprising means for storing trust levels assigned to callers.

12.   An apparatus according to Claim 10 or 11, further comprising means for linking a

10 trust level assigned to a caller with identification information relating to that caller.

13.   An apparatus according to any of Claims 10 to 12, wherein the assigning means is adapted to assign the same trust level to all callers for which the apparatus has stored identification information.

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14.   An apparatus according to any of Claims 10 to 13, wherein the assigning means is adapted to assign a trust level to a caller in dependence on the status within an organisation of the caller.

20 15.   An apparatus according to any of Claims 10 to 14, wherein the assigning means is adapted to automatically assign a particular trust level to a caller in dependence on the job title of the caller.

16.   An apparatus according to any of Claims 10 to 15, further comprising means for

25 altering the trust level of a caller.

17.   An apparatus according to any of Claims 10 to 16, wherein the assigning means is adapted to assign a trust level to a caller for a specified time period.

30 18.   An apparatus according to Claim 17, wherein the assigning means is adapted to alter the trust level assigned to a caller in dependence on one or more of the following: the time of day; day of the week; and calendar date.

19.   An apparatus according to any of Claims 10 to 18, wherein particular call

35 processing rules are associated with particular trust levels, and preferably wherein

particular call processing rules associated with certain trust levels override default call processing rules.

20.   An apparatus according to any of the preceding claims, further comprising means for activating one of a plurality of call reception modes.

21.   An apparatus according to Claim 20, wherein the processing means is adapted to process calls in accordance with an activated reception mode.

22.   An apparatus according to Claim 20 or 21, wherein particular call processing rules are assigned to particular call reception modes.

23.   An apparatus according to any of Claims 20 to 22, wherein the processing means is adapted to process calls in dependence upon the reception mode of the apparatus and/or trust level of the caller.

24.   An apparatus according to any of the preceding claims, wherein the processing means is adapted to process calls in accordance with one or more call handling rules, and preferably wherein the processing means is adapted to process calls in one or more of the following ways: route a call to voice mail; divert a call; reject a call; allow a call through; and play a personalised message to a caller.

25.   An apparatus according to any of the preceding claims, wherein the processing means comprises an interactive voice response (IVR) system.

26.   An apparatus according to any of the preceding claims, wherein the receiving means is adapted to answer incoming calls thereby to inhibit a ringing signal from disturbing the called party, and preferably wherein the receiving means is adapted to rapidly seize the line.

27.   An apparatus according to any of the preceding claims, wherein the receiving means is adapted to play an announcement to unidentified callers.

28.   An apparatus according to any of the preceding claims, wherein the indentifying means comprising means for receiving a code from a caller and alerting the called party

of the incoming call in dependence upon whether said code corresponds to a code stored in a memory of the apparatus.

29.   An apparatus according to any of the preceding claims, further comprising means for enabling a caller having a specified trust level to request that the called party be alerted of the incoming call from said caller; and means for alerting the called party of the incoming call in dependence upon receipt of said request.

30.   An apparatus according to Claim 29, wherein the enabling means comprises an interactive voice response (IVR) system.

31.   An apparatus according to Claim 29 or 30, wherein the enabling means comprises means for playing an announcement to a caller to inform the caller that the called party should only be disturbed in an emergency.

32.   An apparatus according to Claim 31, wherein the announcement informs the caller that the called party is asleep.

33.   An apparatus according to Claim 31 or 32, further comprising means for customising the announcement message.

34.   An apparatus according to any of Claims 29 to 33, wherein the enabling means comprises means for accepting a response from the caller.

35.   An apparatus according to Claim 34, wherein the accepting means is adapted to receive a dual tone multi-frequency (DTMF) signal, and preferably wherein the DTMF signal corresponds to a non-numerical key press, and more preferably wherein the DTMF signal corresponds to the "hash" / "pound" key press.

36.   An apparatus according to Claim 34 or 35, wherein the accepting means is adapted to accept a voice response from the caller.

37.   An apparatus according to any of Claims 29 to 36, wherein the enabling means is adapted to prompt a caller to leave a message.

38.   An apparatus according to any of Claim 29 to 37, wherein the identifying means comprises means for storing caller identification information for at least one caller that is trusted by the called party, and means for comparing incoming calls with said stored caller identification information.

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39.   An apparatus according to any of Claims 29 to 38, wherein the alerting means allows a call request signal to pass through the apparatus thereby to alert the called party of the incoming call.

10 40.   An apparatus according to Claim 39, wherein the call request signal is at least one of an auditory tone; a visual indication; and a tactile alert.

41.   An apparatus according to Claim 40, wherein the call request signal is a ringing signal.

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42.   An apparatus according to any of the preceding claims, further comprising means for selectively activating / deactivating the apparatus.

43.   An apparatus according to Claim 42, wherein the activating / deactivating means
20 comprises a single pushbutton.

44.   An apparatus according to Claim 42 or 43, wherein the apparatus is adapted to allow all incoming calls through when deactivated.

25 45.   An apparatus according to any of the preceding claims, further comprising a timer for automatically activating the apparatus during certain time periods.

46.   An apparatus according to Claim 45, wherein the timer is programmable.

30 47.   An apparatus according to any of the preceding claims, wherein the apparatus is adapted to be incorporated within a telephone handset.

48.   An apparatus according to Claim 47, wherein the apparatus is adapted to be incorporated within a mobile telephone.

35

49. An apparatus according to any of Claims 1 to 46, wherein the apparatus is in the form of a standalone device adapted to be connectable between a telephone and a telephone line.

5 50. An apparatus according to Claim 49, further comprising means for connecting the apparatus to a telephone and means for connecting the apparatus to a telephone line.

51. A telephone which comprises an apparatus according to any of Claims 1 to 47.

10 52. A telephone according to Claim 51, which is in the form of a corded landline telephone, a DECT telephone or a mobile telephone.

53. A telephone according to Claim 51 or 52, wherein the functionality of the apparatus is implemented within software adapted to be executed within the memory of
15 the telephone.

54. A method of handling telephone calls, which comprises receiving incoming telephone calls to a party; identifying particular callers; determining a trust level associated with a caller; and processing the incoming call in dependence on the trust
20 level associated with the caller.

55. A computer program product comprising software code adapted, when executed on a data processing apparatus, to perform all the steps of the method according to Claim 54.
25
56. A telecommunications system which incorporates an apparatus according to any of Claims 1 to 46.

57. A telecommunications system according to Claim 56, wherein the functionality of
30 the apparatus is implemented in software.

58. An apparatus substantially as herein described and/or as illustrated with reference to the accompanying drawings.

59.   A method substantially as herein described and/or as illustrated with reference to the accompanying drawings.

60.   A computer program product substantially as herein described and/or as illustrated with reference to the accompanying drawings.

61.   A telephone substantially as herein described and/or as illustrated with reference to the accompanying drawings.

62.   A telecommunications system substantially as herein described and/or as illustrated with reference to the accompanying drawings.
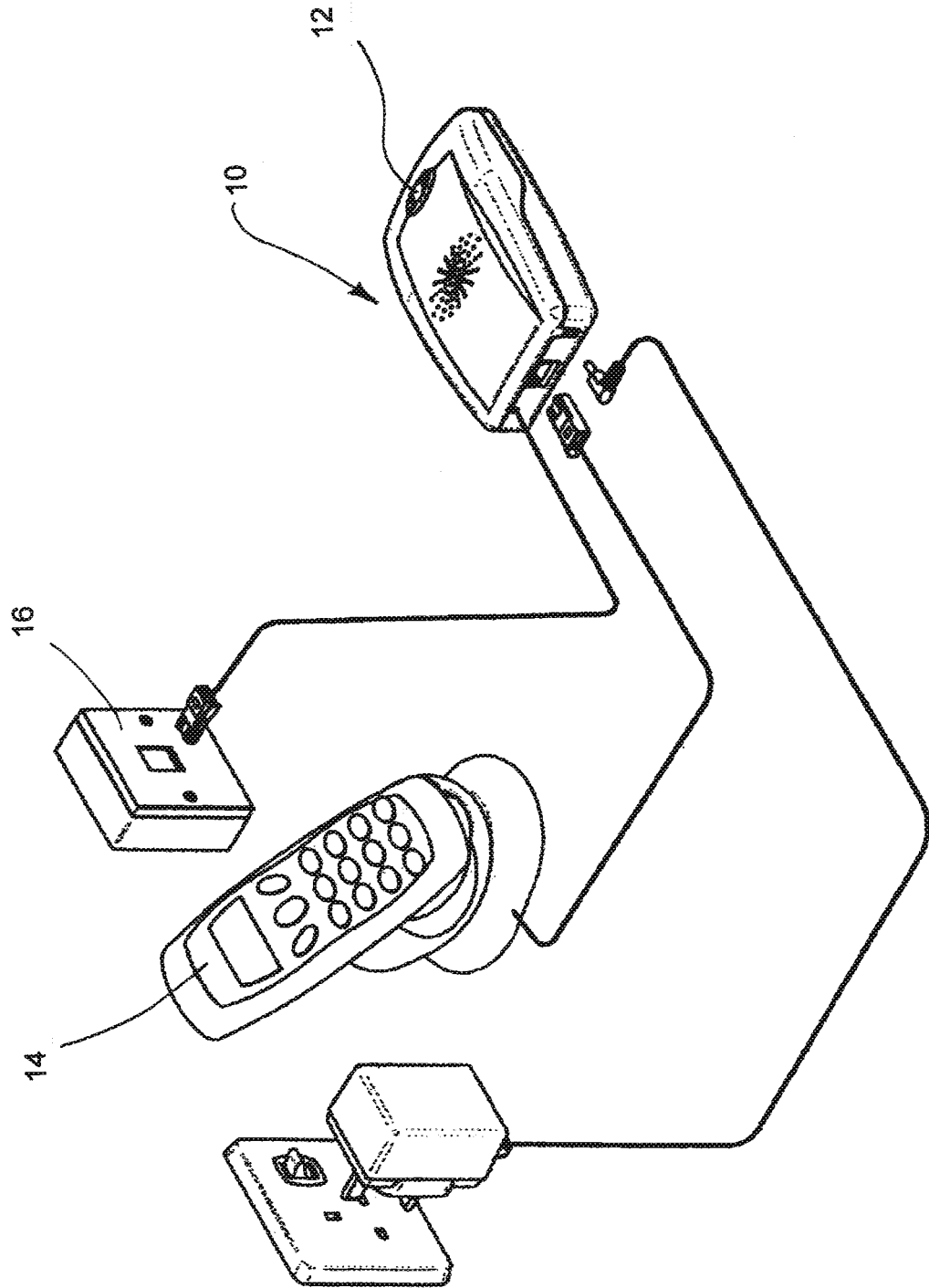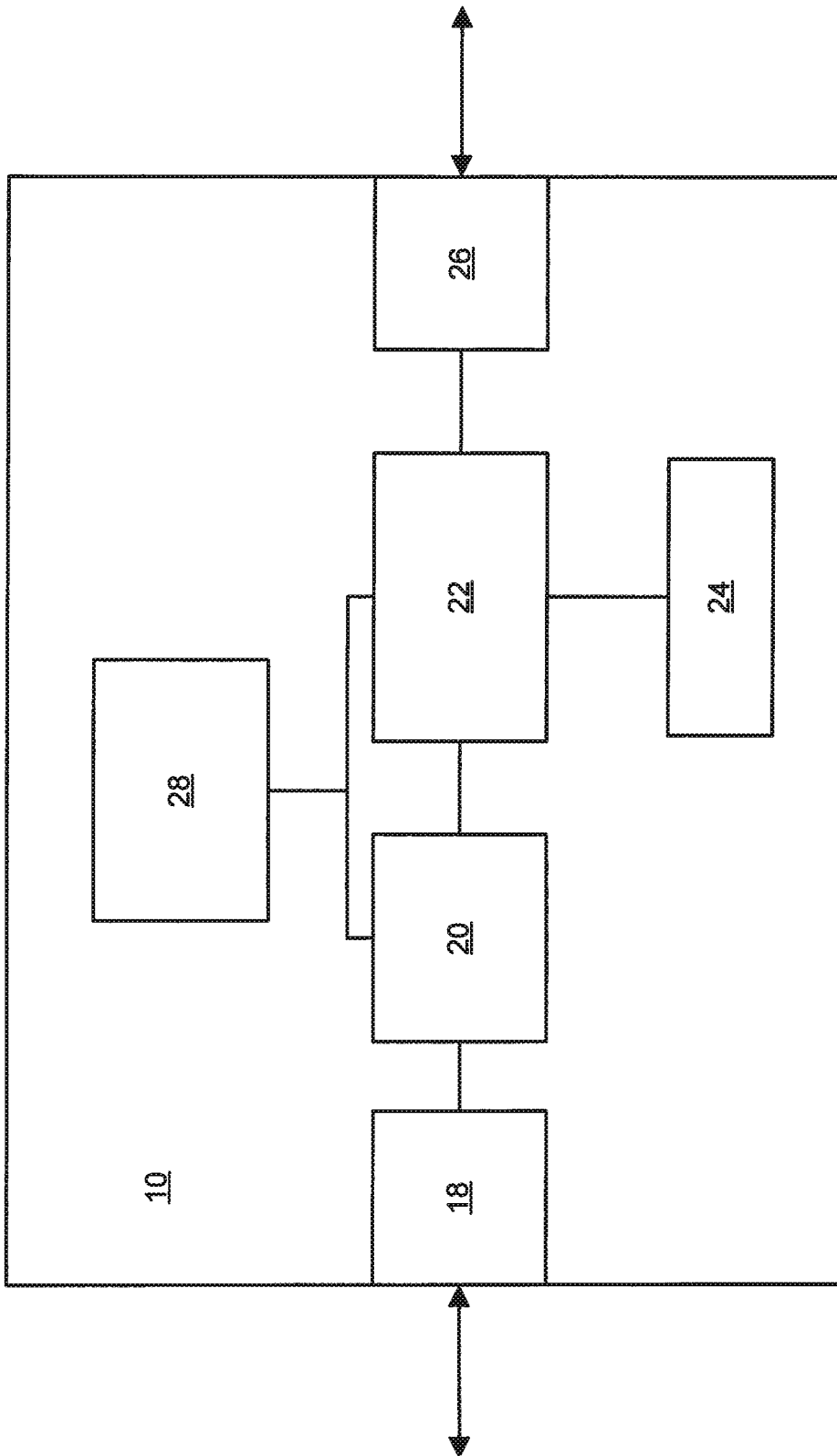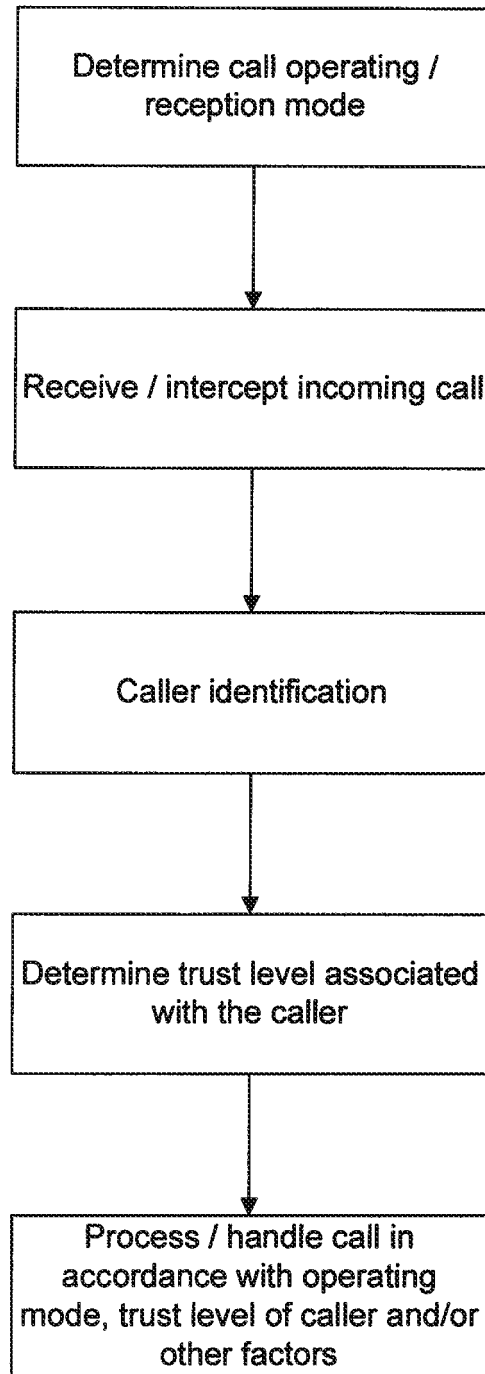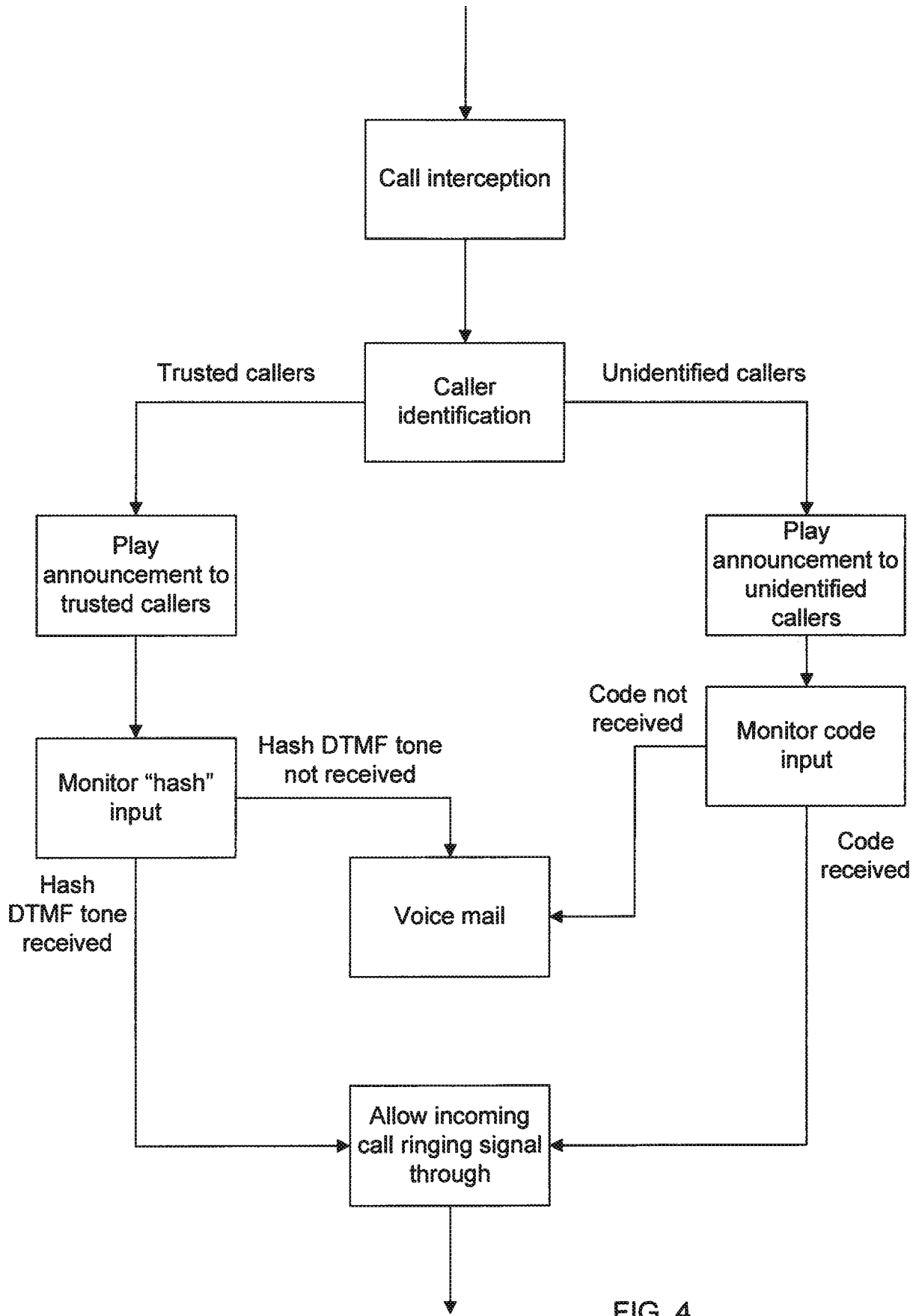
FIG. 1

FIG. 2

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┌─────────────────────────────┐
│   Determine call operating / │
│        reception mode        │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│   Receive / intercept incoming call │
│                             │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│                             │
│    Caller identification     │
│                             │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│  Determine trust level associated │
│        with the caller       │
│                             │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│     Process / handle call in  │
│   accordance with operating  │
│ mode, trust level of caller and/or │
│         other factors        │
└─────────────────────────────┘
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FIG. 3

FIG. 4