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(54) Title : TELECOMMUNICATIONS FUNCTIONS MANAGEMENT SYSTEM

(57) Abrégé/Abstract:
A personal communications controller (PCC, 10) may be programmed with a customized service configuration (52) based on which telecommunications functions in connection with multiple telephone terminals (16) are managed. The PCC system is designed to provide enhanced service value to all of the telephone terminals throughout a residence coupled to a single telephone communication line (12) entering the residence. The PCC may provide service differentiation on an individual basis to the telephone terminals and, furthermore, differentiated treatment may be effected on a per telephone call basis. The customized service configuration may be generated using a personal computer (20) from which it is downloaded to the PCC.
A personal communications controller (PCC, 10) may be programmed with a customized service configuration (52) based on which telecommunications functions in connection with multiple telephone terminals (16) are managed. The PCC system is designed to provide enhanced service value to all of the telephone terminals throughout a residence coupled to a single telephone communication line (12) entering the residence. The PCC may provide service differentiation on an individual basis to the telephone terminals and, furthermore, differentiated treatment may be effected on a per telephone call basis. The customized service configuration may be generated using a personal computer (20) from which it is downloaded to the PCC.
TELECOMMUNICATIONS FUNCTIONS MANAGEMENT SYSTEM

Background Of The Invention

This invention relates generally to telecommunication management systems and, in particular, to a programmable personal communications controller system whereby a user may effectively manage residential telecommunication functions in accordance with a personal service configuration programmed therein. The service configuration defines how the system responds to various attributes associated with either incoming or outgoing calls.

Intelligent telephone terminals have been evolving in terms of features and services supported thereby for management of telecommunications functions. Such intelligent terminals are typically characterized by a microprocessor based telephone set having a liquid crystal display (LCD), which together with the common telephone keypad and a few softkeys provide a user interface whereby the terminal may be programmed and controlled for personal operation. Furthermore, these intelligent telephone terminals are known to be equipped with one or more of the following conventional functionality: a dual tone multi-frequency (DTMF) generator, a DTMF decoder, a digital telephone answering device (DTAD), a time of day (TOD) clock and a calling line identification (CLID) device.

However, the technology capabilities and corresponding service and feature opportunities in existing intelligent telephones have outgrown the capacity of a user to personalize and configure the telephone. The user interface represents a bottleneck to full personalization which point is best illustrated by the following example.

Nortel’s 9516 telephone set, a commercially available intelligent telephone terminal having a TOD clock, a two line LCD display and CLID capabilities provides the ability to define a feature key that displays call duration. When you press the key, the LCD display
changes from displaying details about the call, either caller identification for terminating call or calling information for originating calls, to displaying call duration time. Press the key again and the display returns to call details.

Other intelligent telephone sets are known to provide a similar call timer that is continuously displayed on their LCD display. A call timer function can be assigned to one of the programmable keys provided on the set. It's function is to reset the timer to zero.

Still other vendors have telephone sets with a call duration timer on their LCD display. Programming of the telephone set simply enables or disables the call timer on a permanent basis.

These represent at least three different variations on implementation of the call timer feature. Telephone set manufacturers generally pick a specific implementation and then provide a programming function whereby a user may only enable or disable this feature.

It would not be difficult to implement the several variations within the telephone set firmware. The difficulty is in providing a configuration setup interface using the LCD display and keypad of the intelligent terminal that empowers the user to configure the call timer feature to his particular personalization.

Speed calling directories is another example where the inadequacy of the telephone display/keypad user interface. Many intelligent telephones now have an internal directory of name and telephone number lists. Typically, these telephones do not include an alphanumeric keyboard so that names are entered from the digit keypad. For instance, the "2" key is for entering the letters "ABC"; press once for "A", press twice for "B", a third press for "C".

Furthermore, any telecommunication management functions provided by the intelligent telephone terminal are limited to itself and thus it is not particularly
useful in a residence having a multiple telephone extension wiring configuration connected to which it is common to find several telephone sets. Still further, there is no way to add incremental service functionality to existing telephone terminals without either replacing the terminal or at a minimum effecting some kind of hardware modification, upgrade.

It is, therefore, desirable to have adjunct system that provides flexibility for a user to truly personalize its configuration and whereby enhanced telecommunications services and features are supported for multiple telephone terminals within the user’s residence.

Summary Of The Invention

It is an object of the present invention to provide a new and improved method and system for managing telecommunication functions.

The invention, therefore, according to a first exemplary broad aspect provides in a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of: providing one or more predetermined call identifiers; associating each predetermined call identifier with one or more alerters of the plurality of alerters; correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers; and activating the one or more alerters associated with the particular identifier.

In accordance with a second exemplary broad aspect, the invention provides for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a
telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising: means for providing one or more predetermined call identifiers; means for associating each predetermined call identifier with one or more alerters of the plurality of alerters; means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers; and means for activating the one or more alerters associated with the particular identifier.

In accordance with a third broad aspect, the invention provides in a telecommunications functions management system for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of: providing one or more predetermined call identifiers; associating each predetermined call identifier with one cadence of the plurality of cadences; correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers; and activating the one or more alerters to operate at the one cadence associated with the particular identifier.

In accordance with a fourth broad aspect, the invention provides for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising: means for providing one or more predetermined call identifiers;
means for associating each predetermined call identifier with one cadence of the plurality of cadences; means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers; and means for activating the one or more alerters to operate at the one cadence associated with the particular identifier.

In accordance with a fifth exemplary broad aspect, the invention provides in a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network, a method for managing alerting of an incoming call directed to the subscriber, comprising the steps of: providing one or more predetermined call treatment options; associating each predetermined call treatment option with one or more alerters of the plurality of alerters; prompting the incoming call with the predetermined call treatment options; receiving an input selection from the incoming call; correlating the input selection to a particular call treatment of the one or more predetermined call treatment options; and activating the one or more alerters associated with the particular call treatment.

In accordance with a sixth exemplary broad aspect, the invention provides for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, a system for managing alerting of an incoming call directed to the subscriber, comprising: means for providing one or more predetermined call treatment options; means for associating each predetermined call treatment option with one cadence of the plurality of cadences; means for prompting the incoming call with the
predetermined call treatment options; means for receiving an input selection from the incoming call; means for correlating the input selection to a particular call treatment of the one or more predetermined call treatment options; and means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment.

In accordance with a seventh broad aspect, the invention provides in a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals communicatively coupled to a telecommunications network, a method for managing outgoing calls originating from any of the plurality of telephone terminals, comprising the steps of: providing one or more predetermined block call identifiers; associating each predetermined block call identifier with one or more telephone terminals of the plurality of telephone terminals; correlating a directory number of one outgoing call to a particular block call identifier of the one or more predetermined block call identifiers; identifying one terminal of the plurality of telephone terminals at which the one outgoing call is being originated; and blocking, responsive to the one terminal being associated with the particular block call identifier, the one outgoing call.

In accordance with an eighth broad aspect, the invention provides in a telecommunications functions management system, comprising: a plurality of telephone terminals associated with a plurality of alerters, each telephone terminal being adapted to communicate through a subscriber loop with a telecommunications network; and a personal communications controller, coupled to the subscriber loop, for controlling dependent upon predetermined operational parameters, operation of the plurality of alerters in response to an incoming call from the telecommunications network and access of each telephone terminal to the telecommunications network in response to
an outgoing call originated from that terminal; a computer station at which data defining the predetermined operation parameters is generated; and means for downloading the data from the computer to the personal communications controller.

A personal communications controller (PCC), embodying the present invention, may be programmed with a personal service configuration based on which telecommunications functions in connection with multiple telephone terminals are managed. The PCC system is designed to provide enhanced service value to all of the telephone terminals throughout a residence coupled to a single telephone communication line entering the residence. The PCC may provide service differentiation on an individual basis to the telephone terminals and, furthermore, differentiated treatment may be effected on a per telephone call basis.

A wireline arrangement of the personal communications controller system effects a signaling protocol between the PCC and the telephone sets over the single twisted pair telephony wiring existing within the residence. The signaling is shared with normal analog telephone line operation by utilizing a frequency band which is above the telephony band. It is fully compatible with existing conventional analog telephone signaling and voice. The signaling operates transparently and invisibly to the telephone central office. The PCC includes suitable protection equipment to prevent leakage of its signaling outside the home into the telephone company wiring.

A wireless arrangement of the present system comprises the PCC integrated into a base station which is able to communicate and control multiple cordless handsets over radio frequency channels.

A personal computer (PC) or any other data processing workstation may be utilized to generate the service configuration which is then downloaded therefrom to the PCC. In operation, however, the PCC represents a
standalone "computer peripheral" that operates independently and externally to the PC for call processing. The PC brings advantageous value to the PCC system. The role of the PC is to unblock the personalization bottleneck. An intuitive graphical interface on the PC enables a much broader flexibility of configuration and the standard PC keyboard is a more efficient input means for generating the service configuration, for instance, to do data entry.

The service configuration defines parameter in accordance with which the PCC operates. For instance, the PCC may have installed a number of predefined features and services for which the personal service configuration may include parameters that indicate to either activate or deactivate specific ones as desired. For frequently used features, this approach is beneficial. Other operational parameters include associating a distinctive alert cadence with a particular calling number and, further, a particular mailbox to leave a message if the call is not answered.

**Brief Description Of The Drawings**

The invention will be better understood from the following description of a personal communications controller system together with reference to the accompanying drawings, in which:

- Figure 1 is a block diagram that generally represents the personal communications controller system;
- Figures 2a and 2b illustrate various configurations of the personal communications controller system at a subscriber's residence;
- Figure 3a is a block diagram illustrating internal details of a personal communications controller and satellite control module for a wireline implementation of the system;
- Figure 3b is a block diagram illustrating internal details of the personal communications controller for a second wireline implementation of the system;
Figure 3c is a block diagram illustrating internal details of the personal communications controller for a wireless implementation of the system;

Figure 4 is a flow chart depicting operation of the personal communications controller to effect an automatic attendant functionality;

Figure 5 is a flow chart depicting operation of the personal communications controller to effect selective ringing functionality;

Figure 6 is a flow chart depicting operation of the personal communications controller to effect toll alerting functionality;

Figure 7 is a flow chart depicting operation of the personal communications controller to effect do not disturb, time of day blocking and priority override functionality;

Figure 8 is a flow chart depicting operation of the personal communications controller to effect single number service functionality;

Figure 9 is a flow chart depicting operation of the personal communications controller to effect selective outgoing call blocking functionality; and

Figure 10 is a flow chart depicting operation of the personal communications controller to effect data call protection functionality.

Detailed Description

Referring to Figure 1, depicted for illustrating the personal communications controller system, in accordance with the present invention, is a personal communications controller (PCC) 10 which may be connected through a conventional communication line 12 to a central office 14 of a telephone network and to which a plurality of telephone terminals 16 may be communicatively coupled, through either wireline or wireless connectability represented by line 18. The communication line 12 may be a typical analog subscriber loop having tip and ring leads, an integrated service digital network line or other
conventional interfaces for network access. The communicative coupling 18 may be effected by a parallel connection between the PCC 10 and all telephone terminals 16, individual connections for respective terminal 16 to the PCC 10 and, alternatively, employing a combination of parallel and independent connections. Also connectable to the PCC 10 is a personal computer workstation or PC 20.

The personal communications controller system and specifically the PCC 10 constitutes subscriber premise equipment that is logically positioned intermediate and operationally interconnects the telephone network wiring, namely line 12, entering a subscriber's residence and the telephone terminals 16 dispersed throughout the residence. It, however, should be understood that the PCC 10 is not necessarily limited to serially connecting, in physical terms, the communication line 12 to the terminals 16. This logical positioning enables the PCC 10 to act as a telecommunication hub which intercepts, blocks and processes signaling and voice between the line 12 and telephone terminals 16 to thereby effectively manage residential telecommunications functions. Examples of services and features supported for management functions in connection with incoming calls include determining which calls to answer, when to answer and where to send answered calls. Similar options and controls are supported for outgoing calls. The PCC 10 may provide differentiated call treatment, such as alerting and originating features, on a per telephone terminal basis and on a per telephone call basis, to the multiple telephone terminals 16 connected to the telephone network via the single line 12.

Various configurations for installation of the PCC 10 at the subscriber's residence are possible. Figure 2a exemplifies both wireline and wireless based installations, wherein the PCC 10 is integrated into a cordless telephone base station which is connected to an extension of the single line inhouse telephony wiring 22 which provides multiple telephone extensions in parallel. The base
station has the capability to establish radio wave links over which it may control and communicate with multiple remote cordless handset 24. Satellite communicator modules (SCMs) 26 are connected to other telephone extensions, and one or more conventional analog telephone sets 28 may be connected to each SCM 26. The inhouse wiring 22 is the medium over which a bi-directional signaling path between the FCC 10 and the SCMs 26 may be established. In addition to providing telecommunications management functions on a per telephone call basis, each handset 28 and SCM 26 may be addressed individually by the FCC 10 whereby enhanced services may be provisioned on a per telephone terminal basis, in accordance with a programmed service configuration for the particular handset 28 or telephone set 24 corresponding to the particular SCM 26.

The SCM 26 enables the provision of enhanced services on an individual basis to the telephone sets 28 which otherwise are connected in parallel by the inhouse wiring 22 at extensions that are remotely located in the residence distant from the FCC 10. The SCM 26 is able to intercept and even block signals between the telephone line 12 and its locally connected set 28. For example, the FCC 10 could determine that an incoming call is intended for a particular person and then would signal only the appropriate SCMs 26 to provide ringing indication; there would be no ringing indications at telephone sets attached to other SCMs. The SCMs 26 could either block, enable or even generate ringing signals for their locally connected telephone sets 28. Preferably, the ringing notification of the sets 28 connected to the SCMs 26 would be disabled and an internal SCM ringing generator or any other means for alerting of an incoming call could be used. It is envisioned that the SCM functionality may be integrated into the telephone sets 28 instead of employing two separate devices.

Another configuration of the personal communications controller system, shown in Figure 2b, is a
wireline based installation having the PCC 10 disposed as an entrance unit between the communications line 12 entering the residence and all the telephone extensions of the inhouse telephony wiring 22. In this particular arrangement, the PCC 10 connects to and controls in parallel conventional telephone sets 28 attached to the various telephone extensions, and supports enhanced telephony services on a per telephone call basis as the telephone sets 28 may not be individually controlled. Alternatively, each telephone extension may be provisioned with an SCM 26 whereby the sets 28 connected thereto may then be independently controlled, and cordless handsets may also be utilized.

It should be understood that the handsets 24 and the telephone sets 28 are merely exemplary of the types of telephone terminals 16, referred to above in connection with Figure 1, that may utilized in conjunction with the PCC 10. The telephone terminals 16 are representative of conventional telephony equipment by which a person interfaces with the telephone network and, in particular, associated with each telephone terminal 16 is an incoming call alerter (e.g., ringing indicator) which is controllable by the PCC 10.

The PC 20, advantageously forming part of the personal communications controller system, is connectable to the PCC 10 and functions to provide service configuration and programming for the PCC 10. A graphical user interface facilitates use of the PC 20 for generating a service configuration which is then downloaded to the PCC 10. The PC 20 is not involved in the real time processing of telephone calls and therefore may be disconnected from the PCC 10 once it has been programmed. Communication between the PCC 10 and the PC 20, as illustrated in Figures 2a and 2b, may be effected through a dedicated link 30 such as an RS-232 bus attached to the serial port of the PC 20 or, alternatively, over the inhouse telephony wiring 22 by utilizing a modem for this purpose.
Turning now to Figure 3a, depicted are the functional modules within the PCC 10 and the SCM 26, which combination corresponds to the wireline implementation of the personal communications controller system of Figure 2a and is generally referenced by 31. The PCC 10 comprises a processor 32 which interacts with a ring detector 34, line interface 36, calling line identifier (CLID) 38, tone detector 40, digital telephone answering device (DTAD) 42, parallel set detector 44, SCM interface 46, computer interface 48, time of day (TOD) clock 50, service configuration 52 and a basic telephone unit 54. The SCM 26 includes a processor 56 which interacts with a PCC/terminal interface 58 and a ring generator 60 as an alertor which is operable at multiple cadences.

The line interface 36 serves to couple the PCC 10 to the tip and ring leads of the communication line 12 of the central office, and is serially connected across internal tip and ring leads 62 to the SCM interface 46. The line interface 36 includes a call termination impedance together with an on-hook/off-hook switching function controlled by the processor 32 in order to answer incoming calls. It also includes suitable line protection circuitry to prevent leakage of the PCC signaling into the telephone network wiring. The SCM interface 46 is adapted to couple the PCC 10 to the single line telephony wiring 22 to which multiple SCMs 26, via their PCC/terminal interface 58, are connected in parallel at various extensions within a subscriber's residence. The SCM interface 46 and PCC interface 58 communicate through a bi-directional signaling protocol whereby the PCC 10 is able to individually address remote SCMs 26 using telephone company regulatory compliant techniques on the single line twisted pair wiring 22. A signaling channel is effected on the line 22 outside the regular voice channel, and thus signaling is shared with normal analog telephone line operation. It is fully compatible with existing conventional analog telephone signaling and voice. The signaling operates transparently
and invisibly to the telephone network central office.

It should be understood that the inhouse wiring 22 and the communications line 12 may be the same subscriber loop which is connected to the central office of the telephone network and therefore, as shown in Figure 2a, the PCC 10 can be connected in parallel with the other extension telephone sets 28 within the subscriber's residence. Alternatively, as shown in Figure 2b, the PCC 10 may provide a circuit connection between line 12 from the central office and the inhouse telephony wiring 22.

Turning back to Figure 3a, the PCC/terminal interface 58 of the SCM 26 is also adapted for coupling the SCM to a telephone terminal and includes a switching function operated by its processors 56 in order to connect or disconnect the terminal from wiring 22. The ring generator 60 is controlled by the processor 56 in accordance with control commands received from the PCC 10, to produce distinctive ringing associated with the telephone terminal.

Within the PCC 10, the ring detector 34 is connected across the tip and ring leads of the communication line 12 for detecting incoming ring signals from the central office and reporting same to the processor 32 which may then take action in any of a number of ways, in accordance with the service configuration 52. The CLID 38 provides, in a CLASS environment, reception and display of calling details as well as storage of details from previous incoming calls, up to a certain limit. The integrated DTAD 42 functions include voice storage and synthesis for greetings and prompts, DTMF digit recognition, multiple voice message mailboxes and speed calling directories. The tone detector 40 detects various tones including dial tone, ringback tone, busy tone and the like, the reception of each being identified to the processor 32. The parallel set detector 44 functions to recognize whether or not telephone terminals at other extensions are off-hook (i.e., in use) and provides a
output signal indicative of such to the processor 32. The computer interface 48 may be a serial port and/or integrated modem for communication with the PC 20. The TOD clock 50 is utilized by the processor 32 in implementing any time related services and features of the personal communications controller system.

The basic telephone unit 54 consists of conventional telephone set equipment, such as, a DTMF keypad and user configurable “feature” keys for functions like dialing frequently called numbers, a handset, a LCD display and an optional handsfree unit. The telephone unit 54 enables the PCC 10 be utilized as an addition extension telephone set.

The service configuration 52 constitutes configuration data which is downloaded via the computer interface 48 from the PC 20 and which controls operation of the processor 32. The configuration 52 defines operational parameters for the PCC 10 and includes address information in respect of each SCM 26 with which the PCC 10 communicates, directory information, feature activation and deactivation indications as well as further operational data used by active features, if appropriate.

Figure 3b depicts a second embodiment 70 of the functional structure of the PCC 10 for the wireline implementation corresponding to Figure 2b. This second embodiment 70 is substantially similar to the first embodiment 31 of the PCC system in Figure 3a, except the PCC 10 in Figure 3b now includes a ring generator 72 and a terminal interface 73 to which the multiple telephone terminals are connected in parallel over the inhouse wiring 22. Figure 3c depicts a wireless based embodiment 74 of the PCC 10 that includes a transceiver radio 76 and antenna 78 in combination, by which the PCC 10 interacts with and controls an otherwise convention cordless handset 24 as shown in Figure 2a, for example, to ring when an appropriate incoming call is received by the PCC.
The following describes exemplary services and features supported by the personal communications controller system, as illustrated in Figure 1. These services span three functional areas: incoming call termination and signaling, call origination, and call integrity.

**CALL TERMINATION AND SIGNALING**

Under the call termination and signaling functional area, services and features include an automatic attendant, selective and distinctive ringing, toll alert, a do not disturb (DND) feature, time of day (TOD) blocking, priority override, call detail recording, and single number service.

**Automatic Attendant**

Figure 4 exemplifies a process for effecting by the PCC 10 the automatic attendant function. When the PCC 10 detects a ringing signal on the line 12, responsive thereto the PCC 10 functions as an automatic attendant to determine a recipient for whom an incoming call is destined and then properly alert the intended recipient. It is noted that a recipient may be an individual, such as, each member of a household or a group of individuals, such as, the adults and the kids within the household. There are two techniques that may be used for destination determination:

1) If the calling number (CLID) is provided by the central office 14 of the telephone network, the PCC 10 will utilized the CLID information and look for a match within one or more internal lists of directory numbers which form part of the configuration data. For instance, each recipient (e.g., adults and kids or individuals within the household) may have a respective directory list containing directory numbers corresponding to persons from whom calls are frequently received. Each directory list also contains information about the type of alerting for the particular recipient attached to that list.
2) If the CLID information is not provided by the central office or a match is not found in the directory lists within the configuration data, then the PCC 10 will automatically answer the call and present a routing or call treatment options menu to the caller. For example, the PCC 10 may voice prompt for a touch tone digit — "For adults press 1, for kids press 2" — and based on the received DTMF digit, the appropriate recipient for routing of the call is determined. For each routing option, there is a specified within the configuration data the type of alerting.

Once the automatic attendant has determined the destination of the call, it will properly alert the household members as described in the selective ringing feature below.

Selective Ringing

The automatic attendant service implemented by the PCC 10 has determined who an incoming call is for. Selective ringing then determines how to ring or alert that intended recipient. Figure 5 exemplifies a process for effecting selective ringing.

The alerting by the PCC 10 can be configured to be via distinctive ringing and/or via selective ones of the telephone terminals 16. The particular telephone terminal or multiple terminals 16 and the particular ringing cadence are indicated in the configuration data for each recipient and the appropriate selective ringing is based on the determined destination for the incoming call.

This service is implemented by the capability of the PCC 10 to answer a call and then, for example in relation to the PCC embodiment 31 in Figure 3a, use the internal ringing generator 60 within the SCM 26 to re-ring individual extension telephone sets. The PCC 10 transmits over the inhouse telephone wiring an appropriate control signal in which the specific SCMs 26 that generate rings are identified together with the specific ring pattern. For the wireless embodiment of the PCC 74 in Figure 3c, a similar control signal may be transmitted over a radio wave
link, to activate ring generators of the specific handsets 24 in accordance with the specific ring pattern.

A typical application would be to configure the kitchen and family room telephones to always ring on all calls but with a distinctive ringing cadence for different recipients. Bedroom and office phones can be configured to only ring for the actual "occupants" of those rooms.

**Toll Alert**

Figure 6 exemplifies a process for toll alerting effected by the PCC 10. Toll alerting is based on the CLID for an incoming call in conjunction with a user defined toll DN list. The PCC 10 compares the area code or numbering plan area (NPA) of a received CLID with the user's local NPA which forms part of the configuration data and recognizes the incoming call as being a toll call when the two NPAs do not match. Furthermore, an incoming call CLID whose NPA matches the local NPA may still be recognized as a toll call if the incoming DN matches an entry in the pre-defined toll DN list. Recognized toll calls may be identified as such by a distinctive ring cadence (e.g., two shorter rings) which is defined in the configuration data in association with the local NPA. In addition, at the user's discretion, these toll calls may be routed to a specific telephone terminal or terminals 16 which are specified in the configuration data.

Figure 7 exemplifies a process for effecting by the PCC 10 a do not disturb (DND), time of day (TOD) blocking, and priority override functions described in the following.

**Do Not Disturb**

The "do not disturb" (DND) feature is beneficial for when users desire a "quiet time", for instance so that they can simply relax, read a paper, or eat a meal without being disturbed by incoming calls. The DND feature may be activated on an as needed basis, either for a predetermined interval of time as specified in the configuration data or
indefinitely, by depressing a key on the PCC 10 or any extension telephone terminal 16. When this feature is active, incoming calls are routed immediately to a mailbox where the caller is invited to record a message. Each recipient directory list may identify with one of the multiple mailboxes provided by the DTAD 24, with selection of the mailbox being dependent upon correlating the CLID of the incoming call to a particular recipient. Also, each call treatment option provided by the automatic attendant may be associated with a particular mailbox, to which the caller is routed when that option is selected as the DND feature is active.

**Time of Day (TOD) Ringing and Blocking**

At the user's discretion, calls will not be allowed by the PCC 10 to ring the telephone terminals 16 at specific intervals in the day, and instead the caller may be presented with a specific greeting. As an example, calls received after 10 p.m. could be routed to a greeting such as "The Smith family does not take calls after 10 p.m. Please call again tomorrow". Alternatively, the PCC 10 could invite the caller to leave a message in a general mailbox, or the mailbox of the intended recipient to which the incoming CLID corresponds or the mailbox associated with the selected call treatment option. Users may provide as part of the configuration data a time of day window (i.e., a start time and finish time) and at receipt of an incoming call, the PCC 10 retrieves current time from its internal TOD clock to determine whether that call should be blocked or enabled.

**Priority Override**

Priority override provides a means for selected callers to "break through" the call screening features effected by the PCC 10 and ring any or all of the telephone terminals 16 in the residence. A predetermined override password forms part of the configuration data and when a caller enters the password via the touch-tone (DTMF)
keypad, the PCC 10 then rings desired terminals, with or without a distinctive ring. The desired one or more terminals may be specified in connection with the override password in the configuration data or, alternatively, all the terminals 16 may be rung.

**Incoming Call Detail Recording**

Details of incoming calls are recorded and stored in memory of the PCC 10. Subsequently, this information may be uploaded to the PC 20 where it can be used to build or amend personal contact lists, such as, Christmas card lists, business contacts, community & school service groups and the like.

**Single Number Service**

Figure 8 exemplifies a process for effecting single number service by the PCC. Incoming calls can be re-routed by the PCC 10 to another directory number, such as, that of a cellular service. The DN for rewriting may simply be a single predetermined number forming part of the configuration data or there may multiple rewriting DNs with selection of an appropriate one being based on any of time of day, incoming caller CLID information, priority override or by a menu selection from the auto attendant. This feature requires either two lines or ISDN service to the central office 14 of the telephone network.

**CALL ORIGINATION**

Services and features under this functional area include selective blocking of outgoing calls, call detail recording and selective barge in, for which operation of the PCC 10 is described below.

**Selective Outgoing Call Blocking**

Figure 9 exemplifies a process for effecting selective blocking of outgoing calls. The PCC 10 may use the combination of dialed DTMF digits and originating extension telephone terminal identification numbers received from the terminal at which an outgoing call is being originated, to determine whether or not to allow the
outgoing call to proceed. For example, outgoing toll calls could be blocked when they originate from a terminal 16 located in child’s bedroom. The configuration data contains specific directory numbers and directory strings with wild card characters, such as 900*, which are associated with terminal identifiers corresponding to telephone terminals 16 from which originating calls are to be blocked by the PCC 10.

Alternatively, all outgoing calls could be blocked from a particular terminal 16, for example, in the child’s room between 11:00 PM and 7:00 AM. In this case, the time window for blocking the outgoing call would be specified together with the identification number of that terminal 16 in the configuration data.

A more extensive service is to limit a child to a predetermined number "XX" hours a month of outgoing toll calls. All subsequent toll calls would be blocked. This may be effected by providing in the configuration data a value for the maximum number of hours to be allowed together with an identifier of the telephone terminal the child should use when making the toll calls. The PCC 10 maintains a count of time for toll calls from that terminal and once the maximum is depleted, the PCC 10 inhibits further toll calls. As described above in connection with toll alerting for incoming calls, recognition of outgoing calls as toll calls may be done by comparing the NPA of the dialed DN to the local NPA (i.e., toll if different) or by comparing the dialed DN to a pre-defined list of toll numbers. Another service is for the PCC 10 to accumulate total calling time to a particular DN, for example, an online service; once a monthly limit is exceeded then all subsequent calls to the online service are blocked. The particular number and time limit are specified in the configuration data.

Call Detail Recording For Outgoing Calls

Details of outgoing calls are recorded and stored on the PCC 10 from which it subsequently may be uploaded to
the PC 20. This information may be used, for example, to track activities and telecommunications expenses associated with personal work for non-profit organizations and community or school service groups. Such activity can be recorded for each member of the family and for each telephone terminal 16 in the residence.

**Selective Barge In**

The PCC 10 can selectively prevent other extensions from inadvertently " barging into" an existing call. It could be as simple as preventing all other extensions from entering any telephone call that originates in the office/study. For instance, the SCMs 26 of the embodiment for the PCC system in Figure 3a could disconnect, under the command of the PCC 10, their respective telephone terminals from the inhouse telephony wiring.

**CALL INTEGRITY AND ADMINISTRATION**

Examples of services and features provided in this functional area include data call protection, call timing alerts, and file and data transfer.

**Data Call Protection**

This feature prevents other extensions from entering a pre-existing FAX or data call, and potentially interrupting the modem tones. Figure 10 exemplifies a process for effecting data call protection by the PCC 10.

For the embodiment 31 in Figure 3a, when the PCC 10 detects a call from a SCM 26 connected to a FAX machine or modem then it knows a data call is in progress. Alternatively, when a user sets up a data call on his/her residential line, he or she may elect to disable network features such as Call Waiting, by dialing a standard code at the start of the call (i.e.: *67). When the PCC 10 detects such a signal, all (or selected) extensions in the home may be disabled. The PCC 10 controls the appropriate SCMs 26 to open an internal switch whereby its attached telephone terminal is disconnected from the inhouse
telephony wiring, so the data call cannot be inadvertently knocked down by an extension going "off-hook".

**Call Timing Alerts**

Calls (either incoming or outgoing) are timed by the PCC 10 for purposes of call detail recording. The user can pre-record voice messages that will be played over the conversation at prescribed intervals. For instance, on outgoing toll calls, announcements such as "Ten minutes", "Twenty minutes" could be read out at the appropriate intervals.

**File and Data transfer**

Files and data may be transferred to and from the PCC 10 and the PC 20. Data such as speed call lists, caller lists and long distance call summaries, and configuration files such as Time of Day ringing is created or modified at either the PCC 10 or the PC 20. Such data can be loaded either to the PC 20 for storage and further manipulation or down to the PCC 10 for implementation. Transfer and synchronization activity is automatic, running at off-peak intervals, and interrupted immediately if an incoming or outgoing call is initiated.

Those skilled in the art will recognize that various modifications and changes could be made to the invention without departing from the spirit and scope thereof. It should therefore be understood that the claims are not to be considered as being limited to the precise embodiments of the personal communications controller system set forth above, in the absence of specific limitations directed to each embodiment.
CLAIMS:

1. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, wherein the plurality of alerters are operable at a plurality of cadences said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

   providing one or more predetermined call identifiers;

   associating each predetermined call identifier with one or more alerters of the plurality of alerters;

   correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

   activating the one or more alerters associated with the particular identifier;

   associating each predetermined call identifier with one cadence of the plurality of cadences;

   wherein the step of activating the one or more alerters includes controlling the one or more alerters to operate at the one cadence associated with the particular identifier;

   providing one or more predetermined call treatment options;

   associating each predetermined call treatment option with one or more of the plurality of alerters;
promoting, when the incoming call identifier is not available or not correlatable to any of the predetermined call identifiers, the incoming call with the predetermined call treatment options;

correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and

activating the one or more alerters associated with the particular call treatment.

2. A method as claimed in claim 1 further comprising:

associating each predetermined call treatment option with one cadence of the plurality of cadences;

and the step of activating the one or more alerters includes controlling the one or more alerters to operate at the one cadence associated with the particular call treatment.

3. A method as claimed in claim 2, comprising the steps of:

measuring time;

providing a call blocking time interval; and

responsive to the measured time being within the call blocking time interval, not activating any of the plurality of alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

4. A method as claimed in claim 3, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing
the incoming call to the mailbox includes recording the voice
message in the one mailbox associated with the particular
identifier.

5. A method as claimed in claim 4, comprising

associating each predetermined call treatment option with one
mailbox of the plurality of mailboxes; and wherein the step of
ranging the incoming call to the mailbox includes recording the
voice message in the one mailbox associated with the particular
call treatment.

10 6. A method as claimed in claim 5, comprising the steps of:

providing, by the subscriber, an indication
representing do not disturb; and

responsive to the do not disturb indication, not

activating any of the plurality of alerters and routing the
incoming call to the mailbox.

7. In a telecommunications functions management system
for a telecommunications service subscriber having a plurality
of telephone terminals associated with a plurality of alerters,
said telephone terminals being communicatively coupled to a
telecommunications network which provides an identifier of an
incoming call directed to the subscriber, a method for managing
alerting of the incoming call comprising the steps of:

providing one or more predetermined call identifiers;

associating each predetermined call identifier with
one or more alerters of the plurality of alerters;

correlating the incoming call identifier to a
particular identifier of the one or more predetermined call
identifiers;
activating the one or more alerters associated with
the particular identifier;

providing one or more predetermined call treatment
options;

associating each predetermined call treatment option
with one or more of the plurality of alerters;

prompting when the incoming call identifier is not
available or not correlatable to any of the predetermined call
identifiers, the incoming call with the predetermined call
treatment options;

correlating, responsive to receiving an input
selection from the incoming call, the input selection to a
particular call treatment of the one or more predetermined call
treatment options; and

activating the one or more alerters associated with
the particular call treatment.

8. A method as claimed in claim 7, comprising
associating each predetermined call treatment option with one
cadence of the plurality of cadences; and the step of
activating the one or more alerters includes controlling the
one or more alerters to operate at the one cadence associated
with the particular call treatment.

9. A method as claimed in claim 8, comprising the steps of:

measuring time;

providing a call blocking time interval; and

responsive to the measured time being within the call
blocking time interval, not activating any of the plurality of
alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

10. A method as claimed in claim 9, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

11. A method as claimed in claim 10, comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

12. A method as claimed in claim 11, comprising the steps of:

- providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the incoming call to the mailbox.

13. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

- providing one or more predetermined call identifiers;
associating each predetermined call identifier with one or more alerters of the plurality of alerters;

correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

measuring time;

providing a call blocking time interval; and

activating the one or more alerters associated with the particular identifier responsive to the measured time not being within the call blocking time interval, and not activating any of the plurality of alerters and routing the incoming call to a mailbox whereby a voice message is recordable responsive to the measured time being within the call blocking time interval.

14. A method as claimed in claim 13, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

15. A method as claimed in claim 14, comprising the steps of:

providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the incoming call to the mailbox.
16. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

providing one or more predetermined call identifiers;

associating each predetermined call identifier with one or more alerters of the plurality of alerters;

correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

providing, by the subscriber, an indication representing do not disturb; and

activating the one or more alerters associated with the particular identifier when do not disturb is not indicated, and not activating any of the plurality of alerters and routing the incoming call to a mailbox whereby a voice message is recordable when do not disturb is indicated.

17. A method as claimed in claim 16, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

18. For a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, wherein the plurality of alerters are operable at a
plurality of cadences, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

means for providing one or more predetermined call identifiers;

means for enabling a subscriber to associate each predetermined call identifier with one or more alerters of the plurality of alerters;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for activating the one or more alerters associated with the particular identifier;

means for enabling a subscriber to associate each predetermined call identifier with one cadence of the plurality of cadences;

wherein the means for activating the one or more alerters includes means for controlling the one or more alerters to operate at the one cadence associated with the particular identifier;

means for providing one or more predetermined call treatment opinions;

means for enabling a subscriber to associate each predetermined call treatment option with one or more of the plurality of alerters;

means for prompting, when the incoming call identifier is not available or not correlatable to any of the
predetermined call identifiers, the incoming call with the predetermined call treatment options;

means for correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and

means for activating the one or more alerter associated with the particular call treatment.

19. A system as claimed in claim 18, further comprising:

means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

and wherein the means for activating the one or more alerter includes means for controlling the one or more alerter to operate at the one cadence associated with the particular call treatment.

20. A system as claimed in claim 19, comprising:

means for measuring time;

means for providing a call blocking time interval;

and

means, responsive to the measured time being within the call blocking time interval, for not activating any of the plurality of alerter and for routing the incoming call to a mailbox whereby a voice message is recordable.

21. A system as claimed in claim 20, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for
recording the voice message in the one mailbox associated with the particular identifier.

22. A system as claimed in claim 21, comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.

23. A system as claimed in claim 22, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to the mailbox.

24. For a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

means for providing one or more predetermined call identifiers;

means for enabling a subscriber to associate each predetermined call identifier with one or more alerters of the plurality of alerters;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;
means for activating the one or more alerters associated with the particular identifier;

means for providing one or more predetermined call treatment options;

means for enabling a subscriber to associate each predetermined call treatment option with one or more of the plurality of alerters;

means for providing one or more predetermined call treatment options;

means for enabling a subscriber to associate each predetermined call treatment option with one or more of the plurality of alerters;

means for prompting, when the incoming call identifier is not available or not correlatable to any of the predetermined call identifiers, the incoming call with the predetermined call treatment options;

means for correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and

means for activating the one or more alerters associated with the particular call treatment.

A system as claimed in claim 24, comprising means for associating each predetermined call treatment option with one cadence of the plurality of cadences; and wherein the means for activating the one or more alerters includes means for controlling the one or more alerters to operate at the one cadence associated with the particular call treatment.
26. A system as claimed in claim 25, comprising:

means for measuring time;

means for providing a call blocking time interval;

and

means, responsive to the measured time being within the call blocking time interval, for not activating any of the plurality of alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

27. A system as claimed in claim 26, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

28. A system as claimed in claim 27, comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

29. A system as claimed in claim 28, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to the mailbox.

30. For a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of
alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

5 means for providing one or more predetermined call identifiers;

means for enabling a subscriber to associate each predetermined call identifier with one or more alerters of the plurality of alerters;

10 means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for activating the one or more alerters associated with the particular identifier;

15 means for measuring time;

means for providing a call blocking time interval;

and

means, responsive to the measured time being within the call blocking time interval, for not activating any of the one or more alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

31. A system as claimed in claim 30, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

32. A system as claimed in claim 31, comprising:
means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to the mailbox.

33. For a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

means for providing one or more predetermined call identifiers;

means for enabling a subscriber to associate each predetermined call identifier with one or more alerters of the plurality of alerters;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for activating the one or more alerters associated with the particular identifier;

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

34. A system as claimed in claim 33, wherein the mailbox includes a plurality of mailboxes; further comprising means for
associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

35. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

   providing one or more predetermined call identifiers;

   associating each predetermined call identifier with one or more alerters of the plurality of alerters;

   correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

   activating the one or more alerters associated with the particular identifier; and

   wherein the plurality of telephone terminals include cordless handsets; the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the incoming call identifier is received through the communications line by the personal communications controller at which the steps of providing, associating, correlating and activating are effected; and the step of activating the one or more alerters associated with the particular identifier includes signalling,
by the personal communications controller, over a wireless link the cordless handsets associated with the one or more alerters.

36. A method as claimed in claim 35, wherein the plurality of telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; and the step of activating the one or more alerters associated with the particular identifier includes signalling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

37. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters said telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

- providing one or more predetermined call identifiers;
- associating each predetermined call identifier with one or more alerters of the plurality of alerters;
- correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;
- activating the one or more alerters associated with the particular identifier; and
- wherein the telecommunications functions management system includes a personal communications controller which is
coupled to the telephone network by a communications line of the telecommunications service subscriber; the plurality of telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; the incoming call identifier is received through the communications line by the personal communications controller at which the steps of providing, associating correlating and activating are effected; and the steps of activating the one or more alerters associated with the particular identifier includes signalling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

38. In a telecommunications functions management system for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

- providing one or more predetermined call identifiers;
- correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;
- providing one or more predetermined call treatment options;
- associating each predetermined call treatment option with at least one alerter of the one or more alerters;
prompting, when the incoming call identifier is not available or not correlatable to any of the predetermined call identifiers the incoming call with the predetermined call treatment options;

correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and activating the at least one alerter associated with the particular call treatment.

A method as claimed in claim 38, wherein the one or more alerters are operable at a plurality of cadences, and comprising:

associating each predetermined call identifier with one cadence of the plurality of cadences;

activating the one or more alerters to operate at the one cadence associated with the particular identifier;

associating each predetermined call treatment option with one cadence of the plurality of cadences; and

the step of activating the at least one alerter includes controlling the at least one alerter to operate at the one cadence associated with the particular call treatment.

A method as claimed in claim 39, comprising the steps of:

measuring time;

providing a call blocking time interval; and

responsive to the measured time being within the call blocking time interval, not activating any of the one or more alerters and routing the incoming call to a mailbox whereby a voice message is recordable.
41. A method as claimed in claim 40, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

42. A method as claimed in claim 41, comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

43. A method as claimed in claim 42, comprising the steps of:

   providing, by the subscriber, an indication representing do not disturb; and

   responsive to the do not disturb indication, not activating any of the one or more alerters and routing the incoming call to the mailbox.

44. In a telecommunications functions management system for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

   providing one or more predetermined call identifiers;
associating each predetermined call identifier with one cadence of the plurality of cadences;

correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

activating the one or more alerters to operate at the one cadence associated with the particular identifier;

providing one or more predetermined call treatment options;

associating each predetermined call treatment option with one cadence of the plurality of cadences;

prompting, when the incoming call identifier is not available or not correlatable to any of the predetermined call identifiers, the incoming call with the predetermined call treatment options;

correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and

activating the one or more alerters to operate at the one cadence associated with the particular call treatment.

A method as claimed in claim 44, comprising the steps of:

measuring time;

providing a call blocking time interval; and

responsive to the measured time being within the call blocking time interval, not activating any of the one or more
alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

46. A method as claimed in claim 45, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

47. A method as claimed in claim 46, comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

48. A method as claimed in claim 47, comprising the steps of:

   providing, by the subscriber, an indication representing do not disturb; and

   responsive to the do not disturb indication, not activating any of the one or more alerters and routing the incoming call to the mailbox.

49. In a telecommunications functions management system for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:
providing one or more predetermined call identifiers;

associating each predetermined call identifier with one cadence of the plurality of cadences;

correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

activating the one or more alerters to operate at the one cadence associated with the particular identifier;

measuring time;

providing a call blocking time interval; and

responsive to the measured time being within the call blocking time interval, not activating any of the one or more alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

A method as claimed in claim 49, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes, and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.

A method as claimed in claim 50, comprising the steps of:

providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the one or more alerters and routing the incoming call to the mailbox.
52. In a telecommunications functions management system for telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

- providing one or more predetermined call identifiers;

- associating each predetermined call identifier with one cadence of the plurality of cadences;

- correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

- activating the one or more alerters to operate at the one cadence associated with the particular identifier;

- providing, by the subscriber, an indication representing do not disturb; and

- responsive to the do not disturb indication, not activating any of the one or more alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

53. A method as claimed in claim 52, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular identifier.
54. For a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

means for providing one or more predetermined call identifiers;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for providing one or more predetermined call treatment options;

means for enabling a subscriber to associate each predetermined call treatment option with at least one alerter of the one or more alerters;

means for prompting, when the incoming call identifier is not available or not correlatable to any of the predetermined call identifiers, the incoming call with the predetermined call treatment options;

means for correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and

means for activating the at least one alerter associated with the particular call treatment

55. A system as claimed in claim 54, wherein the one or more alerters are operable at a plurality of cadences, and comprising:
means for associating each predetermined call identifier with one cadence of the plurality of cadences;

means for activating the one or more alerters to operate at the one cadence associated with the particular identifier;

means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

and the means for activating the at least one alerter includes means for controlling the at least one alerter to operate at the one cadence associated with the particular call treatment.

A system as claimed in claim 55, comprising:

means for measuring time;

means for providing a call blocking time interval;

and

means, responsive to the measured time being within the call blocking time interval, for not activating any of the one or more alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

A system as claimed in claim 56, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

A system as claimed in claim 57, comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means
for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.

59. A system as claimed in claim 58, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the one or more alerters and for routing the incoming call to the mailbox.

60. For a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

means for providing one or more predetermined call identifiers;

means for associating each predetermined call identifier with one cadence of the plurality of cadences;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for activating the one or more alerters to operate at the one cadence associated with the particular identifier;

means for providing one or more predetermined call treatment options;
means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

means for prompting, when the incoming call identifier is not available or not correlatable to any of the predetermined call identifiers the incoming call with the predetermined call treatment options;

means for correlating, responsive to receiving an input selection from the incoming call, the input selection to a particular call treatment of the one or more predetermined call treatment options; and

means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment.

61. A system as claimed in claim 60, comprising:

means for measuring time;

means for providing a call blocking time interval; and

means, responsive to the measured time being within the call blocking time interval, for not activating any of the one or more alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

62. A system as claimed in claim 61, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.
63. A system as claimed in claim 62, comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.

64. A system as claimed in claim 63, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the one or more alerters and for routing the incoming call to the mailbox.

65. For a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:

means for providing one or more predetermined call identifiers;

means for associating each predetermined call identifier with one cadence of the plurality of cadences;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for activating the one or more alerters to operate at the one cadence associated with the particular identifier;
means for measuring time;
means for providing a call blocking time interval; and
means, responsive to the measured time being within the call blocking time interval, for not activating any of the one or more alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

66. A system as claimed in claim 65, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

67. A system as claimed in claim 66, comprising:
means for providing, by the subscriber, an indication representing do not disturb; and
means, responsive to the do not disturb indication, for not activating any of the one or more alerters and for routing the incoming call to the mailbox.

68. For a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a system for managing alerting of the incoming call comprising:
means for providing one or more predetermined call identifiers;
means for associating each predetermined call identifier with one cadence of the plurality of cadences;

means for correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

means for activating the one or more alerters to operate at the one cadence associated with the particular identifier;

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the one or more alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

A system as claimed in claim 68, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call identifier with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular identifier.

In a telecommunications functions management system for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

providing one or more predetermined call identifiers;
associating each predetermined call identifier with one cadence of the plurality of cadences;

correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;

activating the one or more alerters to operate at the one cadence associated with the particular identifier; and

wherein the one or more telephone terminals include cordless handsets;

the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the incoming call identifier is received through the communications line by the personal communications controller at which the steps of providing, associating correlating and activating are effected; and the step of activating the one or more alerters to operate at the one cadence associated with the particular identifier includes signalling, by the personal communications controller, over a wireless link the cordless handset associated with the one or more alerters.

A method as claimed in claim 70, wherein the one or more telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; and the step of activating the one or more alerters to operate at the one cadence associated with the particular identifier includes signalling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby
addressing the satellite controllers associated with the one or more alerters.

72. In a telecommunications functions system management system for a telecommunications service subscriber having one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network which provides an identifier of an incoming call directed to the subscriber, a method for managing alerting of the incoming call comprising the steps of:

- providing one or more predetermined call identifiers;
- associating each predetermined call identifier with one cadence of the plurality of cadences;
- correlating the incoming call identifier to a particular identifier of the one or more predetermined call identifiers;
- activating the one or more alerters to operate at the one cadence associated with the particular identifier; and

wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the one or more telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operations of the alerters associated with the corresponding telephone set; the incoming call identifier is received through the communications line by the personal communications controller at which the steps of providing, associating, correlating and activating are effected; and the step of activating the one or more alerters to operate at the one cadence associated with the particular identifier includes signalling, by the personal
communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

73. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network, a method for managing alerting of an incoming call directed to the subscriber, comprising the steps of:

- providing one or more predetermined call treatment options;
- associating each predetermined call treatment option with one or more alerters of the plurality of alerters;
- prompting the incoming call with the predetermined call treatment options;
- receiving an input selection from the incoming call;
- correlating the input selection to a particular call treatment of the one or more predetermined call treatment options;
- activating the one or more alerters associated with the particular call treatment;
- measuring time;
- providing a call blocking time interval; and
- responsive only to the measured time being within the call blocking time interval, not activating any of the plurality of alerters and routing the incoming call to a mailbox whereby a voice message is recordable.
74. A method as claimed in claim 73, wherein the plurality of alerters are operable at a plurality of cadences; further comprising associating each predetermined call treatment option with one cadence of the plurality of cadences; and the step of activating the one or more alerters includes controlling the one or more alerters to operate at the one cadence associated with the particular call treatment.

75. A method as claimed in claim 74, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

76. A method as claimed in claim 75, comprising the steps of:

   providing, by the subscriber, an indication representing do not disturb; and

   responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the incoming call to the mailbox.

77. A method as claimed in claim 73, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

78. A method as claimed in claim 77, comprising the steps of:
providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the
incoming call to the mailbox.

79. In a telecommunications functions management system for a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network, a method for managing alerting of an incoming call directed to the subscriber, comprising the steps of:

providing one or more predetermined call treatment options;

associating each predetermined call treatment option with one or more alerters of the plurality of alerters;

prompting the incoming call with the predetermined call treatment options;

receiving an input selection from the incoming call;

correlating the input selection to a particular call treatment of the one or more predetermined call treatment options;

activating the one or more alerters associated with the particular call treatment;

providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the
incoming call to a mailbox whereby a voice message is recordable.

A method as claimed in claim 79, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

For a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network, a system for managing alerting of an incoming call directed to the subscriber, comprising:

means for providing one or more predetermined call treatment options;

means for associating each predetermined call treatment option with one or more alerters of the plurality of alerters;

means for prompting the incoming call with the predetermined call treatment options;

means for receiving an input selection from the incoming call;

means for correlating the input selection to a particular call treatment of the one or more predetermined call treatment options;

means for activating the one or more alerters associated with the particular call treatment
means for measuring time;

means for providing a call blocking time interval;

and

means, responsive only to the measured time being within the call blocking time interval, for not activating any of the plurality of alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

82. A system as claimed in claim 81, wherein the plurality of alerters are operable at a plurality of cadences; further comprising means for associating each predetermined call treatment option with one cadence of the plurality of cadences; and the means for activating the one or more alerters includes means for controlling the one or more alerters to operate at the one cadence associated with the particular call treatment.

83. A system as claimed in claim 82, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.

84. A system as claimed in claim 83, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to the mailbox.

85. A system as claimed in claim 81, wherein the mailbox includes a plurality of mailboxes; further comprising means for
associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.

86. A system as claimed in claim 85, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to the mailbox.

87. For a telecommunications service subscriber having a plurality of telephone terminals associated with a plurality of alerters, said telephone terminals being communicatively coupled to a telecommunications network, a system for managing alerting of an incoming call directed to the subscriber, comprising:

means for providing one or more predetermined call treatment options;

means for associating each predetermined call treatment option with one or more alerters of the plurality of alerters;

means for prompting the incoming call with the predetermined call treatment options;

means for receiving an input selection from the incoming call;

means for correlating the input selection to a particular call treatment of the one or more predetermined call treatment options;
means for activating the one or more alerters associated with the particular call treatment;

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

88. A system as claimed in claim 87, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.

89. A method as claimed in claim 73, wherein the plurality of telephone terminals include cordless handsets; the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the incoming call is answered by the personal communications controller at which the steps of providing, associating, prompting, receiving, correlating and activating are effected; and the step of activating the one or more alerters associated with the particular call treatment includes signaling, by the personal communications controller, over a wireless link the cordless handsets associated with the one or more alerters.

90. A method as claimed in claim 89, wherein the plurality of telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls
operation of the alerter associated with the corresponding telephone set; and the step of activating the one or more alerters associated with the particular call treatment includes signaling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

91. A method as claimed in claim 73, wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the plurality of telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; the incoming call is answered by the personal communications controller at which the steps of providing, associating, prompting, receiving, correlating and activating are effected; and the step of activating the one or more alerters associated with the particular call treatment includes signaling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

92. A method as claimed in claim 79, wherein the plurality of telephone terminals include cordless handsets; the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the incoming call is answered by the personal communications controller at which the steps of providing, associating, prompting, receiving,
correlating and activating are effected; and the step of
activating the one or more alerters associated with the
particular call treatment includes signaling, by the personal
communications controller, over a wireless link the cordless
handsets associated with the one or more alerters.

93. A method as claimed in claim 92, wherein the
plurality of telephone terminals include telephone sets having
respective satellite controllers which are connected in
parallel to the communications line and each of which controls
operation of the alerter associated with the corresponding
telephone set; and the step of activating the one or more
alerters associated with the particular call treatment includes
signaling, by the personal communications controller, the
satellite controllers over the communications line at a channel
above a voice channel, thereby addressing the satellite
controllers associated with the one or more alerters.

94. A method as claimed in claim 79, wherein the
telecommunications functions management system includes a
personal communications controller which is coupled to the
telephone network by a communications line of the
telecommunications service subscriber; the plurality of
telephone terminals include telephone sets having respective
satellite controllers which are connected in parallel to the
communications line and each of which controls operation of the
alerter associated with the corresponding telephone set; the
incoming call is answered by the personal communications
controller at which the steps of providing, associating,
prompting, receiving, correlating and activating are effected;
and the step of activating the one or more alerters associated
with the particular call treatment includes signaling, by the
personal communications controller, the satellite controllers
over the communications line at a channel above a voice
channel, thereby addressing the satellite controllers associated with the one or more alerters.

95. In a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, a method for managing alerting of an incoming call directed to the service subscriber, comprising the steps of:

- providing one or more predetermined call treatment options;
- associating each predetermined call treatment option with one cadence of the plurality of cadences;
- prompting the incoming call with the predetermined call treatment options;
- receiving an input selection from the incoming call;
- correlating the input selection to a particular call treatment of the one or more predetermined call treatment options; and
- activating the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the one or more telephone terminals include cordless handsets; the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the incoming call is answered by the personal communications controller at which the steps of providing, associating, prompting, receiving, correlating and activating are effected; and the step of
activating the one or more alerters to operate at the one cadence associated with the particular call treatment includes signaling, by the personal communications controller, over a wireless link the cordless handsets associated with the one or more alerters.

96. A method as claimed in claim 95, wherein the one or more telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; and the step of activating the one or more alerters to operate at the one cadence associated with the particular call treatment includes signaling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

97. In a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, a method for managing alerting of an incoming call directed to the service subscriber, comprising the steps of:

   providing one or more predetermined call treatment options;

   associating each predetermined call treatment option with one cadence of the plurality of cadences;

   prompting the incoming call with the predetermined call treatment options;
receiving an input selection from the incoming call;
correlating the input selection to a particular call
treatment of the one or more predetermined call treatment
options; and
activating the one or more alerters to operate at the
one cadence associated with the particular call treatment;

wherein the telecommunications functions management
system includes a personal communications controller which is
coupled to the telephone network by a communications line of
the telecommunications service subscriber; the one or more
telephone terminals include telephone sets having respective
satellite controllers which are connected in parallel to the
communications line and each of which controls operation of the
alerter associated with the corresponding telephone set; the
incoming call is answered by the personal communications
controller at which the steps of providing, associating,
prompting, receiving, correlating and activating are effected;
and the step of activating the one or more alerters to operate
at the one cadence associated with the particular call
treatment includes signaling, by the personal communications
controller, the satellite controllers over the communications
line at a channel above a voice channel, thereby addressing the
satellite controllers associated with the one or more alerters.

In a telecommunications functions management system
for a telecommunications service subscriber having a one or
more telephone terminals associated with a one or more alerters
which are operable at a plurality of cadences, said one or more
telephone terminals being communicatively coupled to a
telecommunications network, a method for managing alerting of
an incoming call directed to the service subscriber,
comprising:
providing one or more predetermined call treatment options;

associating each predetermined call treatment option with one cadence of the plurality of cadences;

analyzing the incoming call for determining which of the predetermined call treatment options is applicable;

determining which of the predetermined call treatment options is applicable, using the analysis of the previous step;

correlating the incoming call with the particular call treatment option previously determined to be applicable; and

activating at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber, and at which the steps of providing, associating, analyzing, determining, correlating the incoming call, and activating are effected;

wherein the one or more telephone terminals includes a cordless handset; and

wherein the step of activating the at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment includes the step of signaling, by the personal communications controller, over a wireless link the cordless handset associated with the at least one of the one or more alerters.

A method as claimed in claim 98, further comprising:
answering the incoming call;
prompting the answered incoming call with the predetermined call treatment options;
receiving an input selection from the incoming call, after the incoming call has been prompted; and
correlating the received input selection to a particular call treatment of the one or more predetermined call treatment options;
wherein the steps of answering, prompting, receiving, and correlating the received input selection are effected by the personal communications controller.

A method as claimed in claim 99, comprising the steps of:
measuring time;
providing a call blocking time interval; and
responsive to the measured time being within the call blocking time interval, not activating any of the one or more alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

A method as claimed in claim 100, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

A method as claimed in claim 101, comprising the steps of:
providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the incoming call to the mailbox.

A method as claimed in claim 99, comprising the steps of:

providing, by the subscriber, an indication representing do not disturb; and

responsive to the do not disturb indication, not activating any of the plurality of alerters and routing the incoming call to a mailbox whereby a voice message is recordable.

A method as claimed in claim 103, wherein the mailbox includes a plurality of mailboxes; further comprising associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the step of routing the incoming call to the mailbox includes recording the voice message in the one mailbox associated with the particular call treatment.

A method as claimed in claim 99, further comprising:

providing a call forwarding option for incoming calls;

associating a forwarding telephone number with a particular received telephone number;

analyzing the incoming call for determining if it is from the particular received telephone number;

determining that the incoming call is from the particular received telephone number; and
forwarding the incoming call to the forwarding telephone number.

106. A method as claimed in claim 105, further comprising:

providing a call termination option for outgoing calls to a particular outgoing telephone number;

associating a termination criterion with a particular outgoing telephone number;

analyzing an outgoing call for determining if it is to the particular outgoing telephone number;

determining that the outgoing call is to the particular outgoing telephone number;

analyzing the determined outgoing call for determining if the termination criterion has been met;

determining that the termination criterion has been met; and

terminating the determined outgoing call.

107. A method as claimed in claim 105, further comprising the step of providing service configuration and programming for the personal communications controller.

108. A method as claimed in claim 107, wherein the service configuration and programming is provided to the personal communications controller by a personal computer containing a graphical user interface, and wherein the personal computer is communicatively coupled to the personal communications controller.

109. In a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters
which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, a method for managing alerting of an incoming call directed to the service subscriber, comprising:

providing one or more predetermined call treatment options;

associating each predetermined call treatment option with one cadence of the plurality of cadences;

analyzing the incoming call for determining which of the predetermined call treatment options is applicable;

determining which of the predetermined call treatment options is applicable, using the analysis of the previous step;

correlating the incoming call with the particular call treatment option previously determined to be applicable; and

activating at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber, and at which the steps of providing, associating, analyzing, determining, correlating the incoming call, and activating are effected;

wherein the one or more telephone terminals includes a telephone set having a satellite controller which is connected in parallel to the communications line and which controls operation of the alerter associated with the corresponding telephone set; and
wherein the step of activating the at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment includes the step of signaling, by the personal communications controller, the satellite controller over the communications line at a channel above a voice channel, thereby addressing the satellite controller associated with the at least one of the one or more alerters.

110. A method as claimed in claim 109, further comprising:

10 answering the incoming call;

prompting the answered incoming call with the predetermined call treatment options;

receiving an input selection from the incoming call, after the incoming call has been prompted; and

15 correlating the received input selection to a particular call treatment of the one or more predetermined call treatment options;

wherein the steps of answering, prompting, receiving, and correlating the received input selection are effected by the personal communications controller.

111. A method as claimed in claim 110, further comprising:

providing a call forwarding option for incoming calls;

associating a forwarding telephone number with a particular received telephone number;

analyzing the incoming call for determining if it is from the particular received telephone number;
determining that the incoming call is from the particular received telephone number; and

forwarding the incoming call to the forwarding telephone number.

112. A method as claimed in claim 111, further comprising:

providing a call termination option for outgoing calls to a particular outgoing telephone number;

associating a termination criterion with a particular outgoing telephone number;

analyzing an outgoing call for determining if it is to the particular outgoing telephone number;

determining that the outgoing call is to the particular outgoing telephone number;

analyzing the determined outgoing call for determining if the termination criterion has been met;

determining that the termination criterion has been met; and

terminating the determined outgoing call.

113. A method as claimed in claim 111, further comprising the step of providing service configuration and programming for the personal communications controller.

114. A call management system, for use in a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a
telecommunications network, the call management system comprising:

means for providing one or more predetermined call treatment options;

means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

means for prompting the incoming call with the predetermined call treatment options;

means for receiving an input selection from the incoming call;

means for correlating the input selection to a particular call treatment of the one or more predetermined call treatment options; and

means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the one or more telephone terminals include cordless handsets; the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the incoming call is answered by the personal communications controller which comprises the means for providing, associating, prompting, receiving, correlating and activating; and the means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment includes a means for signaling, by the personal communications controller, over a wireless link the cordless handsets associated with the one or more alerters.
115. A call management system as claimed in claim 114, wherein the one or more telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; and the means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment includes a means for signaling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

116. A call management system for use in a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, the call management system comprising:

   means for providing one or more predetermined call treatment options;

   means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

   means for prompting the incoming call with the predetermined call treatment options;

   means for receiving an input selection from the incoming call;

   means for correlating the input selection to a particular call treatment of the one or more predetermined call treatment options; and
means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber; the one or more telephone terminals include telephone sets having respective satellite controllers which are connected in parallel to the communications line and each of which controls operation of the alerter associated with the corresponding telephone set; the incoming call is answered by the personal communications controller which comprises the means for providing, associating, prompting, receiving, correlating and activating; and the means for activating the one or more alerters to operate at the one cadence associated with the particular call treatment includes a means for signaling, by the personal communications controller, the satellite controllers over the communications line at a channel above a voice channel, thereby addressing the satellite controllers associated with the one or more alerters.

117. A call management system, for use in a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, the call management system comprising:

means for providing one or more predetermined call treatment options;
means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

means for analyzing the incoming call for determining which of the predetermined call treatment options is applicable;

means for determining which of the predetermined call treatment options is applicable;

means for correlating the incoming call with the particular call treatment option previously determined to be applicable; and

means for activating at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber, and which comprises the means for providing, associating, analyzing, determining, correlating the incoming call, and activating are effected;

wherein at least one of the one or more telephone terminals includes a cordless handset; and

wherein the means for activating the at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment includes a means for signaling, by the personal communications controller, over a wireless link the cordless handset associated with at least one of the one or more alerters.

A call management system as claimed in claim 117, wherein the personal communications controller further comprises:
means for answering the incoming call;

means for prompting the answered incoming call with the predetermined call treatment options;

means for receiving an input selection from the incoming call, after the incoming call has been prompted; and

means for correlating the received input selection to a particular call treatment of the one or more predetermined call treatment options.

A call management system, for use in a telecommunications functions management system for a telecommunications service subscriber having a one or more telephone terminals associated with a one or more alerters which are operable at a plurality of cadences, said one or more telephone terminals being communicatively coupled to a telecommunications network, the call management system comprising:

means for providing one or more predetermined call treatment options;

means for associating each predetermined call treatment option with one cadence of the plurality of cadences;

means for analyzing the incoming call for determining which of the predetermined call treatment options is applicable;

means for determining which of the predetermined call treatment options is applicable;

means for correlating the incoming call with the particular call treatment option previously determined to be applicable; and
means for activating at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment;

wherein the telecommunications functions management system includes a personal communications controller which is coupled to the telephone network by a communications line of the telecommunications service subscriber, and which comprises the means for providing, associating, analyzing, determining, correlating the incoming call, and activating are effected;

wherein the one or more telephone terminals include a telephone set having a satellite controller which is connected in parallel to the communications line and which controls operation of the alerter associated with the corresponding telephone set; and

wherein the means for activating the at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment includes a means for signaling, by the personal communications controller, the satellite controller over the communications line at a channel above a voice channel, thereby addressing the satellite controller associated with the at least one of the one or more alerters.

A call management system as claimed in claim 119, wherein:

the means for providing one or more predetermined call treatment options comprises a directory list for each recipient and a processor;

the means for associating each predetermined call treatment option with one cadence of the plurality of cadences comprises a directory list for each recipient which contains
information about the type of alerting for the particular recipient;

the means for analyzing the incoming call for determining which of the predetermined call treatment options is applicable comprises a caller ID system, a line interface, directory lists for each recipient, and a processor;

the means for determining which of the predetermined call treatment options is applicable comprises directory lists for each recipient and a processor;

the means for correlating the incoming call with the particular call treatment option previously determined to be applicable comprises a directory list for each recipient which contains information about the type of alerting for the particular recipient and a processor; and

the means for activating at least one of the one or more alerters to operate at the one cadence associated with the particular call treatment comprises a transceiver.

A call management system as claimed in claim 119, wherein the personal communications controller further comprises:

means for answering the incoming call;

means for prompting the answered incoming call with the predetermined call treatment options;

means for receiving an input selection from the incoming call, after the incoming call has been prompted; and

means for correlating the received input selection to a particular call treatment of the one or more predetermined call treatment options.
122. A call management system as claimed in claim 121, wherein:

the means for answering the incoming call comprises a line interface, a ring detector, and a processor;

the means for prompting the answered incoming call with the predetermined call treatment options comprises a line interface and a processor;

the means for receiving an input selection from the incoming call, after the incoming call has been prompted, comprises a line interface, a processor, and a tone detector; and

the means for correlating the received input selection to a particular call treatment of the one or more predetermined call treatment options comprises a processor.

123. A system as claimed in claim 121, comprising:

means for measuring time;

means for providing a call blocking time interval; and

means, responsive to the measured time being within the call blocking time interval, for not activating any of the one or more alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

124. A system as claimed in claim 123, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.
125. A system as claimed in claim 124, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to the mailbox.

126. A system as claimed in claim 121, comprising:

means for providing, by the subscriber, an indication representing do not disturb; and

means, responsive to the do not disturb indication, for not activating any of the plurality of alerters and for routing the incoming call to a mailbox whereby a voice message is recordable.

127. A system as claimed in claim 126, wherein the mailbox includes a plurality of mailboxes; further comprising means for associating each predetermined call treatment option with one mailbox of the plurality of mailboxes; and wherein the means for routing the incoming call to the mailbox includes means for recording the voice message in the one mailbox associated with the particular call treatment.
FIG. 1
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INCOMING CALL

NO
RING DETECTED
YES

AUTOMATIC ATTENDANT

NO
CLID PROVIDED
YES

MATCH CLID TO DIRECTORY NUMBER IN LIST FOR A RECIPIENT

NO
PROMPT FOR A DESIRED RECIPIENT

YES
MATCH FOUND

SELECTIVE RING FOR RECIPIENT

FIG. 4

END
SELECTIVE RING

IDENTIFY TELEPHONE TERMINALS FOR THAT RECIPIENT

IDENTIFY RING PATTERN FOR THAT RECIPIENT

CONTROL IDENTIFIED TERMINALS TO GENERATE IDENTIFIED PATTERN

END

FIG. 5
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DND AND TOD BLOCKING

INCOMING CALL RECEIVED

TOD RESTRICTIONS ACTIVE

NO

DND ACTIVE

YES

ANSWER CALL

AUTOMATIC ATTENDANT

PRIORITY OVERRIDE

OVERWRITE PASSWORD DIGITS RECEIVED

SELECTIVE RING FOR PRIORITY OVERRIDE

END

FIG. 7
SELECTIVE OUTGOING CALL BLOCKING

TELEPHONE TERMINAL "OFF-HOOK"

IDENTIFY "OFF-HOOK" TERMINAL

TO D

RESTRICTIONS FOR THAT TERMINAL

NO

PROVIDE DIAL TONE

RECEIVE DIALED DIGITS

"1+" TOLL CALL

NO

YES

CUMULATIVE LIMIT REACHED

NO

START CALL TIMER

YES

BLOCK CALL AND PROVIDE MESSAGE

END

FIG. 9
DATA CALL PROTECTION

TELEPHONE TERMINAL "OFF-HOOK"

RECEIVE DIALED DIGITS

PROTECTION SEQUENCE ENTERED

YES

SIGNAL OTHER SCMs TO OPEN LOOP

PROVIDE DIAL TONE AND ACCESS TO NETWORK

RESTORE ALL OPEN LOOPS UPON CALL COMPLETION

END

SELECTIVE OUTGOING CALL BLOCKING

FIG. 10