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ORIGINAL IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

1/28/03
JAN 28 2003

LUTHER D. THOMPSON, Clerk
By: *[Signature]* Deputy Clerk

BELLSOUTH INTELLECTUAL)
PROPERTY CORP.,)
)
Plaintiff,)
)
v.)
)
GLENAYRE TECHNOLOGIES,)
INC., and CALL SCIENCES, INC.,)
)
Defendant.)

1 03 CV 0241
CIVIL ACTION NO. _____

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff BellSouth Intellectual Property Corp. ("BellSouth") brings this action against the Defendants, Glenayre Technologies, Inc. ("Glenayre") and Call Sciences, Inc. ("Call Sciences") and states:

1. BellSouth is a corporation organized and existing under the laws of the state of Delaware.
2. Glenayre is a Delaware corporation with its principal place of business located in Duluth, Georgia. Glenayre is qualified to do business in the State of Georgia and regularly conducts such business. Glenayre may be served

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Pretrial Instructions
Title VII NTC _____
WCB

by service upon its registered agent, C.T. Corporation System, at 1201 Peachtree Street, N.E., Atlanta, Georgia, 30361.

3. Call Sciences is a Delaware corporation with its principal place of business located in Edison, New Jersey. Call Sciences is qualified to do business in the State of Georgia and regularly conducts such business. Call Sciences may be served by service upon its registered agent, Corporation Service Company, at 4845 Jimmy Carter Boulevard, Norcross, Georgia, 30093.
4. Subject-matter jurisdiction over BellSouth's claims is conferred upon this Court by 28 U.S.C. § 1331 (federal question jurisdiction) and 28 U.S.C. § 1338(a) (patent jurisdiction).
5. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b) and (c) and § 1400(b).
6. BellSouth is the owner by assignment of all right, title, and interest in U.S. Patent No. 5,764,747 ("the '747 Patent"), entitled "Personal Number Communication System." A true and correct copy of the '747 Patent is attached as Exhibit A.
7. The '747 Patent describes a system that assigns a unique personal number to a subscriber and receives from the subscriber a hierarchical list of destinations for communications directed to the subscriber's personal

number. The destinations may be arranged, for example, based on the time of day and day of the week when the incoming communication is received, and the subscriber may choose to override or to change the destinations specified. When the system receives a communication directed to the subscriber's personal number, it places a further communication to the first destination specified by the subscriber, announces the incoming communication, receives communication disposition information, and disposes of the call in accord with that information. If the subscriber elects to accept the communication, the system routes the communication to that destination; if not, the system repeats the process using the next specified destination until the incoming communication is accepted or the list of destinations is exhausted.

8. Each Defendant has infringed and contributed to infringement of the '747 Patent and continues to do so by making, using, selling, and/or offering for sale products and services that are covered by at least one claim of the '747 Patent. Such infringement has occurred in this judicial district and elsewhere in the United States.

GLENAYRE

9. Glenayre offers a Versera™ messaging platform that includes the Constant Touch® feature. Constant Touch® is Glenayre's one number service, and it incorporates Find Me service, as shown on certain pages from Glenayre's web site, true and correct copies of which are attached as Exhibit B.
10. Glenayre's Constant Touch® Find Me service "automatically find[s] a subscriber by dialing different devices according to the order and the schedule that the subscriber has programmed into the system."
11. Glenayre's Constant Touch® service allows a subscriber to receive all communications directed to him or her via a single telephone number. The Constant Touch® Find Me service rings the numbers provided by the subscriber sequentially, based on the order and schedule programmed by the subscriber, and plays an announcement to allow the subscriber to screen incoming communications.
12. Glenayre's Constant Touch® service was offered as a part of Glenayre's Large Solution Platform and Solution Platform, and also as a premium service to Glenayre's MVP system, and is now offered as part of Glenayre's Versera™ product line. True and correct copies of pages from Glenayre's

web site and promotional brochure describing these platforms are attached as Exhibit C.

13. BellSouth Intellectual Property Marketing Corp. ("BIPMARK"), which is responsible for licensing BellSouth's patents to third parties, notified Glenayre that its Constant Touch® and Find Me services infringe, *inter alia*, the '747 Patent, as memorialized in a letter dated December 6, 2001, a true and correct copy of which is attached as Exhibit D.
14. Following more than nine months of negotiations, Glenayre refused BIPMARK's offer to license the '747 Patent.
15. Glenayre directly and contributorily infringes at least claim 1 of the '747 Patent.
16. Glenayre's infringement of the '747 Patent is willful.

CALL SCIENCES

17. According to pages on Call Sciences' web site, true and correct copies of which are attached as Exhibit E, one of Call Sciences' "flagship products" is its Personal Assistant®.
18. Call Sciences' Personal Assistant® features include Single Number Service and Find Me Follow Me.

19. The Find Me Follow Me service allows communications placed to a subscriber's single number to be directed to the subscriber wherever he or she may be, based on a subscriber-defined list of destinations, and also provides for Call Screening, so that the subscriber may see who is calling before he or she answers.
20. Call Sciences provides a demonstration of its Personal Assistant® service via telephone at 888/877-9099. A true and correct transcript of this demonstration is attached as Exhibit F.
21. BIPMARK notified Call Sciences that the Personal Assistant® service platform infringes, *inter alia*, the '747 Patent, as memorialized in a letter dated December 12, 2001, a true and correct copy of which is attached as Exhibit G.
22. Following ten months of negotiations, Call Sciences refused BIPMARK's offer to license the '747 Patent.
23. Call Sciences directly and contributorily infringes at least claim 1 of the '747 Patent.
24. Call Sciences' infringement of the '747 Patent is willful.

PRAYER FOR RELIEF

WHEREFORE, BellSouth prays for entry of judgment that:

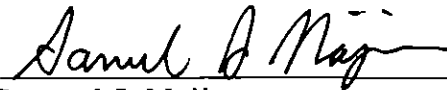
1. Each Defendant has infringed and/or contributed to infringement of the '747 Patent;
2. Each Defendant account for and pay to BellSouth all damages and costs of BellSouth caused by each Defendant's infringement of the '747 Patent, including a reasonable royalty for past infringement, and that such damages be trebled as a result of each Defendant's willful acts of infringement;
3. BellSouth be granted permanent injunctive relief pursuant to 35 U.S.C. § 283 enjoining each Defendant, its officers, agents, servants, employees and those persons in active concert or participation with it from further acts of patent infringement;
4. BellSouth be granted pre-judgment and post-judgment interest on the damages caused to it by reason of each Defendant's patent infringement;
5. Costs be awarded to BellSouth;
6. BellSouth recover attorney's fees because the willful infringement by each of the Defendants makes this an exceptional case under 35 U.S.C. § 285; and

7. BellSouth be granted such further and additional relief as the Court may deem just and proper under the circumstances.

DEMAND FOR JURY TRIAL

BellSouth demands trial by jury on all claims and issues so triable.

Dated: January 28, 2003.



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EXHIBIT / ATTACHMENT

 A

(To be scanned in place of tab)

US00576474/A

United States Patent [19]
Yue et al.

[11] **Patent Number:** 5,764,747
 [45] **Date of Patent:** Jun. 9, 1998

- [54] **PERSONAL NUMBER COMMUNICATION SYSTEM**
- [75] **Inventors:** Drina C. Yue; Raymond J. Smets, both of Atlanta; Thomas Joseph Moquin, Roswell; Evan Kraus, Atlanta; Terry Durand, Marietta; Lawrence R. Berke, Atlanta, all of Ga.
- [73] **Assignee:** BellSouth Corporation, Atlanta, Ga.
- [21] **Appl. No.:** 469,491
- [22] **Filed:** Jun. 6, 1995

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0 451 695	4/1991	European Pat. Off.	
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PCT/US90/06729	11/1990	WIPO	
PCT/US91/00483	1/1991	WIPO	
PCT/FI92/00036	2/1992	WIPO	

Primary Examiner—Ahmad F. Matar
Attorney, Agent, or Firm—Jones & Askew

Related U.S. Application Data

- [63] Continuation of Ser. No. 936,384, Aug. 26, 1992, abandoned.
- [51] **Int. Cl.⁶** H04M 3/54
- [52] **U.S. Cl.** 379/210; 379/211; 379/201; 379/142; 379/88; 455/426
- [58] **Field of Search** 379/210, 211, 379/212, 214, 142, 127, 67, 88; 455/426

[57] **ABSTRACT**

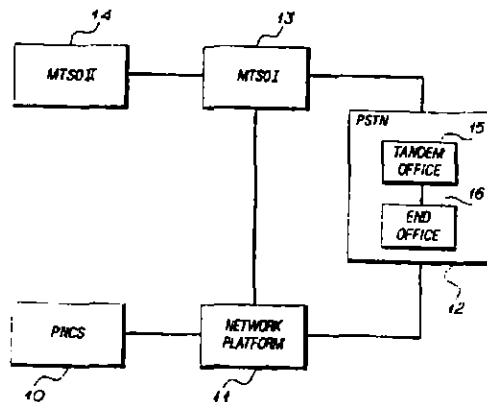
A personal number communications system assigns a personal number to each subscriber, and receives from each subscriber communication routing information in the form of one or more hierarchical lists of destinations based on the time of day and day of the week. The hierarchy and composition of the lists may be changed or may be overridden to direct selected communications to a specific destination. The system receives communications directed to a subscriber's personal number and identifies the source of the communication. The identification may be made through calling line identification, through a personalized list of callers, or through source identification. The system selects a first destination for the communication from the hierarchical list. At the first destination, the system announces the identified source of the communication and requests disposition information as to the acceptance, formal rejection or passive rejection, such as a no answer, of the communication. If accepted, the system routes the communication to the first destination. If rejected, the system routes the communication to the default destination selected by the subscriber. If there is a passive rejection, the system requests communication disposition information from the next destination in the destination list according to the hierarchy selected by the subscriber. The system continues to request communication disposition information from each sequential destination on the destination list until the communication is accepted or until the last destination on the destination list is reached, at which point the communication is routed to the last destination.

[56] **References Cited**

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39 Claims, 50 Drawing Sheets



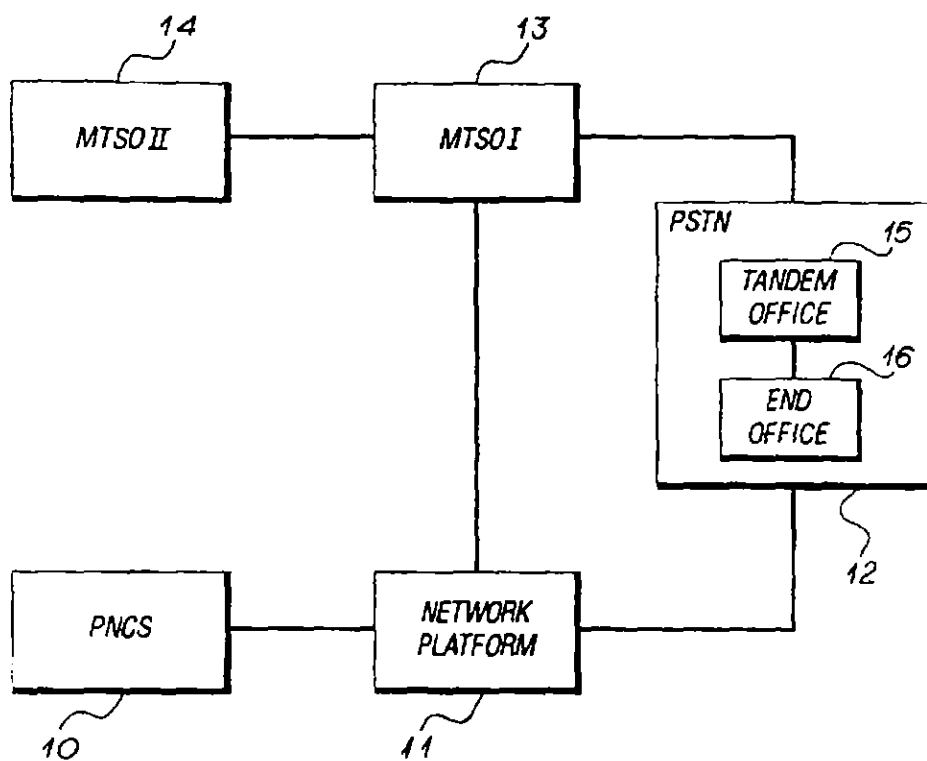


FIG 1

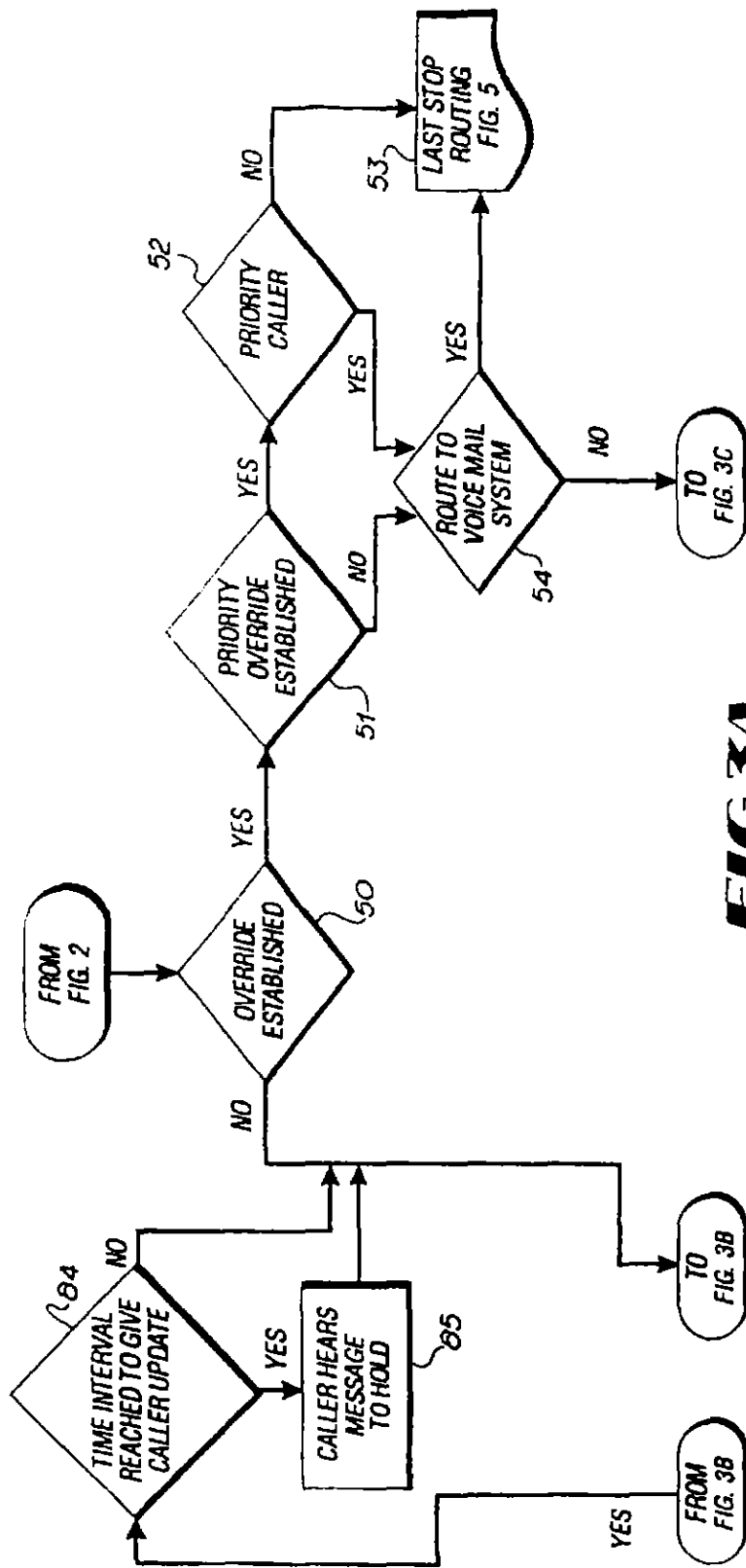


FIG 3A

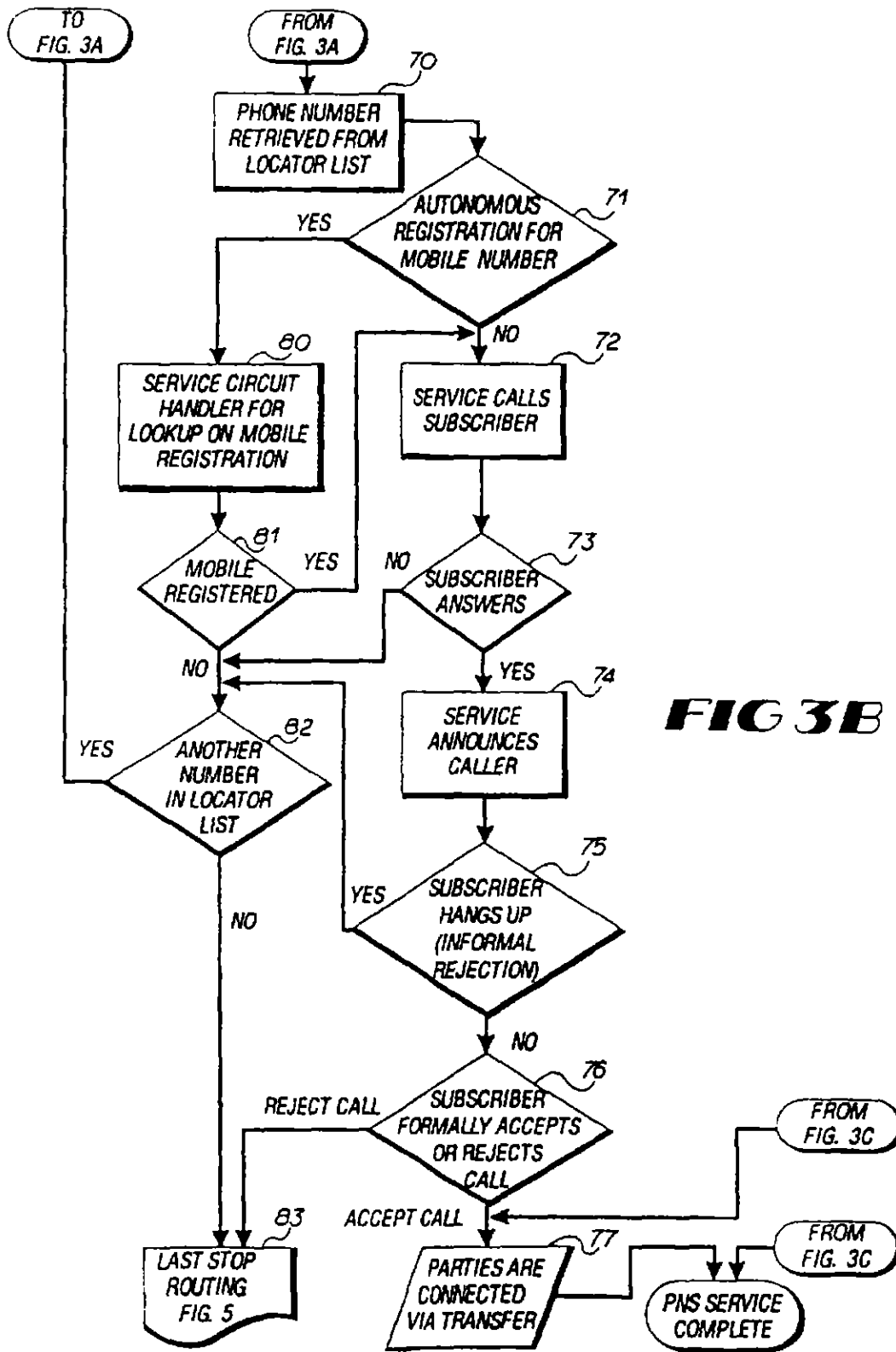
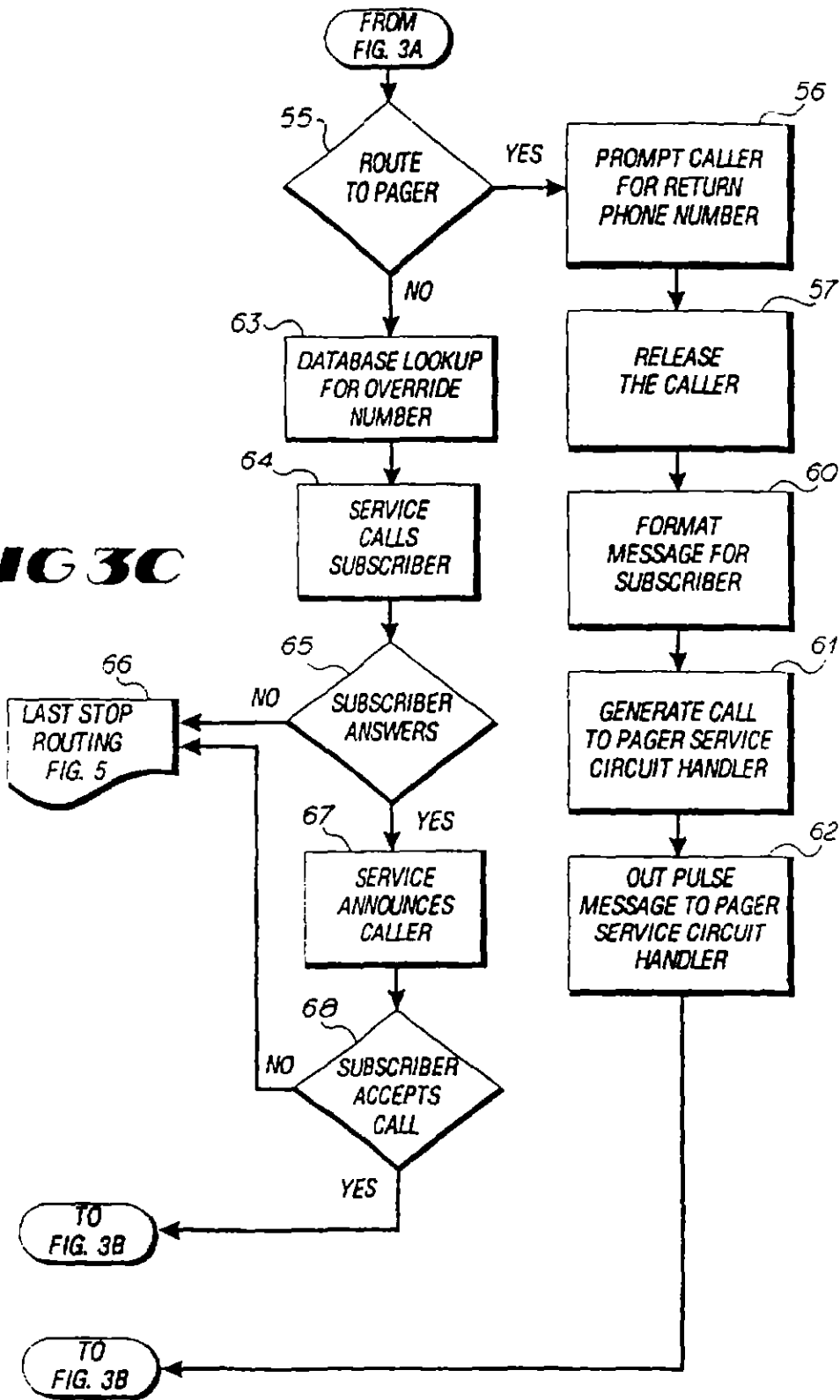


FIG 3B

FIG 3C



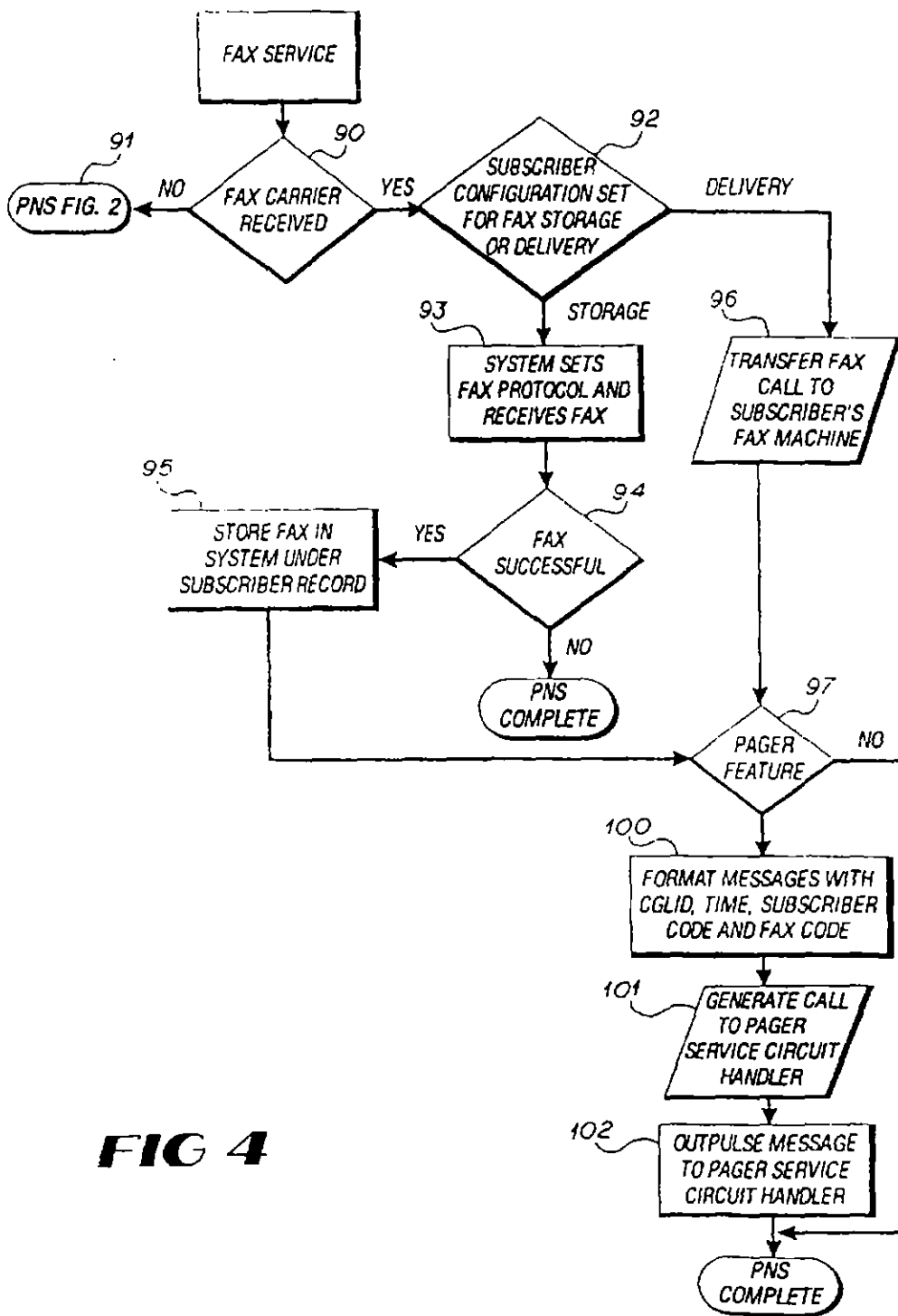


FIG 4

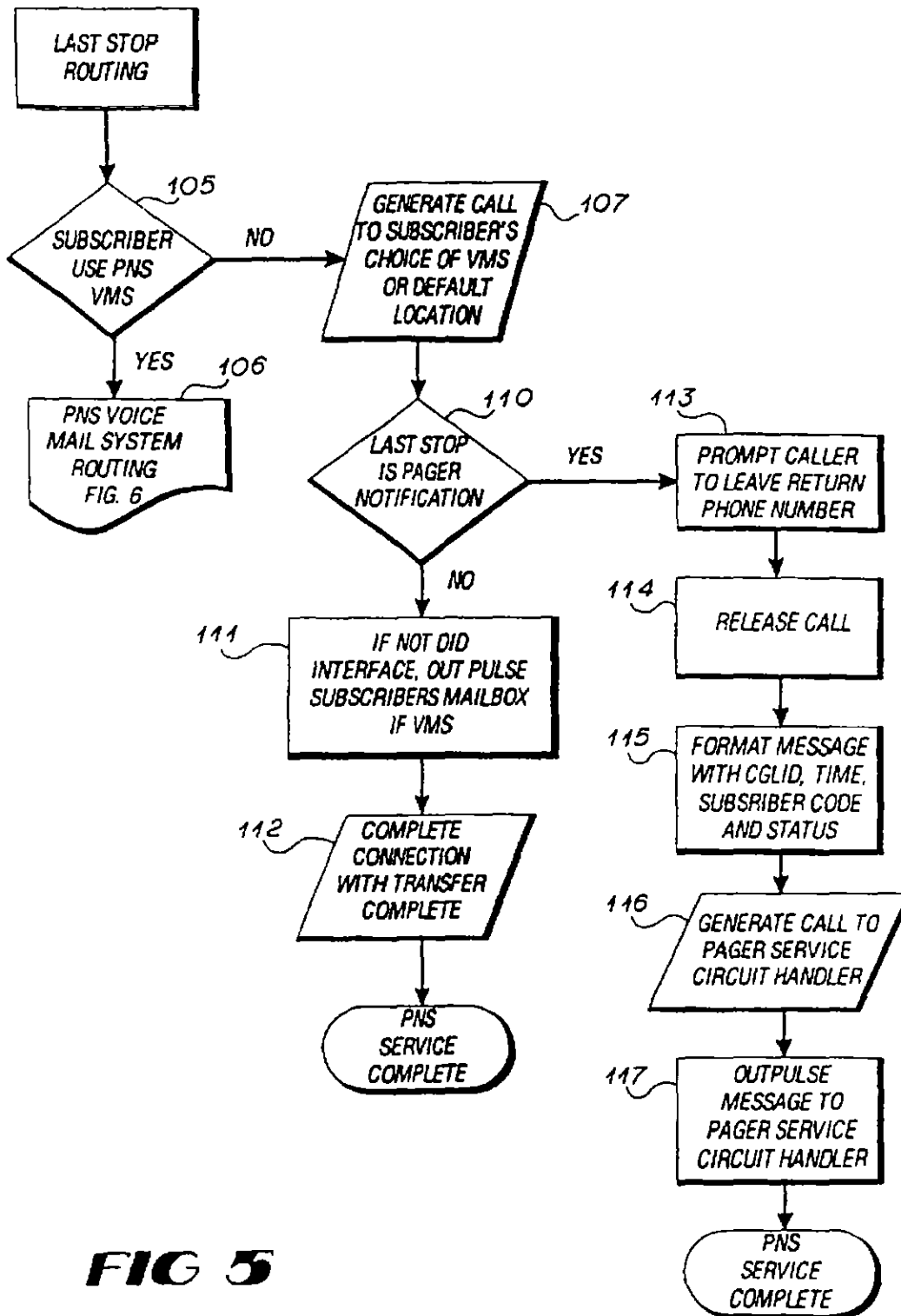


FIG 5

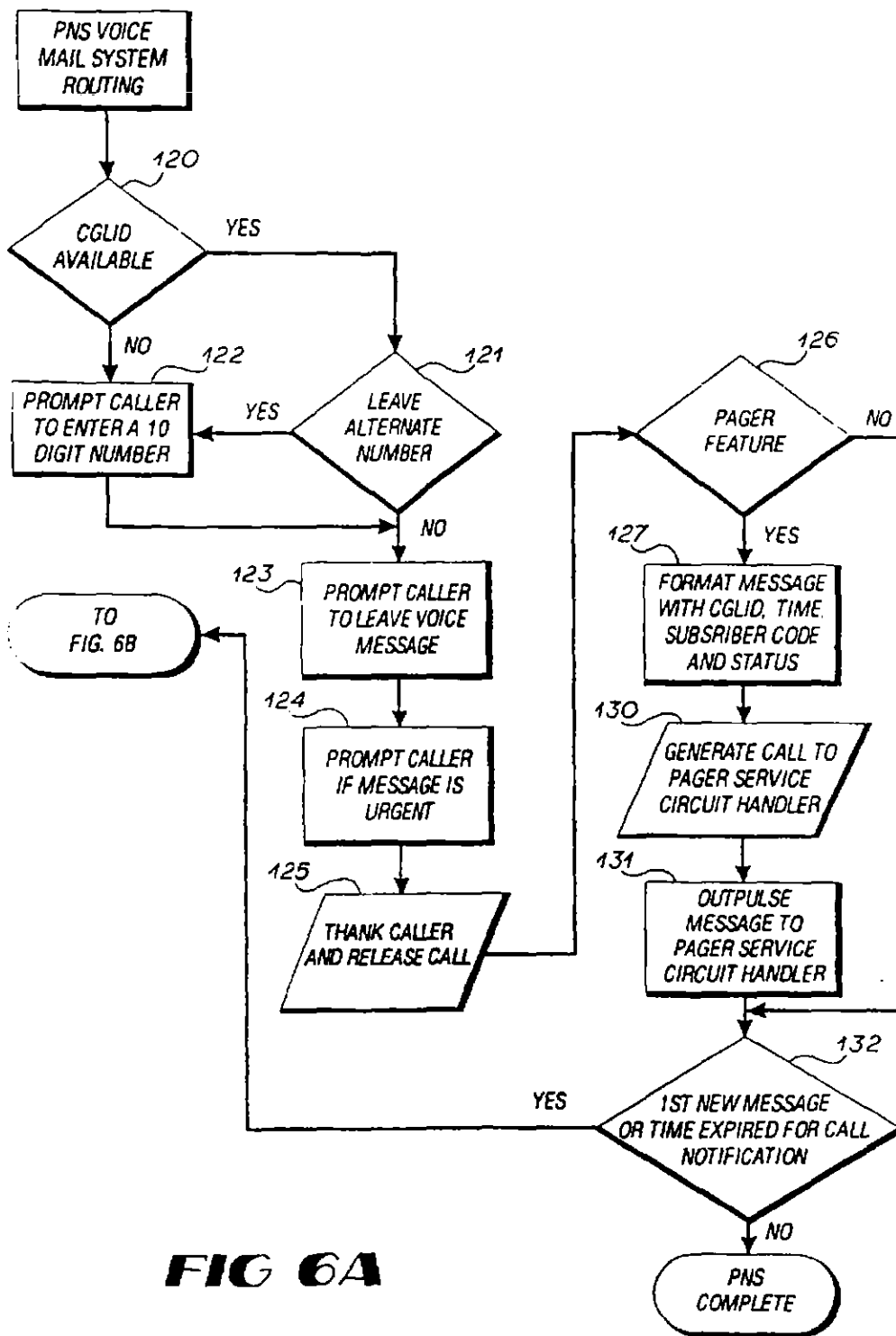
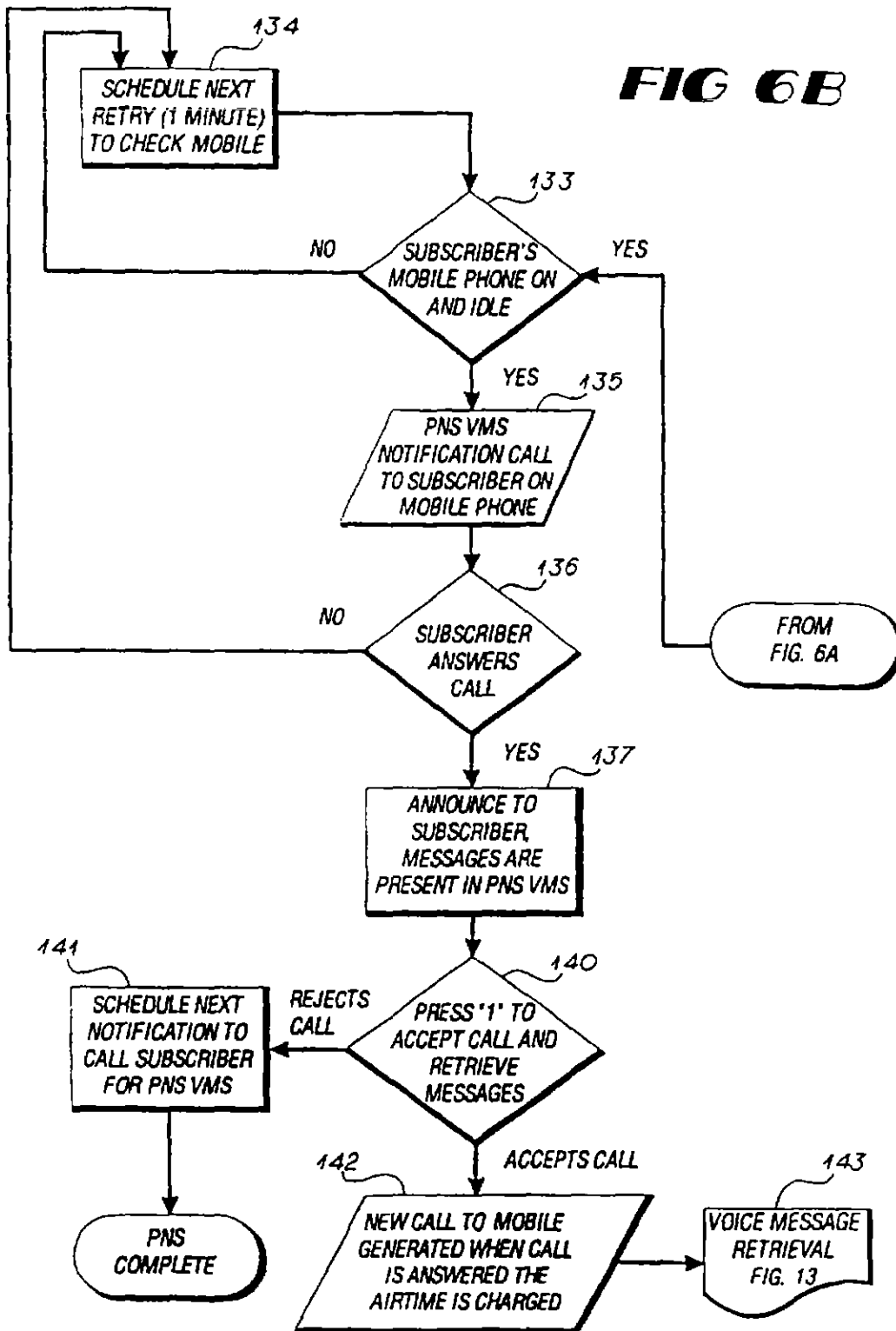


FIG 6A

FIG 6B



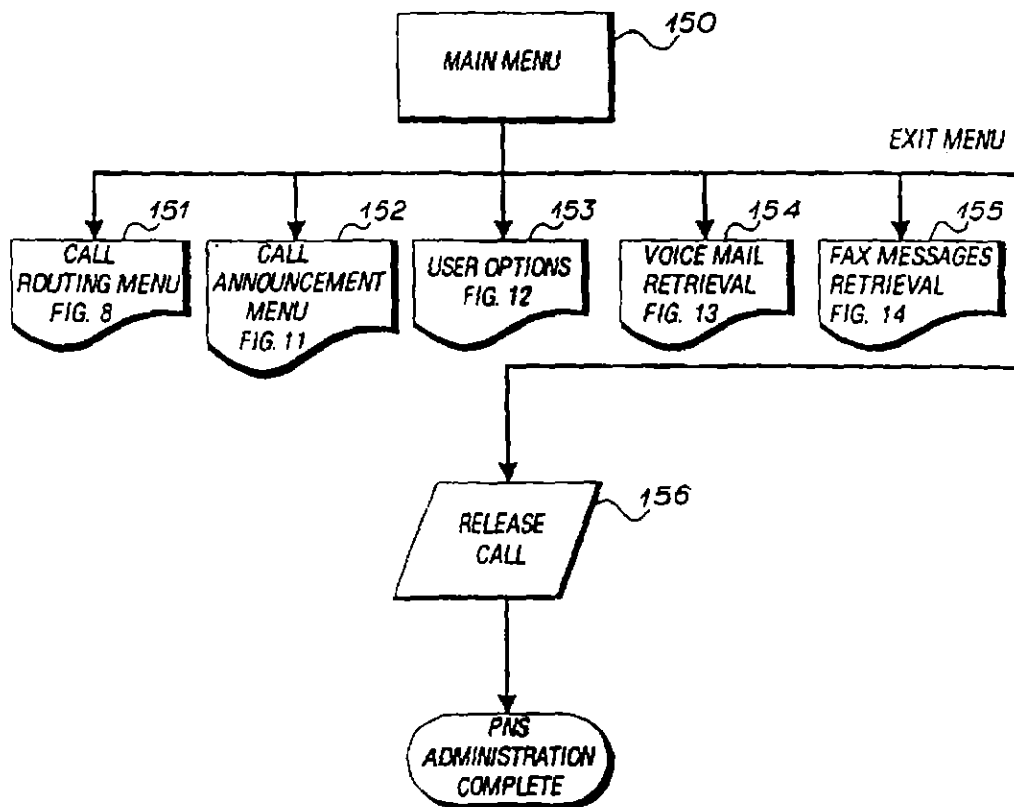


FIG 7

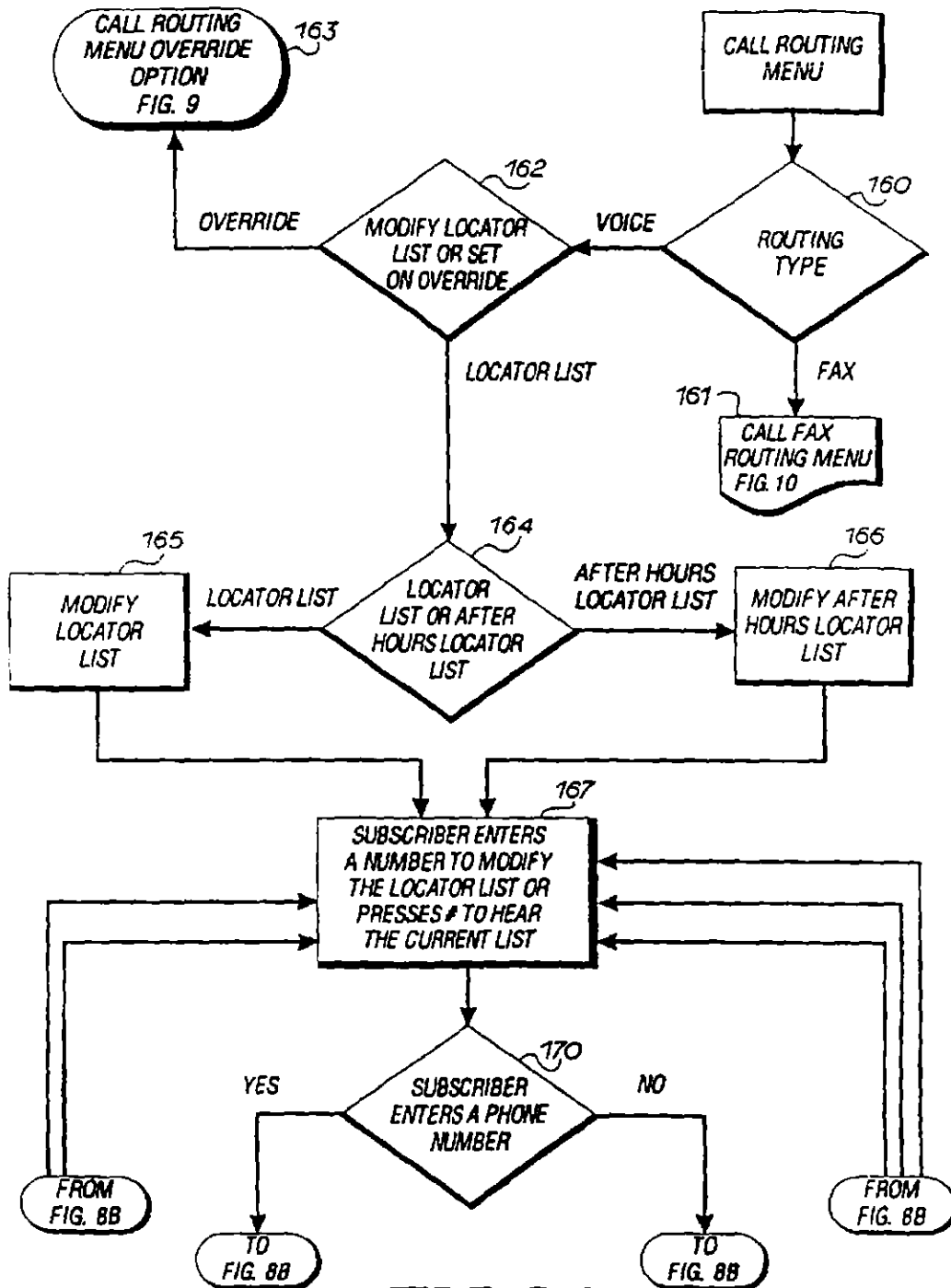


FIG 8A

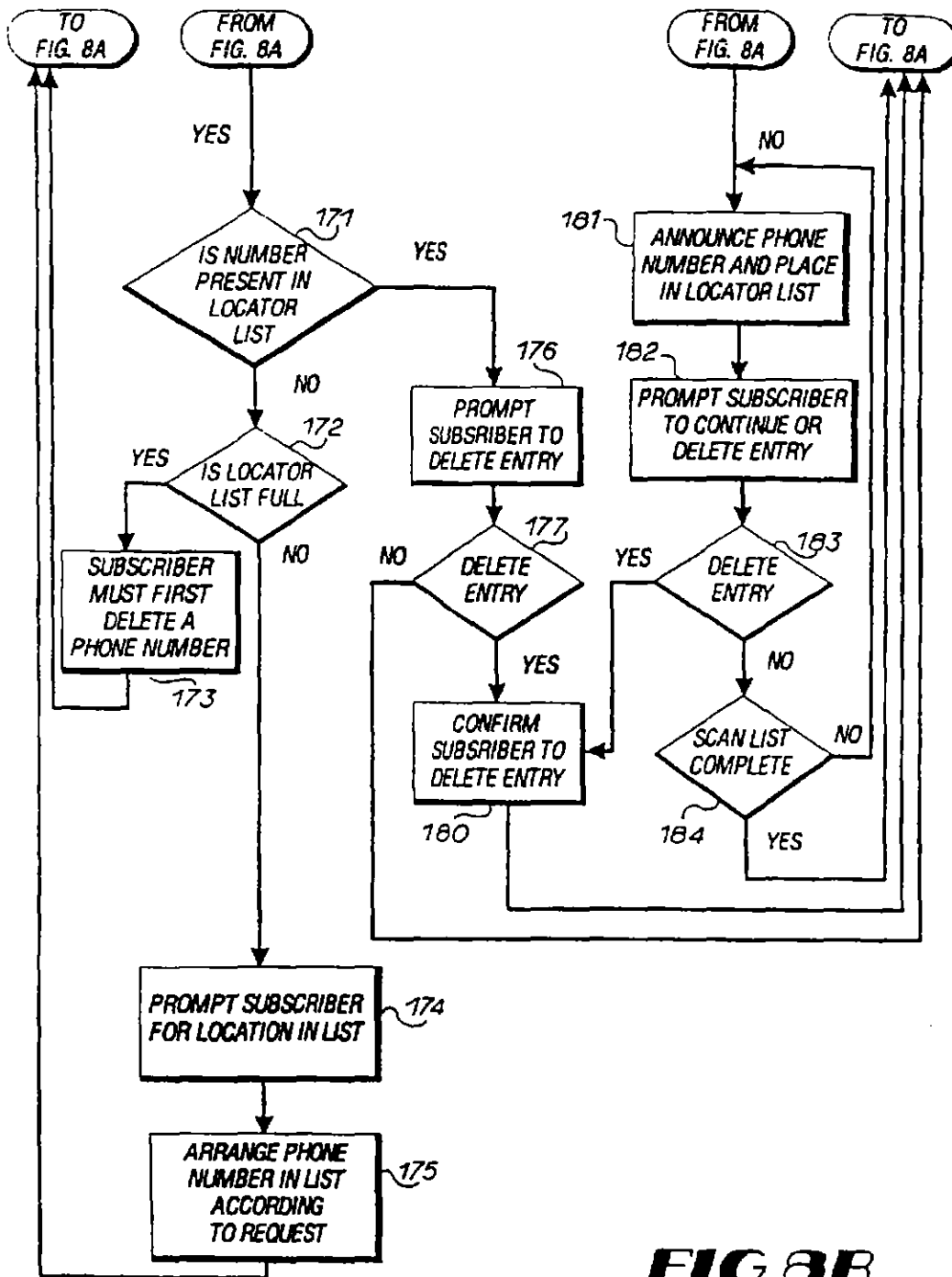
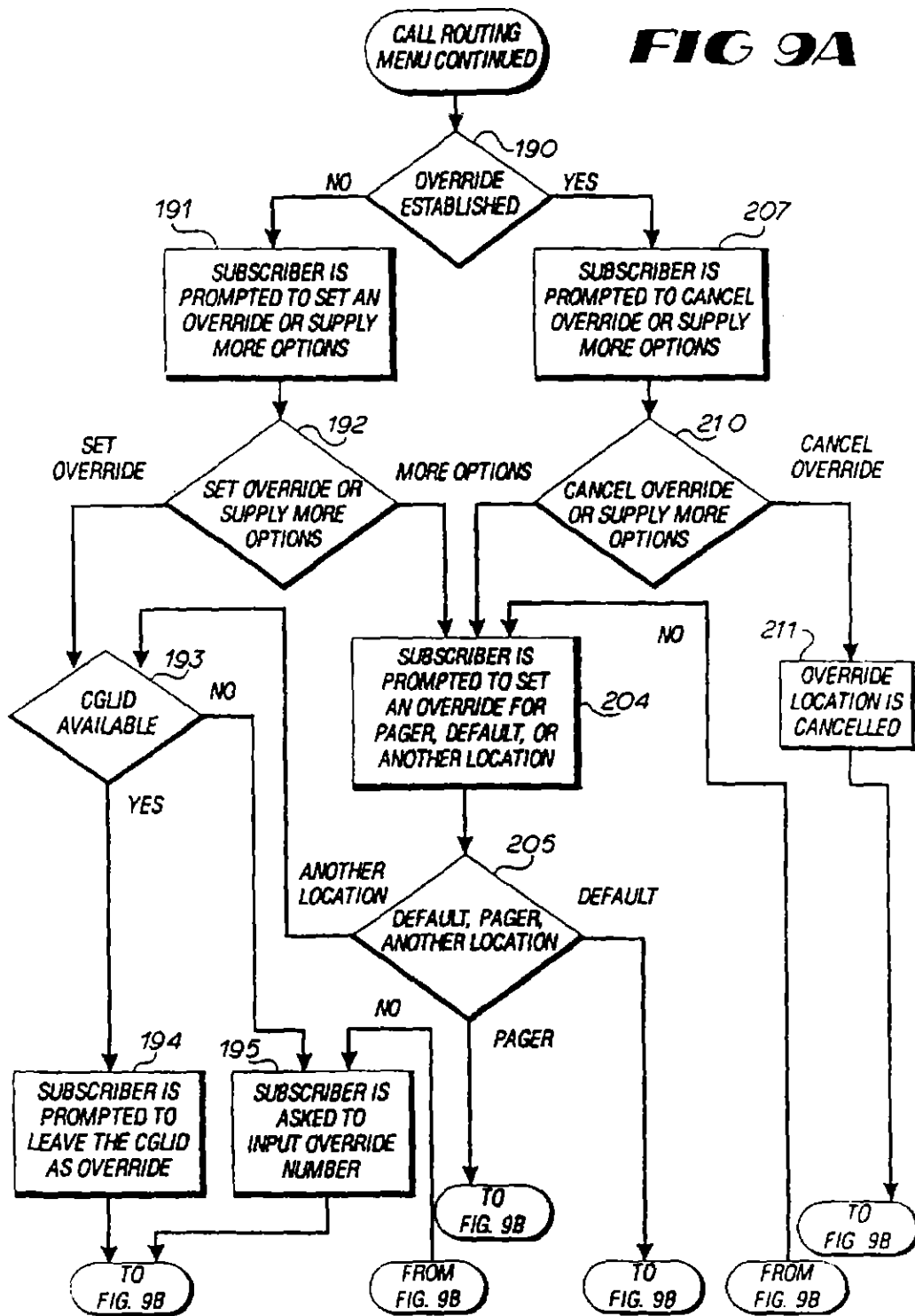


FIG 8B

FIG 9A



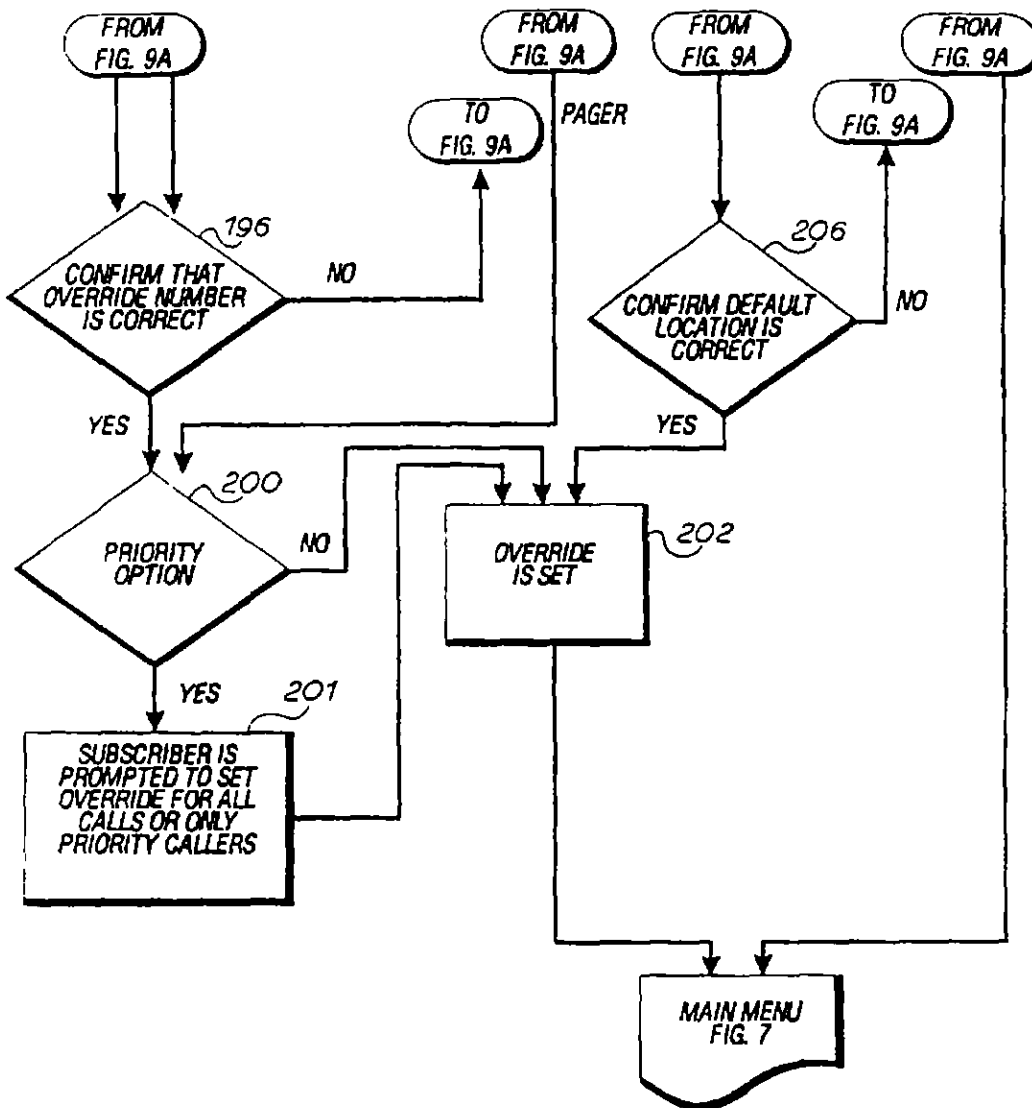


FIG 9B

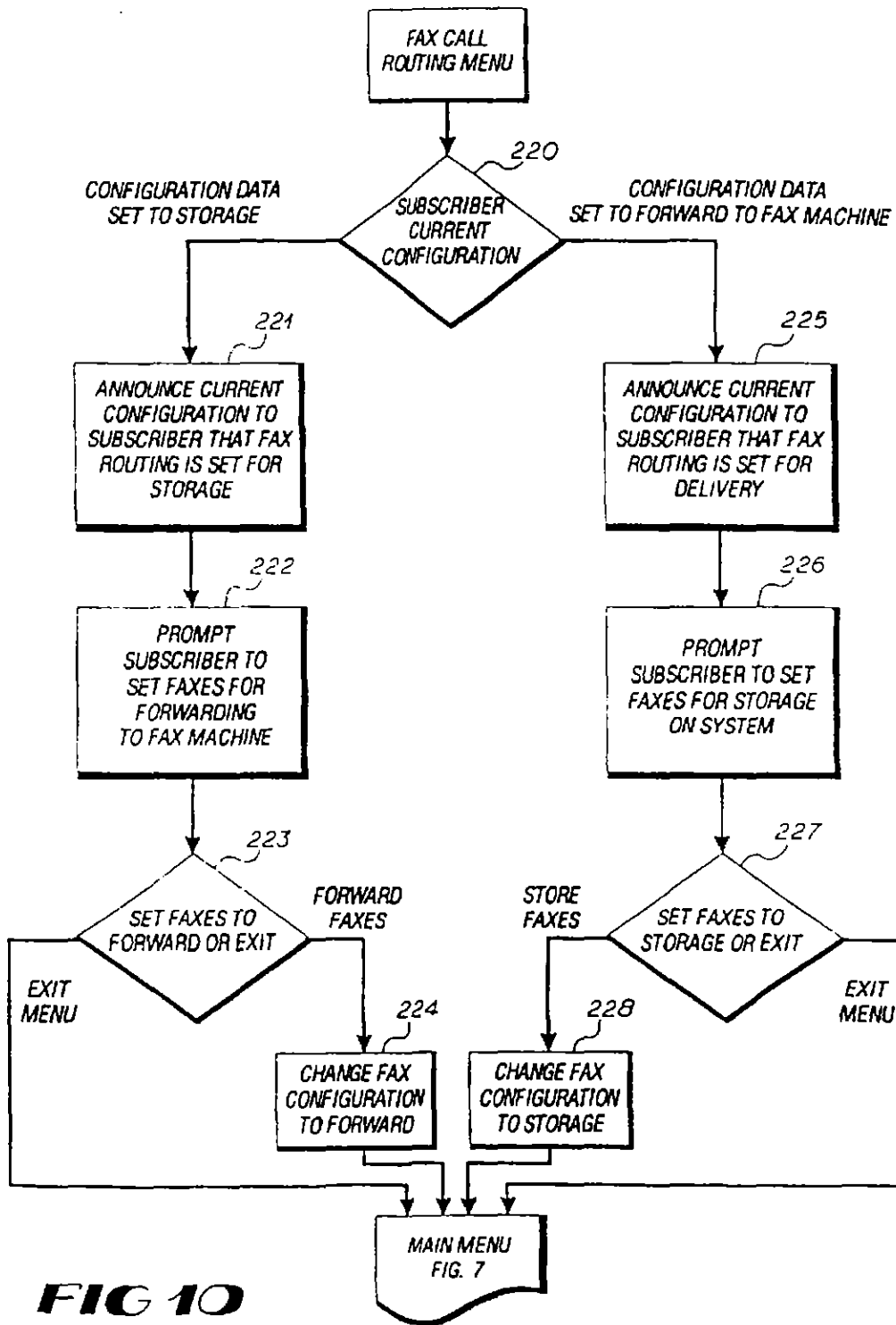


FIG 10

FIG 11A

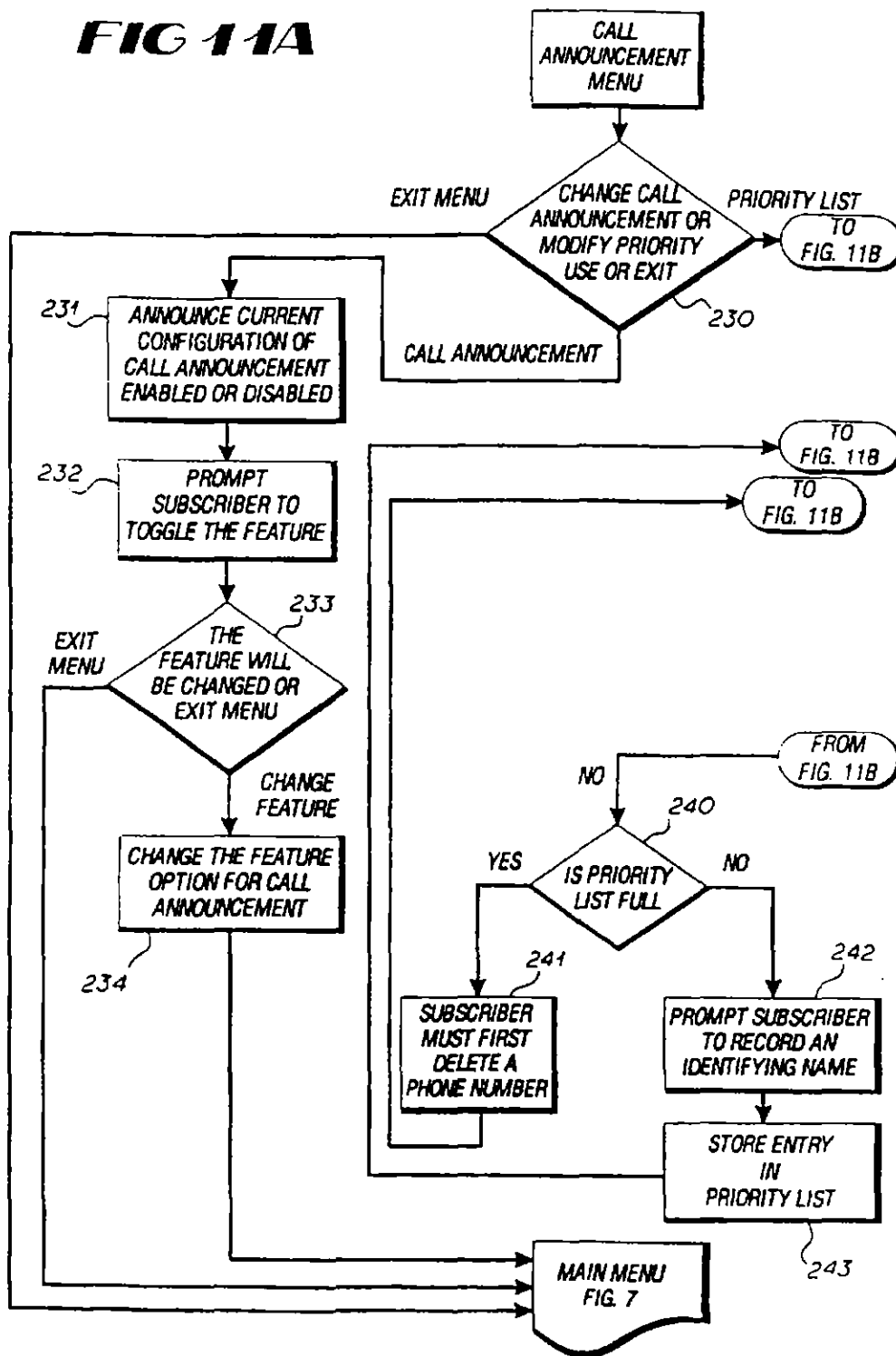
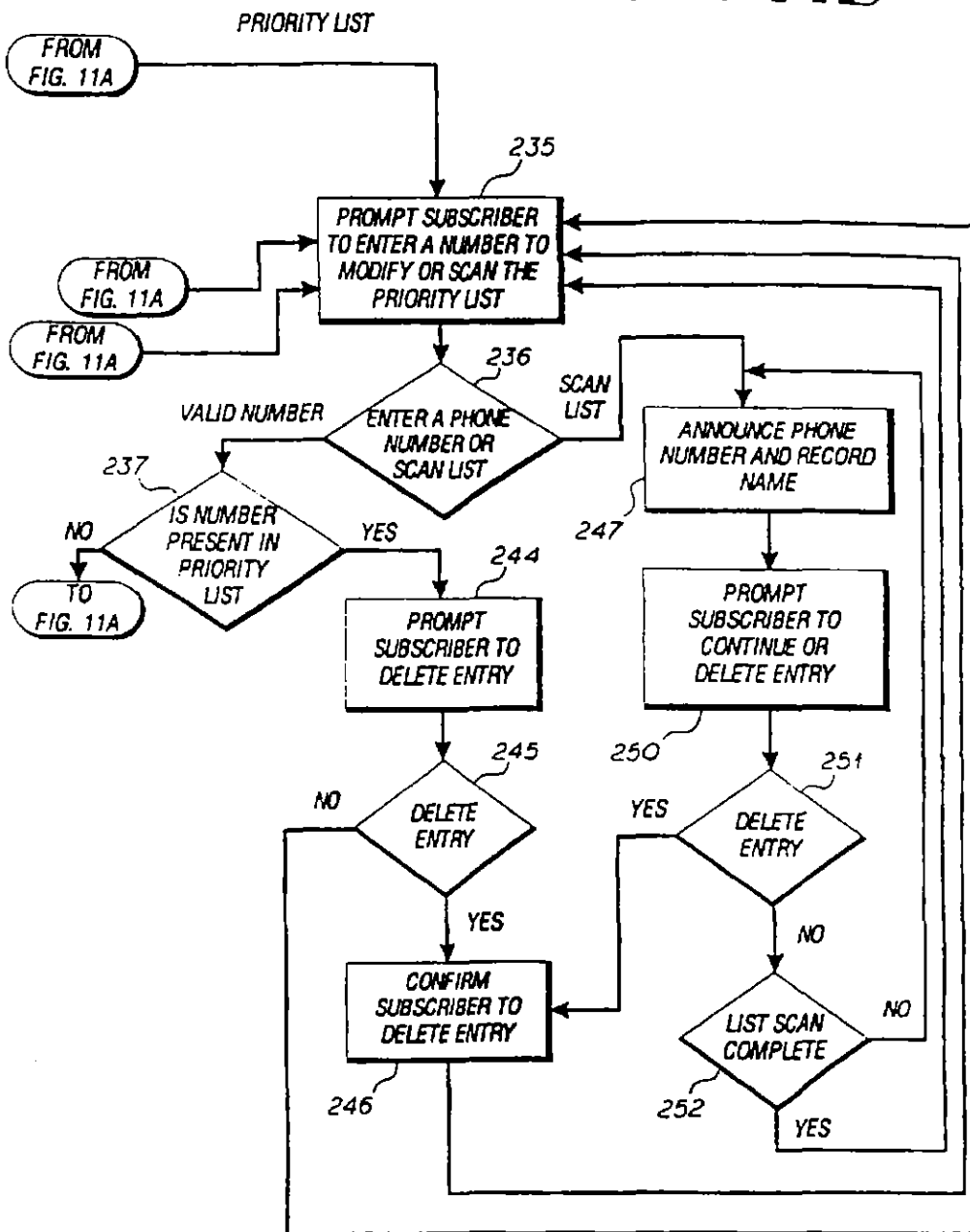


FIG 11B



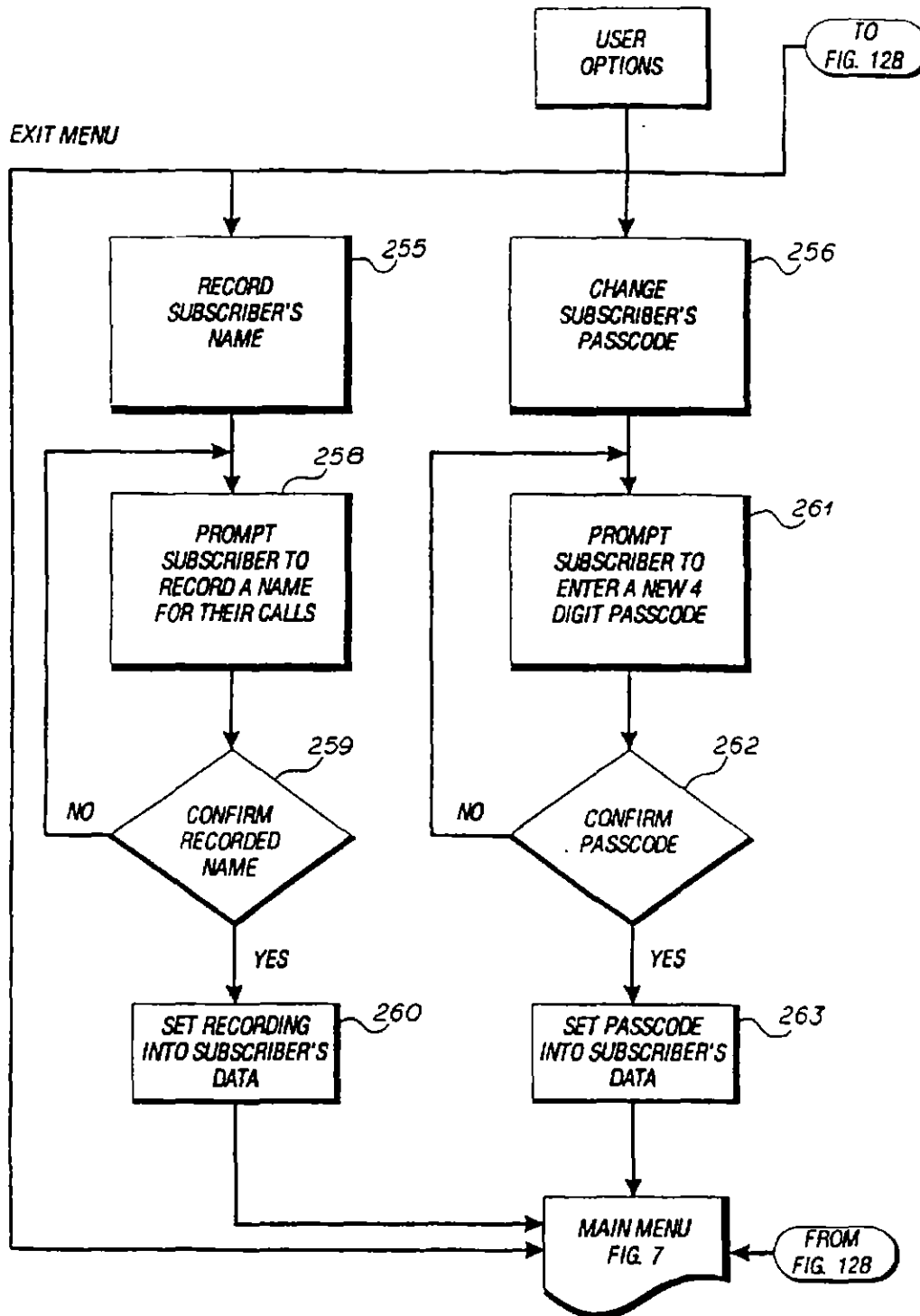


FIG 12A

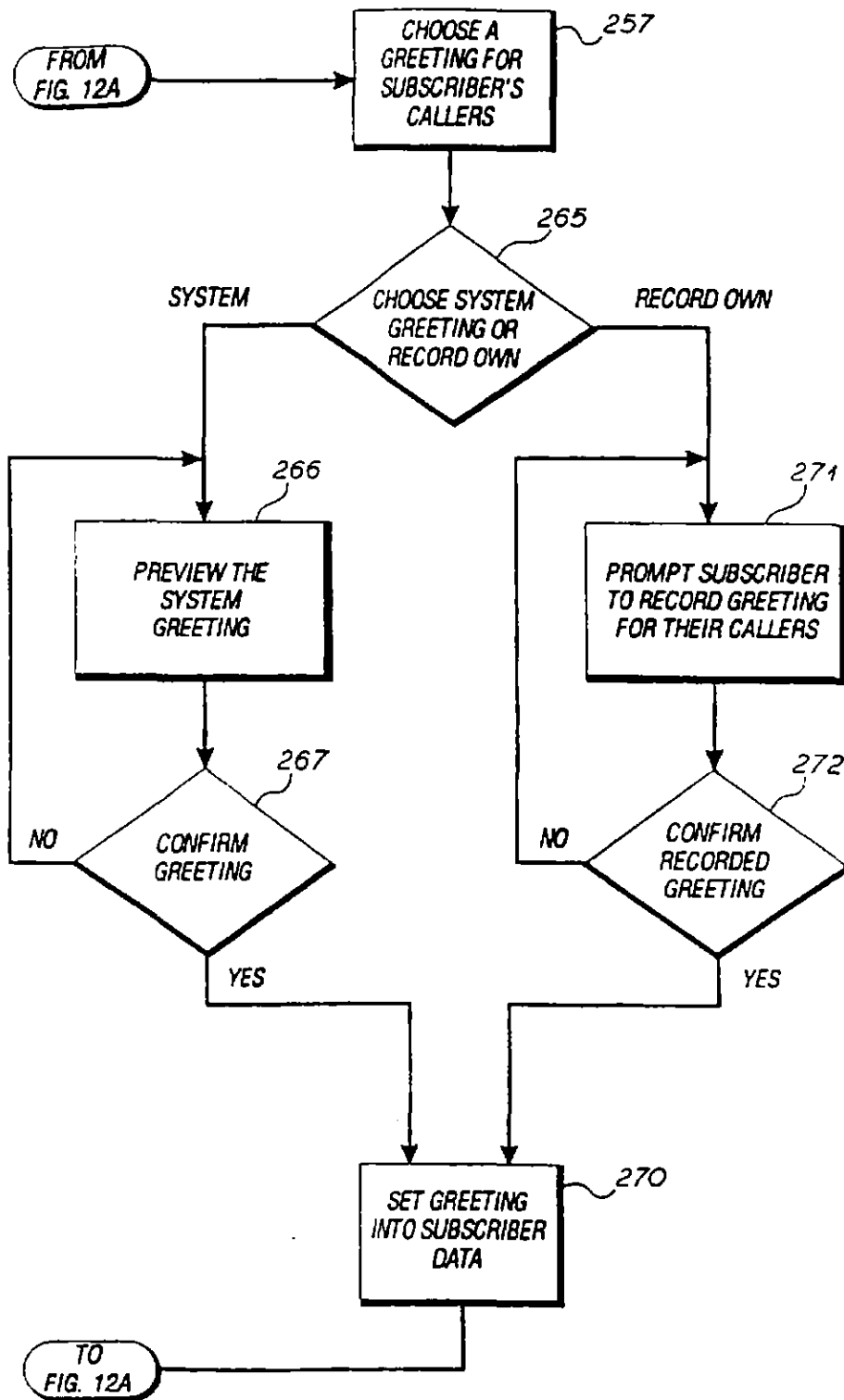


FIG 12B

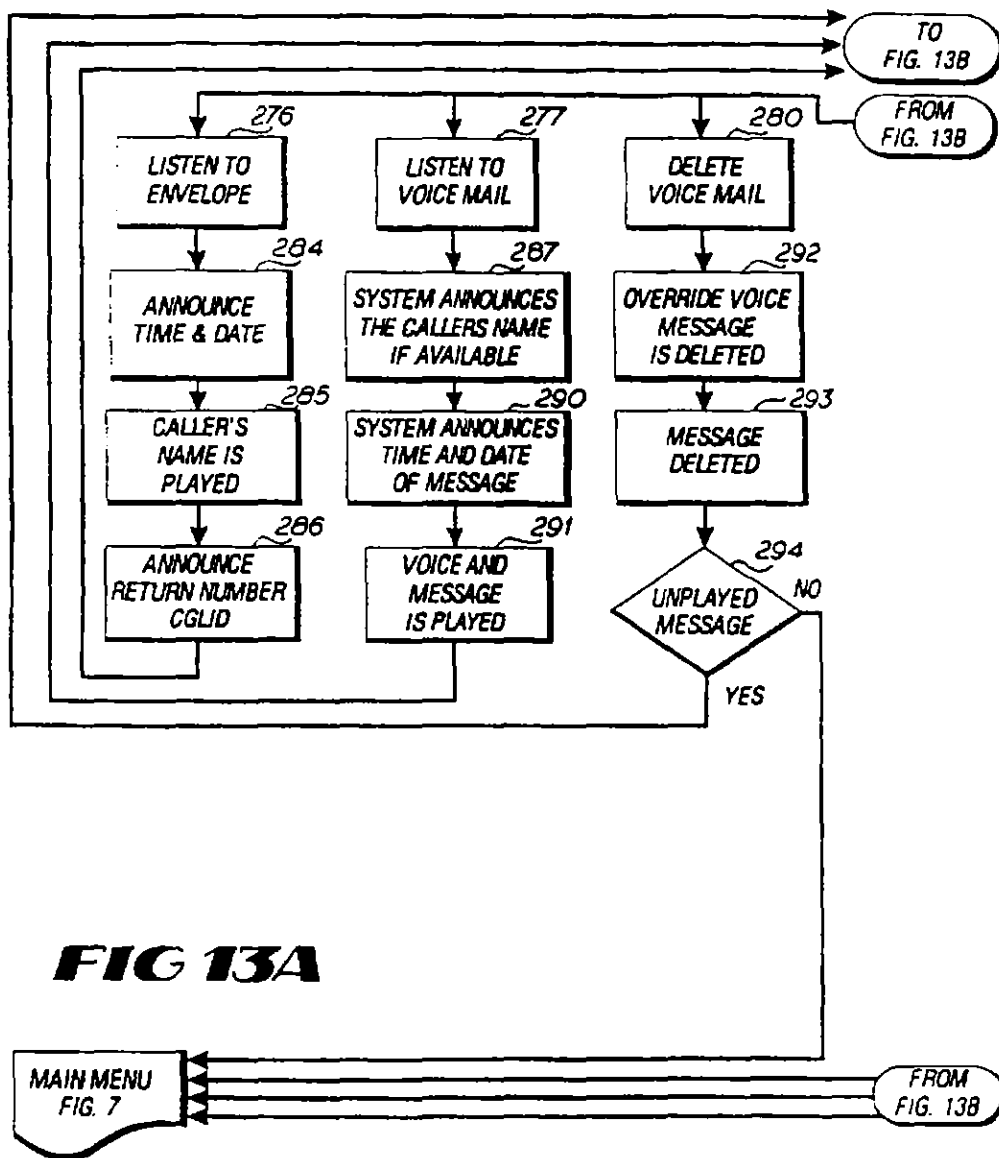
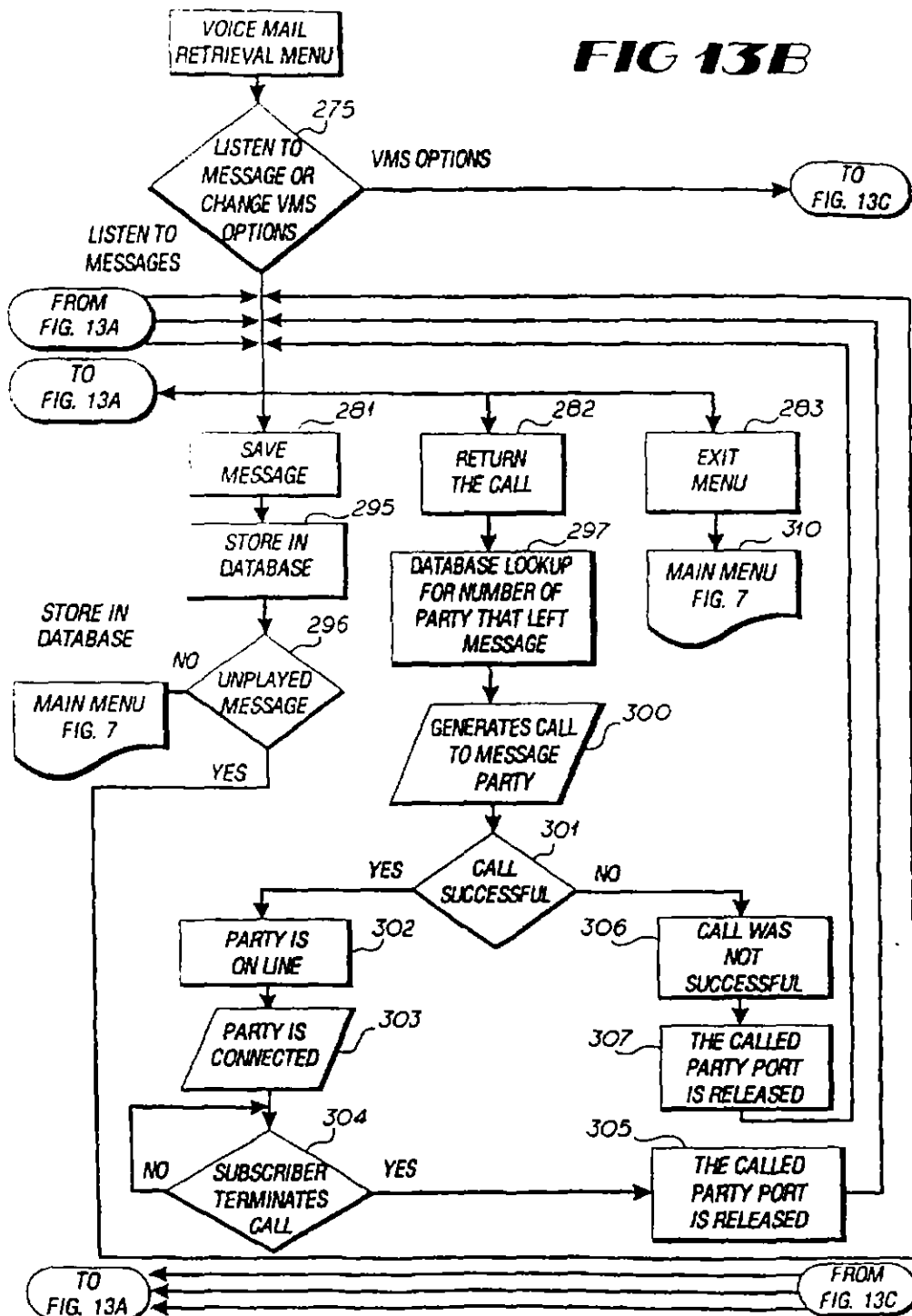
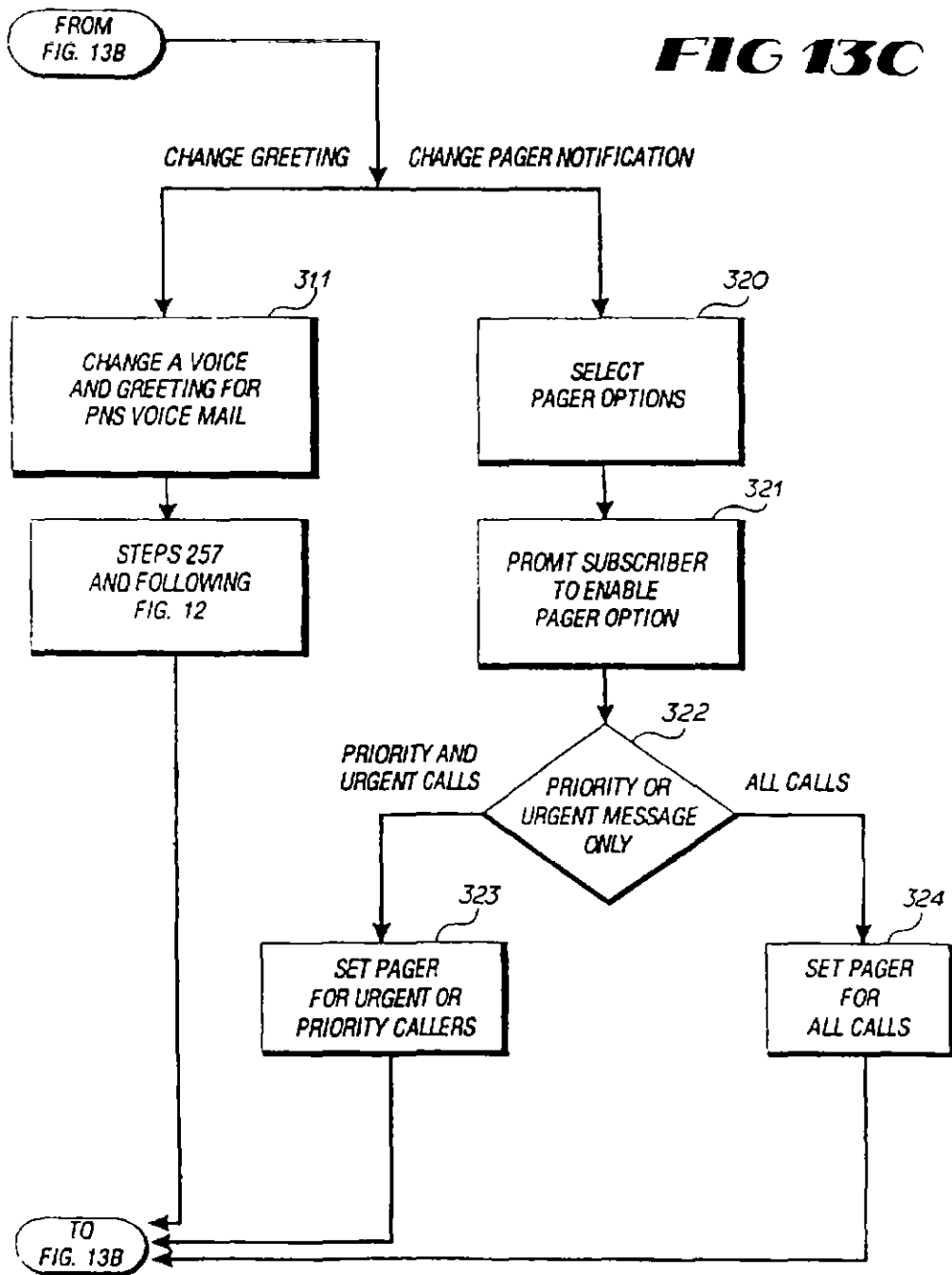


FIG 13B





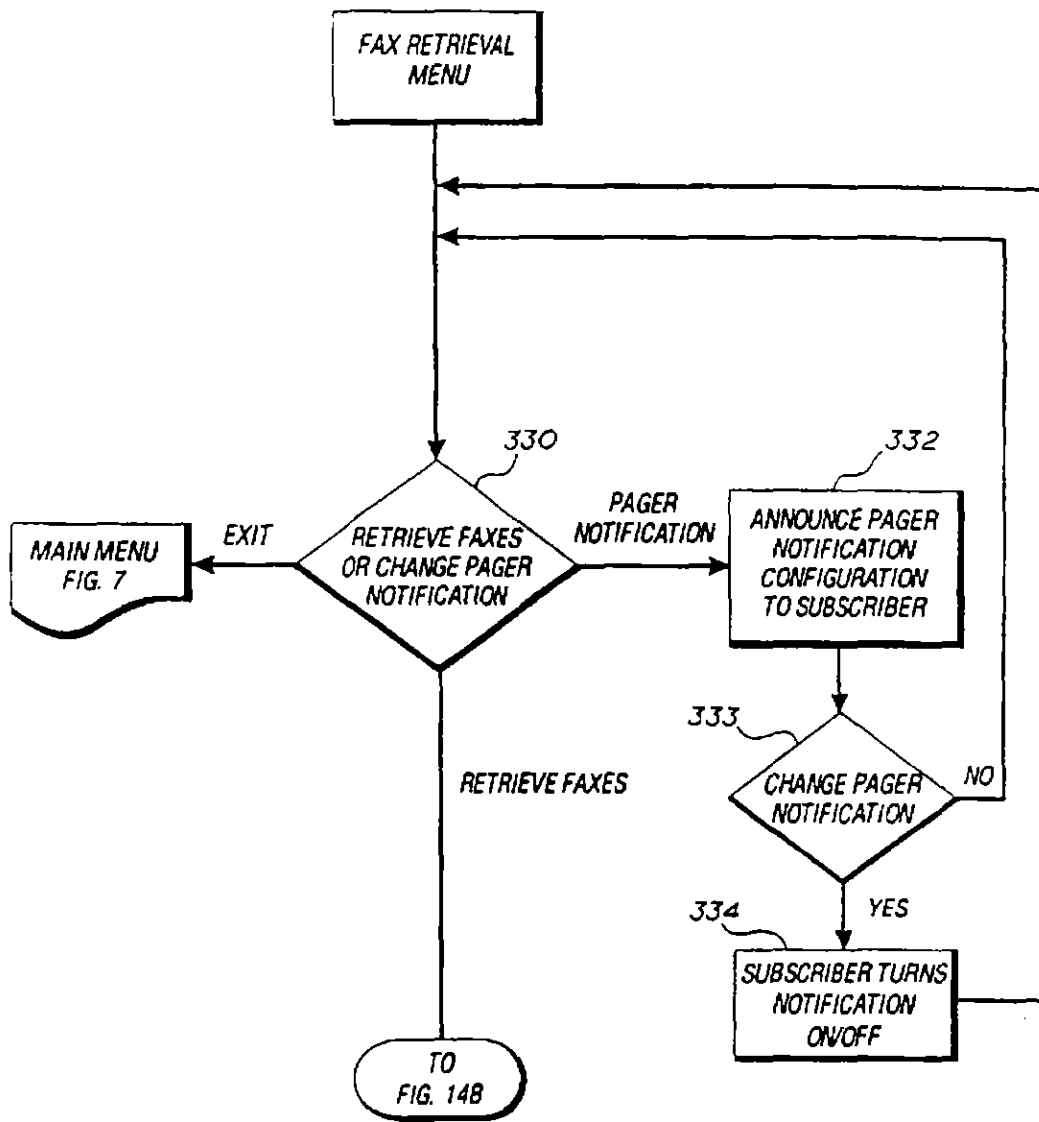


FIG 14A

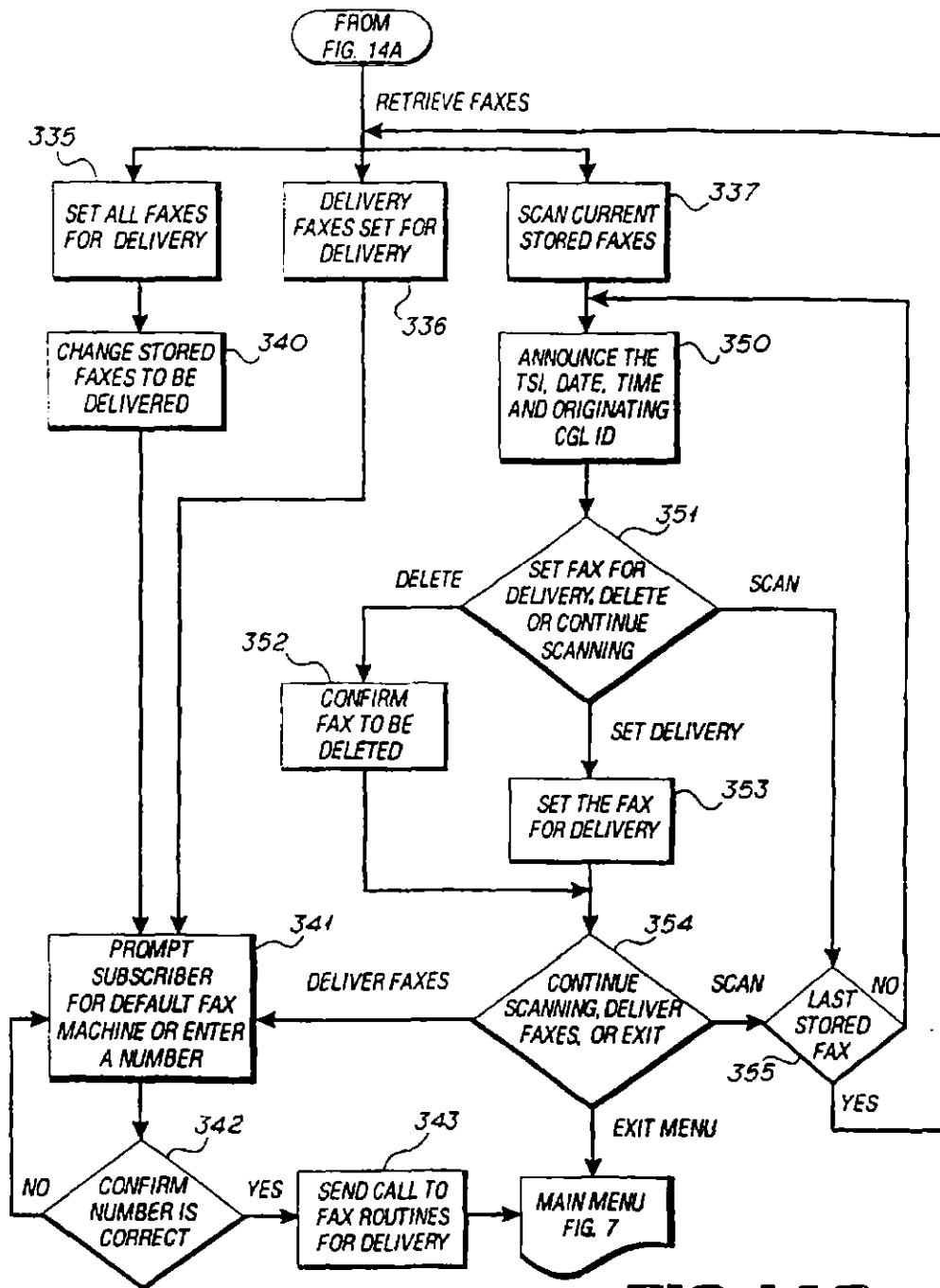


FIG 14B

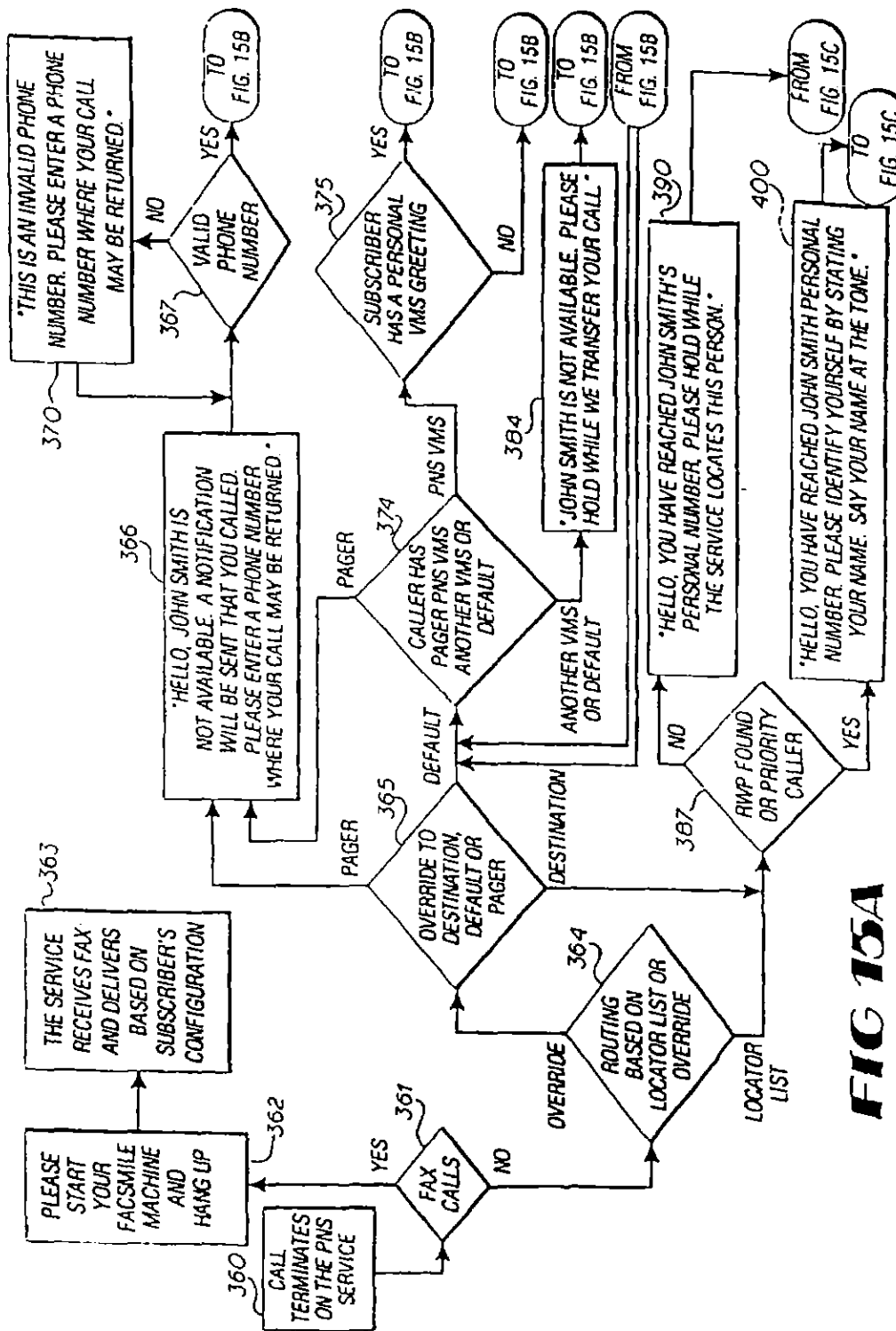


FIG 15A

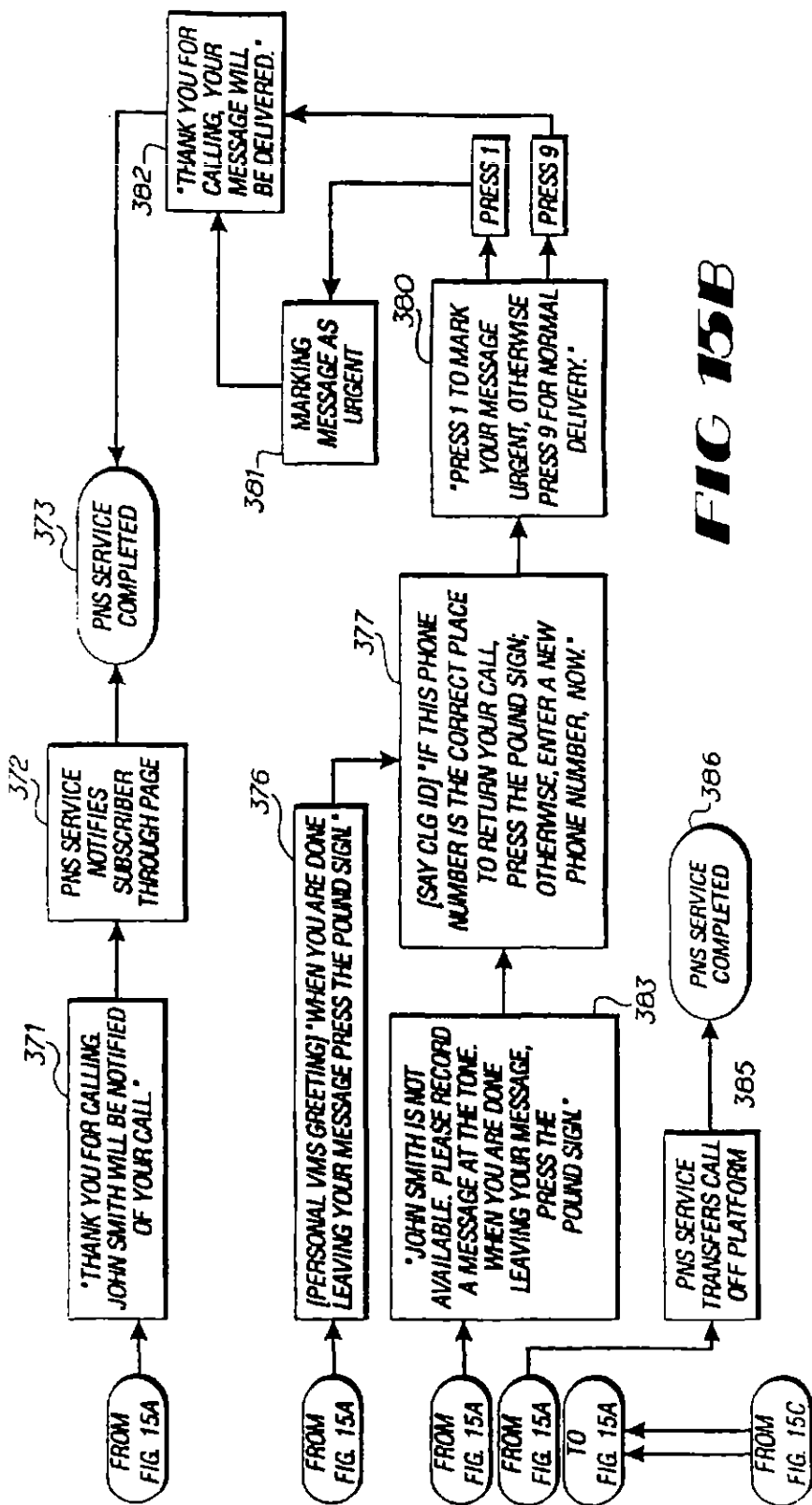


FIG 15B

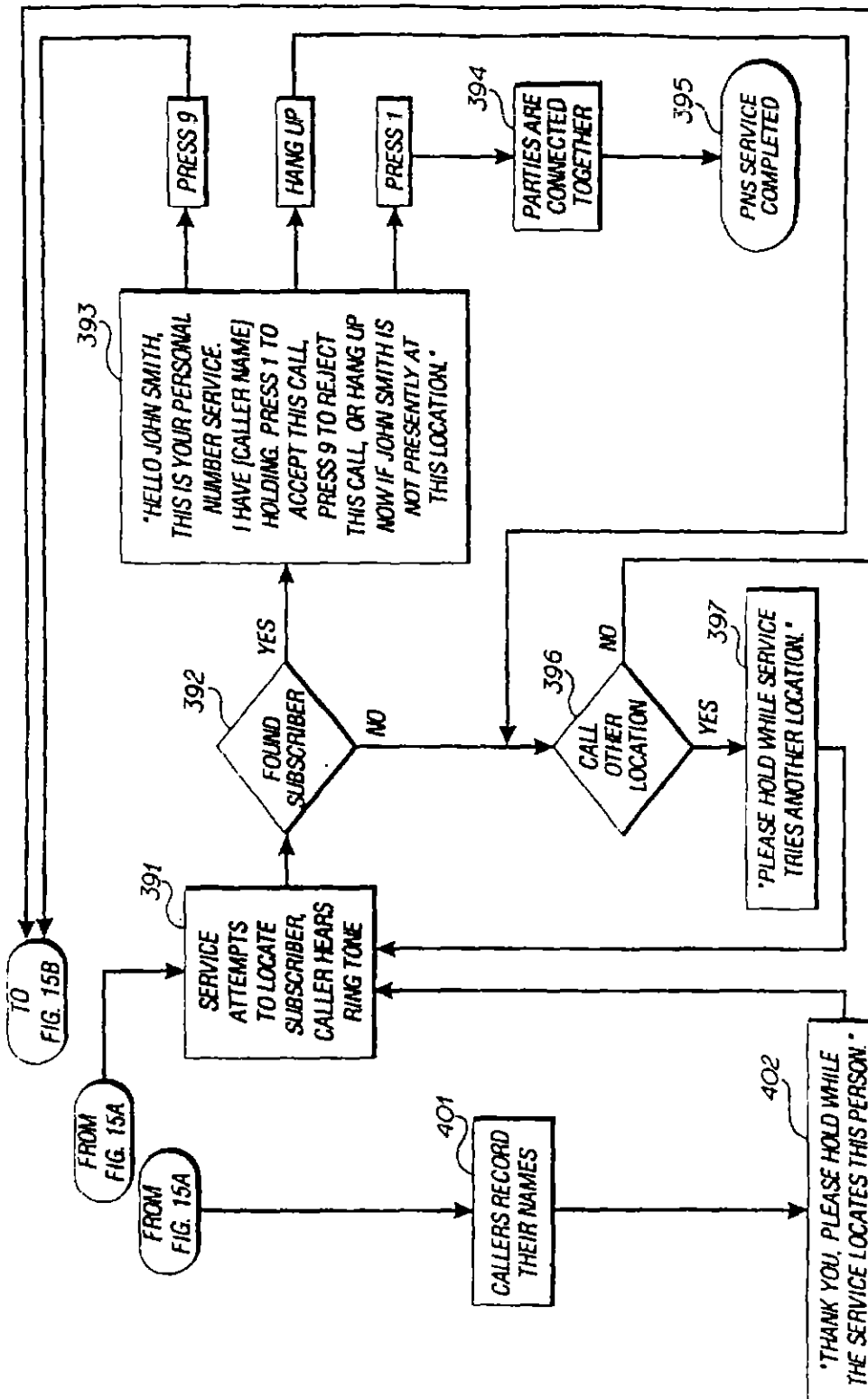


FIG 15C

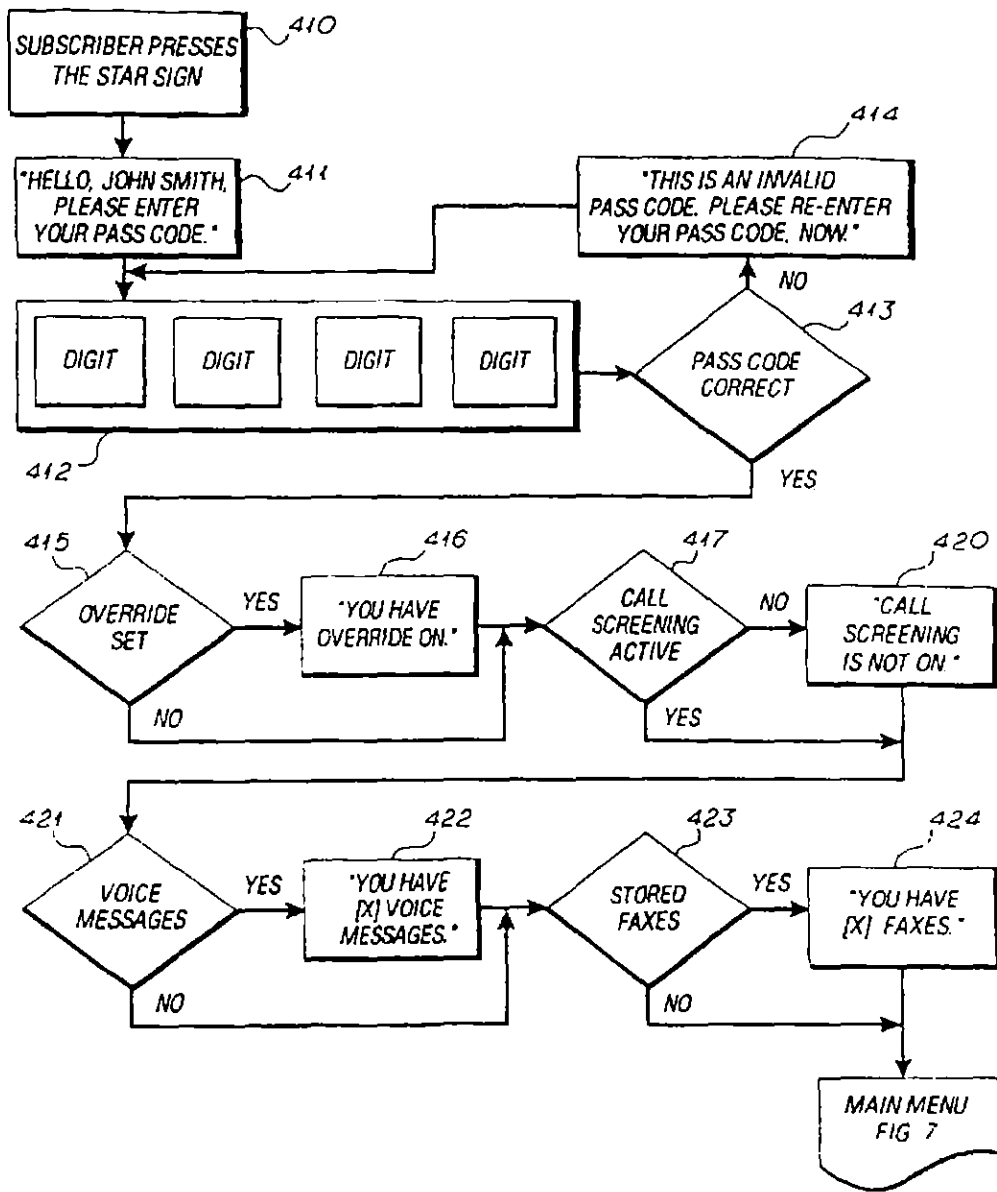


FIG 16

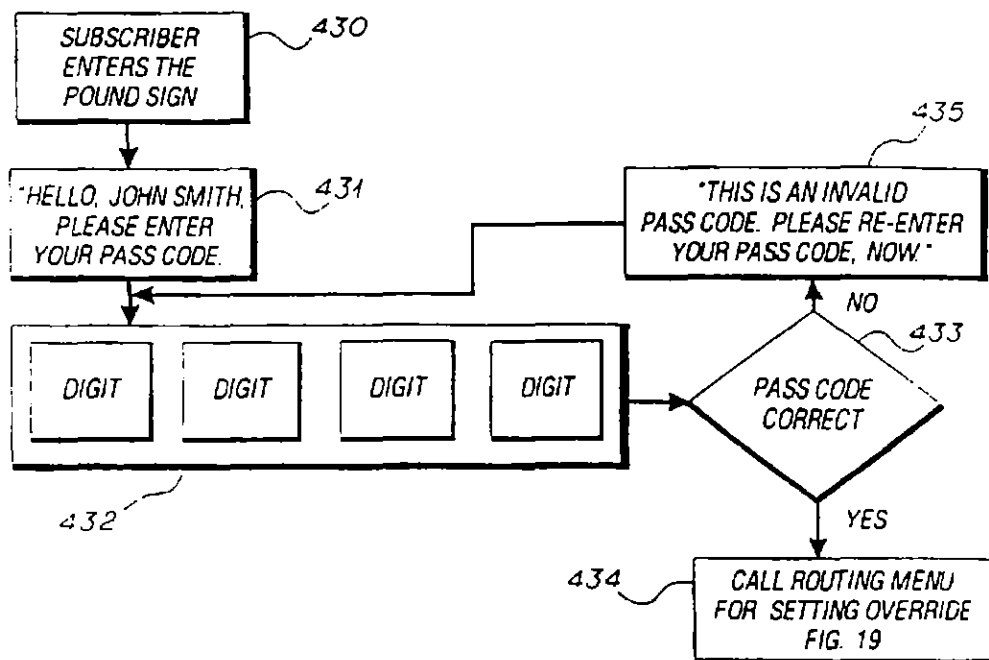


FIG 17

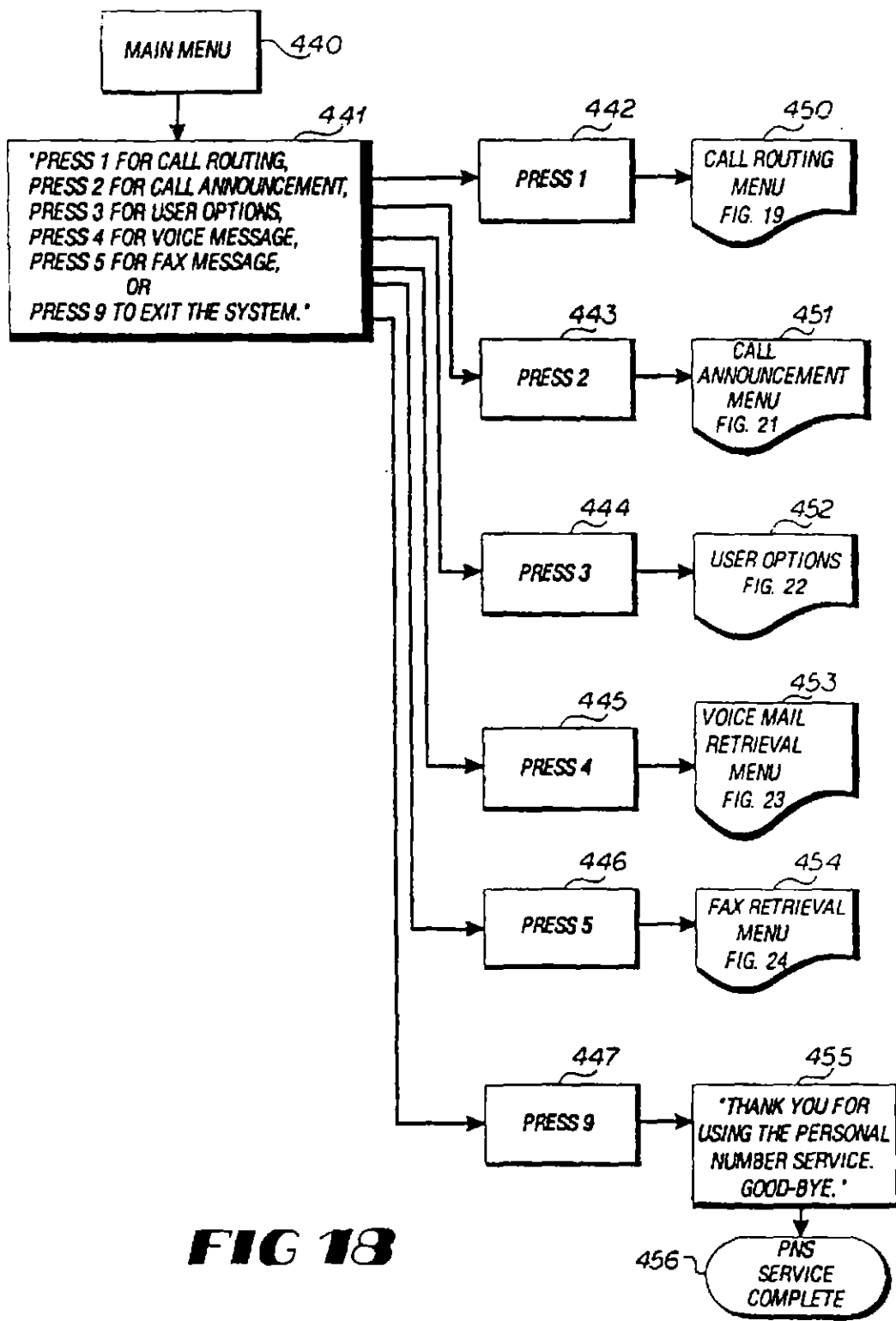


FIG 18

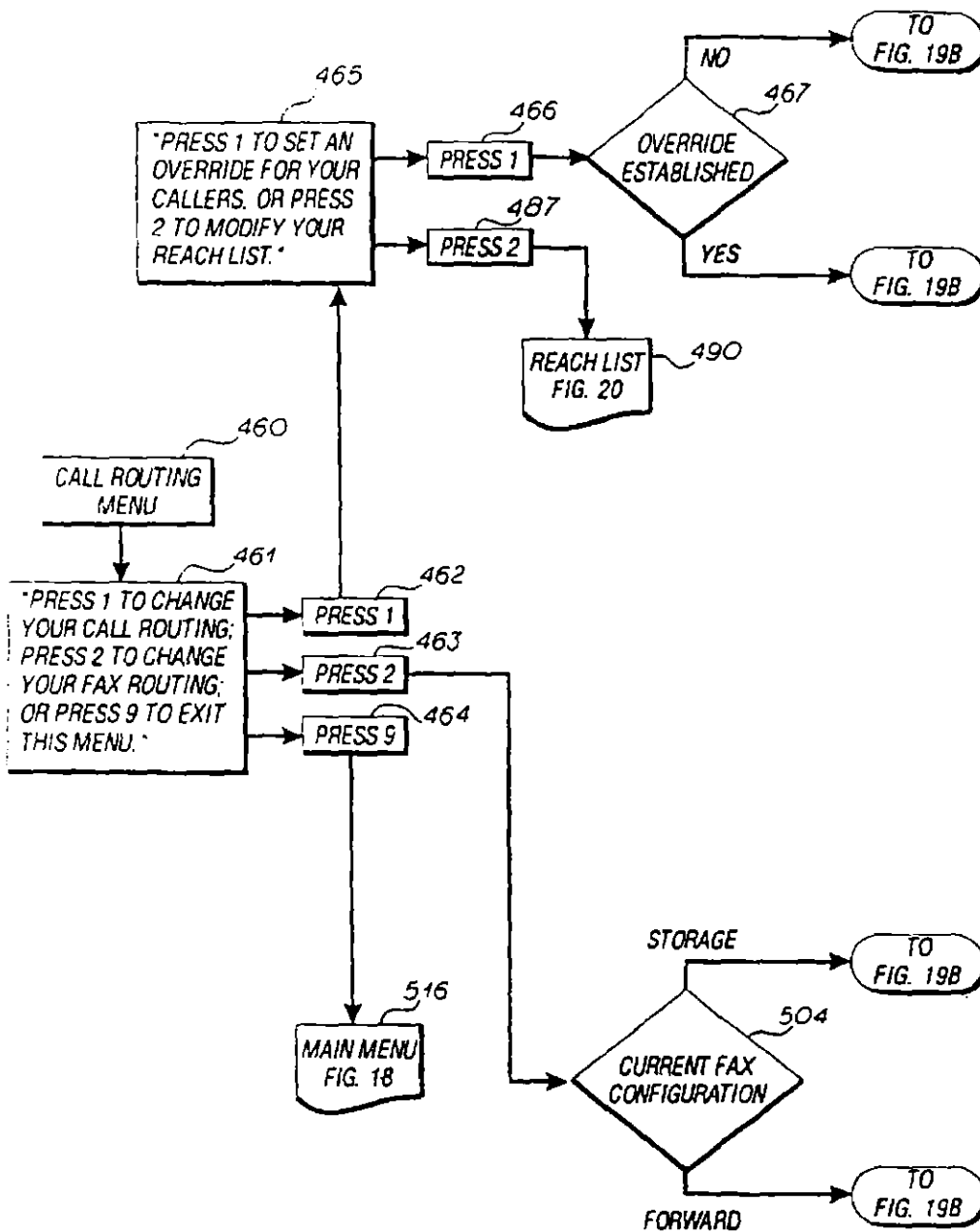


FIG 19A

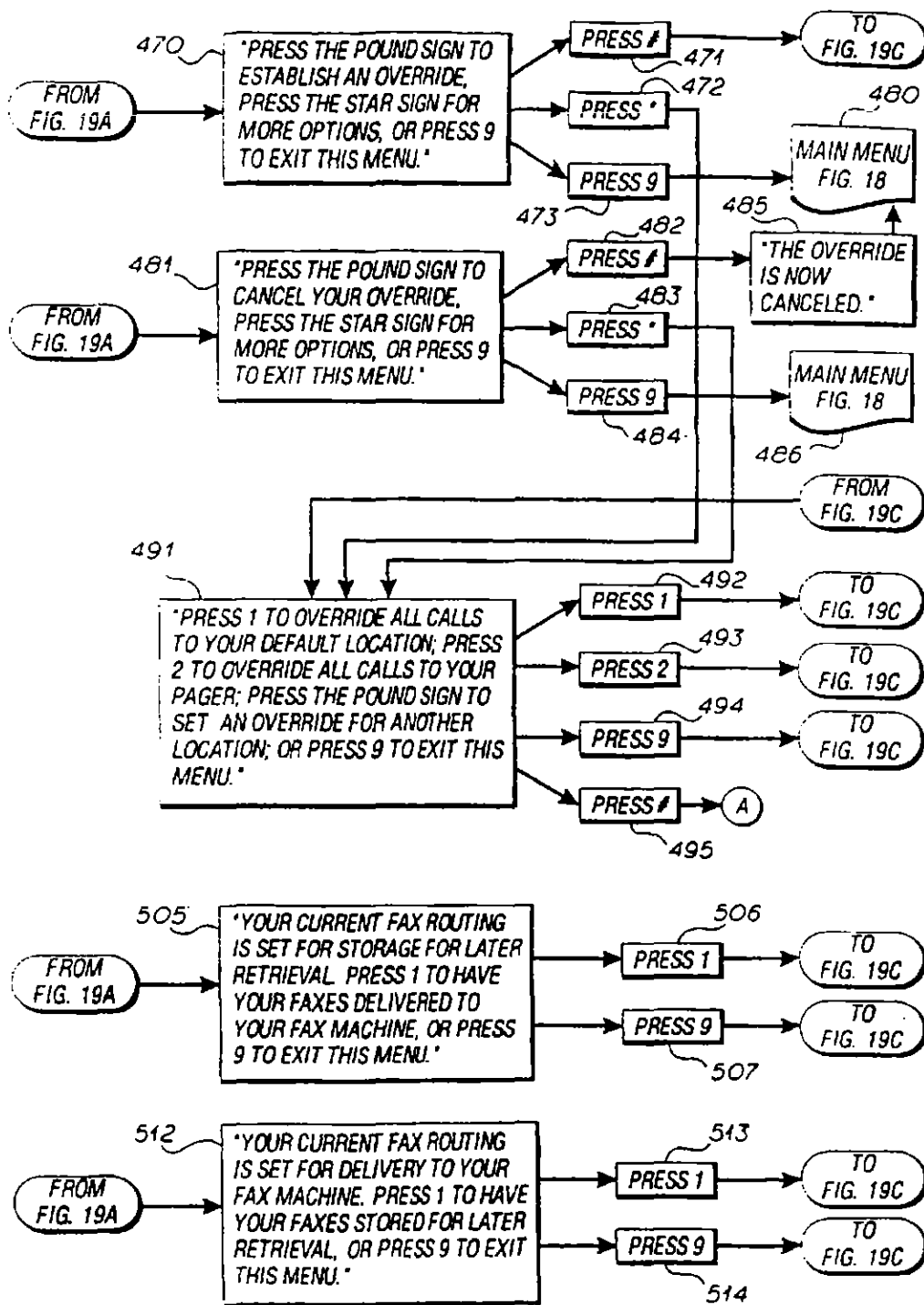


FIG 19B

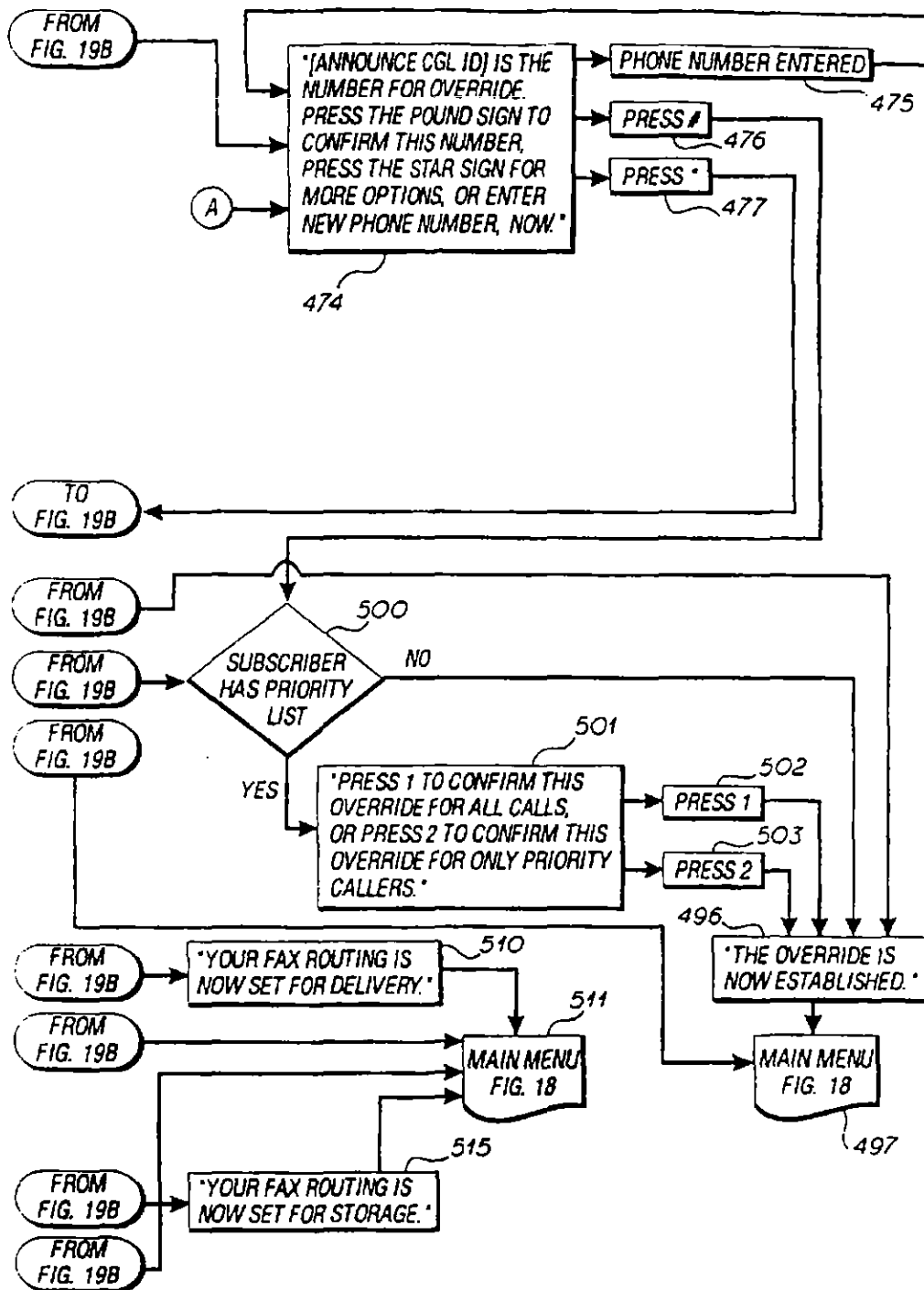
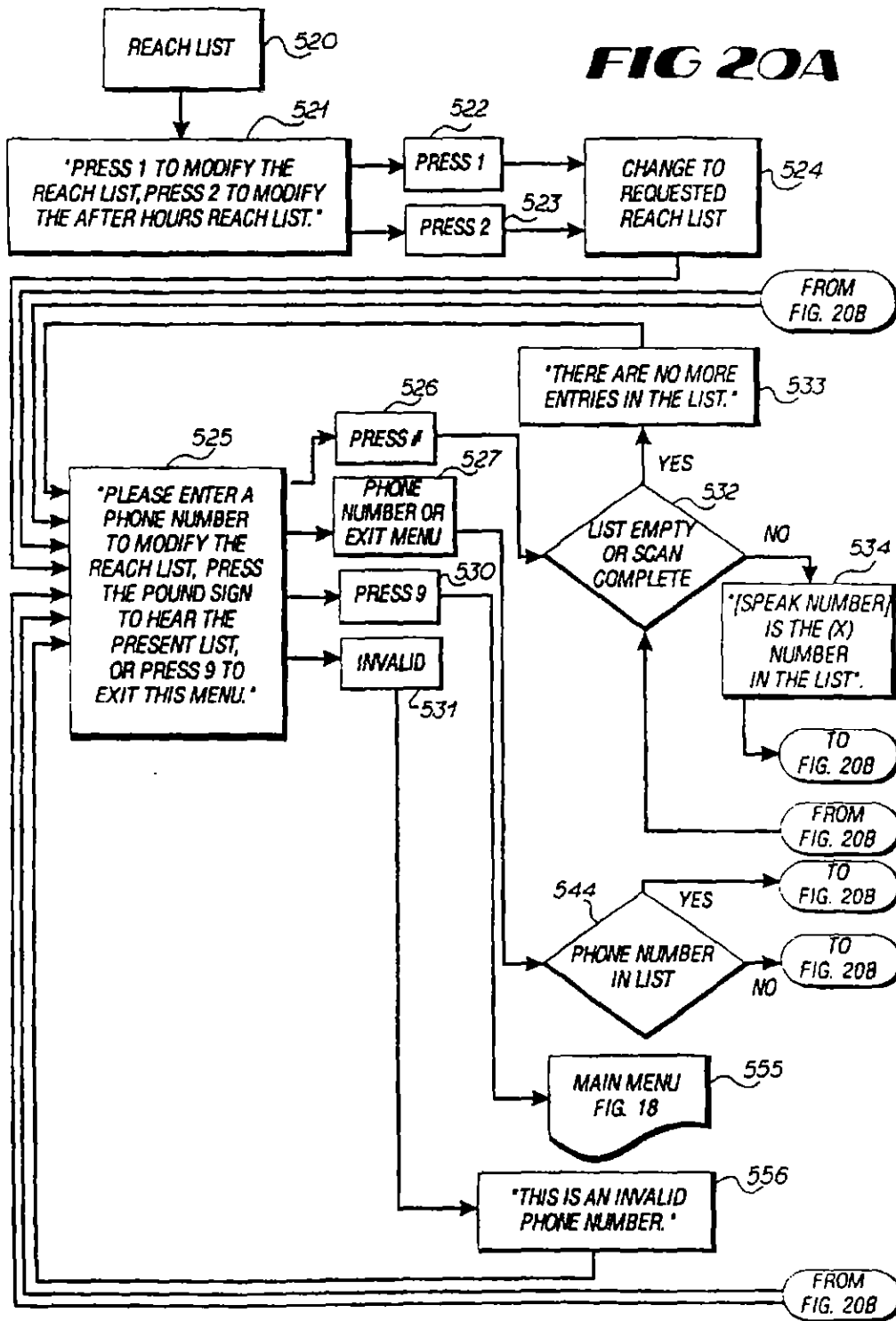


FIG 19C

FIG 20A



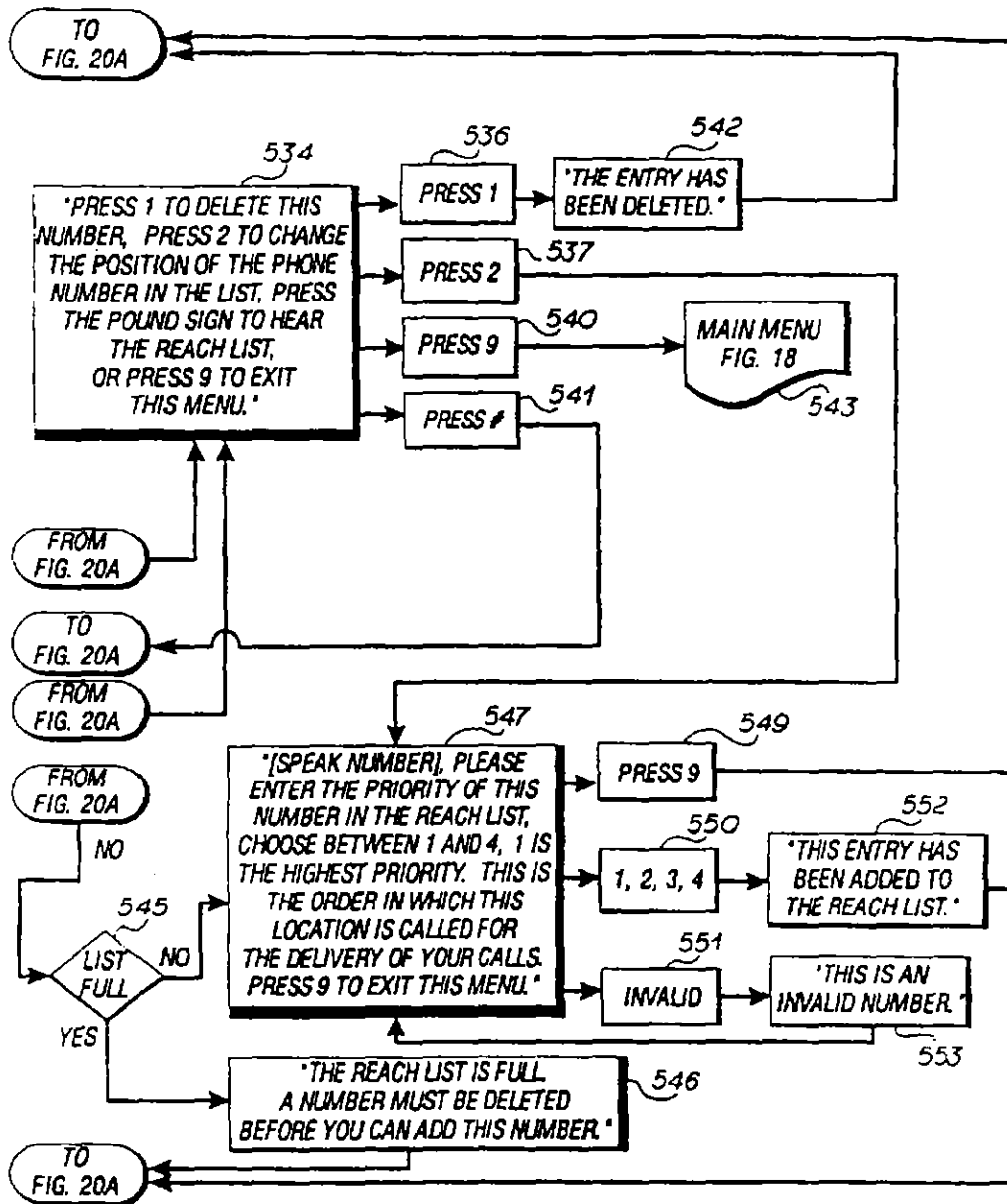
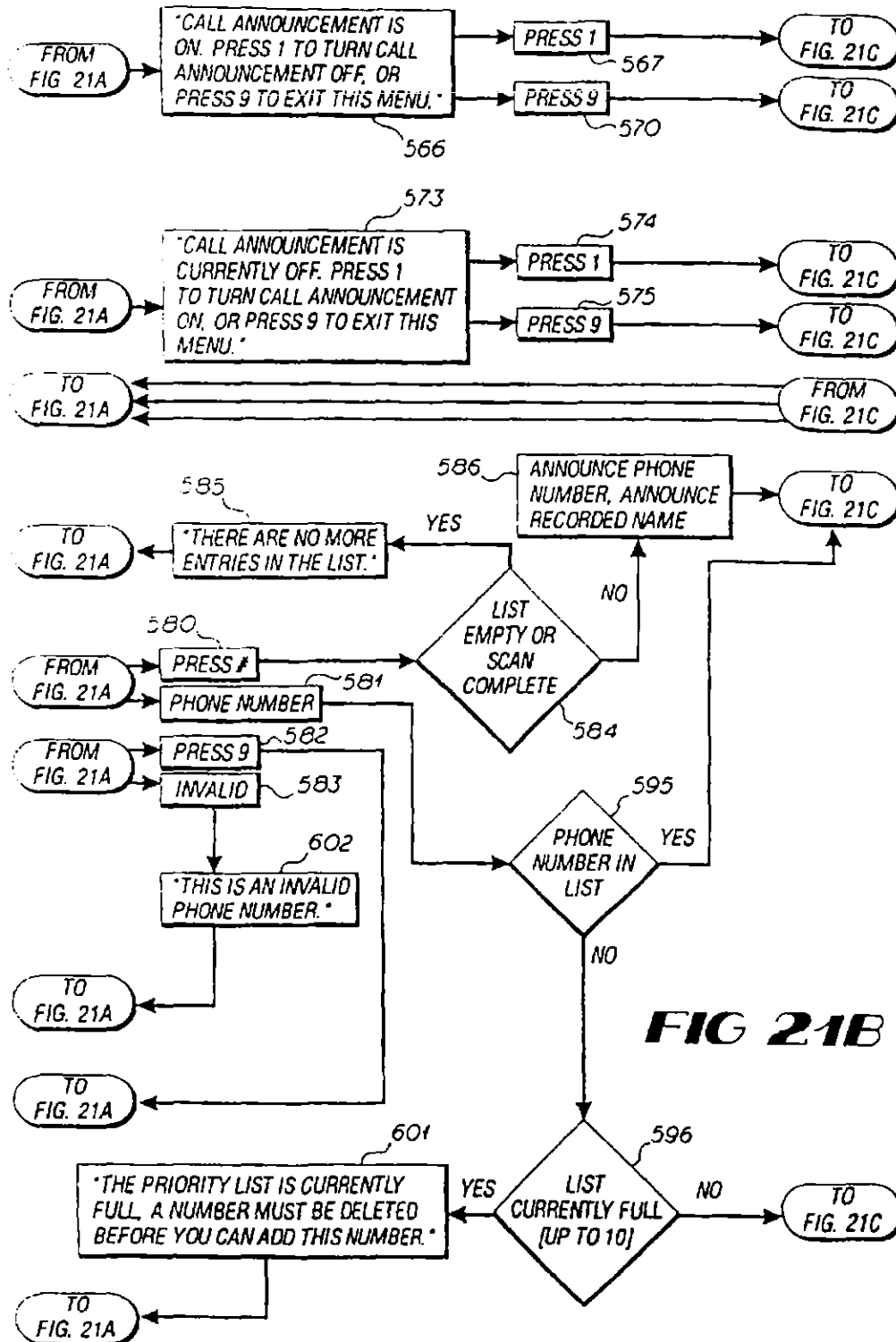


FIG 20B



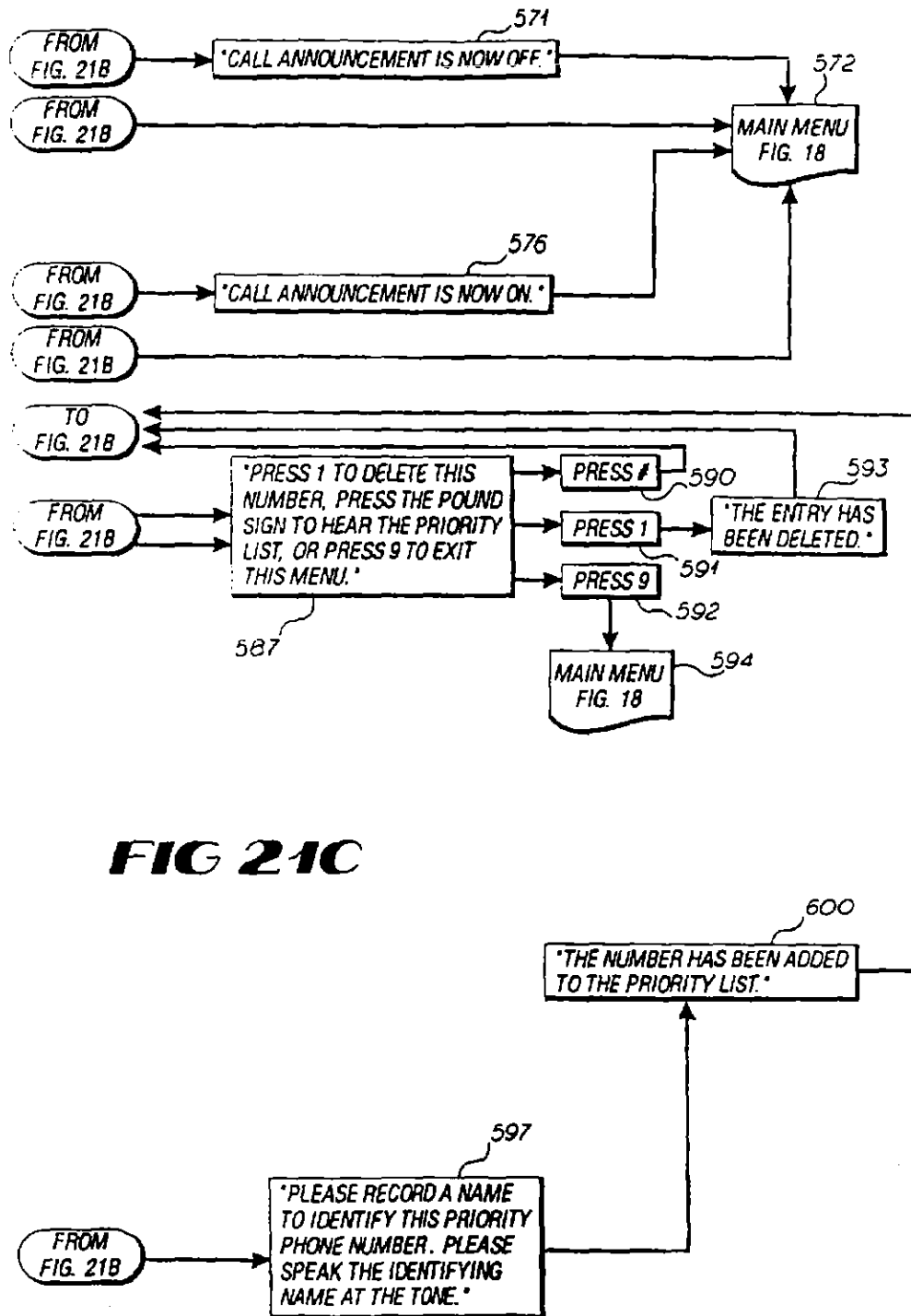


FIG 21C

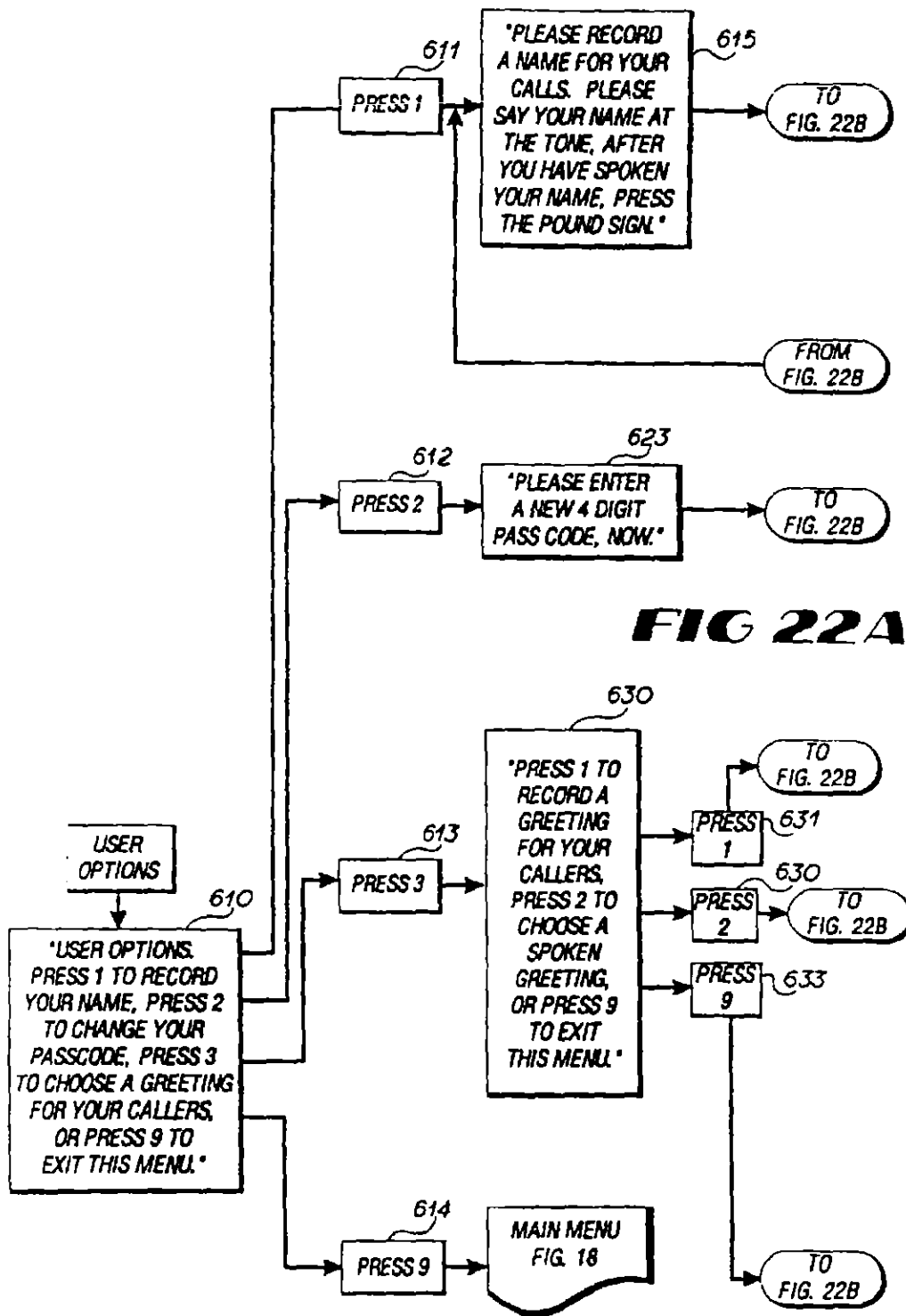


FIG 22A

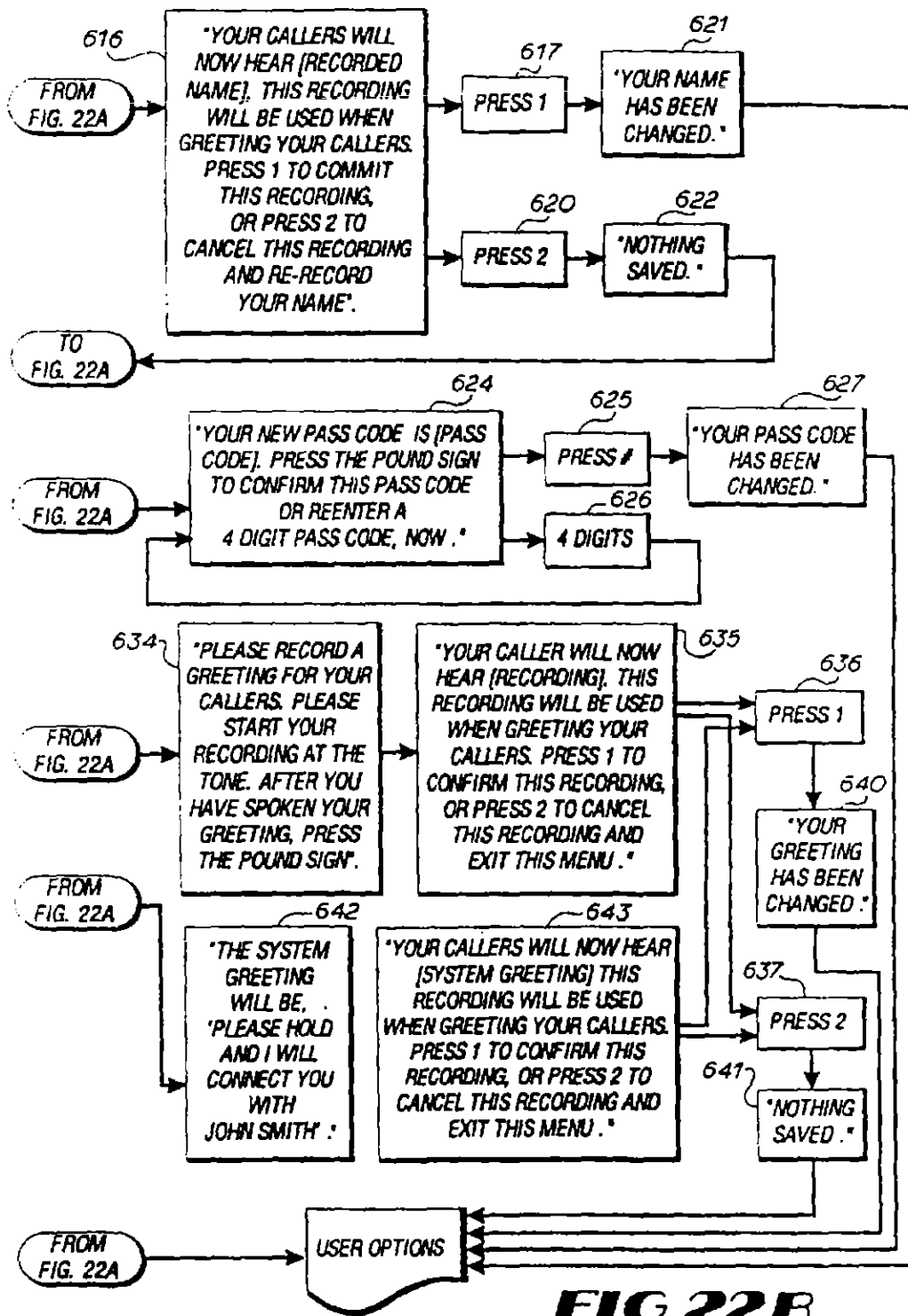


FIG 22B

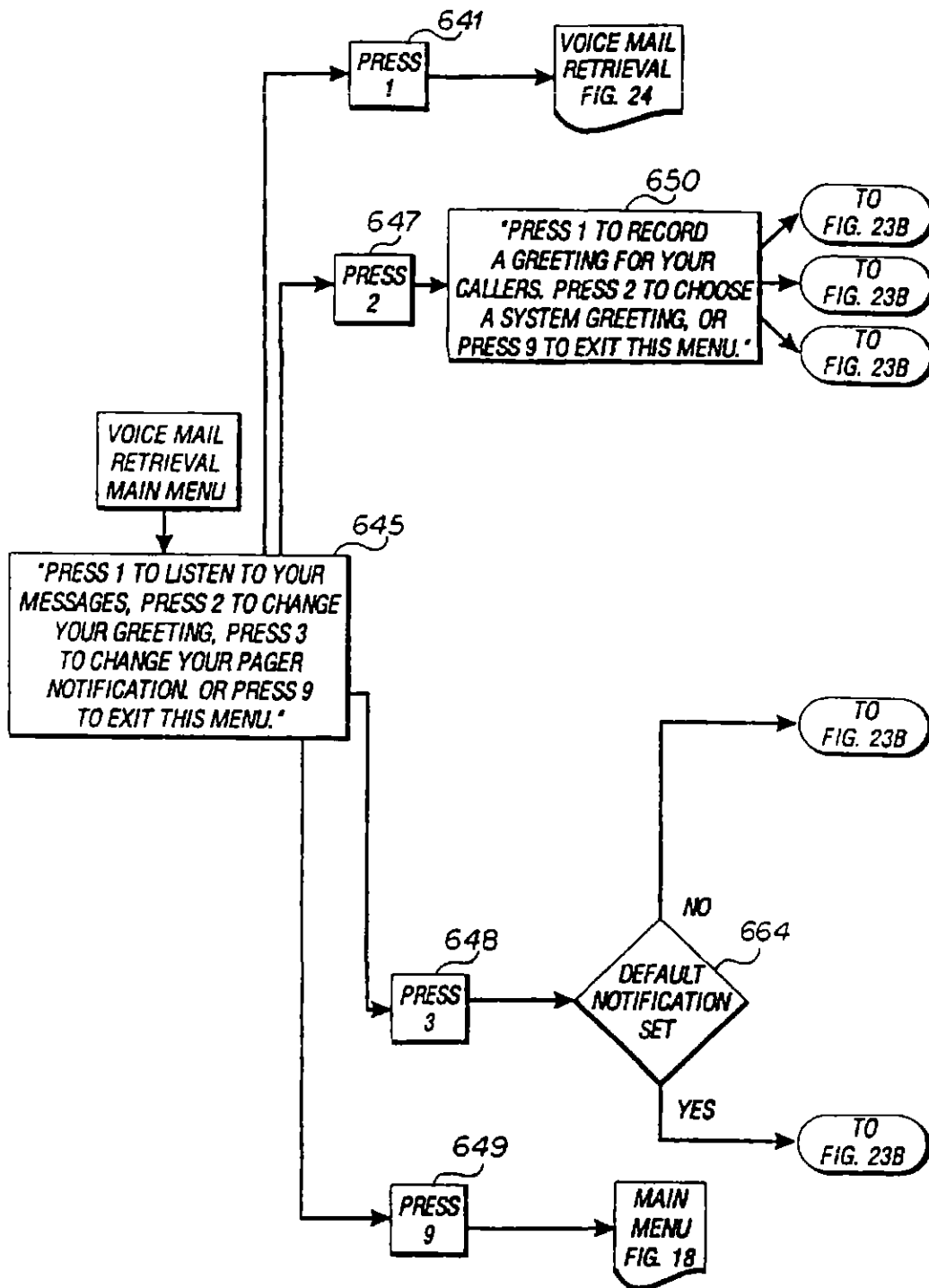


FIG 23A

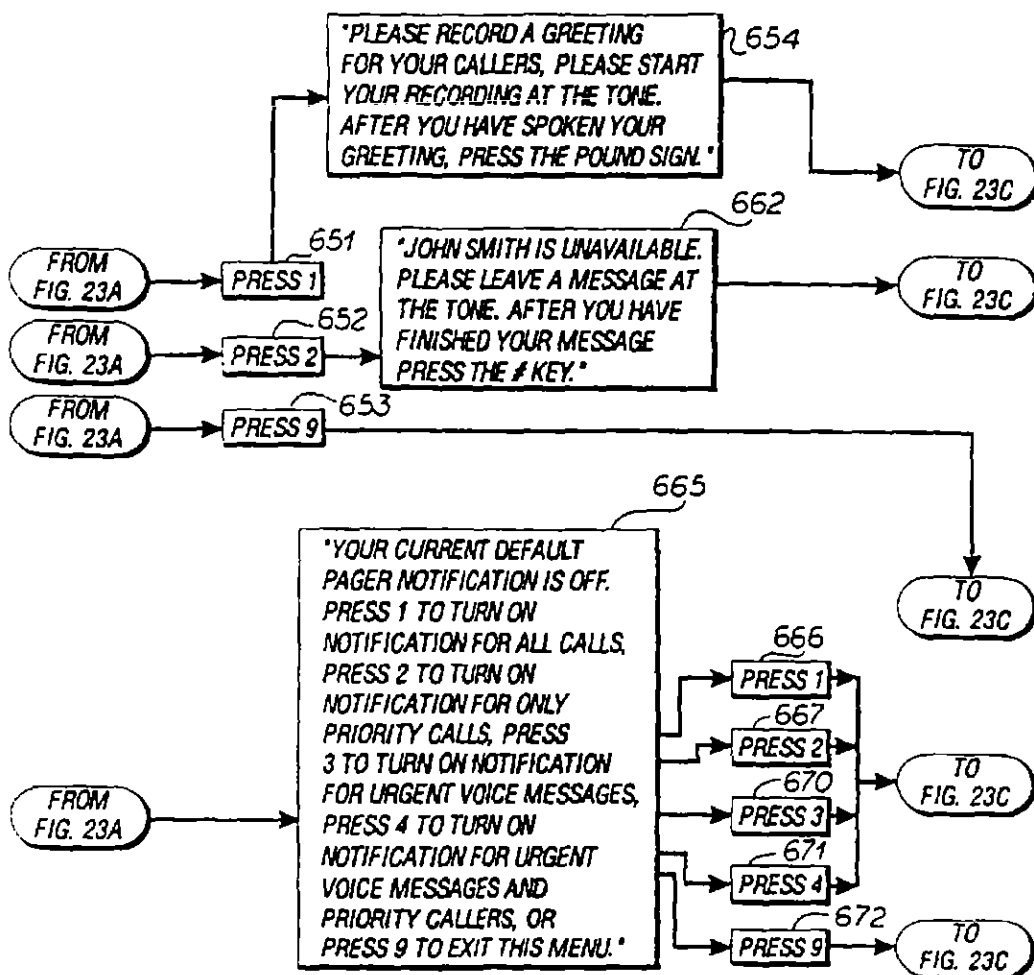


FIG 23B

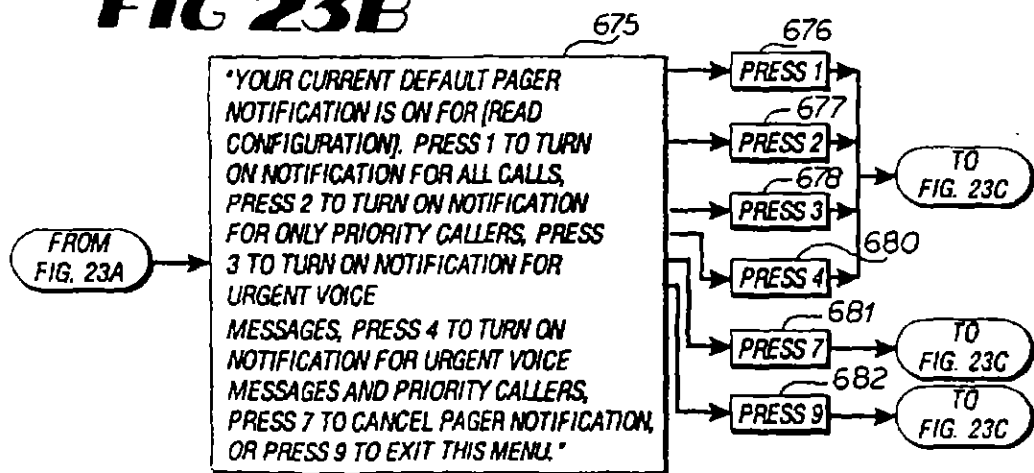
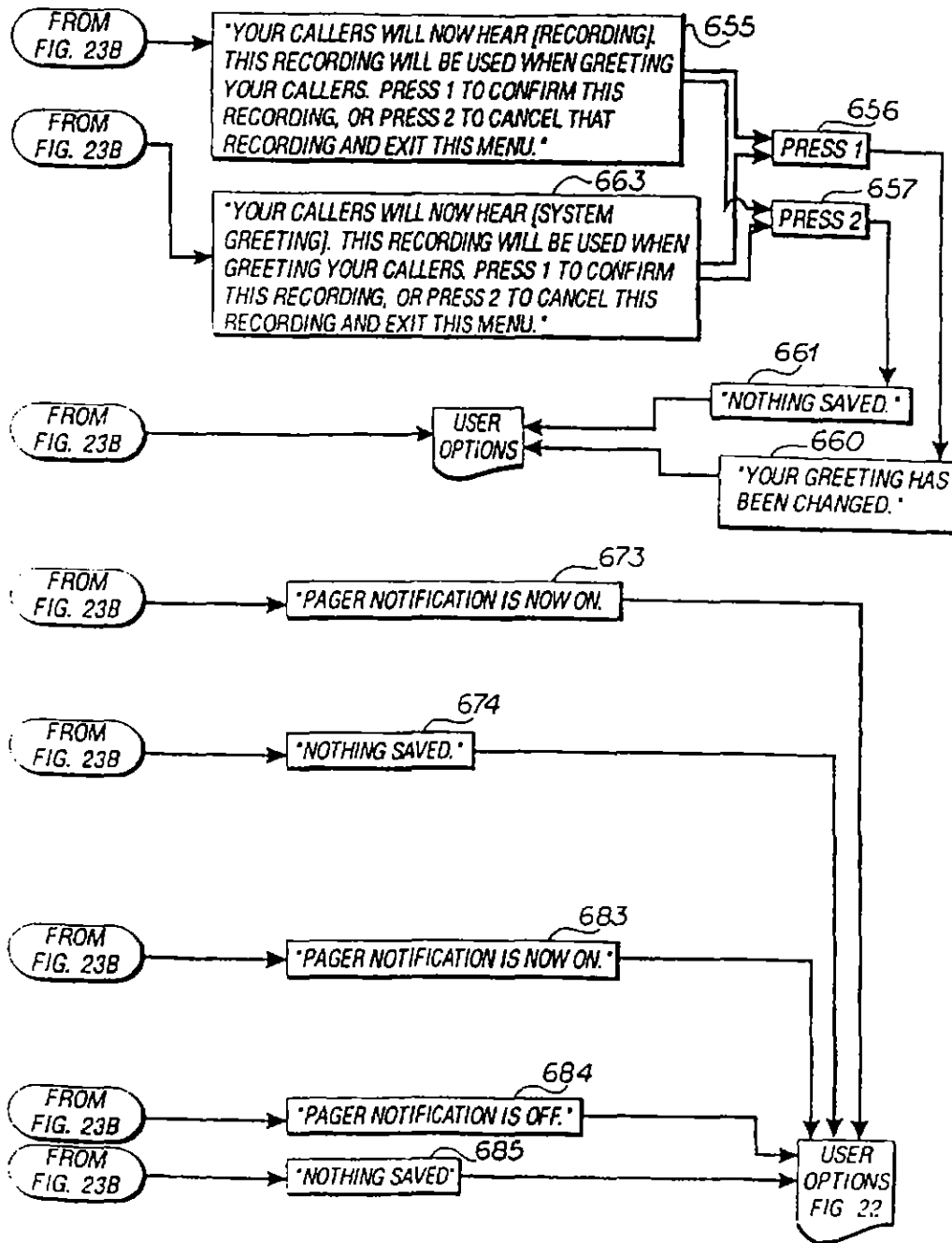


FIG 23C



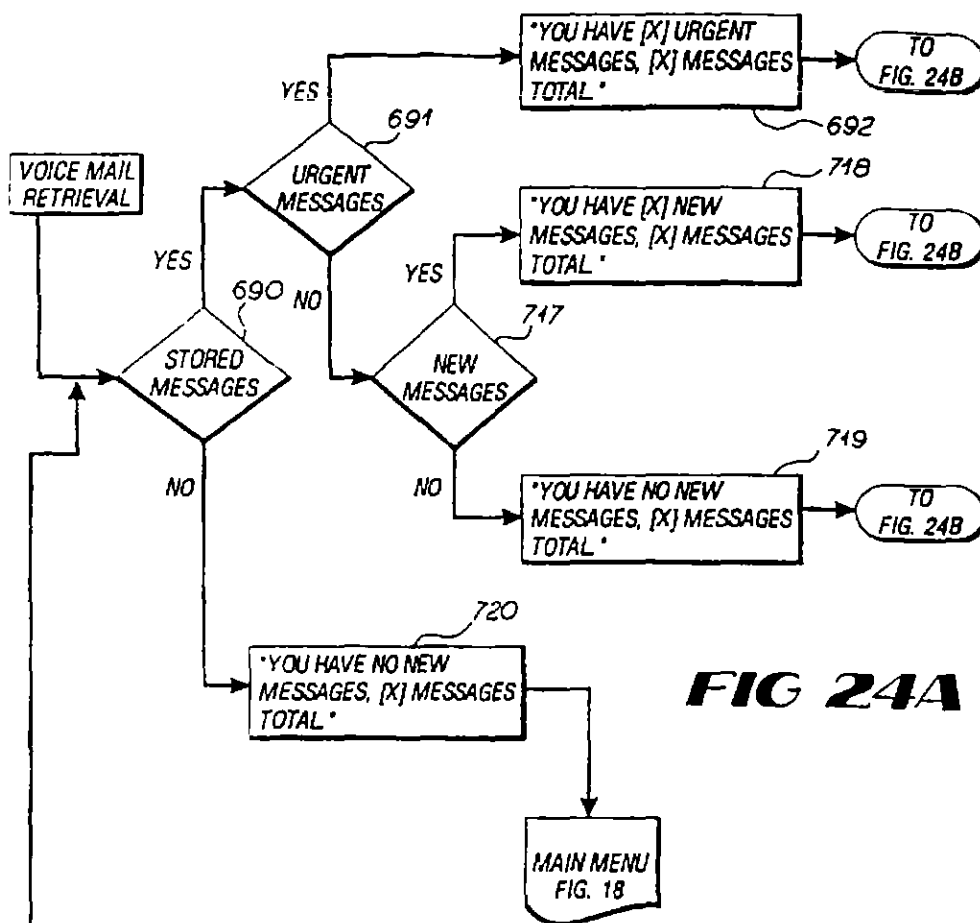


FIG 24A

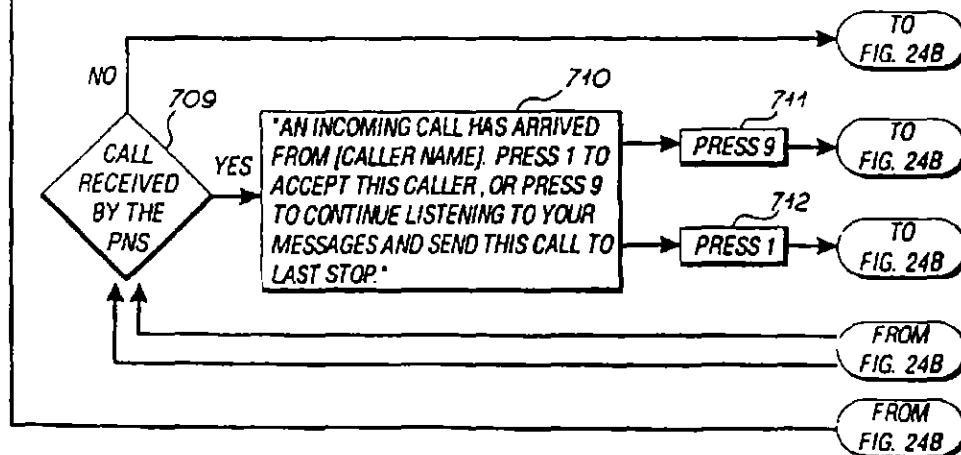
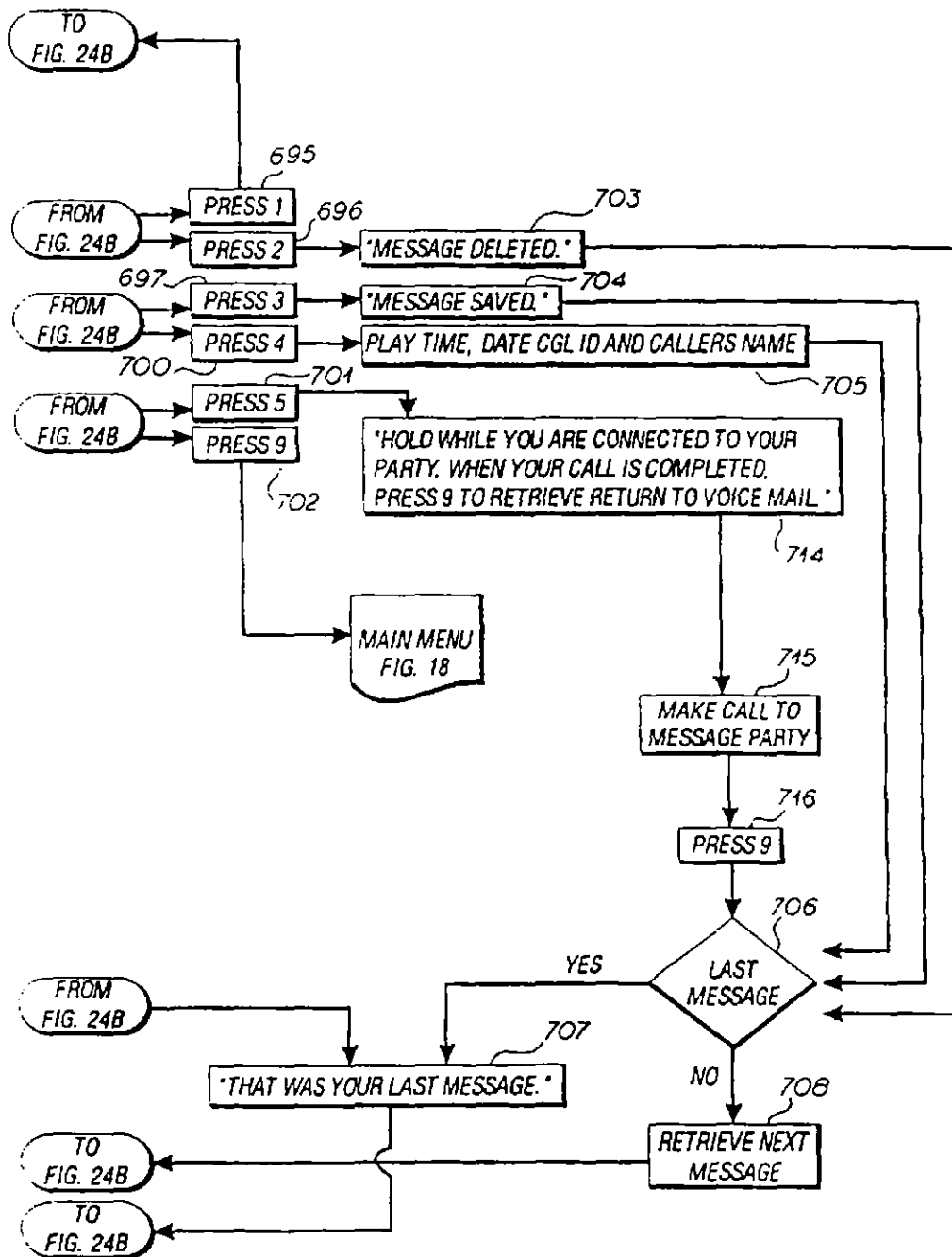


FIG 24C



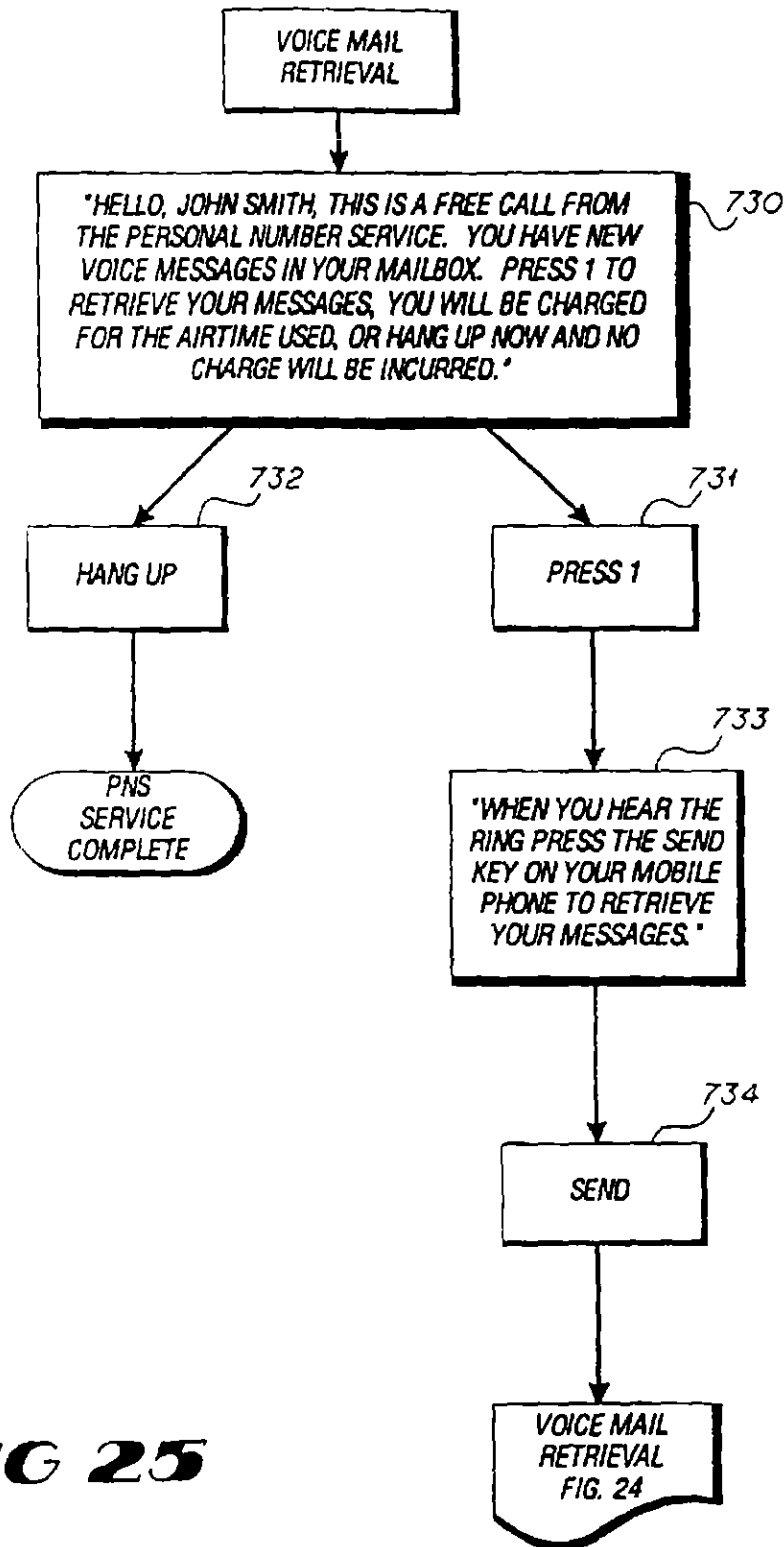


FIG 25

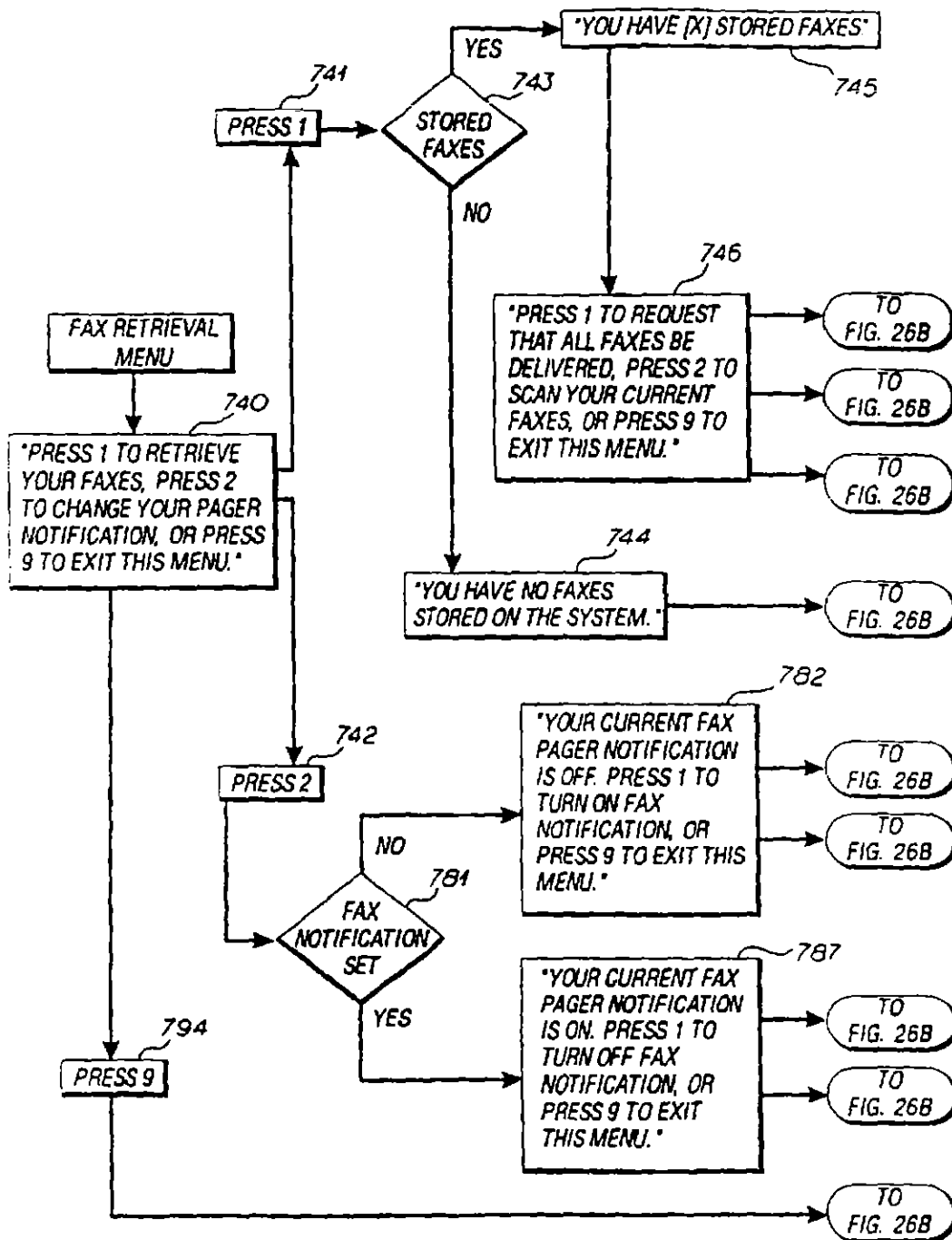
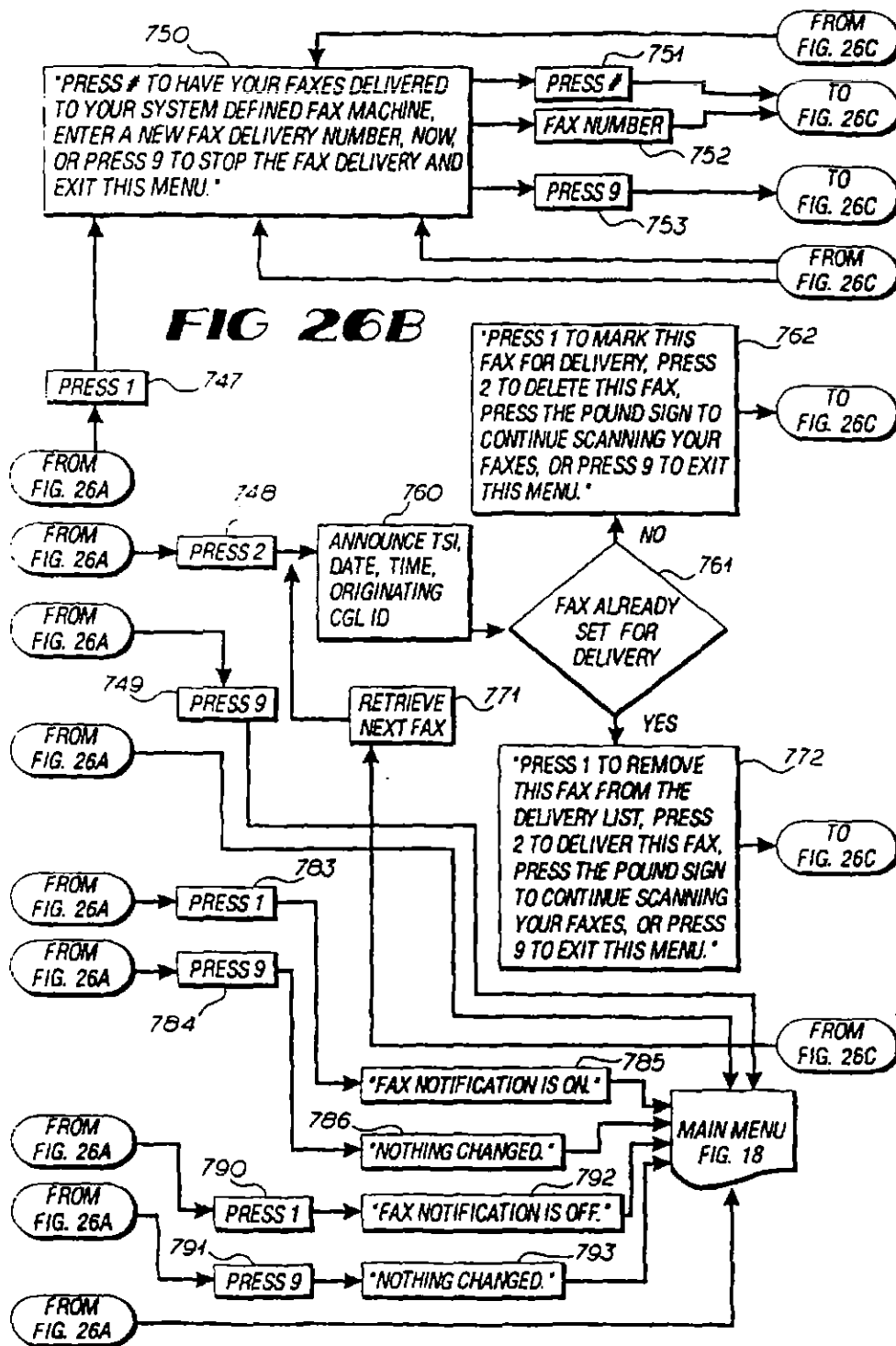


FIG 26A



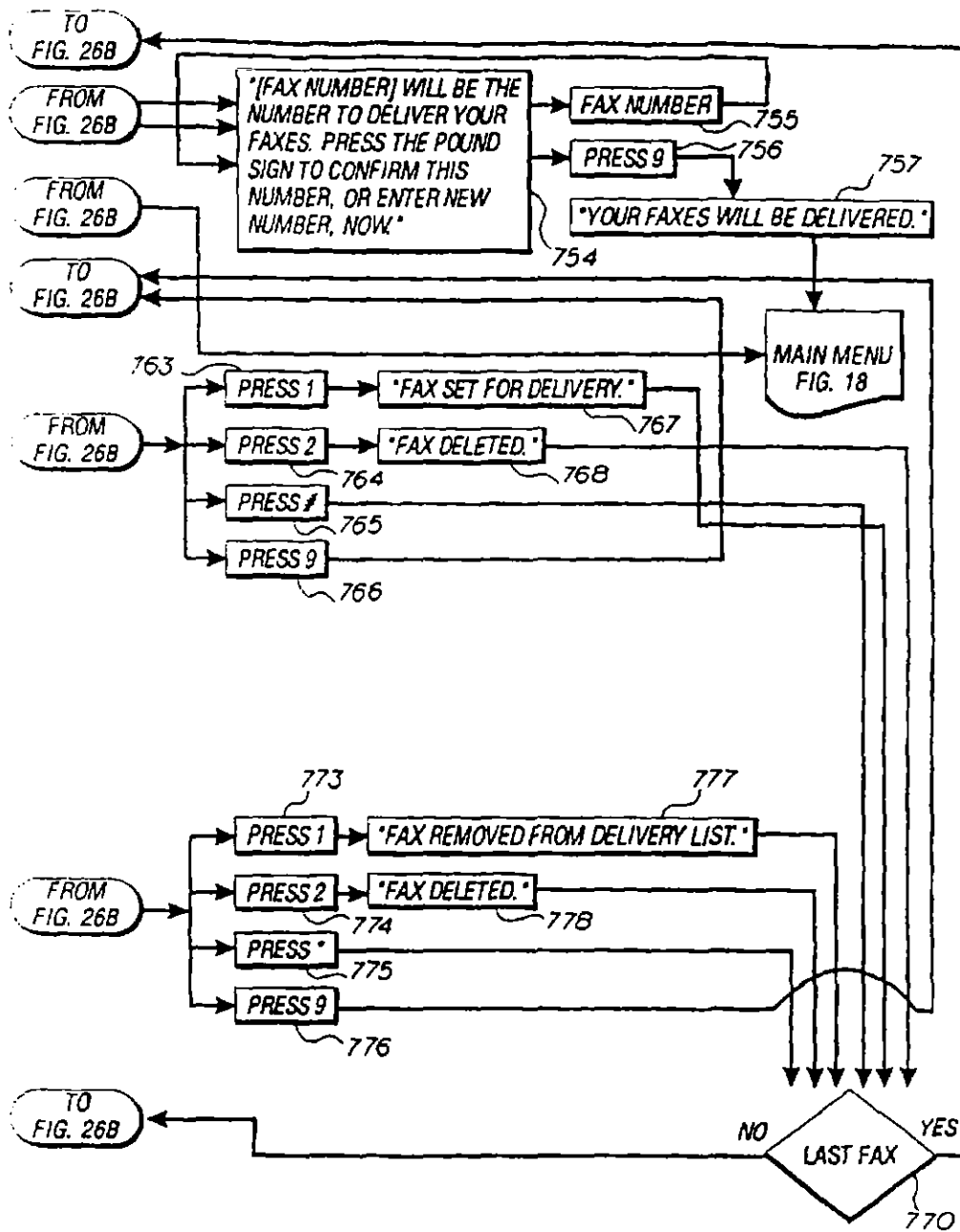


FIG 26C

5.764.747

1

PERSONAL NUMBER COMMUNICATION SYSTEM

This is a continuation of application Ser. No. 07/936,384, filed Aug. 26, 1992 (now abandoned).

TECHNICAL FIELD

The present invention generally relates to communications systems, and more particularly relates to a system for automatically and interactively delivering communications to subscribers at preselected destinations.

BACKGROUND OF THE INVENTION

In this age of communication, the speed of information delivery can affect the outcome of business negotiations and influence national and international politics, as well as affect the well-being of individuals. Communication devices such as wireline and wireless telephones, facsimile transmitters, voice mail systems and pagers are used to speed communications between parties. However, the delivery speed of communications is hampered by the assignment of identification numbers such as telephone numbers to particular locations, rather than to particular individuals. Thus, a caller attempting to deliver a communication to a particular party by telephone will succeed only if the party is located at the site of the called telephone.

If the party is not located at the called site, the caller has the option of trying to deliver the communication to another location by calling a different telephone number. For this option, the caller must possess or obtain other telephone numbers of the telephones at the site where the called party may be located. The caller also has the option of repeatedly calling the first telephone number until the called party returns to the site of the first telephone. This option is, at least, inefficient. The necessity of resorting to either of these options because of the assignment of a telephone number to a location causes delay in delivering communications. Of course, the caller may abandon the attempt to deliver the communication, an option which results in inconvenience and in some cases, negative consequences.

The same delay disadvantages are applicable generally to communication by facsimile transmitters, voice mail systems and pagers, which also are assigned identification numbers by location rather than by person. Moreover, a person who uses multiple communication devices must keep track of and distribute multiple identification numbers for his/her communication devices. For example, an individual who uses a facsimile transmission machine, a voice mail system and a pager and who has an office telephone, a home telephone and a mobile phone must keep track of and distribute at least six different identification numbers. In addition, the person has to keep track of security numbers such as PIN numbers for each device. Anyone trying to reach this person in an emergency would require access to all of these identification numbers and would be lucky to reach the person at the location first contacted.

The prior art has sought to minimize the delay in delivering communications through call forwarding systems. In such a system, a telephone call placed to a first telephone number is forwarded automatically to a second telephone number. A disadvantage of this system is that the first telephone must be used to program the system to forward the call. Thus, if a salesperson wants to have sales calls forwarded from the office to another location such as home or a mobile phone, the office telephone must be used to program the system to forward the call. Upon return to the

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office, the office telephone must be used to reprogram the system to remove the call forwarding feature. Another disadvantage of call forwarding systems is that the called party may not be located at the site of the second telephone number because the called party has completed the business at that site and is returning to the office or moving to another site. Advanced communication delivery options such as redirection to another location, to a voice mail system or to a pager are unavailable generally. Yet another disadvantage of call forwarding systems is the lack of called party selectivity in accepting the forwarded calls. For example, the salesperson does not have the ability to distinguish between sales calls which have been forwarded and administrative or routine calls which also have been forwarded. Thus, the salesperson is disturbed at the forwarded location by all calls made to the office telephone.

Other prior art systems have sought to minimize the delay in communication delivery through the assignment of an identification number based on the person rather than the location of the communication device. These identification numbers are generally known as personal numbers. In personal number systems, efforts at communication with a particular person are directed to the personal number rather than to a plurality of identification numbers associated with a site where the party may be located. One prior art system uses an operator to answer calls made to a personal number. The operator has information regarding the location and telephone numbers of the called party and has instructions regarding the transfer of such calls. The operator forwards information regarding the received telephone call to the called party pursuant to such instructions. Among the disadvantages of this system are the incidence of human error by the operator, the delay in obtaining and dialing the other telephone number, and the high cost of employing the operator as well as the need to provide continuous updates of telephone numbers and instructions to the operator.

In another prior art personal number system, a caller who places a telephone call to a personal number of a particular party is forwarded automatically to a telephone number supplied by the party. However, telephone calls to the party are completed only so long as the party provides the system in a timely manner with a proper destination telephone number.

None of these prior art personal number systems provide features that otherwise speed the delivery of important information such as call screening features or provide communication delivery options such as facsimile transmitters, voice mail systems, or pagers.

Accordingly, there is a need in the art for a method and apparatus that speed the delivery of communications between parties.

Further, there is a need in the art for a method and apparatus that provide a subscriber with a personal number as a contact number for receipt of all communications including wireline, wireless, facsimile transmissions and pagers.

There is also a need in the art for a method and apparatus which minimize the number of identification numbers and security numbers for communication devices associated with an individual.

In addition, there is a need in the art for a method and apparatus that speed the proper delivery of communications by including features such as call announcement, call screening facsimile transmitters and receivers, voice mail services and pagers.

Furthermore, there is a need in the art for a method and apparatus that speeds the proper delivery of communications

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in a flexible, readily understandable, easy-to-use and cost efficient manner.

SUMMARY OF THE INVENTION

As will be seen, the present invention satisfies the foregoing criteria. Stated generally, the communications system of the present invention assigns a personal number to each subscriber. In turn, the system receives communication routing information in the form of one or more hierarchical lists of destinations based on the time of day and day of the week from each subscriber. The hierarchy and composition of the destination lists may be changed by the subscriber, and the subscriber may enable an override or make a registration to direct selected communications to a specific destination, as necessary.

Any communication directed to a subscriber's personal number is received by the system and the source of the communication is identified. The identification is made in one of several ways. First, the calling line number of the communication is identified and compared to entries in a database containing correlated calling line number and identity information. Second, the subscriber may have provided the system with identity information corresponding to particular calling lines. For example, the subscriber may have designated persons using certain calling lines as priority callers. In addition, the caller may provide the system with identity information through the input of a particular code. The system recognizes the code as identifying a priority caller. If the system fails to find or the caller does not immediately provide such identity information, the caller is requested by the system to provide such information.

While the source of the communication is being identified, the system selects a first destination from the hierarchical list of destinations. The system will select automatically a mobile phone from the list of destinations if the mobile phone is powered on. In this case, the system assumes the presence of the subscriber at the mobile phone destination.

At the first destination, the system announces the identified source of the communication and requests communication disposition information as to the acceptance, formal rejection or passive rejection, such as a no answer, of the communication. If accepted, the system routes the communication to the first destination. If rejected, the system routes the communication to the default destination selected by the subscriber. If there is no response from the called party at the first destination, this lack of response is considered a passive rejection. The system then requests communication disposition information from the next destination in the destination list according to the hierarchy selected by the subscriber. The system continues to request communication disposition information from each sequential destination on the destination list until the communication is accepted or until the last destination on the destination list is reached, at which point the communication is routed to the last destination.

Advantageously, the present invention allows subscribers to use one personal number as a contact number for receipt of all communications including wireline, wireless, facsimile transmissions and pagers. In addition, the communications are delivered quickly and efficiently to the subscriber.

Furthermore, the communications system of the present invention routes personal number communications to most types of communication devices. Thus, destinations may include office and home telephones, mobile phones, voice

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mail services, facsimile transmission devices, and both digital and alphanumeric pagers.

In particular, the present invention also provides a voice mail service for use as a subscriber destination. A communication routed to the voice mail service as a destination is accepted automatically. The voice mail service records the calling line number of the caller and the identity of the caller, in addition to the message left by the caller. The service also allows the caller to leave a different call back number other than the originating calling line number. After reviewing a voice mail message from a particular caller, the subscriber may return the call by directing the voice mail service to call the recorded calling line number. In addition, if the caller hangs up without leaving a message on the voice mail service, the voice mail service will inform the subscriber that the caller hung up without leaving a message along with the caller's name as recorded by the caller, provided by the subscriber, or synthesized on the basis of a database entry corresponding to the calling line number identification. The service will also provide the time of day and date of the call to the subscriber.

If the caller hangs up after leaving a message, the system will record the caller's name, the time of day and date of the call, as well as the caller's phone number if dialed from a mobile phone.

If the caller leaves a message and confirms the message, for example by pressing "W" in the preferred embodiment, the caller's calling line number identification is automatically left as the call back number, unless the caller designates a different call back number. The subscriber is also provided with the caller's name, and the time of the day and date of the message.

Advantageously, the subscriber does not have to record separately the calling line of the caller or leave the voice mail service in order to return the call. The subscriber is able to return the call while the message is fresh in mind. When the telephone conference terminates, the voice mail service automatically returns the subscriber to the next recorded message in the voice mail service.

In addition, the present invention alerts a subscriber reviewing voice mail messages of an incoming telephone call. The subscriber has the option of interrupting the review of voice mail messages to take the incoming call. If the subscriber selects this option, the subscriber is connected to the incoming call and, once this communication has been completed, the voice mail service returns the subscriber to the departure point in the voice mail messages. If the subscriber opts to reject the incoming call, the present invention routes the call to the selected default destination.

The voice mail service of the present invention optionally provides subscribers with numeric or alphanumeric paging notification for every voice mail message received. The subscriber is provided with the caller's name, the calling line number identification, and the time and date of the message. In addition, the voice mail service periodically notifies a subscriber having a powered on mobile phone of the existence of unchecked voice mail messages and allows the subscriber to stay on the line to check voice mail messages or to enter the administration routines of the system.

As noted, the present invention routes facsimile transmissions directed to a subscriber's personal number to a selected destination. In particular, a subscriber has the option of choosing the delivery of the facsimile message to a destination associated with a facsimile machine of subscriber's choosing, or of storing facsimile messages in a facsimile message mailbox for retrieval at a later time. The present

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invention optionally notifies a pager designated by the subscriber upon receipt of a facsimile message. Information such as the number of pages of the facsimile message, the calling line number identification of the facsimile message, and the time and date of the facsimile message can be provided to the subscriber's pager. In addition, the subscriber may scan the facsimile messages through voice synthesized announcements of facsimile message information provided to the subscriber's pager.

Thus, it is an object of the present invention to provide an improved personal number communications system.

It is also an object of the present invention to provide a subscriber with a personal number as a contact number for receipt of all communications including wireline, wireless, facsimile transmissions and pagers.

It is an additional object of the present invention to provide a personal number which minimizes the number of identification numbers and security numbers for communications devices used by a subscriber.

It is also an object of the present invention to provide a personal number communications system which speeds the proper delivery of communications by including features such as call announcement, call screening, facsimile transmitters and receivers, voice mail services and pagers.

It is a further object of the present invention to provide a personal number communications system which delivers communications to subscribers in an expeditious and efficient manner.

It is yet another object of the present invention to provide a personal number communications system which obviates the need for the purchase of new equipment by subscribers to speedily receive communications.

It is also an object of the present invention to provide a personal number communications system that is flexible, subscriber friendly, easy to administer and cost efficient.

That the present invention and the preferred embodiment thereof overcome the drawbacks set forth above and accomplish the objects of the invention set forth herein will become apparent from the detailed description of the preferred embodiment to follow.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating the preferred environment of the present invention.

FIGS. 2-26C are flow charts illustrating steps of particular methods of operation of the preferred embodiment of the present invention.

DETAILED DESCRIPTION

Referring now to the drawings, in which like numerals indicate like elements throughout the several figures, FIG. 1 is a block diagram illustrating the preferred environment of the present invention, which includes a method and an apparatus for a personal number communications system (PNCS) 10. The system operates on a network platform 11 such as a service circuit node, which is interfaced with the public switched telephone network (PSTN) 12 comprising one or more tandem offices 15 and/or end offices 16. In the preferred embodiment, the service circuit node is the Bell-South service circuit node. Service circuit nodes are available from AT&T Network Systems, Chicago, Ill.

Preferably, the interface to the public switched telephone network 12 for the network platform 11 is provided by standard interconnect facilities, such as ISDN, connected to

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a local exchange carrier (LEC) end office. The LEC end office provides calling line number identification over the ISDN BRI facilities.

The network platform 11 may also be interfaced to at least one mobile telephone switching office (MTSO) for reception and transmission of communications to mobile telephones. In the preferred embodiment, the network platform is interfaced to two MTSO's 13, 14. A type IIA trunking interface, consisting of twenty-four channels, provides the trunking between the MTSO 13 and the network platform 11. The MTSO's 13, 14 are linked by a type IIA tie-trunk, and a type IIA trunking interface. Through this interconnection, calls made by subscribers using mobile phones can be routed properly to the network platform 11 by either MTSO. Both MTSO's 13, 14 route incoming calls to the network platform 11 based on the Numbering Plan Area (NPA), End Office Code (NXX) or 1(0)00 block number group, if required. Both MTSO's pass calling line number identification to the network platform via the IIA trunk on all mobile calls originating from within the MTSO switches, and all incoming calls from the local exchange carrier (LEC) tandem office. Preferably, the network platform 11 is connected to LEC end offices and to other carriers interconnected through the LEC Class 4 tandem switching system.

In the preferred embodiment, the network platform 11 is interfaced to a roamer detection module (RDM) (not shown) in each MTSO 13, 14 when subscriber mobile telephones are powered on. Mobile phone registration information is delivered by the roamer detection module to the network platform 11 in a manner well known to those skilled in the art such as through mobile detection software. The network platform may also interface with the MTSO's via standard signaling interface (i.e., IS-41, 557) to detect the status of mobile or wireline subscribers.

Stated generally, the present invention provides a personal number communications system, which assigns a personal number to each subscriber and which stores communication routing information including a hierarchical list of destinations selected by each subscriber. The system receives all communications directed to the personal number and identifies the source of the information. The system routes a particular communication to a selected destination based on several factors including the communication routine information, the nature of the communication and the use of a mobile phone by the subscriber.

In routing the communication, the system follows the hierarchical list of destinations selected by the subscriber. The source of the communication is announced at the destination, and communication disposition information is requested as to the acceptance, formal rejection or informal rejection of the communication. If accepted, the system routes the communication to the first destination. If formally rejected, the system routes the communication to the default destination selected by the subscriber. An informal rejection occurs when there is no response at the destination, or the person at the destination breaks the connection such as by hanging up. If informally rejected, the system requests communication disposition information from the next destination according to the hierarchy selected by the subscriber. The system continues to request communication disposition information from each sequential destination until the communication is accepted, rejected, or until the last destination is reached, at which point the communication is routed to the last destination.

More particularly, the present invention routes all telephone calls made to a subscriber's personal number pursuant

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to a hierarchical list of destinations provided by the subscriber to the system. In the preferred embodiment, the subscriber provides a hierarchical list of four destinations. The present invention also provides that the destinations in the hierarchical list may be changed or reordered depending upon the day of the week, or the time of day. In the preferred embodiment, subscribers supply a destination list for use on weekdays and a second destination list for use on weekends. Preferably, the system also allows the subscriber to override any of the destination lists for all types of communications or for selected callers.

A subscriber may specify a mobile telephone as a destination. However, communications are routed to a mobile phone only if the mobile phone is powered on or registered. The present invention is able to detect registration and usage of a mobile or cellular phone through the process of autonomous registration, which is well known to those skilled in the art. If the designated mobile phone is powered on, the system assumes the presence of the subscriber at the mobile phone destination. Thus, with one exception, the system automatically selects the mobile phone from the list of destinations for routing the communication if the mobile phone is powered on. The exception is the presence of a subscriber override. The registration of a mobile phone does not take precedence over an override direction (discussed below) entered by the subscriber. Subscribers desiring to use mobile phones, but seeking to avoid autonomous registration of mobile phones must remove the mobile phones from the destination lists used by the system.

The present invention routes a communication to a destination designated as the final destination or default destination if the subscriber cannot be located at the other listed destinations or if the subscriber has formally rejected the communication. Routing the communication to the default destination removes the communication from the network platform. Preferably, the default destination is a voice mail service or another destination where the caller may leave a message.

As noted above, the present invention provides the subscriber with an override capability with respect to the direction of communications to a particular destination. Advantageously, the override feature of the present invention accommodates unforeseen changes in a subscriber's schedule. The subscriber enables the override feature through entry of a code. All communications are then routed to the telephone number from which the subscriber called, or to a different telephone number entered by the subscriber. The override remains until the subscriber resets the established override. In the preferred embodiment, the subscriber has the option of enabling an override for only certain callers such as priority callers.

The present invention provides the subscriber with information relating to the source of the communication before the subscriber is requested to provide communication disposition information. In order to provide such source information, the system identifies the calling line number of the communication and searches for a match in a computer database containing correlated calling line number/source information. In the preferred embodiment, the present invention seeks a match to the calling line number in a reverse white pages directory, which uses the calling party telephone number to provide the identity of the calling party. If there is no match, the system preferably requests the caller to record identification information, such as the name of the caller.

In announcing a communication to a subscriber, the present invention identifies particular callers as priority

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callers based upon a list of priority numbers supplied to the system by the subscriber. In the preferred embodiment, the subscriber may supply up to ten priority numbers. Together with each priority number, the subscriber supplies a voice identification for each priority caller. When a call is placed to a subscriber's personal number by a priority caller, the system matches the calling line number with the priority number. An announcement of the communication as a priority call and the identity of the priority caller is then made to the subscriber.

The present invention also provides for the identification of priority callers making calls from non-priority telephone numbers. The subscriber selectively supplies priority callers with a code. When calling the subscriber's personal number, the caller enters the code after hearing the initial greeting from the system. The caller is then asked for identification information. Then, the system announces the call to the subscriber as a priority call and identifies the priority caller with the supplied information. In the preferred embodiment, the subscriber has the option of overriding the destination list and designating a particular destination for priority callers only. When a priority override is established all non-priority callers are routed directly to the default destination.

After the system announces the communication to the subscriber, the subscriber is requested to provide communication disposition information by accepting, formally rejecting or informally rejecting the communication. If the subscriber accepts the communication, the parties are connected. If the subscriber rejects the communication, it is routed to the default destination. If there is no response to the system's request, the communication is considered informally rejected, and the system tries the next destination on the hierarchical list provided by the subscriber. The informal rejection feature allows the system to continue the search for the subscriber if the subscriber was not present at the destination attempted.

In addition, the present invention provides a voice mail service which may be designated as a destination for personal number communications. Preferably, the voice mail service of the present invention is designated as the default destination for communications. However, the subscriber may use other voice mail systems with the present invention.

The voice mail service of the present invention functions generally as a conventional voice mail service in recording messages from callers. However, the voice mail service also provides the subscriber with information as to the source of the message. In particular, the voice mail service provides the subscriber with the calling line number of the message source and with correlated information as to the identity of the source. This type of information is generally referred to as envelope information. If the calling line number is unavailable, the message maker is requested to leave a call back number. In addition, the voice mail service announces the number of stored voice messages.

After reviewing a particular voice mail message, the subscriber has five options. The subscriber can re-listen to the message, delete the message, save the message into archives, hear the envelope information, or return the call left by the message maker.

If, after reviewing a particular voice mail message, the subscriber chooses to return the call, the service automatically calls the calling line number recorded in connection with the particular message. Thus, the subscriber can return calls without leaving the voice mail service. In addition, the subscriber does not have to make a special note of the calling

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number while listening to the message. This step also allows the subscriber to return the call even if the message maker did not leave the telephone number as part of the message. After the call-back conversation is completed, the subscriber is returned to the voice mail service. The subscriber may then continue to check messages and return calls.

In addition, the voice mail service notifies subscribers who are checking voice mail messages of incoming telephone calls. After the voice announcement of an incoming call including calling line number identification, the system requests the subscriber to accept or reject the call. If the call is accepted, the subscriber is connected to the call. If the call is rejected, the call is routed to the voice mail service. After the telephone conference or after the rejection of a call, the subscriber is returned to the point in voice mail where the interruption occurred.

In the preferred embodiment, the present invention provides subscribers with the option of being paged (numeric or alphanumeric) every time a voice mail message is received by the voice mail service of the present invention.

In addition, the preferred embodiment provides announcements to a subscriber's powered on mobile phone of the receipt of voice mail messages. When a subscriber turns on a mobile phone, the voice mail service calls and announces the presence of voice mail messages. The subscriber is presented with a choice of accepting the call, thereby allowing for the retrieval of the voice mail messages, or rejecting the call. The service waits for a predetermined interval, preferably four hours, before again notifying the subscriber of voice mail messages. However, if the subscriber clears all the messages by either deleting or saving the messages to archives, the service then notifies the subscriber only as to any new voice mail messages. Notification messages that go unanswered are retried after a predetermined interval, preferably five minutes.

The voice mail service of the preferred embodiment of the present invention allows for the following: voice message length of 180 seconds, unplayed messages are saved for thirty days, played messages are saved for fifteen days, and a maximum of fifty messages are allowed per mailbox. The storage scheme for voice messages is twenty-four kilobytes sample rate resulting in three kilobyte per second.

The present invention also provides for the designation of a facsimile transmission machine for the receipt of facsimile messages sent to the subscriber's personal number. The present invention allows subscribers to direct facsimile messages to a location, or to store facsimile messages in the facsimile mailbox for retrieval at a later time. If the facsimile messages are stored, the subscriber has the option of scanning the facsimile messages for selected retrieval. A transmit subscriber identification (TSI) process identifies the name of the originating facsimile transmission machine as well as the originating calling line number. This information is provided to the subscriber when reviewing the stored facsimile message. In addition, the time and date of receipt of a particular facsimile message is provided. Upon entry to facsimile message retrieval, the present invention announces the number of stored facsimile messages.

The preferred embodiment provides subscribers with the option of receiving numeric or alphanumeric paging notification for every new facsimile message arriving in the facsimile message mailbox.

Preferably, the present invention provides a maximum of thirty pages of facsimile message storage for up to fifteen days on the system for each subscriber. The storage for one page of facsimile messages averages forty-five kilobytes, ranging from two kilobytes to one hundred kilobytes.

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The flow charts in FIGS. 2-26 provide a detailed description of the process steps executed by the personal number communications system 10. As analogy to an electrical circuit diagram, these flow charts are equivalent to a detailed schematic for an electrical circuit where provision of the circuitry for electrical circuit blocks corresponds to provision of actual computer instructions for blocks of the flow chart. Thus, the coding of the process steps of these flow diagrams into instructions for suitable commercially available computers is a mere mechanical step for a routineer skilled in the programming art.

In the preferred embodiment, the system software is coded in the service logic language within a UNIX environment. Further, the system software comprises different data structures which contain the subscriber's configuration data as well as customer data. The preferred system data structure enables information to be global among subscribers and enables the system to retrieve cross-references for any subscriber.

FIG. 2 is a flow chart illustrating the general method of routing communications directed to a personal number of a subscriber of the preferred embodiment of the present invention.

FIG. 2 is entered at step 20 when the personal number communications system 10 receives a personal number communication, that is, a call to a personal telephone number. The service provided by the system is initiated when a call for a subscriber terminates to the network platform 11. In step 21, the system checks to see whether the subscriber subscribes to a facsimile (fax) service. If the subscriber does subscribe to a facsimile service, the system sends answer supervision in step 22. In step 23, the system determines whether the communication is a facsimile call. If it is a facsimile call, the facsimile call is directed to the facsimile service in step 24. The facsimile service procedures are discussed in connection with the flow chart illustrated in FIG. 4.

Referring again to step 23, if the communication is not a facsimile call, in step 25 the system checks whether the call is an administration call. If the call is an administration call, it is directed to administration in step 26. The administration procedures of the present invention are discussed in connection with FIG. 7. If the call is not an administration call, the system checks whether the call is a priority call in step 27. If the call is not a priority call, the source of the call is determined by checking the calling line number identification with a database, such as the reverse white pages, in step 30. If the source information is not found, a check is made in step 31 to determine whether answer supervision has been sent. If not previously sent, answer supervision is sent in step 32. If or once answer supervision has been sent, in step 33 the caller is requested to record his/her name for identification. Step 33 is followed by step 37, which is discussed below.

If the source information is found in step 30, then step 35 is executed.

Referring again to step 27, if the call is a priority call, the priority system status is set in step 34. In step 35, a check is made to determine whether answer supervision has been sent. If not, answer supervision is sent in step 36. In step 37, a check is made as to whether a priority fast code has been entered. If so, the priority system status is set in step 40. In step 41, the caller hears a greeting and is requested to hold. The greeting may be a subscriber personal greeting or a standard greeting provided by the system.

The general method of routing communications in the preferred embodiment is continued in FIG. 3.

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A subscriber can enable an override or a priority override to route calls to a particular destination. When a priority override is established, all non-priority callers are routed directly to the default destination. In step 50, the system checks whether an override has been established. If an override has been established, in step 51 the system checks for a priority override. If a priority override has been established, in step 52 the system checks to determine whether the caller is a priority caller. If the caller is not a priority caller, in step 53 the system directs the communication to the default destination discussed in connection with FIG. 6. A default destination is also referred to as a last stop.

Referring again to steps 51 and 52, if priority override has not been established in step 51 or if the caller is a priority caller in step 52, in step 54 the system checks to determine whether the call is to be routed to the voice mail system. If so, the call is routed to the default destination in step 53. If the call is not to be routed to the voice mail system, in step 55 a check is made to determine whether the call should be routed to the pager. If so, in step 56 the caller is prompted for a return telephone number. In step 57, the system releases the caller. In step 60, the system formats the message for the subscriber. In step 61, the system generates a call to the pager service circuit handler. In step 62, the system sends, such as by outputting, a message to the pager service circuit handler, and the routing of the communication is considered complete.

Referring again to step 55, if the communication is not to be routed to the pager, in step 63 the system consults the database for the override destination number. In step 64, the system calls the subscriber. In step 65, the system checks to determine whether the subscriber has answered. If the subscriber does not answer, in step 66 the system directs the communication to the default destination. If the subscriber answers in step 65, in step 67 the system announces the caller. In step 68, the system checks to determine whether the subscriber accepted the call. If the subscriber does not accept the call, the system proceeds to step 66 and the call is routed to the default destination. If the subscriber accepts the call, the system proceeds to step 77 and the parties are connected via transfer. Step 77 is discussed in the following paragraph.

Referring again to step 50, if no override has been established, in step 70 the system retrieves a destination number from the hierarchical list (Locator List or Reach List) of destinations provided by the subscriber. In step 71, the selected destination is checked for autonomous registration of a mobile number. If there is no autonomous registration, the system calls the subscriber in step 72 at the number retrieved from the hierarchical list. In step 73, the system waits for the subscriber to answer. If the subscriber answers, the system announces the caller in step 74. In step 75, the system checks to determine whether the subscriber has hung up. Such a disconnection is considered an informal rejection, also called a bypass. If the subscriber has not informally rejected the call, the subscriber accepts or rejects the call in step 76. If the subscriber accepts the call, in step 77 the parties are connected via transfer, and the system considers the routing of the communication complete. If the subscriber rejects the call, the call is directed to the default destination in step 83, discussed in the following paragraph.

Referring again to step 73, if the subscriber does not answer, in step 82 the system tries another number on the hierarchical list of destinations. Similarly, in step 75, if the subscriber informally rejects the call, in step 82 the system will try another number on the hierarchical list of destinations.

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Referring again to step 71, if autonomous registration exists for the mobile number retrieved from the list of destinations, in step 80 the system consults the service circuit handler on mobile registration. In step 81, the system checks whether the mobile phone is registered. If it is registered, the system calls a subscriber pursuant to step 72. If the mobile phone is not registered, in step 82 the system checks to see whether there is another number on the locator list. If not, the system routes the communication to the default destination in step 83. If there is another number on the destination list, in step 84 the system checks to see whether the time interval has expired so as to give the caller an update. If the time interval has not expired, the system returns to step 70 to retrieve a destination number. If the time interval has expired, in step 85 the system provides the caller with a message to hold. Then, the system proceeds to step 70 to retrieve a phone number from the destination list.

The personal number communications system preferably includes a facsimile service for subscriber use. The facsimile service consists of a facsimile node residing on the network platform 11. The facsimile service works in conjunction with the personal number concept utilizing the same access phone number for the subscriber's personal number. The network platform is able to detect the two types of facsimile initialization sequences which are standard in facsimile protocols.

In the preferred embodiment, the facsimile service works only with automated facsimile transmission machines. Upon receipt, a facsimile call is immediately distinguished, and the system starts the facsimile initialization process. Callers who first attempt to call the system, and then start the facsimile transmission machine after the system answers, are unsuccessful. The system recognizes this type of communication as a voice call. The facsimile detection process completes in the first seconds after the communication is answered by the network platform 11.

The system preferably checks the subscriber's configuration to determine whether to store the facsimile message for later retrieval or to deliver the facsimile message to the subscriber's facsimile transmission machine. When the subscriber's configuration is set for delivery, the facsimile calls are transferred directly to the subscriber's facsimile transmission machine. If the subscriber has facsimile storage enabled, the incoming facsimile message will be stored in the facsimile mailbox of the particular subscriber. Once the facsimile is transferred to the subscriber's facsimile machine or stored for later retrieval, the system preferably pages the subscriber to provide notification of the facsimile receipt. A formatted message consisting of the information pertaining to the facsimile message received by the system will be sent in a paced message. The system is able to either send an alphanumeric page or the standard numerical page. The page format consists of a simple message stating that the facsimile message was received through the subscriber's personal number. The alphanumeric page contains the subscriber's personal number or name, the number of current facsimile messages stored on the subscriber's mailbox, or that the facsimile message was delivered to the subscriber's facsimile machine, the originating calling line number identification, and the TSI information. The numeric page consists preferably of numeric symbols representing various information pertaining to the facsimile message. In the preferred embodiment the numeric page contains the numbers "8888" denoting a facsimile message has been stored in the subscriber's mailbox.

FIG. 4 is a flow chart illustrating the general method of routing facsimile communications. At step 90, the system checks whether a facsimile carrier has been received. If not,

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in step 91 the system follows the general method of routing communications as described in the flow charts of FIGS. 2 and 3. If a facsimile carrier has been received, in step 92 the system checks the setting of the subscriber's configuration to determine whether the facsimile message is to be stored or delivered. If the facsimile message is to be stored, in step 93 the system sets the facsimile protocol and receives the facsimile message. In step 94, the system checks whether the transmission of the facsimile message has been successful. If not, the system considers the communications routing complete. If the transmission of the facsimile message has been successful, in step 95 the system stores the facsimile message under the subscriber's record. The facsimile routing continues with step 97 discussed below.

Referring again to step 92, if the subscriber configuration is set for facsimile delivery, in step 96 the system transfers the facsimile call to the subscriber's facsimile transmission machine. In step 97, the system checks to determine whether the pager feature is enabled. If not, the system considers the communications routing complete. If the pager feature is enabled, in step 100 the system formats the message together with information relating to the calling line number identification (CLID), the time, the subscriber code and the facsimile code. In step 101, the system generates a call to the pager service circuit handler. In step 102, the system outpulses a message to the pager service circuit handler, and the system considers the communications routing complete. It should be understood that the term "outpulses" is used in a generic sense that includes pulsing, sending tone signals, and sending other types of signals to dial a telephone number and/or transfer telephone number information.

The preferred embodiment of the present invention offers a subscriber four options for handling calls that are formally rejected or that are informally rejected, i.e., the subscriber is not found. First, the subscriber may transfer all such calls to another location such as an answering service, an answering machine, a pager, an office number where a receptionist is present, or just another location where the subscriber may be found. In this first option, the caller is notified that he/she is being transferred to the subscriber's default or last stop destination, and the transfer is completed. If the telephone line at the default destination is busy, the system notifies the caller that the subscriber is unavailable and terminates the call.

As a second option, the subscriber may route calls to a pager as the default destination. Callers are requested to input a number where the subscriber may contact the caller. Once the caller or the system ends the call, the system provides the subscriber a pager notification.

The third option for completing unanswered or rejected calls is to transfer the calls to the subscriber's own voice mail system, which is not part of the network platform 11.

The fourth option for completing unanswered or rejected calls is to transfer the calls to the voice mail service of the present invention, discussed below in connection with FIG. 6.

FIG. 5 is a flow chart illustrating the general method of routing communications to the default destination designated by a subscriber. In step 105, the system determines whether the subscriber uses the personal number service (PNS) voice mail service (VMS) of the present invention as a default destination. If so, in step 106 the system routes the communication to the voice mail service as discussed in connection with FIG. 6. If the subscriber does not use the voice mail service of the present invention, in step 107 the system generates a call to the subscriber's choice of voice

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mail systems (VMS) or to the default destination. If the default destination has been specified by the subscriber, then, in step 110 the system checks if the default destination is a pager notification. If not, in step 111 the system outpulses to gain access to the subscriber's own mailbox. In step 112, the system completes the connection, and considers the communication routing complete.

Referring again to step 110, if the default destination is a pager, in step 113 the caller is prompted to leave a return telephone number. Once the caller has completed the call, such as by entering a telephone number or hanging up, in step 114 the system releases (terminates) the call. In step 115, the system formats the message with information relating to the calling line number identification (CLID), time, subscriber code, and status. In step 116, the system generates a call to the pager service circuit handler. In step 117, the system outpulses a message to the pager service circuit handler, and the system considers the communications routing complete.

It will be understood that the pager service circuit handler sends a message to the subscriber's pager which advises the subscriber that a call was placed to the subscriber. As noted above, the fourth option for completing unanswered or rejected calls is to direct the calls to the voice mail service of the present invention as the default destination. This voice mail service preferably resides on the network platform 11. The system records the originating calling line number identification (CLID) as well as information pertaining to priority call status. The caller may leave a voice message and mark the urgency of the message. The voice mail service of the present invention provides subscribers with the option of receiving numeric or alpha numeric paging notification for calls delivered to the voice mail service. Preferably, the subscriber pager option is administered through the touch-tone interface. The page format for the voice mail service includes a message that a voice mail message was stored on the voice mail service. The alphanumeric page contains the acronym PNS to reference that the personal number is sending the page. The page also includes the number of current messages stored in the subscriber's mailbox, the originating calling line number identification, and the correlated database information, also referred to as the reverse white pages information, when available. The numeric page consists of numeric symbols representing information about the originating caller. In the preferred embodiment, the numeric page contains the numbers "77777" to denote that a new message has been received on the voice mail service of the present invention.

FIG. 6 is a flow chart illustrating the general method of routing communications to the personal number service (PNS) voice mail service (VMS) of the present invention. In step 120, the system checks to determine whether the calling line number identification (CLID) is available. If so, in step 121 the system checks to determine whether to prompt the caller to leave an alternate number. If so, in step 122 the system prompts a caller to enter a ten digit number.

Referring again to step 120, if the calling line number identification is unavailable, in step 122 the system prompts the caller to enter a ten digit number, and the system proceeds to step 123 discussed below.

Referring again to step 121, if an alternate number prompt is not to be provided, the system proceeds to step 123. The caller is prompted in step 123 to leave a voice message. In step 124, the caller is prompted to indicate whether the message is urgent. The caller keys in a predetermined code to indicate that the call is urgent. In step 125, the system

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thanks the caller and releases the call. In step 126, the system checks for a pager feature. If there is no pager feature, the system proceeds to step 132 discussed below. If there is a pager feature, in step 127 the system formats the message with calling line number identification (CLID), time, subscriber code and status. In step 130, the system generates a call to the pager service circuit handler. In step 131, the system outputs a message to the pager service circuit handler. In step 132, the system checks whether the message is a first new message or whether the time has expired for call notification. If neither condition is satisfied, the system considers the communication routing complete. If either condition is satisfied, in step 133 the system checks whether the subscriber's mobile phone is turned on and idle. If the conditions are unsatisfied, in step 134 the system schedules a retry to check the mobile phone. In the preferred embodiment, the system retries after one minute. If the subscriber's mobile phone is on and idle, in step 135 the system provides a voice mail service notification call to the subscriber on the mobile phone.

In step 136, the system checks for the subscriber's answer to the call. If there is no answer, the system repeats step 134 and schedules a retry for checking the mobile phone. If the subscriber answers the call, in step 137 the system announces to the subscriber that messages are present in the voice mail service of the present invention. In step 140, the system requests the subscriber for call disposition information. If the subscriber rejects the call, in step 141 the system schedules the next notification for calling the subscriber regarding voice mail service, and the system considers the communication routing complete. If the subscriber accepts the call in order to retrieve messages, in step 142 the system generates a new call to the mobile phone. In step 143, the subscriber is provided with voice mail messages through the voice message retrieval process as discussed in connection with FIG. 13.

The administration operations for the personal number communication system 10 consist of five menus: call routing, call announcement, user options, voice mail retrieval, and facsimile message retrieval. Subscribers reach the administration menus in the preferred embodiment by one of two methods. By the first method, the subscriber calls his/her personal number and presses the "*" key after the service has answered. The system requests the subscriber's pass code. After successful entry of the pass code, the main administration menu options are available. A second and more direct access method is provided to subscribers for the override feature. To enable the override feature, subscribers press the "W" key after the service has answered. Once the pass code is successfully entered, the user is routed directly to the override options menu under the call routing menu.

FIG. 7 is a block diagram illustrating the relationship of the administration menus. The main menu 150 comprises a call routing menu 151, a call announcement menu 152, a user options menu 153, a voice mail retrieval menu 154, and a facsimile message retrieval menu 155. After a subscriber uses any one of the menus, the system releases the call as shown by the release call diagram 156, and system administration is complete.

FIGS. 8 and 9 are flow charts illustrating the general method of call routing menu operations. In step 160, the system checks the routing type. If the routing type is facsimile, in step 161 the system routes to the facsimile routing menu described in connection with FIG. 10. If the routing type is voice, in step 162 the system checks whether the destination list (Locator List or Reach List) is to be modified or whether an override is to be set. If an override

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is to be set, in step 163 the system transfers to the call routing menu-override options menu as described in connection with FIG. 9. If the destination list is to be modified, in step 164 the system checks whether the destination list or the after hours destination list is to be modified. If the destination list is to be modified, in step 165 the system proceeds with modifying the destination list. If the after hours destination list is to be modified, in step 166 the system proceeds to modify the after hours destination list.

Both steps 165 and 166 are followed by step 167 wherein the subscriber enters a number to modify the destination list or to hear the current version of the destination list. In step 170, the system checks the subscriber's phone number entry. If the subscriber entered a phone number, in step 171 the system checks for the number in the destination list. If the number is not in the destination list, in step 172 the system checks whether the destination list is full. If the destination list is full, in step 173 the system advises the subscriber that the list is full and one of the present numbers must be deleted before the new number can be entered and requests the subscriber to delete a phone number. The system then proceeds to step 167 wherein the subscriber enters a number to modify the destination list or presses a number to hear the current version of the list. Referring again to step 172, if the destination list is not full, the system in step 174 prompts the subscriber for a designation of a location in the hierarchy of the list for the new number. In step 175, the system arranges the destination list according to the subscriber's requests. The system then proceeds to step 167, wherein the subscriber enters a number to modify the destination list or presses a number to hear the current version of the list.

Referring again to step 171, if the number entered by the subscriber is in the destination list, in step 176 the system prompts the subscriber to delete an entry in the list. In step 177, the system checks for the deleted entry. If the entry has not been deleted, the system proceeds to step 167, supra. If the entry has been deleted, in step 180 the system confirms the deletion of the entry with the subscriber, and returns to step 167, supra.

Referring again to step 170, if the subscriber does not enter a phone number, in step 181 the system announces the telephone number of the source of the subscriber's call and places the number in the destination list. In step 182, the system prompts the subscriber to continue or to delete the entry. In step 183, the system checks for deletion of the entry. If the entry has been deleted, in step 180 the system confirms the deletion with the subscriber. If the entry has not been deleted, in step 184 the system scans the destination list for completeness. If the list is incomplete, the system repeats steps 181 through 183. If the list is complete, the system returns to step 167, supra.

FIG. 9 is a flow chart illustrating the general method of the call routing-override option menu. In step 190, the system checks whether an override has been established. If there is no established override, in step 191 the system prompts the subscriber to decide between setting an override or reviewing more options. In step 192, the system checks for the subscriber's decision. If an override is to be set, in step 193 the system checks whether calling line number identification (CLID) is available. If such information is available, in step 194 the system prompts the subscriber to leave the calling line as the override. In step 196, the system confirms that the override number is correct by presenting the telephone number to the subscriber and asking the subscriber to verify the telephone number. If the override number is correct, in step 200 the system checks for a priority option. If there is a priority option, in step 201 the system prompts the

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subscriber to set an override for all calls or only for priority callers. In step 202, the selected override is set, and in step 203 the system returns to the main menu.

Referring again to step 200, if there is no priority option, the system proceeds to step 202 in setting the override. Referring again to step 193, if the calling line number identification is unavailable, in step 195 the system requests the subscriber to input an override number and then proceeds to step 196. In step 196, if the subscriber advises that the override number is incorrect, the system proceeds to step 195 and requests the subscriber to input an override number.

Referring again to step 192, if the user requests that more options be supplied, in step 204 the system prompts the subscriber to set an override to pager, default, or another location. In step 205, the system checks for such information. If such information includes another location, the system proceeds to step 193 and the steps thereafter, in checking for calling line number identification. If the information in connection with step 205 includes pager information, the system proceeds to step 200 in checking for priority options. If the information in step 205 is default information, the system proceeds to step 206 and checks for confirmation that the default location is correct. If the default location is incorrect, in step 204 the system prompts the subscriber to set such information. If the default confirmation is correct, an override is set in step 202.

Referring again to step 190, if an override has been established, in step 207 the system prompts the subscriber to cancel or to view more options. In step 210, the system checks whether the subscriber requested more options or cancelled the override. If the subscriber requested more options, in step 204 the subscriber is prompted to set an override for the pager, default or another location, and the system follows the steps thereafter. If the subscriber has cancelled the override, in step 211 the system cancels the override location, and returns to the main menu in step 203.

FIG. 10 is a flow chart illustrating the general method of the facsimile call routing menu. In step 220, the system checks the subscriber's current configuration. If the configuration data is set for storage, in step 221 the system announces the current configuration to the subscriber, that is, that the facsimile routing is set for storage. In step 222, the system prompts the subscriber to set facsimile messages for forwarding to the facsimile machine. In step 223, the system checks whether facsimile messages have been set to forward or to exit. If the facsimile messages have been set to exit, the system returns to the main menu. If facsimile messages have been set to forward, in step 224 the system changes the facsimile configuration to forward, and returns to the main menu.

Referring again to step 220, if the configuration data has been set to forward to the facsimile machine, in step 225 the system announces the current configuration to the subscriber, that is, that the facsimile routing is set for delivery to the facsimile machine. In step 226, the system prompts the subscriber to set facsimile messages for storage on system. In step 227, the system checks whether the facsimile messages have been set to storage or exit. If the facsimile messages have been set to storage, in step 228 the system changes the facsimile configuration to storage, and then returns to the main menu. If the facsimile messages have been set to exit menu, the system returns to the main menu.

In the preferred embodiment, the call announcement menu enables the subscriber to change the call announcement feature and to modify the priority list of callers. As

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noted, the call announcement feature announces the identity of the original caller when calls are delivered to the subscriber. This is completed through the reverse white pages data, when available for the original caller, or by recording the caller's name and replaying this recording for the subscriber. This allows the subscriber to screen the incoming calls. The call announcement menu provides the subscriber with an option to turn off the call announcement feature. When the feature is turned off, the system simply asks the party receiving the call if he/she is indeed the subscriber. The subscriber presses a specified key to answer that he/she is the correct party to receive the call and the system transfers the call to him/her. The answering party is requested to hang up the phone when the subscriber is not present at the location. The system can then continue to look for the subscriber at other possible destinations.

When call announcement screening is enabled, the party answering the call has three options. The first option is to accept the call from the screened calling party such as by pressing the "1" key. Once this option has been selected, the parties are connected through the transfer capability on the network platform. The second option is to reject the call such as by pressing the "9" key. This causes the calling party to be sent directly to the last stop or default destination. Finally, the third option is to informally reject the call by hanging up, which is interpreted by the system as an indication that the subscriber is not present at that location. This is also referred to as bypassing the call, which also occurs if the call to that location is not answered. This option allows the service to continue in the search for the subscriber at other destinations.

In the preferred embodiment, the system allows for a more enhanced call announcement capability which can be set and adjusted using the call announcement menu. For example, the system can be set to announce automatically the identity of a caller designated as a priority caller to the subscriber. The subscriber provides the system with a list of priority callers. The subscriber enters a phone number for each person on the list followed by a recorded name for each person. The recorded name identifies the priority caller when the call is screened. The priority list may be viewed or changed using the call announcement menu. A subscriber can either enter a phone number to modify the priority list, or scan the present entries in the priority list. If the subscriber enters a new phone number, the system requests the subscriber to record a name for identifying this number. When this party calls the personal number, the recorded name that the subscriber has stored in the priority list will be played for the purpose of identifying the calling party to the subscriber. Preferably, the subscriber also has the ability to delete telephone numbers from the priority list. Before deleting a number from the priority list, the system checks with the subscriber to confirm such deletion. Confirmation made by the subscriber to delete the entry will cause the service to remove this priority number from the list.

FIG. 11 is a flow chart illustrating the general method of the call announcement menu. In step 230, the system checks whether the subscriber desires to exit the menu, to change the call announcement, or to modify the priority list of callers. If the subscriber desires to exit the menu, the system returns to the main menu. If the subscriber desires to change the call announcement, in step 231 the system announces the current configuration of the call announcement feature as to whether it is enabled or disabled. In step 232, the system prompts the subscriber to toggle the feature. In step 233, the system checks whether the subscriber has requested that the feature be changed or whether the subscriber desires to exit

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the menu. If the subscriber desires to exit, the system returns to the main menu. If the subscriber desires to change the feature, in step 234 the system changes the feature option enablement status for call announcement.

Referring again to step 230, if the subscriber desires to modify the priority list of callers, in step 235 the system prompts the subscriber to enter a number to indicate whether the subscriber wishes to modify or to scan the priority list. In step 236, the system checks whether the subscriber has entered a phone number or has requested to scan the list. If the subscriber has entered a phone number and it is valid, in step 237 the system checks whether the number is present in the priority list. If not, in step 240 the system checks whether the priority list is full. If the priority list is full, in step 241 the system prompts the subscriber to delete a phone number, and returns to step 235, discussed above. If the priority list is not full, in step 242 the system prompts the subscriber to record an identifying name. In step 243, the system stores the entry in the priority list, and returns to step 235, discussed above. If the number entered in step 236 is an invalid number, then step 236 is repeated. Referring again to step 237, if the number entered by the subscriber is in the priority list, in step 244 the system prompts the subscriber to delete the entry. In step 245, the system checks for deletion of the entry. If the entry has not been deleted, the system returns to step 235, discussed above. If the entry has been deleted, in step 246 the system confirms with the subscriber the deletion of the entry, and returns to step 235, discussed above.

Referring again to step 236, if the subscriber chooses to scan the list of priority callers, in step 247 the system announces a phone number and the record name associated therewith. In step 250, the system prompts the subscriber to continue or to delete the entry. In step 251, the system checks whether the entry has been deleted. If it has been deleted, the system confirms the deletion of the entry in step 246 and steps thereafter. If the entry has not been deleted, in step 252 the system checks for list scan completion. If the subscriber has completed scanning the list, the system returns to step 235, discussed above. If the subscriber has not completed the scanning of the list, the system returns to step 247, discussed above.

In the preferred embodiment, the user options menu gives the subscriber the ability to modify personal data associated with the system. The user options menu enables the subscriber to record the subscriber's name, select a pass code, and choose a standard greeting or record the subscriber's own greeting. The preferred embodiment requires the subscriber to record his/her name. Once the name is recorded, the subscriber must confirm the recording. The system then uses this recording in greeting the subscriber's callers.

In the preferred embodiment, the customer chooses a pass code to be used to access the system. The subscriber may select a new pass code under the user options menu. The subscriber chooses the option for setting a pass code. The subscriber then is asked to enter a new four digit pass code followed by a confirmation of the pass code.

The preferred embodiment provides a choice of greetings to greet callers. The subscriber may choose a system greeting by selecting the option for system greeting. Preferably the system greeting ends with the recorded subscriber's name. Instead, the subscriber may choose the option for recording his/her own greeting.

FIG. 12 is a flow chart illustrating the general method of the user options operation menu. In this menu, the subscriber has an initial choice of three options: record subscriber's

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name 255; change subscriber's pass code 256; or choose a greeting for subscriber's callers 257. If the subscriber chooses the first option, record subscriber's name 255, in step 256 the system prompts the subscriber to record a name for his/her calls. In step 257, the system confirms the recorded name with the subscriber. If the recorded name is unconfirmed, the system returns to step 256. If the recorded name is confirmed, in step 260 the system sets the recording into the subscriber's data and returns to the main menu.

If the subscriber chooses the second option, change subscriber's pass code 256, in step 261 the system prompts the subscriber to enter a new four digit pass code. In step 262, the system confirms the pass code with the subscriber. If the pass code is unconfirmed, the system returns to step 261. If the pass code is confirmed, in step 263 the system sets the pass code into the subscriber's data, and returns to the main menu.

If the subscriber chooses the third option, choose a greeting for subscriber's callers 257, in step 265 the system checks whether the subscriber chooses to record a system greeting or to record his/her own greeting. If the subscriber chooses the system greeting, in step 266 the system previews the system greeting. In step 267, the system confirms the greeting with the subscriber. If the greeting is unconfirmed, the system returns to step 266. If the greeting is confirmed, in step 270 the system sets the greeting into the subscriber data.

Referring again to step 265, if the subscriber chooses to record his/her own greeting, in step 271 the system prompts the subscriber to record the greeting. In step 272, the system confirms the recorded greeting. If the greeting is unconfirmed, the system returns to step 271. If the recorded greeting is confirmed, the system sets the greeting into subscriber data in step 270, and returns to the main menu.

In the preferred embodiment, in addition to the three options presented in the user options menu, the subscriber is given the option of exiting the options menu and returning to the main menu.

The preferred embodiment of the present invention has a voice mail retrieval service. Callers may leave a voice message and mark the urgency thereof. The retrieval menu allows a subscriber to listen to a message, listen to the originating calling line number identification, delete the message, save the message or return the call to the originator of the given message. The subscriber also has the option of recording a voice mail greeting as well as selecting the particular pager options as defined in the system.

There are five options that are available when reviewing voice messages: listen to the message; delete the message; save the message into archives; hear the envelope information; or return the call of the party who left the message. The subscriber is requested to listen to the message once before any other action can take place on the message.

The fifth option, returning the call to the party originating the message, allows the subscriber to return messages without leaving the voice mail service. This option records the calling line number identification of the originating (messaging) party. The messaging party or caller also has the option of giving an alternate phone number to have the subscriber return his/her call. If the return call option is selected by the subscriber the system reads this phone number and places the call to the telephone number of the messaging party. After the conversation, the subscriber is returned to the same place in the voice mail retrieval menu as his/her point of departure. If the called party did not answer, the subscriber is automatically returned to the voice mail retrieval menu.

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The system preferably provides a subscriber with the option of recording his/her own voice message for the voice mail service. The subscriber can access this feature by selecting the option for recording a greeting. The subscriber then records a greeting and then confirms the recording. The system gives the subscriber the option of cancelling the personal greeting, which results in the voice mail service using the default system greeting. Preferably, the system also provides the subscriber with the ability to be paged after a voice message has been left on the network platform. The subscriber is given a choice when selecting the pager notification. A subscriber must decide if all calls should provide pager notification or if only priority calls should be provided. The subscriber who has voice mail service may select that only urgent messages left by the original caller provide pager notification.

The voice mail service of the present invention notifies a subscriber checking messages of incoming calls via voice announcements. Thus, the subscriber can retrieve messages without missing important calls. When the call is received into the system, the subscriber is provided with an announcement of who is calling and a choice of accepting or rejecting the call. If the call is accepted, the parties are connected and, once the call is completed, the subscriber is returned to the departure point of the voice mail service. If the call is rejected, the subscriber is returned to the departure point in the voice mail service, and the caller is routed to the voice mail service.

In the preferred embodiment, the voice mail service of the present invention provides a means of message notification other than the pager. When a subscriber turns on his/her mobile phone, the system calls the subscriber if messages are present on the voice mail service and announces that new messages are present. The subscriber then has three choices: accepting the call and retrieving his/her messages; rejecting the call; or hanging up. Whether the subscriber accepts or rejects the call, once the call has been answered, the system will not notify the subscriber again of his/her messages for a four hour interval. If the subscriber clears all new messages by either deleting them or saving them to archives, the system will notify the subscriber once any new messages are left on the voice mail service of the present invention. Notification calls that are not answered by the subscriber are retried after a five minute interval.

FIG. 13 is a flow chart illustrating the general method of the voice mail retrieval menu.

FIG. 13 is entered at step 275 with the system checking the subscriber's preference with regard to listening to messages or changing voice mail service options. If the subscriber decides to listen to messages, the subscriber has six options: listen to envelope information 276; listen to voice mail 277; delete voice mail 280; save message 281; return the call 282; or exit the menu 283. If the subscriber chooses to listen to envelope information 276, in step 284 the system announces the time and date of the message. In step 285, the system plays the caller's name. In step 286, the system announces the calling line number identification, and returns to step 275.

Referring again to step 275, if the subscriber chooses the second option, listen to voice mail 277, in step 287 the system announces the caller name, if available. In step 290, the system announces the time and date of the message. In step 291, the voice message is played, and the system returns to step 275.

Referring again to step 275, if the subscriber chooses the third option, delete voice mail 280, in step 292 the system

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deletes the current voice message. In step 293, the message is deleted. In step 294, the system checks for an unplayed message. If there is an unplayed message, the system returns to step 275. If there is no unplayed message, the system returns to the main menu.

Referring again to step 275, if the subscriber chooses the fourth option, save message 281, in step 295 the system stores the message in a database. In step 296, the system checks for an unplayed message. If there is no unplayed message, the system returns to the main menu. If there is an unplayed message, the system returns to step 275.

Referring again to step 275, if the subscriber chooses the fifth option, return the call 282, in step 297 the system checks the database for a number of the party that left the message. In step 300, the system generates a call to the message party. In step 301, the system checks whether the call was successful. If the call was successful, in step 302 the party is on the line. In step 303, the parties are connected. In step 304, the system checks whether the subscriber has terminated the call. If not, the system loops back to continue checking whether the subscriber has terminated the call. When the subscriber terminates the call, in step 305 the system releases the called party port and returns to step 275. Referring again to step 301, if the call to the message party is unsuccessful, in step 306, the call is determined to be unsuccessful. In step 307 the called party port is released, and the system returns to step 275.

Referring again to step 275, if the subscriber chooses the sixth option, exit menu 283, in step 310 the system returns to the main menu.

Referring again to step 275, if the subscriber chooses to change voice mail service options, the subscriber may change the greeting or may change the pager notification. If the subscriber chooses to change the greeting the system executes step 257 and the following steps of FIG. 12, and then returns to the main menu.

If the subscriber decides to change the pager notification, in step 320 the system prompts the subscriber to select pager options. In step 321, the system prompts the subscriber to enable pager options. In step 322, the system checks whether priority or urgent messages only are to be included as part of the pager notification. If priority and urgent messages only are to be included, in step 323 the system sets the pager for the urgent or priority callers, and returns to the main menu. If all calls are to be included, in step 324 the system sets the pager for all calls and returns to the main menu.

The preferred embodiment of the present invention provides the subscriber with the feature of sending pager notifications for facsimile messages received by the network platform. The facsimile message service allows pager notification for facsimile messages stored in the subscriber's mailbox or facsimile messages delivered to his/her facsimile machine. The pager notification can be turned on or off by the subscriber using the facsimile message retrieval menu. The facsimile message retrieval menu also gives the subscriber the ability to select delivery of facsimile messages. The menu enables the subscriber to scan the current stored facsimile messages, set all facsimile messages for delivery, delete a particular facsimile message or set a facsimile message for delivery. The scan process announces the transmit subscriber identification (TSI) information of the facsimile message and the originating calling line number identification. The subscriber may then delete this facsimile message from the subscriber's facsimile message mail box or mark the facsimile message for delivery. The subscriber also has the ability to select that all stored facsimile mes-

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sages are marked for delivery. Once the facsimile messages have been selected for delivery, the subscriber must input the location of the facsimile message delivery. The subscriber may choose the subscriber's normal route, that is, to the subscriber's facsimile message machine, or the subscriber may choose to enter a different facsimile number so that the facsimile message is sent to a different facsimile machine. The service then will deliver the facsimile messages with a maximum of two automatic facsimile retries in cases of failure.

FIG. 14 is a flow chart illustrating the general method of the facsimile message retrieval menu.

FIG. 14 is entered at step 330 when the system checks with the subscriber as to exiting the menu, retrieving facsimile messages, or entering pager notification options. If the subscriber chooses to exit the facsimile message retrieval menu, the system returns to the main menu. If the subscriber chooses to enter pager notification options, in step 332 the system announces the pager notification configuration to the subscriber. In step 333, the system queries the subscriber as to changing the pager configuration. If the subscriber decides not to change the pager configuration, the system returns to step 330. If the subscriber decides to change the pager notification, in step 334 the system prompts the subscriber to turn on/off the notification, and the system returns to step 330.

If the subscriber chooses to retrieve facsimile messages in step 330, the system preferably provides three options: set all faxes for delivery 335; deliver facsimile messages set for delivery 336; or scan current stored facsimile messages 337. If the subscriber chooses the first option, set all facsimile messages for delivery 335, in step 340 the system changes stored facsimile messages to facsimile messages to be delivered. In step 341, the system prompts the subscriber for a default facsimile machine number or to enter a number. In step 342, the system confirms the number is correct. If the number is unconfirmed, the system returns to step 341. If the number is confirmed, in step 343 the system sends the call to facsimile routines for delivery, and the system returns to the main menu. If the subscriber chooses the second option, deliver facsimile messages set for delivery 336, in step 341 the system prompts the subscriber for a default facsimile machine number or to enter a number, and then executes the steps following thereafter.

If the subscriber chooses the third option, scan current stored facsimile messages 337, in step 350 the system announces the TSI date, time and originating calling line number identification (CLID). In step 351, the system sets the facsimile message for one of three options: delete; set delivery; or scan. If the delete option is chosen, in step 352 the system confirms that the facsimile message is to be deleted before deleting the facsimile message. In step 354, the system checks whether it is to continue scanning, delivering facsimile messages, or to exit. If the system is to deliver facsimile messages, the system proceeds to step 341 and prompts the subscriber for a default facsimile machine number or to enter a number, and then executes the steps thereafter. If the subscriber chooses to exit the menu, the system proceeds to the main menu. If the subscriber chooses to continue scanning, in step 355 the system checks whether the facsimile message is the last stored facsimile message. If it is the last stored facsimile message, the system returns to the retrieve facsimile message options, discussed above. If the facsimile message is not the last stored facsimile message, the system returns to step 350 and steps thereafter. Referring again to step 351, if the subscriber chooses to set the facsimile message for delivery, in step 353 the system

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sets the facsimile message for delivery. Thereafter, the system proceeds to step 354, discussed above, regarding the continuation of facsimile message delivery, facsimile message scanning or exiting the menu.

FIGS. 15-26 are flow charts illustrating the general method of user interface of the preferred embodiment of the present invention.

FIG. 15 is a flow chart illustrating the user interface for the call routing process, and is entered at step 360 when a call terminates on the network platform. In step 361, the system checks whether the call is a facsimile message. If so, in step 362 the system makes the following announcement: "Please start your facsimile machine and hang up." In step 363, the system receives the facsimile message and delivers it based on the subscriber's configuration. If the call is not a facsimile message, in step 364 the system checks for routing based on the destination list or an override. If an override is present, in step 365 the system checks whether the override is to a destination, a default, or a pager. If the override is to a pager, in step 366 the system announces: "Hello, John Smith is not available. A notification will be sent that you called. Please enter a phone number where your call may be returned." In step 367, the system checks whether the phone number entered is a valid phone number. If not, in step 370 the system makes the following announcement: "This is an invalid phone number. Please enter a phone number where your call may be returned." The system then returns to step 367. If a valid phone number is entered, the system announces in step 371: "Thank you for calling, John Smith will be notified of your call." In step 372, the system notifies the subscriber through a page, and in step 373 completes the service.

Referring again to step 365, if the override is to a default destination, in step 374 the system checks the default destination for one of three configurations: pager; the voice mail system of the present invention; or another voice mail service or other default. If the default destination is a pager, the system proceeds to step 366 and the steps thereafter. If the default destination is the voice mail service of the present invention (PNS VMS), in step 375 the system checks whether the subscriber has a personal voice mail greeting. If so, in step 376 the system plays the personal voice mail greeting together with the following statement: "When you are done leaving your message press the pound sign." In step 377, the system announces the calling line number identification and also makes the following announcement: "If this phone number is the correct place to return your call, press the pound sign; otherwise, enter a new phone number, now." In step 380, the system makes the following announcement: "Press 1 to mark your message urgent, otherwise press 9 for normal delivery." If the subscriber chooses to mark the message urgent, in step 381 the system marks the message as urgent. In step 382, the system makes the following announcement: "Thank you for calling, your message will be delivered." The service is then completed in step 373. If the message has been marked for other delivery, the system makes the announcement of step 382.

Referring again to step 375, if the subscriber does not have a personal voice mail greeting, in step 383 the system makes the following announcement: "John Smith is not available. Please record a message at the tone. When you are done leaving your message, press the pound sign." The system then proceeds with step 377 and the steps following, as described above.

Referring again to step 374, if the caller has designated a separate voice mail system or other destination as the default

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destination, in step 384 the system makes the following announcement: "John Smith is not available. Please hold while we transfer your call." In step 385, the system transfers the call off the network platform, and the service is completed in step 386.

Referring once again to step 365, if the override is to a destination on the locator list, the system follows the same steps as if the routing was based on a destination in the locator list as checked in step 364. Thus, if the routing of the call is based on the locator list or an override to a destination on the locator list, the system proceeds to system 387. At this step, the system checks whether the source identification or reverse white pages information has been found, or whether the caller is a priority caller. If the caller is a priority caller, in step 390 the system makes the following announcement: "Hello, you have reached John Smith's personal number, please hold while the service locates this person." In step 391, the system attempts to locate the subscriber while the caller hears ringing tones. In step 392, the system checks whether it has found the subscriber. If so, the system makes the following announcement in step 393: "Hello John Smith, this is your personal number service. I have [caller name] holding. Press 1 to accept this call, press 9 to reject this call, or hang up now if John Smith is not presently at this location." If the subscriber rejects the call by pressing 9, the call is sent to the default destination pursuant to steps 374 and so on. If the call is accepted in step 394, the system connects the parties, and system service is completed in step 395. If the call is bypassed, in step 396 the system checks whether it is to call another location. If it is not to call another location, the system routes the call to the default destination as in steps 374 and so on. If the system is to call another location, in step 397 the system makes the following announcement: "Please hold while the service tries another location." The system then returns to step 391.

Referring again to step 387, if the system has not found source identification information for the call, in step 400 the system makes the following announcement: "Hello, you have reached John Smith's personal number. Please identify yourself by stating your name. Say your name at the tone." In step 401, the system records the caller's name. In step 402, the system makes the following announcement: "Thank you, please hold while the service locates this person." The system then proceeds to step 391.

FIG. 16 is a flow chart illustrating the user interface for the administration menu entry, and is entered at step 410 when the subscriber presses the "*" sign. In step 411, the system makes the following announcement: "Hello, John Smith, please enter your pass code." In step 412, the pass code is entered. In the preferred embodiment, four digits are allotted for the subscriber's pass code. In step 413, the system checks as to the correctness of the pass code. If the pass code is incorrect, in step 414, the system makes the following announcement: "This is an invalid pass code. Please re-enter your pass code, now." The system then returns to step 412. If the pass code is correct, in step 415, the system checks whether the override is set. If the override is set, in step 416 the system makes the following announcement: "You have override ON." The system then proceeds to step 417. If the check in step 415 is negative, the system proceeds to step 417. In step 417, the system checks whether call screening is active. If call screening is inactive, in step 420, the system makes the following announcement: "Call screening is not ON." The system then proceeds to step 421. If the check in step 417 is positive, the system proceeds to step 421. In step 421, the system checks for voice messages. If there are voice messages, in step 422 the system makes the

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following announcement: "You have [x] voice messages." The system then proceeds to step 423. If there are no voice messages, the system proceeds to step 423. A check is made in step 423 to determine if there are any stored facsimile messages. If there are stored facsimile messages, in step 424 the system makes the following announcement: "You have [x] faxes." The system then proceeds to the main menu. If there are no stored facsimile messages, the system proceeds to the main menu.

FIG. 17 is a flow chart illustrating the general method of user interface in connection with administration menu entry for quick access to the override feature.

FIG. 17 is entered at step 430 when the subscriber enters the "*" sign. In step 431, the system makes the following announcement: "Hello, John Smith, please enter your pass code." In step 432, the pass code is entered. In the preferred embodiment, the pass code is allotted four digits. In step 433, the system checks for the correctness of the pass code. If the pass code is correct, in step 434 the system calls up the call routing menu of FIG. 19 for setting the override feature. If the pass code is incorrect, in step 435 the system makes the following announcement: "This is an invalid pass code. Please re-enter your pass code, now." The system then returns to step 432.

FIG. 18 is a flow chart illustrating the general method of the user interface in connection with the administration main menu.

FIG. 18 is entered at step 440 when the main menu is presented. In step 441, the system makes the following announcement: "Press 1 for Call Routing, Press 2 for Call Announcement, Press 3 for User Options, Press 4 for Voice Message, Press 5 for Fax Message, or Press 9 to Exit the system." Thus, the system presents the subscriber with six options: press 1, 442; press 2, 443; press 3, 444; press 4, 445; press 5, 446; and press 9, 447. If the subscriber presses 1, in step 450 the system presents the Call Routing Menu of FIG. 19. If the subscriber presses 2, in step 451 the system presents the Call Announcement Menu of FIG. 21. If the subscriber presses 3, in step 452 the system presents the User Options Menu of FIG. 22. If the subscriber presses 4, in step 453 the system presents the Voice Mail Retrieval Menu of FIG. 23. If the subscriber presses 5, in step 454 the system presents the Facsimile Message Retrieval Menu of FIG. 24. If the subscriber presses 9, in step 455 the system makes the following announcement: "Thank you for using the personal number service. Good Bye." The system then proceeds with completing the service in step 456.

FIG. 19 is a flow chart illustrating the general method of user interface in connection with the call routing menu.

FIG. 19 is entered at step 460 with the presentation of the call routing menu. In step 461, the system makes the following announcement: "Press 1 to change your call routing, Press 2 to change your fax routing, or Press 9 to exit this menu." Thus, the subscriber is presented with three options: change call routing—press 1, 462; change fax routing—press 2, 463; or exit menu—press 9, 464.

If the subscriber chooses to change call routing, in step 465 the system makes the following announcement: "Press 1 to set an override for your callers, or Press 2 to modify your Reach List (destination list)." If the subscriber chooses to set an override, in step 466 the system recognizes the choice, and in step 467 checks whether an override has been established. If no override has been established, in step 470 the system makes the following announcement: "Press the pound sign to establish an override, Press the star sign for more options, or Press 9 to exit this menu." Thus, the

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subscriber is presented with three options: establish an override—press “*”, 471; more options—press “*”, 472; or exit menu—press 9, 473. If the subscriber chooses to establish an override, in step 474 the system makes the following announcement: “[calling line number identification] is the number for override. Press the pound sign to confirm this number, press the star sign for more options, or enter a new phone number, now.” Thus, the subscriber is presented with three options: new phone number, 475; confirm the override number—press “*”, 476; or more options—press “*”, 477. If the subscriber chooses to enter a new phone number, the system repeats step 474. If the subscriber chooses to confirm the override number, the system proceeds to step 500, discussed below. If the subscriber chooses more options, the system proceeds to step 491.

Referring again to step 470, if the subscriber chooses more options in step 472, the system proceeds to step 491. If the subscriber chooses to exit the menu in step 473, the system returns to the main menu in step 480.

Referring again to step 467, if an override is established, in step 481 the system makes the following announcement: “Press the pound sign to cancel your override. Press the star sign for more options, or Press 9 to exit this menu.” Thus, the subscriber is presented with three options: cancel override—press “*”, 482; more options—press “*”, 483; or exit menu—press 9, 484. If the subscriber chooses to cancel the override, in step 485 the system makes the following announcement: “The override is now cancelled.” The system then returns to the main menu in step 480. If the subscriber chooses to review more options in step 483, the system proceeds to step 491. If the subscriber chooses to exit the menu, the system proceeds to the main menu in step 486.

In step 491, the system makes the following announcement: “Press 1 to override all calls to your default location; press 2 to override all calls to your pager; press the pound sign to set an override for another location; or press 9 to exit this menu.” Thus, the subscriber is presented with four options: override to default location—press 1, 492; override to pager—press 2, 493; exit menu—press 9, 494; or override to another location—press “*”, 495. If the subscriber chooses to override to the default destination, in step 496 the system makes the following announcement: “The override is now established.” The system returns to the main menu in step 497. If the subscriber chooses to override to the pager, in step 500 the system checks whether the subscriber has a priority list. If the subscriber does not have a priority list, the system then proceeds to step 496 as described above. If the subscriber has a priority list, in step 501 the system makes the following announcement: “Press 1 to confirm this override for all calls, or press 2 to confirm this override for only priority callers.” Thus, the subscriber is presented with two options: override for all calls—press 1, 502; override for only priority callers—press 2, 503. In either case, the system then proceeds to step 496 as discussed above.

Referring again to step 491, if the subscriber chooses to exit the menu, the system proceeds to the main menu in step 497. If the subscriber chooses to set an override for another location, the system returns to step 474, discussed above.

Referring again to step 465, if the subscriber chooses to modify the Reach List (hierarchical list of destinations), the system proceeds to the Reach List interface (FIG. 20) in step 490.

Referring again to step 461, if the subscriber chooses to change facsimile message routing, in step 504 the system checks for the current facsimile configuration. If the current

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facsimile configuration is set for storage, in step 505 the system makes the following announcement: “Your current fax routing is set for storage for later retrieval. Press 1 to have your faxes delivered to your fax machine or press 9 to exit this menu.” Thus, the subscriber is presented with two options: facsimile message delivery,—press 1, 506; exit menu—press 9, 507. If the subscriber chooses facsimile message delivery, in step 510 the system makes the following announcement: “Your fax routing is now set for delivery.” The system then proceeds to the main menu in step 511. If the subscriber chooses to exit the menu, the system proceeds directly to the main menu in step 511.

Referring again to step 504, if the current facsimile message configuration is set to forward, in step 512 the system makes the following announcement: “Your current fax routing is set for delivery to your fax machine. Press 1 to have your faxes stored for later retrieval or press 9 to exit this menu.” Thus, the subscriber has two options: store faxes—press 1, 513; exit menu—press 9, 514. If the subscriber chooses to store faxes, in step 515 the system makes the following announcement: “Your fax routing is now set for storage.” The system then proceeds to the main menu in step 511. If the subscriber chooses to exit the menu, the system proceeds to the main menu in step 511.

Referring again to step 461, if the subscriber chooses to exit the menu, the system proceeds directly to main menu in step 516.

FIG. 20 is a flow chart illustrating the general method of the user interface in connection with the hierarchical list of destinations. In the preferred embodiment, the destination list is also referred to as the Reach List.

FIG. 20 is entered at step 520 when the Reach List menu is presented. In step 521, the system makes the following announcement: “Press 1 to modify the Reach List, press 2 to modify the after hours Reach List.” Thus, the subscriber is presented with two options: modify Reach List—press 1, 522; or modify after hours Reach List—press 2, 523. In either case, the system begins the process of making the changes in step 524. Then, in step 525 the system makes the following announcement: “Please enter a phone number to modify the Reach List, press the # sign to hear the present list, or press 9 to exit this menu.” Thus, the subscriber is presented with three options: hear present list—press “#”, 526; enter phone number, 527; or exit menu—press 9, 530. If the subscriber chooses to hear the present list, in step 532 the system checks to make sure the scan is complete or the list is empty. If the scan is complete, in step 533 the system makes the following announcement: “There are no more entries in this list.” The system then returns to step 525. If the scan is incomplete, in step 534 the system makes the following announcement: “[Speak number] is the [x] number in the list.” The system then proceeds to step 535 where it makes the following announcement: “Press 1 to delete this number; press 2 to change the position of the phone number in the list; press the pound sign to hear Reach List, or press nine to exit this menu.” Thus, the subscriber is presented with four options: delete number—press 1, 536; change position of number—press 2, 537; exit menu—press 9, 540; or hear the Reach List—press “#”, 541. If the subscriber chooses to delete the number, the system makes the following announcement in step 542: “The entry has been deleted.” The system then returns to step 525. If the subscriber chooses to change the position of the phone number in the list, then the system proceeds to step 547, discussed below. If the subscriber chooses to exit the menu, the system returns to the main menu in step 543. If the subscriber chooses to hear the Reach List, the system returns to step 532.

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Referring again to paragraph 525, if the subscriber enters a valid phone number, in step 544 the system checks to see whether the phone number is in the list. If so, the system proceeds to step 535. If the phone number is not in the list, in step 545 the system checks whether the list is full. If the list is full, in step 546 the system makes the following announcement: "The Reach List is full. A number must be deleted before you can add this number." The system then returns to step 525. If the list is not full, the system makes the following announcement in step 547: "[Speak number], please enter the priority of this number in the Reach List, choose between one and four; one is the highest priority. This is the order in which this location is called for the delivery of your calls. Press 9 to exit this menu." Thus, the subscriber is presented with two options: exit menu—press 9, 548; or enter a priority number, 550. If the subscriber chooses to exit the menu, the system returns to step 525. If the subscriber enters a valid priority number, the system in step 552 makes the following announcement: "This entry has been added to the Reach List." The system then returns to step 525. If the subscriber enters an invalid priority number, in step 553 the system makes the following announcement: "This is an invalid number." The system then returns to step 547.

Referring again to step 525, if the subscriber decides to exit the menu, in step 555 the system proceeds to the main menu. If the subscriber enters an invalid number, then in step 556, the system makes the following announcement: "This is an invalid phone number." The system then returns to step 525.

FIG. 21 is a flow chart illustrating the general method of user interface in connection with the call announcement menu.

FIG. 21 is entered at step 560 when the call announcement menu is represented to the subscriber. In step 561, the system makes the following announcement: "Press 1 to change call announcement, press 2 to modify the priority list, or press 9 to exit this menu." Thus, the subscriber is presented with three options: change call announcement—press 1, 562; modify priority list—press 2, 563; or exit menu—press 9, 564. If the subscriber chooses to change the call announcement, in step 565 the system checks whether call announcement is active. If so, in step 566 the system makes the following announcement: "Call announcement is on. Press 1 to turn call announcement off, or press 9 to exit this menu". Thus, the subscriber is presented with two options: turn call announcement off, 567; or exit menu, 570. If the subscriber chooses to turn call announcement off, in step 571 the system makes the following announcement: "Call announcement is now off." The system then proceeds to the main menu in step 572. If the subscriber chooses to exit the menu, the system proceeds to the main menu in step 572.

Referring again to step 561, if the subscriber chooses the second option, modify priority list, in step 577 the system makes the following announcement: "Please enter a number to modify the priority list. Press the pound sign to hear the present list, or press 9 to exit this menu." Thus, the subscriber has three options: hear present list—press #, 580; modify priority list, 581; exit menu—press 9, 582. If the subscriber chooses to hear the present list, in step 584 the system checks whether the list is empty or the scan is complete. If both conditions are satisfied, in step 585 the system makes the following announcement: "There are no more entries in the list." The system then returns to step 577. If the list is not empty or the scan is incomplete, in step 586 the system announces the phone number and announces the recorded name. In step 587, the system makes the following

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announcement: "Press 1 to delete this number, press the pound sign to hear the priority list, or press 9 to exit this menu." Thus, the subscriber has three options: hear priority list—press #, 590; delete number—press 1, 591; or exit menu—press 9, 592. If the subscriber chooses to hear the priority list, the system returns to step 577. If the subscriber chooses to delete the number, in step 593 the system makes the following announcement: "The entry has been deleted." The system then returns to step 577. If the subscriber chooses to exit the menu, the system returns to the main menu (FIG. 18).

Referring again to step 577, if the subscriber chooses the second option, modify priority list, in step 595 the system checks whether the phone number entered by the subscriber is already in the list. If so, the system proceeds to step 587. If not, in step 596 the system checks whether the priority list is currently full. In the preferred embodiment, a subscriber may designate up to ten priority callers. If the list is not full, in step 597 the system makes the following announcement: "Please record a name to identify this priority phone number. Please speak the identifying name at the tone." In step 600, the system makes the following announcement: "The number has been added to the priority list." The system returns to step 577.

Referring again to step 596, if the list is full, in step 601 the system makes the following announcement: "The priority list is currently full. A number must be deleted before you can add this number." The system then returns to step 561, discussed above.

Referring again to step 577, if the subscriber chooses the third option, exit menu, the system returns to the main menu (FIG. 18) in step 603.

Referring again to step 577, if the subscriber enters an invalid number in seeking to modify the priority list in step 583, in step 602 the system makes the following announcement: "This is an invalid phone number." The system then returns to step 577.

Referring again to step 561, if the subscriber chooses the third option, exit menu, the system returns to the main menu (FIG. 18) in step 603.

FIG. 22 is a flow chart illustrating the general method of user options in connection with the user interface.

FIG. 22 is entered at step 610 when the system makes the following announcement: "User options. Press 1 to record your name; press 2 to change your pass code; press 3 to choose a greeting for your caller; or press 9 to exit this menu." Thus, the subscriber is presented with four options: Record name—press 1, 611; change pass code—press 2, 612; choose greeting—press 3, 613; or exit menu—press 9, 614. If the subscriber chooses the first option, record name, in step 615 the system makes the following announcement: "Please record a name for your calls. Please say your name at the tone; after you have spoken your name, press the pound sign." In step 616, the system makes the following announcement: "Your callers will now hear [recorded name]. This recording will be used when greeting your callers. Press 1 to commit this recording, or press 2 to cancel this recording and re-record your name." Thus, the subscriber is presented with two options: Commit recording—press 1, 617; or cancel recording and re-record—press 2, 620. If the subscriber commits the recording, in step 621 the system makes the following announcement: "Your name has been changed." The system then returns to the user options menu. If the subscriber cancels the recording, in step 622 the system announces: "Nothing saved." The system then returns to step 615.

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If at step 610 the subscriber chooses the second user option, change pass code, in step 623 the system makes the following announcement: "Please enter a new four digit pass code, now." In step 624, the system makes the following announcement: "Your new pass code is [pass code]. Press the pound sign to confirm this pass code, or reenter a four digit pass code, now." Thus, the subscriber has two options: "confirm pass code—press *". 625; or reenter pass code. 626. If the subscriber chooses to reenter the pass code, the system repeats step 624. If the subscriber chooses to confirm the pass code, in step 627 the system makes the following announcement: "Your pass code has been changed." The system then returns to the user options menu.

If at step 610 the subscriber chooses the third user option, choose greeting, in step 630 the system makes the following announcement: "Press 1 to record a greeting for your callers, press 2 to choose a system greeting, or press 9 to exit this menu." Thus, the subscriber has three options: record a greeting—press 1, 631; choose a system greeting—press 2, 632; or exit menu—press 9, 633. If the subscriber chooses to record a greeting, in step 634 the system makes the following announcement: "Please record a greeting for your callers. Please start your recording at the tone. After you have spoken your greeting, press the pound sign." In step 635, the system makes the following announcement: "Your callers will now hear [recording]. This recording will be used when greeting your callers. Press 1 to confirm this recording, or press 2 to cancel this recording and exit this menu." Thus, the subscriber has two options: confirm recording—press 1, 636; or cancel recording and exit menu—press 2, 637. If the subscriber chooses to confirm the recording, in step 640 the system makes the following announcement: "Your greeting has been changed." The system returns to the user options menu. If the subscriber chooses to cancel the recording and exit the menu, in step 641 the system makes the following announcement: "Nothing saved." The system then returns to the user options menu.

Referring again to step 630, if the subscriber chooses a system greeting, in step 642 the system makes the following announcement: "The system greeting will be 'Please hold and I will connect you with John Smith.'" In step 643, the system will make the following announcement: "Your callers will now hear [system greeting]. This recording will be used when greeting your callers. Press 1 to confirm this recording, or press 2 to cancel this recording and exit this menu." Thus, subscribers are presented with two options: Confirm recording—press 1, 636; or cancel the recording and exit menu—press 2, 637. These options are the same options as follow step 635, and are discussed above.

Referring again to step 630, if the subscriber chooses to exit the menu, the system returns to the user options menu.

Referring again to step 610, if the subscriber chooses the fourth option, exit menu, the system returns to the main menu.

FIG. 23 is a flow chart illustrating the general method of user interface in connection with the voice mail retrieval main menu.

FIG. 23 is entered at step 645 when the system makes the following announcement: "Press 1 to listen to your messages, press 2 to change your greeting, press 3 to change your pager notification or press 9 to exit this menu." Thus, subscriber is presented with four options: Listen to messages—press 1, 646; change greeting—press 2, 647; change pager notification—press 3, 648; or exit menu—press 9, 649. If the first option is chosen, listen to messages,

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the system proceeds to the voice mail retrieval menu shown in FIG. 24. If the subscriber chooses the second option, change your greeting, in step 650 the system makes the following announcement: "Press 1 to record a greeting for your callers, press 2 to choose a system greeting, or press 9 to exit this menu." Thus, the subscriber has three options: record greeting—press 1, 651; choose system greeting—press 2, 652; or exit menu—press 9, 653. If the subscriber chooses the first option, in step 654 the system makes the following announcement: "Please record a greeting for your callers, please start your recording at the tone. After you have spoken your greeting, press the pound sign." In step 655, the system makes the following announcement: "Your callers will now hear [recording]. This recording will be used when greeting your callers. Press 1 to confirm this recording, or press 2 to cancel this recording and exit this menu." Thus, the subscriber has two options: confirm recording—press 1, 656; or exit menu—press 2, 657. If the subscriber chooses the first option, in step 660 the system makes the following announcement: "Your greeting has been changed." The system then proceeds to the user options menu. If the subscriber chooses to cancel the recording and exit the menu, in step 661 the system makes the following announcement: "Nothing saved." The system then returns to the user options menu.

Referring again to step 650, if the subscriber chooses the option of choosing a system greeting, in step 662 the system makes the following announcement: "John Smith is unavailable. Please leave a message at the tone. After you have finished your message press the pound key." In step 663, the system makes the following announcement: "Your callers will now hear [system greeting]. This recording will be used when greeting your callers. Press 1 to confirm this recording or press 2 to cancel this recording and exit this menu." Thus, the subscriber has two options: confirm recording—press 1, 656; or cancel recording and exit menu—press 2, 657. These steps are discussed above.

Referring again to step 650, if the subscriber chooses to exit the menu, the system proceeds to the user options menu.

Referring again to step 645, if the subscriber chooses the third option, change pager notification, in step 664 the system checks whether the default notification has been set. If not, in step 665 the system makes the following announcement: "Your current default pager notification is off. Press 1 to turn on notification for all calls, press 2 to turn on notification for only priority calls, press 3 to turn on notification for urgent voice messages, press 4 to turn on notification for urgent voice messages and priority callers, or press 9 to exit this menu." Thus, the subscriber has five options: turn on notification for all calls—press 1, 666; turn on notification for only priority callers—press 2, 667; turn on notification for urgent voice messages—press 3, 670; turn on notification for urgent voice messages and priority callers—press 4, 671; or exit menu—press 9, 672. If the subscriber chooses any of the first four of these five options, in step 673 the system announces: "Pager notification is now on." The system then proceeds to the user options menu. If the subscriber chooses the fifth option, in step 674 the system announces: "Nothing saved." The system then proceeds to the user options menu.

Referring again to step 664, if the default notification is set, in step 675 the system makes the following announcement: "Your current default pager notification is on for [read configuration]. Press 1 to turn on notification for all calls, press 2 to turn on notification for only priority callers, press 3 to turn on notification for urgent voice messages, press 4 to turn on notification for urgent voice messages and priority

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callers, press 7 to cancel pager notification, or press 9 to exit this menu." Thus, the subscriber has six options: Turn on notification for all calls—press 1, 676; turn on notification for only priority callers—press 2, 677; turn on notification for urgent voice messages—press 3, 678; turn on notification for urgent voice messages and priority callers—press 4, 680; cancel pager notification—press 7, 681; and exit menu—press 9, 682. If the subscriber chooses any of the first four of these six options, in step 683 the system announces: "Pager notification is now on." If the subscriber chooses the fifth option, in step 684 the system makes the following announcement: "Pager notification is off." If the subscriber chooses the sixth option, in step 685 the system announces: "Nothing saved." The system proceeds to the user options menu after step 683, 684 or 685.

Referring again to step 645, if the subscriber chooses the fourth option, exit menu, the system proceeds to the main menu.

FIG. 24 is a flow chart illustrating the general method of user interface in connection with voice mail retrieval.

FIG. 24 is entered at step 690 when the system checks for stored messages. If there are stored messages, in step 691 the system checks for urgent messages. If there are urgent messages, in step 692 the system makes the following announcement: "You have [X] urgent message, [X] messages total." In step 693, the system provides information relating to the date, time, and recorded message. In step 694, the system makes the following announcement: "Press 1 to play the current message, press 2 to delete this message, press 3 to save this message, press 4 to get envelope information, press 5 to return the call of the message party, or press 9 to exit this menu." Thus, the subscriber has six options: play message—press 1, 695; delete message—press 2, 696; save message—press 3, 697; get envelope information—press 4, 700; return call—press 5, 701; or exit menu—press 9, 702. If the subscriber chooses to play the current message, the message played in step 694 is repeated. If the subscriber chooses to delete the message, in step 703 the system makes the following announcement: "Message deleted." If the subscriber chooses to save the message, in step 704 the following message is announced: "Message saved." If the subscriber chooses to receive the envelope information, in step 705 the system announces the time of the message, the date of the message, the calling line number identification (CLID), and the caller's name.

Following steps 703 through 705, in step 706 the system checks to determine whether the message played was the last message. If so, in step 707 the system makes the following announcement: "That was your last message." The system then returns to the voice mail retrieval menu.

Referring again to step 706, if the message played was not the last message, in step 708 the system retrieves the next message. In step 709, the system checks to determine whether a call has been received by the network platform. If not, the system proceeds to step 693, discussed above. If a call has been received, in step 710 the system makes the following announcement: "An incoming call has arrived from [caller name]. Press 1 to accept this call, or press 9 to continue listening to your messages and send this call to the last stop." Thus, the subscriber has two options: send call to last stop—press 9, 711; or accept call—press 1, 712. If the subscriber chooses to send the call to last stop, the system proceeds to step 693, discussed above. If the subscriber decides to accept the call, in step 713 the system makes the following announcement: "You are now connected to your caller." The system then considers the service complete.

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Referring again to step 694, if the subscriber chooses to return the call of the message party, in step 714 the system makes the following announcement: "Hold while you are connected to your party. When your call is completed, press 9 to retrieve return to voice mail." In step 715, the system makes the call to the message party. In step 716, the system responds to the press 9 instruction of a subscriber by proceeding to step 706, discussed above.

Referring again to step 694, if the subscriber chooses to exit the menu, the system proceeds to the main menu.

Referring again to step 691, if there are no urgent messages, in step 717 the system checks for new messages. If there are new messages, in step 718 the system makes the following announcement: "You have [X] new messages, [X] new messages total." The system then proceeds to step 693, discussed above, to announce the date, the time, and the recorded message to the subscriber. Referring again to step 717, if there are no new messages, in step 719 the system makes the following announcement: "You have no new messages, [X] messages total." The system then proceeds to step 693 discussed above, to announce the date, time, and the recorded message to the subscriber.

Referring again to step 690, if there are no stored messages, in step 720 the system makes the following announcement: "You have no new messages, [X] messages total." The system then proceeds to the main menu.

The preferred embodiment of the present invention allows subscribers to scan messages in step 721 by simply pressing the # key. In step 722, the system scans to the next message. In step 723, the system checks whether the message is the last message. If the message is the last message, the system proceeds to step 707, described above. If the message is not the last message, the system proceeds to step 709, described above.

FIG. 25 is a flow chart illustrating the general method of user interface in connection with the PNS voice mail system call notification.

FIG. 25 is entered at step 730 when the system makes the following announcement: "Hello John Smith, this is a free call from the personal number service. You have new voice messages in your mailbox. Press 1 to retrieve your messages, you will be charged for the airtime used, or hang up now and no charge will be incurred." Thus, the subscriber has two options: retrieve messages—press 1, 731; or hang up, 732. If the subscriber chooses to retrieve messages, in step 733 the system makes the following announcement: "When you hear the ring press the send key on your mobile phone to retrieve the messages." In step 734, the system sends the messages, and returns to voice mail retrieval. If the subscriber chooses to hang up (step 732), the system considers the service complete.

FIG. 26 is a flow chart illustrating the general method of the user interface in connection with the facsimile message retrieval menu.

FIG. 26 is entered at step 740 when the system makes the following announcement: "Press 1 to retrieve your faxes, press 2 to change your pager notification, or press 9 to exit this menu." Thus, the subscriber has three options: retrieve facsimile messages—press 1, 741; change pager notification—press 2, 742; or exit menu—press 9. If the subscriber chooses to retrieve facsimile messages, in step 743 the system checks to determine whether facsimile messages are stored. If not, in step 744 the system makes the following announcement: "You have no faxes stored on the system." The system then returns to the main menu.

If facsimile messages are stored, in step 745 the system makes the following announcement: "You have [X] stored

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faxes." Then, in step 746 the system makes the following announcement: "Press 1 to request that all faxes be delivered, press 2 to scan your current faxes, or press 9 to exit this menu." Thus, the subscriber has three options: request facsimile message delivery—press 1, 747; scan facsimile messages—press 2, 748; or exit menu—press 9, 749. If the subscriber chooses to request facsimile message delivery, in step 750 the system makes the following announcement: "Press pound to have your faxes delivered to your system defined fax machine, enter a new fax delivery number, now, or press 9 to stop the fax delivery and exit this menu." Thus, the subscriber has three options: deliver facsimile messages—press #, 751; enter new facsimile number, 752; or exit menu—press 9, 753. If the subscriber chooses either of the first two options, then in step 754 the system makes the following announcement: "[Fax number] will be the number to deliver your faxes. Press the pound sign to confirm this number, or enter a new number, now." Thus, the subscriber has the option of entering a new fax number in step 755, or pressing the pound sign in step 756.

If the subscriber chooses to enter a new fax number, the system repeats step 754. If the subscriber presses the pound sign, in step 757 the system makes the following announcement: "Your faxes will be delivered." The system then proceeds to the main menu.

Referring again to step 750, if the subscriber decides to stop the facsimile message delivery and exit the menu, the system proceeds to the main menu.

Referring again to step 746, if the subscriber chooses the second option, scan current faxes, then in step 760 the system announces the TSL date, time, and originating calling line number identification. In step 761, the system checks to determine whether the facsimile message has already been set for delivery. If not, in step 762 the system makes the following announcement: "Press 1 to mark this fax for delivery, press 2 to delete this fax, press the pound sign to continue scanning your faxes, or press 9 to exit this menu." Thus, the subscriber has four options: Mark facsimile message for delivery—press 1, 763; delete facsimile message—press 2, 764; scan facsimile messages—press #, 765; or exit menu—press 9, 766. If the subscriber chooses the first option of marking the facsimile message for delivery, in step 767 the system makes the following announcement: "Fax set for delivery." Then in step 770, the system checks to determine whether the facsimile message is the last facsimile message. If it is, the system proceeds to step 750, discussed above. If not, the system proceeds to step 771 and retrieves the next facsimile message. Then, the system returns to step 760.

Referring again to step 762, if the subscriber chooses a second option, delete facsimile message, in step 768 the system makes the following announcement: "Fax deleted." The system then proceeds to step 770, discussed above. If the subscriber chooses the third option, continue scanning facsimile messages, the system proceeds to step 770, discussed above. If the subscriber chooses to exit the menu, the system proceeds to step 750, discussed above.

Referring again to step 761, if the facsimile message is already set for delivery, in step 772 the system makes the following announcement: "Press 1 to remove this fax from the delivery list, press 2 to delete this fax, press the pound sign to continue scanning your faxes, or press 9 to exit this menu." Thus, the subscriber has four options: remove facsimile message from delivery list—press 1, 773; delete facsimile message—press 2, 774; continue scanning facsimile messages—press #, 775; or exit menu—press 9, 776.

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If the subscriber chooses the first option, then in step 777 the system makes the following announcement: "Fax removed from delivery list." The system then proceeds to step 770, discussed above. If the subscriber chooses a second option, then in step 778 the system makes the following announcement: "Fax deleted." The system then proceeds to step 770. If the subscriber chooses the third option of continuing to scan facsimile messages, then the system proceeds to step 770. If, however, the subscriber chooses the fourth option, exit the menu, the system then proceeds to step 750.

Referring again to step 746, if the subscriber chooses the third option, exit the menu, the system returns to the main menu.

Referring again to step 740, if the subscriber chooses the second option, change pager notification, in step 781 the system checks to determine whether the facsimile message has been set. If not, in step 782 the system makes the following announcement: "Your current fax pager notification is off. Press 1 to turn on fax notification, or press 9 to exit this menu." Thus, the subscriber has two options: turn on fax notification—press 1, 783; or exit menu—press 9, 784. If the subscriber chooses to turn on fax notification, in step 785 the system makes the following announcement: "Fax notification is on." The system then proceeds to the main menu. If the subscriber chooses to exit the menu, in step 786 the system makes the following announcement: "Nothing changed." The system then proceeds to the main menu.

Referring again to step 781, if the facsimile message notification has been set, then in step 787 the system makes the following announcement: "Your current fax pager notification is on. Press 1 to turn off fax notification, or press 9 to exit this menu." Thus, the subscriber has two options: turn off facsimile message notification press 1, 790; or exit menu—press 9, 791. If the subscriber chooses to turn off facsimile message notification, then in step 792 the system makes the following announcement: "Fax notification is off." The system then proceeds to the main menu. If the subscriber chooses to exit the menu, in step 793 the system makes the following announcement: "Nothing changed." The system then proceeds to the main menu.

Referring again to step 740, if the subscriber chooses to exit the menu in step 794, the system then proceeds to the main menu.

While this invention has been described in detail with particular reference to preferred embodiments thereof, it will be understood that variations and modifications can be effected within the spirit and scope of the invention as described hereinabove and as defined in the appended claims.

We claim:

1. A method for routing a communication to a subscriber, comprising the steps of:

- (a) assigning a personal number to said subscriber;
- (b) receiving a first communication directed to said personal number;
- (c) accessing communication routing information in response to said first communication, said communication routing information including a list of destinations on the public switched telephone network, said list of destinations comprising a plurality of said destinations hierarchically arranged in order of subscriber preference for communication routing;
- (d) selecting the first destination on said list of destinations;
- (e) placing a further communication to said destination;

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(f) announcing at said destination the receipt of said first communication;

(g) receiving communication disposition information from said destination; and

(h) disposing of said first communication in accordance with said communication disposition information by either routine said first communication to said first destination or by selecting the next hierarchically arranged destination on said list of destinations and repeating steps (e) through (h) at said next destination.

2. The method of claim 1, wherein said list of destinations comprises a list of devices having calling line numbers, said devices comprising the following: telephones, mobile phones, cellular phones, voice mail systems, facsimile devices, and paging devices; and wherein said step of accessing communication routine information comprises accessing said list of devices having at least two said calling line numbers.

3. The method of claim 1, wherein said list of destinations comprises a first hierarchical list and a second hierarchical list, said first hierarchical list having destinations hierarchically arranged in order of subscriber preference for communication routing during a first period of time, said second hierarchical list having destinations hierarchically arranged in order of subscriber preference for communication routing during a second period of time.

4. The method of claim 3, wherein said first period of time is a first portion of a twenty-four hour period and said second period of time is a second portion of said twenty-four hour period.

5. The method of claim 3, wherein said first period of time is a first portion of a week and said second period of time is a second portion of said week.

6. The method of claim 1, wherein said communication routing information further comprises an override destination, and wherein said method further comprising the steps of:

prior to selecting said first destination on said list of said destinations, determining if a priority override is established;

if said priority override is established, then determining whether the source of said communication is a priority caller; and

if said source is a priority caller, then selecting and routing said communication to said override destination.

7. The method of claim 6, wherein said communication routing information further comprises a default destination, and wherein said method further comprising the step of:

if said source is not a priority caller, then selecting and routing said communication to said default destination.

8. The method of claim 7, wherein said subscriber has a voice mail service, and wherein said step of routing said communication to said default destination comprises routing said communication to said voice mail service.

9. The method of claim 2, further comprising the steps of:

accessing said communication routing information in response to receiving a call on a calling line from said subscriber; and

substituting a new destination for a destination in said list of destinations.

10. The method of claim 9, wherein said step of substituting said new destination comprises the step of requesting said subscriber for said new destination.

11. The method of claim 9, wherein said step of substituting said new destination comprises:

identifying the calling line number associated with said calling line; and

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confirming said calling line number as said new destination with said subscriber.

12. The method of claim 9, wherein said step of substituting said new destination in said list of destinations in said communication routing information comprises substituting an override destination for said destination in said list of destinations.

13. The method of claim 12, wherein said step of selecting said first destination consists of selecting said override destination.

14. The method of claim 12, further comprising the steps of:

determining whether the source of said communication is a priority caller, and

if said source is a priority caller, then selecting said override destination as said destination.

15. The method of claim 14, further comprising the step of:

if said source is not a priority caller, then selecting a default destination for routing said communication.

16. The method of claim 1, wherein said communication is initiated by a source, and further comprising the step of identifying the source of said communication.

17. The method of claim 16, wherein said step of announcing comprises announcing the identity of said source.

18. The method of claim 16, further comprising the step of requesting said source to confirm said identity.

19. The method of claim 16, wherein said step of identifying said source of said communication comprises the steps of:

identifying the calling line number associated with said source of said communication; and

determining said identity for said source by accessing a database to find a database entry corresponding to said calling line number.

20. The method of claim 19, wherein said step of announcing comprises announcing said identity obtained from said database.

21. The method of claim 19, wherein said database comprises a subscriber personalized database having entries of priority callers, and wherein said step of determining said identity comprises accessing said subscriber personalized database to find a priority caller entry corresponding to said calling line number.

22. The method of claim 21, wherein said step of announcing comprises announcing said identity obtained from said subscriber personalized database.

23. The method of claim 21, wherein said step of announcing comprises:

announcing the receipt of a priority call; and

announcing said identity obtained from said subscriber personalized database.

24. The method of claim 21, further comprising the step of automatically requesting said source to confirm said identity obtained from said subscriber personalized database.

25. The method of claim 1, wherein said step of selecting said destination comprises:

checking said communication routing information for a mobile telephone destination;

if said mobile telephone destination is present in said communication routing information, then checking for a powered-on indication of said mobile telephone destination; and

if said mobile telephone destination provides said powered-on indication, then selecting said mobile telephone destination as said first destination.

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26. The method of claim 1, further comprising the step of requesting said communication disposition information at said destination before said step of receiving said communication disposition information.

27. The method of claim 1, wherein said communication disposition information comprises an acceptance of said communication, and wherein said step of receiving said communication disposition information comprises receiving said acceptance.

28. The method of claim 27, wherein said communication disposition information comprises a rejection of said communication, and wherein said step of receiving said communication disposition information comprises receiving said rejection.

29. The method of claim 28, wherein said rejection comprises a failure to receive said acceptance.

30. The method of claim 1, wherein said communication disposition information comprises an acceptance of said communication, and wherein said step of disposing comprises routing said communication to said destination.

31. The method of claim 1, wherein said communication disposition information comprises a rejection of said communication, and wherein said step of disposing comprises routing said communication to a default destination.

32. The method of claim 31, wherein said default destination comprises a voice mail service, and wherein said step of routing said communication comprises routing said communication to said voice mail service.

33. The method of claim 31, wherein said rejection comprises a failure to receive an acceptance of said communication, and wherein said step of disposing comprises routing said communication to a second destination.

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34. The method of claim 31, wherein said rejection comprises a failure to receive an acceptance of said communication, and wherein said step of disposing comprises routing said communication to a default destination.

35. The method of claim 1, wherein said communication disposition information comprises a rejection of said communication, and wherein said step of disposing of said communication comprises;

selecting a second destination for routing said communication;

announcing at said second destination the receipt of said communication;

receiving second communication disposition information; and

disposing of said communication in accordance with said second communication disposition information.

36. The method of claim 1, wherein said communication directed to said personal number is received and routed by a service circuit node according to said list of destinations.

37. The method of claim 1, wherein the source of said communication hears ringing tones while said receipt of said communication is announced at said destination.

38. The method of claim 1, wherein if said communication is not routed to said first destination on said list of destinations, the source of the said communication is informed that another destination is being contacted.

39. The method of claim 1, wherein said subscriber can modify said order of said hierarchically arranged destinations.

* * * * *



EXHIBIT / ATTACHMENT

 B

(To be scanned in place of tab)

Premium Services:**1. CONSTANT TOUCH®**

With CONSTANT TOUCH service from the MVP system, your subscribers can have the mobility and accessibility they demand by consolidating all of their phone numbers (business, cellular, wireless messaging unit, fax, home and more) into one convenient number.

- "Meet Me" Services - Notifies a subscriber's wireless messaging unit that a caller is on hold. Subscribers can then go to any telephone and, from their mailbox, either take the call or transfer it to voice mail or a personal assistant.
- "Find Me" Services - Can automatically find a subscriber by dialing different devices according to the order and the

schedule that the subscriber has programmed into the system.

2. Fax Messaging

With Fax Messaging, subscribers can receive faxes in their mailbox and retrieve them when and where they want. They can also direct faxes to a machine of choice, so that even the most confidential information is in their control. Fax Messaging gives subscribers all the convenience, security and privacy they're looking for.

3. Voice Dialing

With this Glenayre feature, your subscribers can navigate and place a call from their mailbox using a wireline phone or mobile handset by simply speaking a pre-programmed name, telephone number or command. It's that easy. No numbers to remember; just tell the mailbox



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Products

Large Solution Platform (LSp)

Solution Platform (Sp)

Unified Messaging (UMS)

Short Messaging Service (SMS)

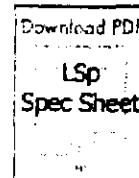
Customer Support

Training

Glenayre.net

Solutions for an @ctiveWorld™

LSp



The Glenayre Large Solution platform- Future-proof and Dynamically Scalable

Service providers today are under enormous pressure to balance the conflicting demands for new services with prudent capital investments. Designed to help service providers support the convergence of unified messaging, wireless and Internet technologies, the@ctiveMessaging platform provides one of the industry's most robust platform solutions available for delivering seamless, end-to-end unified communications. The Glenayre Large Solution platform, which supports up to 5 million subscribers and 6,000 ports, offers service providers a large subscribe configuration in a scalable network environment.

With the Large Solution platform, service providers can keep pace with new technologies required for unified communications on a platform that supports voice, fax, text and unified messaging applications, with system capacity that scales from 10,000 subscribers to millions.

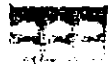
The Large Solution platform protects service provider's capital investments by combining the advantages of a modular, distributed architecture with the efficiencies of centralized provisioning, database, maintenance and new services deployment - a solution designed to never need forklift upgrades.

Key Features:

- All the revenue generating service applications of the Sp
- Concentrated SS7 signaling links with SGF
- Increased Capacity
- 6,000 ports, 5 million subscribers, 46,000 voice hours
- Scalability
- 200,000 to 5 million subscribers
- Independent scaling (subscribers vs. ports vs. voice storage)
- Common database & message store
- Single System Interface appearance for OAM&P
- Distributed Architecture
- Key Ethernet Redundancy
- Improved Reliability and Availability
- Redundant CPUs and network
- RAID disks for storage

Find out how to make your subscribers count for more on your bottom line. [E-mail](#) today for more information.

Glenayre Large Solution Platform



Scalable solution for a growing subscriber base

The Large Solution Platform from Glenayre delivers unmatched flexibility for carriers and service providers, combining the most desired and marketable subscriber features on a platform that protects the value of the equipment investment. The Solution platform offers a smooth migration path from small to large capacity with enhanced reliability, with maximum re-use of existing Glenayre equipment.

- Capacity for up to 5,000,000 subscribers, 6,000 ports and 46,000 voice hours.
- Scalable in increments – each component can be individually scaled for affordable expansion.
- Availability and reliability, with redundant processors and RAID disks.
- Reduced cost of ownership with centralized management, large trunk groups, consolidated SS7 signaling, shared database.
- Flexible Enhanced Service/Unified Messaging feature set that can expand as carrier's needs for additional services grow.

Capacity

The Large Solution Platform unifies and expands the subscriber database and message storage, and expands trunking capacity. The common database and message store has a total system capacity of 5,000,000 subscribers, over 46,000 voice hours, and up to 6,000 ports.

Scalability and Flexibility

Each platform element can be scaled independently: the trunks, SS7 links, subscriber capacity, message storage capacity and processors can be upgraded separately.

Reliability and Availability

At the heart of the Large Solution Platform is the common database and message store that allows carriers to separately scale voice hours and subscribers. The common database and message store consists of redundant CPUs in online/standby

configuration for reliability and availability, and RAID disks for secure, reliable storage of subscriber data.

Migration and Growth Path

Glenayre's migration path protects the carrier's investment, allowing for maximum re-use of equipment as features and capacity grows. The migration path allows a carrier to begin with a smaller installation, followed by scalable increases in functionality, database, message storage, and trunking capacity as desired. New features such as Voice Activated Services, fax services, and unified messaging can be introduced to extend service offerings. No load balancing or provisioning changes are required.

Reduced Cost of Ownership

As the system grows, efficiencies of scale mean reduced operating costs. A single trunk group of up to 6000 ports means increased trunk efficiency. Centralized management of subscribers, database, billing, alarms, and statistics increases operational efficiencies, and provides a single management point for each element in the network.

Enhanced Services/UMS

Voice Messaging features include:

- Messaging Notification
- Group Messaging
- Operator Revert to live assistant
- Family Mailbox
- Automated attendant/Bulletin boards
- Outdial from voice mailbox

Fax Messaging provides single-point fax receipt, storage and redirection capability.

Glenayre Constant Touch™ service for find-me, follow-me service.

Large Solution Platform Components

- Application Management Units (AMUs)
- Common Database and Message Store (CDMS) - Redundant Processors with RAID Storage
- Voice/Data Network Switches (VDNS)
- Command and Control Network Switches (CCNS)
- System Management Unit (SMU 2.3)
- X.9F Software

Optional Shared Resources

- Signaling Gateway (SGF)
 - Consolidated SS7 Links Into One DPC
 - Up to 48 Links per SGF
 - 2 SGFs (Redundant) Support 25 AMUs as One DPC
 - Economical After Two AMUs
- Shared Fax Server (SFS)
 - Up to 25 AMUs Supported
- Speech Recognition Server (SRS) - Voice Activated Services
 - Up to 8 AMUs Supported
- Unified Messaging Server - Unified Communications
- Future "Network" Services

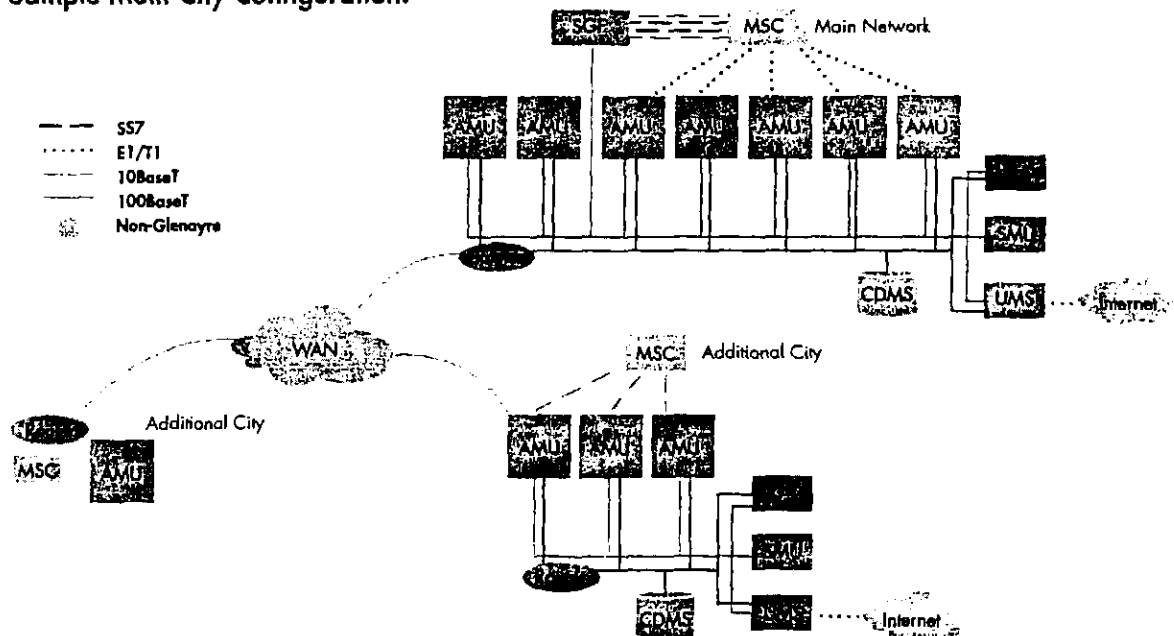
Configuration Summary

- Minimum Configuration
 - 2 AMUs
 - Common Database and Message Store (CDMS)
 - 1 Peripheral Cabinet with VDNS and CCNS
 - SMU 2.3
- Optional Resources
 - SGF - Competitive at 2 or more Solution platforms using SS7
 - SFS - Shared Fax Server
 - SRS - Voice Activated Services
 - UMS version 3.0 and Beyond

Specifications

Ports	480+ to 6000
Subscribers	500K to 5,000K
Voice Hours	4,000 to 46,000+
AMUs	2 to 25
Fax Server	1 Shared
Consolidated SS7	2 or More AMU's
Trunk Efficiencies	>7% Erlangs/AMU
Central Office Grade Availability	
Requires: X.9F and SMU 2.3	

Sample Multi-City Configuration:



North America
Atlanta 770 283 1000

Asia South
Singapore 65 483 8787

Latin America North
Mexico City 525 580 5150

www.glenayre.com

China
Beijing 86 10 6621 5599

Europe
Amsterdam 31 23 569 0500

Latin America South
Sao Paulo 55 11 3179 1300

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Solutions for an @ctiveWorld™



The Glenayre Solutions platform - More Revenue Generating Features from One Platform than Any Other

Glenayre's Solution Platform will give you all the basic services that your subscribers and new customers want today, PLUS powerful advanced services, such as fax, e-mail messaging and voice dialing, to keep them coming back for more.

Key Service Features:

- Call completion
- SMDI, SMS, outdial, and e-mail intelligent notification
- Multiple schedulable greetings
- Group messaging with broadcast lists
- Operator revert
- Automated attendant
- Bulletin board services
- Automatic callback
- Multi-user mailboxes
- Wake-up service
- Voice dialing
- Constant Touch™
- Fax mail

Our Solutions platform allows you to offer any number of services, in any combination, from a single platform ensuring you stay competitive in today's crowded marketplace. Our solution is simple. Instead of working with multiple vendors, Glenayre provides you with one complete system offering the most enhanced, value-added services and features you need to keep your business competitive today and in the future.

By offering the widest range of services available on a single platform you can address unlimited niches in consumer, corporate, small office/home office, and specialized market segments for maximum revenues in your wireless or wireline network.

Because the Solution platform is so flexible, you can easily modify and expand your service mix to target new niches and take subscribers up the value curve over time. And of course, Glenayre backs up the entire line of Solutions products with a highly trained support team eager to help you make the most of your enhanced services deployment.

Glenayre adheres to ISO 9001 standards for design and manufacturing. Our products use only the most reliable components, and helps lower operating costs by offering convenient Front Access to all major components, which can help minimize the time to repair and replace components. The world's leading cellular, GSM, CLEC, DCS, landline, ESMR, and PCS network

operators are currently generating more revenue with the @ctiveMessaging Sp than any other system.

Find out how to make your subscribers count for more on your bottom line. [E-mail](#) today for more information.



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Products

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Solutions for an @ctiveWorld™

UMS

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UMS
Spec Sheet

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UMS
Speech
Interface

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UMS
Web
Interface

The Glenayre Unified Messaging Solution - The Enhanced Services Deployment Method Of Choice

Glenayre's Unified Messaging Solution is a carrier-grade, end-to-end unified messaging package. The platform and application solution integrates all subscriber services on one scalable platform. Now you can merge message types-from wireless instant messaging to multimedia to legacy pager notification and faxing. You can bridge the various networks and protocols, and deliver voice and data messages wherever, and whenever your subscribers need them: to the home or office desktop, via the Internet, to a WAP phone, wireless PDA, or virtually any other device. And you can do it with an open, standards-based platform with the scalability to serve from thousands to millions of subscribers. You can meet today's messaging needs with an end-to-end solution with the adaptability and extensibility that will be required for tomorrow's high bandwidth applications. You can have it all, with Glenayre UMS.

Glenayre UMS subscriber features:

- **Intuitive, platform-independent Web interface**
 - Read, reply, create, forward, or delete e-mail
 - Read, forward or delete faxes; send e-mail to fax number
 - Collect e-mail from external POP3 and IMAP4 mailboxes
 - Play, forward or delete voice mail
 - Group messaging, broadcast messaging, passwords, greeting schedules, out-dial service, and one-number service
- **Visual mailbox for USSD and WAP-enabled phones**
 - Read, reply, create, forward, or delete e-mail
 - Play, forward or delete voice mail
 - Read, forward or delete faxes
- **Voice interface and text-to-speech for mobile freedom**
 - Listen to e-mail messages on the phone, and reply by voice
 - Use voice commands to dial and navigate the mailbox
- **Powerful call management**
 - Use one contact number for all voice and fax calls
 - Send message-waiting notification to pager, mobile phone, or other devices, with scheduling feature
 - Send call delivery to a live attendant (operator revert).
- **...and more features arriving in upcoming Unified Communications Services (UCS) upgrades.**

Find out how to make your subscribers count for more on your bottom line. [E-mail](mailto:info@glenayre.com) today for more information.

Glenayre UCS Solutions

Glenayre UCS is the premiere unified communications solution for converging voice, data and Internet applications. Designed to make human communications easier for active users, the platform allows subscribers to manage voice mail, e-mail, and fax messages from multiple devices through a single, unified inbox.

Subscribers have multiple options to access their mailbox:

- Using a voice interface with natural language commands
- Via a Web-based graphical user interface
- Through any Wireless Application Protocol (WAP) handset
- Via USSD for GSM services
- Or with any telephone

The Glenayre UCS platform provides benefits to both service providers and their subscribers. Service providers using Unified Communications can provide the value-added services that subscribers are demanding, while differentiating themselves from competitors and gaining additional revenue streams.

Glenayre UCS Features Include:

- A single inbox for voice, e-Mail and fax messaging
- One-stop e-mail collection (retrieve e-mail from external POP3 and IMAP4 servers)
- One contact number for wired and wireless voice and fax
- Wireless Web (WAP/USSD) visual mailbox access
- Spoken delivery of e-mail messages (text-to-speech) for telephone access to e-mail
- Voice dialing, voice-controlled mailbox navigation and management
- Easy Web interface for notification lists, greeting schedules, voice-activated dialing directory, personal assistant, out-dial number and one-number service
- Message-waiting notification to pager, mobile phone or other devices, with scheduling
- Group messaging
- Broadcast messaging
- Operator revert (for call delivery to a live attendant)

www.glenayre.com

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Sao Paulo 55 11 3179 1300



@ctiveVision™ UMS Voice Activated Services

Subscribers are demanding the convenience of value-added services made possible by advances in automated speech recognition technology. Service providers using the Glenayre @ctiveVision UMS platform can meet these demands by providing their subscribers with convenient access to their unified mailbox with Voice Activated Services.

Voice services for the Glenayre @ctiveVision UMS platform include hands-free voice dialing and management of voice mail, e-mail and fax messages using the latest speech recognition technology.

Glenayre services are housed on a robust, carrier grade speech server featuring natural language speech recognition. With natural language, there is no need for subscribers to train the system to recognize their voice or learn specific voice commands. Using the system is as easy as talking on the phone.

Accessing Voice Activated Services is simple. When users dial into their voice mail box, they are prompted to enter their password to access the Voice Activated Services main menu, or they can press "00" to access messages through the keypad. Once at the main menu, subscribers have access to all message management functions for e-mail, voice mail and fax messages, as well as their Address Book. Users can place calls directly from the Voice Activated Services system without disconnecting from VAS.

Use Voice Activated Services to:

- Manage voice mail
- Compose messages
- Manage e-mail
- Dial by Voice
- Manage Fax Messages
- Access the Address Book

Managing Voice Messages

Managing voice mail using voice commands is easy for subscribers. Users talk in natural language, giving commands such as "play my messages" or "play voice mail." By talking to the system, subscribers can:

- Play, Save, Delete, or Repeat messages
- Move to the Next or Previous message
- Return a call using the caller's ANI or prompted "callback number" entry
- Reply to a message by sending a message back to the originating mailbox or to a mailbox addressed by the subscriber.
- Forward or Redirect messages to one or more mailboxes in the subscriber's address book. Users can record and attach their comments to the message being forwarded. (*Note: private or confidential messages cannot be forwarded.*)

Message Composition

The Compose function enables the user to record and send a voice message to one or more numbers in the subscriber's Address Book. The subscriber has the option to Edit, Delete, Review and re-record the message they are composing. The user can immediately send their message.

Managing e-mail

Voice Activated Services allow users to manage e-mail via a text-to-speech (TTS) engine with voice commands such as "check my e-mail" or "play my e-mail." Compose and Send functions enable the user to record a voice message to be sent as an audio file attachment to an e-mail.

When the subscriber asks to listen to e-mail messages, a message header can be read. The header provides the date and time the message was sent, delivery options (i.e. "urgent"), originator and subject line.

Subscribers can manage their e-mail messages using voice commands to Play, Save, Delete, or Repeat messages, move to the Next or Previous message, Forward or Redirect and Reply, regardless of whether they are playing message headers, body text or attachments. (The subscriber can play contents of an attachment provided the attachment is either a .wav or .txt file type.)

Voice Dialing

Voice Dialing functionality eliminates the need for the user to interact with the keypad, unless they specifically wish to designate a number using DTMF.

Voice Dialing can be initiated by speaking a name from the address book or a phone number. Multiple phone numbers may be supported for each directory entry such as Home, Work and Mobile numbers.

Managing Fax Messages

Subscribers can manage fax messages using the latest text-to-speech technology and via voice commands such as "read my fax messages" or "play my faxes."

When the subscriber first requests the fax messages be played, the Voice Activated Services will play a fax message header containing the following information: the date and time of the message, delivery options, and originator. After the header information is presented, the subscriber has the option to print, save or delete the fax message. To print, the user forwards the message to a fax machine to be printed.

Other fax functions include:

- Move to the Next or Previous message
- Forward or Redirect fax messages

Address Book

The Address Book is accessible for all types of message addressing including voice, e-mail and fax messages as well as access to originate a call with voice dialing. The Address Book has two interfaces: Voice User Interface and a Web-based interface.

The address book contains information that can be stored, edited, searched and retrieved through Voice Activated Services. Names and phone numbers in the address book can be added, changed, deleted or reviewed. Users can access listings in their address book by name, other, home number, work number, mobile number, fax number, pager, voice-mail box number.

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Atlanta 770.283.1000

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Asia South
Singapore 65.483.8787

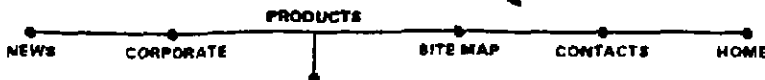
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MVP System

The widest range of revenue-generating enhanced services

ENHANCED SERVICES FOR NETWORKS

MVP Systems

MVP 2120

MVP 4240

Value-added Services

Marketing Advantage

Partners Program

openMEDIA

Customer Service



QUICK SEARCH

Search options



Enhanced and Value-added Services

Glenayre offers the widest selection of services for every subscriber's needs.

Basic services:

1. Voice Messaging

There are many basic applications you can offer to your new subscribers, such as Universal Mailbox and Call Answering. Each of these applications allows you to offer basic enhanced services to satisfy any market segment.

2. Operator Revert

With Operator Revert, callers can transfer out of voice mail to the subscriber's personal assistant or to another phone number designated by the subscriber.

3. Pager Notification

With Pager Notification, subscribers are alerted when a message is waiting. Using intelligent protocols, your subscribers will be informed via pager of the number and types of messages waiting in their mailbox. This includes faxes and urgent messages.

4. Short Message Service

This service delivers text messages to a mobile phone and/or pager. Intelligent message-waiting capabilities show the number and types of messages, in addition to pre-recorded short messages. Custom messages can be sent to a subscriber via a WWW interface and/or e-mail.

5. Direct Dial

With Direct Dial, subscribers can make multiple calls directly from their mailbox without hanging up and getting a new dial tone after each call.

6. Automatic Callback

With Automatic Callback, subscribers can return important calls right from their mailbox. The Calling Line Identification number is captured while the

caller leaves a message. A phone call can be returned quickly and conveniently with a few key strokes, directly from the mailbox.



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● Glenayre Versera™ Solutions

Under its Versera™ brand, Glenayre offers a wide and growing range of products that share a common goal: making success simple for you in today's complex competitive environment. Glenayre is here to help you set yourself apart from other communications service providers and avoid profit-draining customer churn by making it easy to deliver exactly what subscribers want, when they want it. Offering the ultimate flexibility of open and affordably scalable standards-based architecture, our products include:

- Versera Messaging Solutions: Everything your subscribers need to stay in touch
 - Voice & Fax messaging
 - Constant Touch® one-number services
 - Call Out™ 1-key call return
 - My language application
 - Integrated Short Message Service (ISMS)
- Versera Voice Services Suite: Putting the power of the spoken word to work
 - Dial-by-voice
 - Voice control of My Contacts
 - Voice navigation of voice mail, e-mail, and Unified Communications services
 - Personal Conference™ service
 - Voice Instant messaging
- Versera Unified Communications Suite: A complete package of services for total customer satisfaction

- My Mailbox integration of voice, fax, e-mail
- My Contacts address book
- Voice, Web, WAP, USSD interfaces
- Click-to-Talk Internet call return
- My Services web-base personalization tool
- Versera Multimedia Messaging: Keeping up with subscribers and ahead of the crowd
 - Multimedia Messaging Service Center (MMSC)
 - Person-to-Person Multimedia Messaging
 - Photo albums, greeting cards and other popular applications
- Versera Professional Services: Dependable support for a solid relationship with our customers
 - GlenayreCARE
 - The Strategist Program
 - Glenayre Technical Training

Each product suite operates on the Versera Dynamic Architecture – our fully integrated, modular platform. Flexible and scalable, Versera Dynamic Architecture cost-effectively meets your subscribers’ demands for next-generation communications. Versera takes the effort out of service deployment, by letting you sell personalized, bundled offerings with unrivaled subscriber capabilities. This layered approach allows you to quickly and easily introduce new applications to your subscribers moving them further up the services value chain.



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● Versera™ Messaging Solutions

For solid voice and fax messaging services, Glenayre really delivers. Our Versera™ Messaging Solutions are at work around the world for communications service providers of all sizes. Glenayre makes it simple to offer features like:

- Voice messaging
 - Call answering
 - **Call Out®** one-key call return
 - Find Me/Follow Me serviceConstant Touch®
 - one-number service
 - Extensive, intelligent notification methods
- Business services
 - Group broadcast
 - Automated attendant
 - Group message forwarding
 - Bulletin Boards
 - Fax messaging
 - Never busy fax
 - Virtual office fax
- Integrated SMS notification (ISMS)
- *My Language* personal selection application

Earn more revenue from a single platform

Versera Messaging Solutions are carrier-grade, easy to operate and scale to meet the demands of telecom service providers. Our intimate knowledge of service providers' needs and expectations has led to products that deliver the lowest total cost of ownership from purchase through upgrade.



Messaging brochure view (1.66mb) | download (1.64mb)



**Glenayre –
Simply the Ultimate
Communications
Experience**



Glenayre.



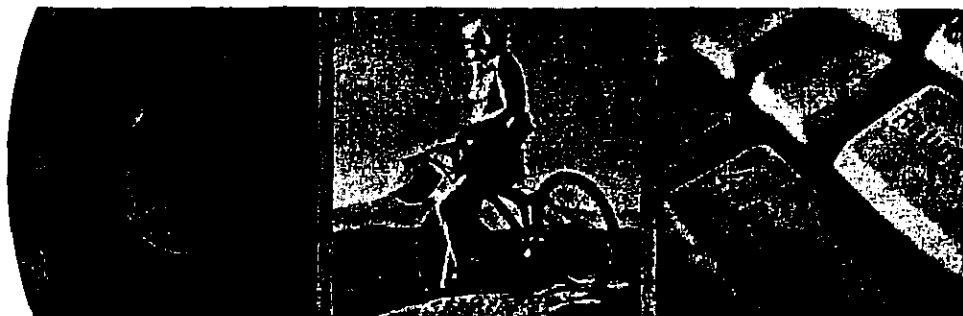
Technology Can Make the Unimaginable Possible.

But it Takes the Right Company to Make it Simple.

Rapidly changing technology is just the beginning. Add intense competition, increasing subscriber churn and downward pressures on pricing and it's clear that there are no easy answers in today's world of communications. Fortunately, there is a company that can help service providers and their customers make sense of all this complexity by delivering messaging and communications solutions that harness the power of technology and are still elegant in their simplicity.

Glenayre knows where possibility and profitability intersect. We know there's a smart way to use technology to achieve bottom-line results. That's why we are committed to helping service providers increase their revenues and build subscriber loyalty with solutions that include:

- Voice, fax and e-mail messaging
- Enhanced services
- Unified communication
- Voice services and voice portals
- Multimedia messaging



smart, simple
solutions

We've Been Making Communications Easy for 40 Years

More than 200 service providers in 60 countries trust Glenayre because we're experts in messaging and communications applications with a solid history of translating complex technologies into simple, revenue-generating solutions for communications service providers all over the world. Glenayre has the proven, real-world experience our customers need to make their enhanced services and messaging solutions a profitable part of their businesses.

The experience Glenayre has gained through years of working side-by-side with communications service providers gives us invaluable insight to the unique challenges and objectives associated with today's dynamic communications industry. We understand the difference between the promise of technology, and promises fulfilled. We've built Glenayre solutions to deliver the right product — at the right price — so our customers succeed.

It's All About Customer Success

Ours is a timeless, customer-centered philosophy founded on the belief that innovation and technology are simply tools to help our customers succeed. We know that our customer's success is the best way to build our business, and a singular focus on solutions that help our customers get ahead is the driving force behind everything we do.

We listen, and learn. Working closely with our customers to understand their needs has enabled us to take customer suggestions from "desired" to "delivered" — with outstanding results. This approach makes it possible for Glenayre to create the products that service

providers — and their customers — really want. Glenayre customers benefit from this close relationship as we draw on our experience to balance the needs of our customers with technological possibilities.



The Simplest Solution: A Personal Communications Portal

Subscribers want it all. And now service providers can deliver with a Personal Communications Portal, a unique set of services joined through a single base of control which can be personalized by the user to fit their individual needs.

The personal communications portal gives subscribers a choice of easy-to-use services, accessible with a variety of user interfaces, that can be managed as an integrated solution for all of their communications needs. This type of solution creates a bond between service providers and their customers that helps reduce churn and capture more revenue as subscribers centralize their services with a single provider.

Based on modular, carrier-grade applications from Glenayre that support both circuit-switched and IP telephony in networks from 2G to 3G and beyond, the personal communications portal gives service providers the ultimate in flexibility. Providers can select and package their choice of solutions to create an offering that can evolve as their business or markets change. Glenayre Versera solutions deliver the sustainable competitive advantage of a personal communications portal by allowing the provider to quickly respond to a variety of subscribers with packages of services that address needs of various demographic groups, regions or other market segments.

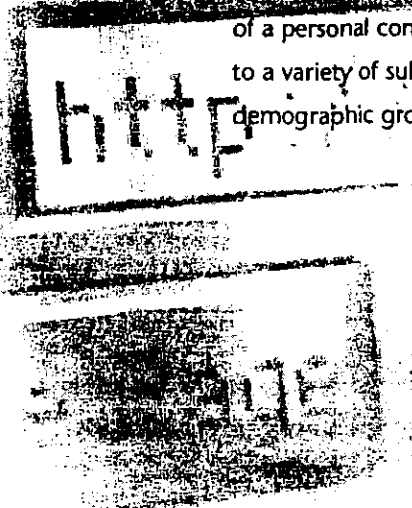
A variety of services:

- Voice, text, video, and data communications
- Personalized content and applications
- Location-based services
- Mobile commerce
- Multimedia and entertainment

A variety of user interfaces:

- Voice-activated, menu-driven, touch-tone
- Web browser, text-based, and graphical
- Web, WAP, and other

**Together in one place —
the Personal Communications PortalSM**



Glenayre Versera™ Solutions put Command and Control Where They Belong

With our flexible, standards-based approach, Glenayre gives service providers the control they need to adapt in today's competitive environment. At the same time, we give unprecedented command and control capability to subscribers so they can manage many of their own personalization needs without creating a burden on the service provider's customer support organization.

Users demand control over their services — they want to manage where and when they can be reached, select the information and features they want, and to tailor how each feature works for them.

With Glenayre solutions, service providers can differentiate their business and break the costly cycle of subscriber churn by offering their subscribers a variety of highly-desirable services. These solutions, offered by Glenayre under the Versera™ brand, include a comprehensive selection of communications services such as voice, fax and e-mail messaging, voice-controlled services and unified communications applications that make it easy for people to control how, when and where they communicate.

Glenayre Versera solutions are designed to be flexible building blocks that service providers can use to create a Personal Communications Portal offering. By combining solutions from different Versera portfolios, service providers can create unique, targeted packages of services for their individual markets. Monthly service fees and, for wireless providers, increased minutes of use (MOUs) to access these services drive increased revenues. At the same time, because Versera solutions

let service providers tailor their offerings to the needs of specific markets with high-value, in-demand services, Versera solutions help build subscriber loyalty by delivering what their subscribers want, when they want it.

Solutions

- Voice Mail, Greeting, Forwarding
- Web-based Messaging
- Mail Forwarding and Mailbox Management
- Mail Out™ (Text-to-Mail™)
- Mail-to-Web Application
- Integrated Short Message Service (SMS)
- Voice Mail by Web/PC Interface
- Mail by Voice
- Voice Control of My Contact
- Voice Navigation of voice, e-mail, fax and Web services
- Voice Portal/Information Service
- Personal Conference Services
- Voice Instant Messaging

Versera Unified Communication Suite

- My Mailbox integration of voice, fax and e-mail
- My Contact address book
- Voice Web/WAP and USSD interface
- Call transfer, forward and return
- My Services web-based personalization tool

Versera Multimedia Messaging

- Multimedia Call Completion
- Multimedia to Web communication services
- Multimedia Message Store

Versera Professional Services

- The Strategist Program
- Glenayre Care
- Glenayre Technical Training
- Speedy Migration Service

Glenayre helps communications service providers clearly differentiate themselves by delivering what their subscribers want when their subscribers want it.

The Versera Solutions Architecture

Glenayre systems are built using best-of-breed building blocks like Intel® hardware and the Linux® operating system to create an open and standards-based architecture supporting both IP and circuit-switched telephony networks for a graceful evolution from 2G to 2.5G and 3G services. Our flexible, proven architecture meets the demands of thousands of users and affordably scales to support millions of subscribers. Glenayre solutions support industry standards such as VoiceXML and SALT, to harness the power of speech for voice-driven services.

Versera solutions can be quickly deployed in a service provider's network to start generating revenue as soon as possible. In addition to integrating easily with existing platforms, new offerings from Glenayre and third-party applications can be added in the future to further expand the capabilities of the personal communications portal.

Glenayre architecture ensures that today's solutions will be compatible with new capabilities as business grows, so service providers are assured of a simple, affordable migration strategy as demand evolves.

Dependable Professional Services

Glenayre and communications service providers alike are in the business of serving people's needs. Our customers consistently give us high marks for customer satisfaction — largely driven by our customer support and other customer-facing teams. We are not just delivering the right products with the right support. Our person-to-person and business-to-business relationships drive our customer's satisfaction. Glenayre's people understand our customers —and it's this understanding that delivers great customer support.

Marketing Support Helps Drive Revenue and Reduce Costs

Since 1993, Glenayre has provided strategic marketing services to its customers to make the process of launching new solutions easier —and more profitable. Our dedicated marketing support team, and our first-hand knowledge about the most successful ways to unleash the potential of our solutions help service providers to make the most of their investments. Through Glenayre's marketing Strategist Program, we show our customers how to customize and launch new services with high initial adoption rates, and how to continue marketing these services to build loyalty among their subscribers.



With the Strategist program, service providers can reduce their overall deployment costs and get to market faster by working with industry experts whose hard-won lessons and knowledge help to:

- Determine the best service packaging strategy for each market.
- Localize services to meet end-user needs.
- Use proven methods for a successful launch of service products, including sales scenarios, PR opportunities and telemarketing know-how.
- Generate sales collateral materials in a fraction of the time it would take to create from scratch.
- Ensure that the knowledge needed to implement successfully is retained in the organization through specialized training programs.

Glenayre Care

Glenayre has a strong commitment to supporting its customers through all phases of product ownership. To ensure that our customers achieve the highest level of carrier-grade functionality from Glenayre solutions, we provide extended warranty support through our Glenayre Care support program, as well as resources for localization, installation, project management of turnkey systems, training and service.

Glenayre Technical Training

To keep our customers current on the latest technologies in Glenayre systems, we provide technical training on maintenance, support and other topics through Glenayre Technical Training programs.



break the cycle of churn

Glenayre - The Ultimate Communications Experience

Glenayre is a global leader in open, standards-based communications solutions that accelerate communications service providers' deployment of rapid, revenue-generating, next-generation services.

More than 200 service providers including mobile, fixed network, ISP and broadband in 60 countries trust Glenayre. For nearly 40 years, communications service providers have deployed Glenayre next-generation services including voice, fax and e-mail integration, voice activated services, one-number services, peer-to-peer messaging, mailbox out-dialing and one-touch call return over traditional and IP telephony networks.



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MKT200EN0202



Messaging Solutions



The Message Solution That Features More

It's not just hype. You really can have the greatest number of revenue-generating services on a single platform with Versera™ Messaging Solutions.

Messaging and enhanced services have been Glenayre's strength for decades. Dedication to our customers has led to the creation of one of the most solid voice mail and fax messaging solutions available today. The design has been crafted over time to fulfill the exacting needs of the service providers who trust us with their most prized possessions – their network and their reputation for quality service. Compare every voice messaging solution and the message is clear: Glenayre gives you more.



• • • • •
For communications service providers, it is no longer a question of whether you need voice messaging services. The question is who is the best choice.

Versera Messaging Solutions offer the lowest total cost of ownership for carrier-grade voice mail and a wealth of enhanced services features. From our range of platform configurations, we have a solution for communication service providers of all sizes, including:

- Mobile operators
- Wireline telephony providers, including PTTs
- Broadband and digital cable providers like MSOs and ISPs
- Vertical market service bureaus

Versera Messaging Solutions provide:

- Basic voice mail and advanced messaging services and features
- Fax messaging that can be deployed in a variety of ways
- **Call Out™** one-key call return for real-time call control
- The original find-me/follow-me application: **Constant Touch®** one-number service
- Integrated SMS notification without an external SMSC

Messaging Without Boundaries

Versera Messaging Solutions deliver the ultimate in flexibility for the service provider and the end user alike. With an ever-expanding variety of features that can be mixed, packaged and deployed in unique service bundles, you can offer subscribers and enterprises unique and highly targeted communication solutions.

Offering the messaging services your customers want most leads to increased subscriber growth and services uptake. Our adaptable Messaging Solutions easily expand to meet this growth. Trunk, storage, processing and subscriber capacity are all individually scalable, so you can manage your growth simply and affordably.

Versera Messaging Solutions provide a foundation for interchangeable elements that perform as a single system based on the Versera Dynamic Architecture. Highly reliable, scalable and flexible, Versera Messaging Solutions will be a lasting investment.

At Glenayre, we understand your needs change with technology and time. With each new development, we keep your Versera investment alive with maximum equipment reuse, backward compatibility and clear migration paths. Our strict adherence to standards-based engineering is a key element in providing you with long-lived value for your investment. Our solutions interact using all common protocol and transport methods – from SS7 to VPIM to IP.



an old favorite

Distinguishing Features of Versera Messaging Preferred User Interface

- The **My Language** application lets subscribers select their preferred language, choosing from up to eight simultaneously deployable options.
- Several DTMF keypad interfaces are available to emulate the voice mail style you and your subscribers want.
- Integrated SMS (ISMS) lets you offer SMS message notification without an external SMSC, a large cost savings for most operators.

Efficient, Functional System Elements

- A common database and message store (CDMS) provides shared subscriber data across the entire network. This simplifies maintenance by helping you avoid moving subscriber records and limits extensive work for adding classes of service.
- The Signaling Gateway Function (SGF) consolidates SS7 links, significantly reducing the labor costs generally associated with deploying and maintaining SS7 links.
- Sharing the fax server resources across the network replaces the inefficiency and added expense of node-specific fax servers.
- Single system operations, management, administration and provisioning provided by the system management unit (SMU) assures a common view of all Versera functions, network-wide.

Messaging Platform Options

IVMP System

- Single point of single location solution
- Handles 200,000 calls per hour
- Support system

Subscriber Platform

- A single platform that can handle IVMP to a subscriber application management (AM) to provide up to 200,000 calls per hour, 24x7x365
- Supports over 100,000 subscribers per hour
- Can handle over 100,000 calls per hour
- Utilizes a distributed architecture

Network Integration Platform

- Distributed network architecture
- Supports over 2 million subscribers
- Single system view of distributed shared resources
- Make the configuration WAN capable

Trust Glenayre for Enhanced Services

When it comes to messaging and enhanced services, no one matches Glenayre for quality and service. Our reputation for excellence comes from years of experience satisfying our customers' needs for messaging and enhanced services. Contact us to make the most of your messaging services.

Voice messaging—
delivering new revenues.



**More Than 200 Service Providers in Over
60 Countries Trust Glenayre**

For 40 years, communications service providers have deployed Glenayre's revenue-generating enhanced services including voice, fax and e-mail messaging, voice-activated services such as voice dialing and voice navigation and unified communications with real-time control like one-touch call return. Glenayre's customer-centric design creates solutions that run on open platforms with a standards-based architectures, supporting IP and traditional telephony networks.

Customer Focus Centers

North America

Atlanta 770 283 1000

Latin America North

Mexico City 52 55 5580 5150

Latin America South

Sao Paulo 55 11 3061 1422

China

Beijing 86 10 8525 1100

Asia

Singapore 65 6 483 8787

Europe, Middle East and Africa

Amsterdam 31 23 569 0500

Versera™

Messaging Solutions

www.Glenayre.com

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EXHIBIT / ATTACHMENT

 D

(To be scanned in place of tab)



**BellSouth Intellectual Property
Marketing Corporation**
Suite 900
1155 Peachtree Street, N.E.
Atlanta, GA 30309-3610

William A. Hartselle
Director - Patent Licensing

404 249-2461
Fax (404) 249-2822
bill.hartselle@bellsouth.com

December 6, 2001

Kevin A. Cranman, Esq.
Glenayre Electronics, Inc.
11360 Lakefield Drive
Duluth, GA 30097

Dear Kevin:

As Scott and Michael mentioned last week and as I mentioned in my voice mail message to you on Wednesday, BellSouth owns numerous patents relating to voice messaging technology including U.S. Patent Nos. 5,764,747, 5,857,013, 5,937,050, and 5,363,431. We have determined that Glenayre's Large Solution platform (LSp), Solution platform (Sp), Unified Messaging Solution (UMS), and Unified Communications Solution (UCS) are covered by these BellSouth patents, and we would like to discuss licensing arrangements for these patents.

Specifically, we believe BellSouth's '747 patent covers the Constant Touch/Find Me feature, and the '013 patent covers the Automatic Callback feature, of Glenayre's LSp, Sp, UMS, and UCS. We further believe that the '050 patent covers the Pager Notification feature of Glenayre's UMS and UCS, and the '431 patent covers the message waiting indication features of these Glenayre systems. I have enclosed a copy of each patent, claims charts, and documentation regarding the particular Glenayre products that demonstrates how each is covered by the respective patents.

I am hopeful that we can discuss this matter expeditiously to arrive at a mutually-beneficial resolution. I will contact you within a couple weeks to make sure you received this packet and to answer any questions that you might have. At that time, we can also set a timetable for negotiating a resolution.

Very truly yours,

A handwritten signature in cursive script that reads "William A. Hartselle".

William A. Hartselle
Director-Patent Licensing

Enclosures

CLAIM CHART FOR U.S. PAT. NO. 5,764,747
and
GLENAYRE'S CONSTANT TOUCH SERVICE
(for LSp, Sp, UMS, and UCS)

Claim 1. A method for routing a communication to a subscriber, comprising the steps of:	Constant Touch locates a user at multiple locations
(a) assigning a personal number to said subscriber;	With Constant Touch, subscribers consolidate all of their phone numbers into one convenient number
(b) receiving a first communication directed to said personal number;	Callers call subscriber's personal number
(c) accessing communication routing information in response to said first communication, said communication routing information including a list of destinations on the public switched telephone network, said list of destinations comprising a plurality of said destination hierarchically arranged in order of subscriber preference for communication routing;	The subscriber defines the order and schedule of the different devices at which the subscriber can be reached
(d) selecting the first destination on said list of destinations;	Find Me selects the first number from the list of subscriber-provided phone numbers
(e) placing a further communication to said destination;	Find Me dials the different devices according to the order programmed by the subscriber
(f) announcing at said destination the receipt of said first communication;	Caller announcement is common in one number systems
(g) receiving communication disposition information from said destination; and	Call screening is common in one number systems
(h) disposing of said first communication in accordance with said communication disposition information by either routing said first communication to said first destination or by selecting the next hierarchically arranged destination on said list of destinations and repeating steps (e) through (h) at said next destination.	Find Me dials the different devices sequentially in the order programmed by the subscriber

CLAIM CHART FOR U.S. PAT. NO. 5,857,013
and
GLENAYRE'S AUTOMATIC CALLBACK
(for LSp, Sp, UMS, and UCS)

Claim 1. A method for disposal of a voice mail message for a subscriber using a mobile telephone, said voice mail message having been received on a first calling line from a source, comprising the steps of:	Automatic Callback is available for mobile subscribers
accessing a voice mail service in response to an instruction from said subscriber received on a second calling line from said mobile telephone;	Subscriber calls into voice messaging service from a mobile telephone
playing said voice mail message for said subscriber;	Inherent feature of voice mail systems
receiving a call back indication from said subscriber;	A phone call can be returned quickly and conveniently with a few key strokes, directly from the mailbox
automatically generating a call to the calling line number associated with said first calling line in response to said call back indication from said subscriber; and	The Calling Line Identification number is captured while the caller leaves a message Subscribers can return important calls right from their mailbox
connecting the subscriber to said first calling line if said call is successful.	Subscriber's are connected to the CLI number
Claim 18. A method for returning a plurality of voice mail messages for a subscriber by a voice mail service residing within a telephone network platform, comprising the steps of:	See above for Claim 1
receiving a first communication with a voice mail message for said subscriber on a first calling line;	
recording said calling line number in a database associated with said network platform	
receiving a second communication with a request from said subscriber to play said voice mail message;	
playing said voice mail message for said subscriber;	
receiving a call back indication from said subscriber;	
retrieving said first calling line number from said database associated with said network platform;	
automatically generating a third communication to the calling line number associated with said first calling line; and	
connecting said subscriber with said calling line associated with said first calling line number if said call is successful.	

CLAIM CHART FOR U.S. PAT. NO. 5,937,050
and
GLENAYRE'S PAGER NOTIFICATION
(for UMS and UCS)

Claim 1. A method for handling the receipt of a facsimile transmission to a subscriber, comprising the steps of:	UMS receives faxes
(a) receiving said facsimile transmission on a first calling line, said facsimile transmission comprising source information;	Inherent feature of standard fax services
(b) obtaining said source information;	Obtaining source information from the fax is a standard feature of fax services
(c) storing said facsimile transmission;	UMS stores the received fax for later retrieval by subscriber
(d) notifying said subscriber of said receipt of said facsimile by paging said subscriber; and	Pager Notification provides pager notification for received faxes
(e) providing said subscriber with said source information.	Providing source information is a standard feature of pager notification services

CLAIM CHART FOR U.S. PAT. NO. 5,363,431
and
GLENAVRE'S MESSAGING WAITING INDICATOR
(for LSp, Sp, UMS, and UCS)

<p>Claim 22. A method for use with a telephone switching network which is responsive to telephone subscriber locations for providing telephone connections for said telephone subscriber locations including connections to a <i>voice message system, comprising:</i></p>	<p>Glenayre's voice mail system is connected to the telephone switching network</p>
<p>generating a message waiting indicator request signal associated with a particular subscriber location, said message waiting indicator request signal indicating that said voice message system contains a message;</p>	<p>Glenayre's system generates a message waiting indicator (MWI) signal that indicates the voice mail system contains a message</p>
<p>and based on said message waiting indicator request signal, establishing a suppressed ringing connection through said telephone switching network to the particular subscriber location associated with said message waiting indicator request signal.</p>	<p>The telephone network establishes a suppressed ringing connection with the subscriber location associated with the MWI signal.</p>



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Solutions for an @ctiveWorld™

LSp

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LSp
Spec Sheet

The Glenayre Large Solution platform- Future-proof and Dynamically Scalable

Service providers today are under enormous pressure to balance the conflicting demands for new services with prudent capital investments. Designed to help service providers support the convergence of unified messaging, wireless and Internet technologies, the@ctiveMessaging platform provides one of the industry's most robust platform solutions available for delivering seamless, end-to-end unified communications. The Glenayre Large Solution platform, which supports up to 5 million subscribers and 6,000 ports, offers service providers a large subscribe configuration in a scalable network environment.

With the Large Solution platform, service providers can keep pace with new technologies required for unified communications on a platform that supports voice, fax, text and unified messaging applications, with system capacity that scales from 10,000 subscribers to millions.

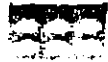
The Large Solution platform protects service provider's capital investments by combining the advantages of a modular, distributed architecture with the efficiencies of centralized provisioning, database, maintenance and new services deployment - a solution designed to never need forklift upgrades.

Key Features:

- All the revenue generating service applications of the Sp
- Concentrated SS7 signaling links with SGF
- Increased Capacity
- 6,000 ports, 5 million subscribers, 46,000 voice hours
- Scalability
- 200,000 to 5 million subscribers
- Independent scaling (subscribers vs. ports vs. voice storage)
- Common database & message store
- Single System Interface appearance for OAM&P
- Distributed Architecture
- Key Ethernet Redundancy
- Improved Reliability and Availability
- Redundant CPUs and network
- RAID disks for storage

Find out how to make your subscribers count for more on your bottom line. [E-mail](#) today for more information.

Glenayre Large Solution Platform



Scalable solution for a growing subscriber base

The Large Solution Platform from Glenayre delivers unmatched flexibility for carriers and service providers, combining the most desired and marketable subscriber features on a platform that protects the value of the equipment investment. The Solution platform offers a smooth migration path from small to large capacity with enhanced reliability, with maximum re-use of existing Glenayre equipment.

- Capacity for up to 5,000,000 subscribers, 6,000 ports and 46,000 voice hours.
- Scalable in increments – each component can be individually scaled for affordable expansion.
- Availability and reliability, with redundant processors and RAID disks.
- Reduced cost of ownership with centralized management, large trunk groups, consolidated SS7 signaling, shared database.
- Flexible Enhanced Service/Unified Messaging feature set that can expand as carrier's needs for additional services grow.

Capacity

The Large Solution Platform unifies and expands the subscriber database and message storage, and expands trunking capacity. The common database and message store has a total system capacity of 5,000,000 subscribers, over 46,000 voice hours, and up to 6,000 ports.

Scalability and Flexibility

Each platform element can be scaled independently: the trunks, SS7 links, subscriber capacity, message storage capacity and processors can be upgraded separately.

Reliability and Availability

At the heart of the Large Solution Platform is the common database and message store that allows carriers to separately scale voice hours and subscribers. The common database and message store consists of redundant CPUs in online/standby

configuration for reliability and availability, and RAID disks for secure, reliable storage of subscriber data.

Migration and Growth Path

Glenayre's migration path protects the carrier's investment, allowing for maximum re-use of equipment as features and capacity grows. The migration path allows a carrier to begin with a smaller installation, followed by scalable increases in functionality, database, message storage, and trunking capacity as desired. New features such as Voice Activated Services, fax services, and unified messaging can be introduced to extend service offerings. No load balancing or provisioning changes are required.

Reduced Cost of Ownership

As the system grows, efficiencies of scale mean reduced operating costs. A single trunk group of up to 6000 ports means increased trunk efficiency. Centralized management of subscribers, database, billing, alarms, and statistics increases operational efficiencies, and provides a single management point for each element in the network.

Enhanced Services/UMS

Voice Messaging features include:

- Messaging Notification
- Group Messaging
- Operator Revert to live assistant
- Family Mailbox
- Automated attendant/Bulletin boards
- Outdial from voice mailbox

Fax Messaging provides single-point fax receipt, storage and redirection capability.

Glenayre Constant Touch™ service for find-me, follow-me service.

Large Solution Platform Components

- Application Management Units (AMUs)
- Common Database and Message Store (CDMS) - Redundant Processors with RAID Storage
- Voice/Data Network Switches (VDNS)
- Command and Control Network Switches (CCNS)
- System Management Unit (SMU 2.3)
- X.9F Software

Optional Shared Resources

- Signaling Gateway (SGF)
 - Consolidated SS7 Links Into One DPC
 - Up to 48 Links per SGF
 - 2 SGFs (Redundant) Support 25 AMUs as One DPC
 - Economical After Two AMUs
- Shared Fax Server (SFS)
 - Up to 25 AMUs Supported
- Speech Recognition Server (SRS) - Voice Activated Services
 - Up to 8 AMUs Supported
- Unified Messaging Server - Unified Communications
- Future "Network" Services

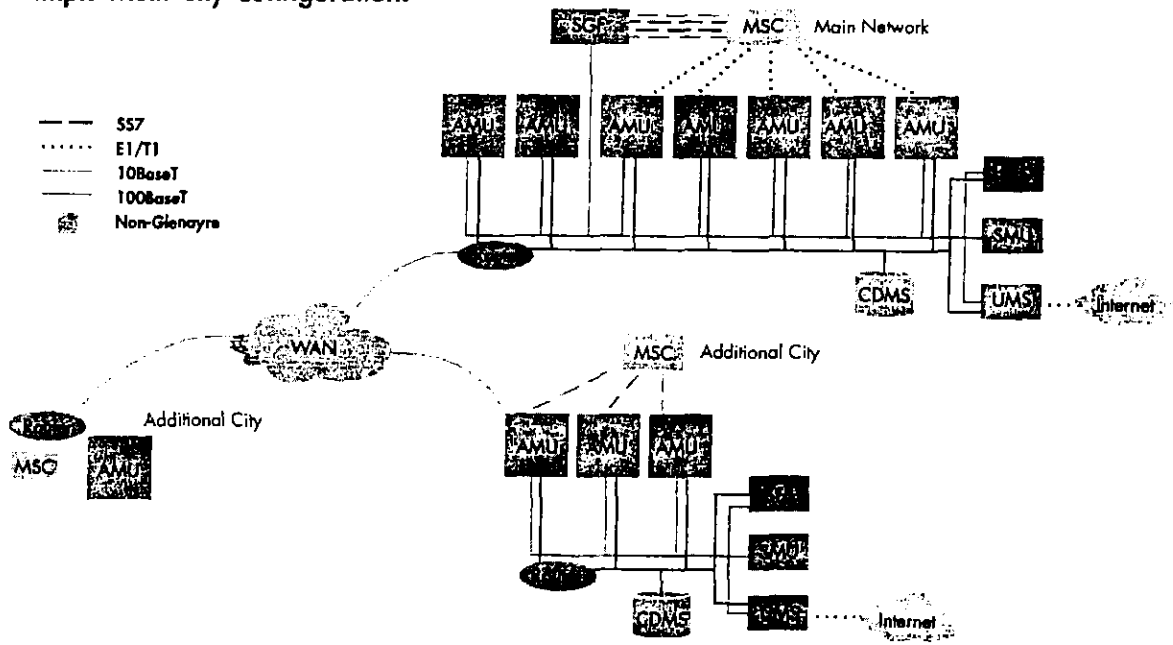
Configuration Summary

- Minimum Configuration
 - 2 AMUs
 - Common Database and Message Store (CDMS)
 - 1 Peripheral Cabinet with VDNS and CCNS
 - SMU 2.3
- Optional Resources
 - SGF - Competitive at 2 or more Solution platforms using SS7
 - SFS - Shared Fax Server
 - SRS - Voice Activated Services
 - UMS version 3.0 and Beyond

Specifications

Ports	480+ to 6000
Subscribers	500K to 5,000K
Voice Hours	4,000 to 46,000+
AMUs	2 to 25
Fax Server	1 Shared
Consolidated SS7	2 or More AMU's
Trunk Efficiencies	>7% Erlangs/AMU
Central Office Grade Availability	
Requires: X.9F and SMU 2.3	

Sample Multi-City Configuration:



North America
Atlanta 770 283 1000

Asia South
Singapore 65 483 8787

Latin America North
Mexico City 525 580 5150

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Beijing 86 10 6621 5599

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Solutions for an @ctiveWorld™



The Glenayre Solutions platform - More Revenue Generating Features from One Platform than Any Other

Glenayre's Solution Platform will give you all the basic services that your subscribers and new customers want today, PLUS powerful advanced services, such as fax, e-mail messaging and voice dialing, to keep them coming back for more.

Key Service Features:

- Call completion
- SMDI, SMS, outdial, and e-mail intelligent notification
- Multiple schedulable greetings
- Group messaging with broadcast lists
- Operator revert
- Automated attendant
- Bulletin board services
- Automatic callback
- Multi-user mailboxes
- Wake-up service
- Voice dialing
- Constant Touch™
- Fax mail

Our Solutions platform allows you to offer any number of services, in any combination, from a single platform ensuring you stay competitive in today's crowded marketplace. Our solution is simple. Instead of working with multiple vendors, Glenayre provides you with one complete system offering the most enhanced, value-added services and features you need to keep your business competitive today and in the future.

By offering the widest range of services available on a single platform you can address unlimited niches in consumer, corporate, small office/home office, and specialized market segments for maximum revenues in your wireless or wireline network.

Because the Solution platform is so flexible, you can easily modify and expand your service mix to target new niches and take subscribers up the value curve over time. And of course, Glenayre backs up the entire line of Solutions products with a highly trained support team eager to help you make the most of your enhanced services deployment.

Glenayre adheres to ISO 9001 standards for design and manufacturing. Our products use only the most reliable components, and helps lower operating costs by offering convenient Front Access to all major components, which can help minimize the time to repair and replace components. The world's leading cellular, GSM, CLEC, DCS, landline, ESMR, and PCS network

operators are currently generating more revenue with the @ctiveMessaging Sp than any other system.

Find out how to make your subscribers count for more on your bottom line. [E-mail](#) today for more information.



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Solutions for an @ctiveWorld™

UMS

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The Glenayre Unified Messaging Solution - The Enhanced Services Deployment Method Of Choice

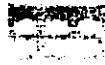
Glenayre's Unified Messaging Solution is a carrier-grade, end-to-end unified messaging package. The platform and application solution integrates all subscriber services on one scalable platform. Now you can merge message types—from wireless instant messaging to multimedia to legacy pager notification and faxing. You can bridge the various networks and protocols, and deliver voice and data messages wherever, and whenever your subscribers need them: to the home or office desktop, via the Internet, to a WAP phone, wireless PDA, or virtually any other device. And you can do it with an open, standards-based platform with the scalability to serve from thousands to millions of subscribers. You can meet today's messaging needs with an end-to-end solution with the adaptability and extensibility that will be required for tomorrow's high bandwidth applications. You can have it all, with Glenayre UMS.

Glenayre UMS subscriber features:

- **Intuitive, platform-independent Web interface**
 - Read, reply, create, forward, or delete e-mail
 - Read, forward or delete faxes; send e-mail to fax number
 - Collect e-mail from external POP3 and IMAP4 mailboxes
 - Play, forward or delete voice mail
 - Group messaging, broadcast messaging, passwords, greeting schedules, out-dial service, and one-number service
- **Visual mailbox for USSD and WAP-enabled phones**
 - Read, reply, create, forward, or delete e-mail
 - Play, forward or delete voice mail
 - Read, forward or delete faxes
- **Voice interface and text-to-speech for mobile freedom**
 - Listen to e-mail messages on the phone, and reply by voice
 - Use voice commands to dial and navigate the mailbox
- **Powerful call management**
 - Use one contact number for all voice and fax calls
 - Send message-waiting notification to pager, mobile phone, or other devices, with scheduling feature
 - Send call delivery to a live attendant (operator revert).
- **...and more features arriving in upcoming Unified Communications Services (UCS) upgrades.**

Find out how to make your subscribers count for more on your bottom line. [E-mail](mailto:info@glenayre.com) today for more information.

Glenayre UCS Solutions



Glenayre UCS is the premiere unified communications solution for converging voice, data and Internet applications. Designed to make human communications easier for active users, the platform allows subscribers to manage voice mail, e-mail, and fax messages from multiple devices through a single, unified inbox.

Subscribers have multiple options to access their mailbox:

- Using a voice interface with natural language commands
- Via a Web-based graphical user interface
- Through any Wireless Application Protocol (WAP) handset
- Via USSD for GSM services
- Or with any telephone

The Glenayre UCS platform provides benefits to both service providers and their subscribers. Service providers using Unified Communications can provide the value-added services that subscribers are demanding, while differentiating themselves from competitors and gaining additional revenue streams.

Glenayre UCS Features Include:

- A single inbox for voice, e-Mail and fax messaging
- One-stop e-mail collection (retrieve e-mail from external POP3 and IMAP4 servers)
- One contact number for wired and wireless voice and fax
- Wireless Web (WAP/USSD) visual mailbox access
- Spoken delivery of e-mail messages (text-to-speech) for telephone access to e-mail
- Voice dialing, voice-controlled mailbox navigation and management
- Easy Web interface for notification lists, greeting schedules, voice-activated dialing directory, personal assistant, out-dial number and one-number service
- Message-waiting notification to pager, mobile phone or other devices, with scheduling
- Group messaging
- Broadcast messaging
- Operator revert (for call delivery to a live attendant)

www.glenayre.com

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Sao Paulo 55 11 3179 1300



@activeVision™ UMS Voice Activated Services



Subscribers are demanding the convenience of value-added services made possible by advances in automated speech recognition technology. Service providers using the Glenayre @activeVision UMS platform can meet these demands by providing their subscribers with convenient access to their unified mailbox with Voice Activated Services.

Voice services for the Glenayre @activeVision UMS platform include hands-free voice dialing and management of voice mail, e-mail and fax messages using the latest speech recognition technology.

Glenayre services are housed on a robust, carrier grade speech server featuring natural language speech recognition. With natural language, there is no need for subscribers to train the system to recognize their voice or learn specific voice commands. Using the system is as easy as talking on the phone.

Accessing Voice Activated Services is simple. When users dial into their voice mail box, they are prompted to enter their password to access the Voice Activated Services main menu, or they can press "00" to access messages through the keypad. Once at the main menu, subscribers have access to all message management functions for e-mail, voice mail and fax messages, as well as their Address Book. Users can place calls directly from the Voice Activated Services system without disconnecting from VAS.

Use Voice Activated Services to:

- Manage voice mail
- Compose messages
- Manage e-mail
- Dial by Voice
- Manage Fax Messages
- Access the Address Book

Managing Voice Messages

Managing voice mail using voice commands is easy for subscribers. Users talk in natural language, giving commands such as "play my messages" or "play voice mail." By talking to the system, subscribers can:

- Play, Save, Delete, or Repeat messages
- Move to the Next or Previous message
- Return a call using the caller's ANI or prompted "callback number" entry
- Reply to a message by sending a message back to the originating mailbox or to a mailbox addressed by the subscriber.
- Forward or Redirect messages to one or more mailboxes in the subscriber's address book. Users can record and attach their comments to the message being forwarded. (*Note: private or confidential messages cannot be forwarded.*)

Message Composition

The Compose function enables the user to record and send a voice message to one or more numbers in the subscriber's Address Book. The subscriber has the option to Edit, Delete, Review and re-record the message they are composing. The user can immediately send their message.

Managing e-mail

Voice Activated Services allow users to manage e-mail via a text-to-speech (TTS) engine with voice commands such as "check my e-mail" or "play my e-mail." Compose and Send functions enable the user to record a voice message to be sent as an audio file attachment to an e-mail.

When the subscriber asks to listen to e-mail messages, a message header can be read. The header provides the date and time the message was sent, delivery options (i.e. "urgent"), originator and subject line.

Subscribers can manage their e-mail messages using voice commands to Play, Save, Delete, or Repeat messages, move to the Next or Previous message, Forward or Redirect and Reply, regardless of whether they are playing message headers, body text or attachments. (The subscriber can play contents of an attachment provided the attachment is either a .wav or .txt file type.)

Voice Dialing

Voice Dialing functionality eliminates the need for the user to interact with the keypad, unless they specifically wish to designate a number using DTMF.

Voice Dialing can be initiated by speaking a name from the address book or a phone number. Multiple phone numbers may be supported for each directory entry such as Home, Work and Mobile numbers.

Managing Fax Messages

Subscribers can manage fax messages using the latest text-to-speech technology and via voice commands such as "read my fax messages" or "play my faxes."

When the subscriber first requests the fax messages be played, the Voice Activated Services will play a fax message header containing the following information: the date and time of the message, delivery options, and originator. After the header information is presented, the subscriber has the option to print, save or delete the fax message. To print, the user forwards the message to a fax machine to be printed.

Other fax functions include:

- Move to the Next or Previous message
- Forward or Redirect fax messages

Address Book

The Address Book is accessible for all types of message addressing including voice, e-mail and fax messages as well as access to originate a call with voice dialing. The Address Book has two interfaces: Voice User Interface and a Web-based interface.

The address book contains information that can be stored, edited, searched and retrieved through Voice Activated Services. Names and phone numbers in the address book can be added, changed, deleted or reviewed. Users can access listings in their address book by name, other, home number, work number, mobile number, fax number, pager, voice-mail box number.

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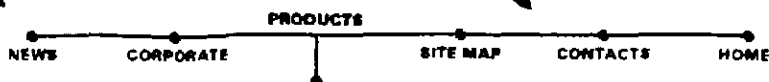
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Sao Paulo 55.11.3179.1300

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MVP System

The widest range of revenue-generating enhanced services

ENHANCED SERVICES FOR NETWORKS

MVP Systems

MVP 2120

MVP 4240

Value-added Services

Marketing Advantage

Partners Program

openMEDIA

Customer Service



Enhanced and Value-added Services

Glenayre offers the widest selection of services for every subscriber's needs.

Basic services:

1. Voice Messaging

There are many basic applications you can offer to your new subscribers, such as Universal Mailbox and Call Answering. Each of these applications allows you to offer basic enhanced services to satisfy any market segment.

2. Operator Revert

With Operator Revert, callers can transfer out of voice mail to the subscriber's personal assistant or to another phone number designated by the subscriber.

3. Pager Notification

With Pager Notification, subscribers are alerted when a message is waiting. Using intelligent protocols, your subscribers will be informed via pager of the number and types of messages waiting in their mailbox. This includes faxes and urgent messages.

4. Short Message Service

This service delivers text messages to a mobile phone and/or pager. Intelligent message-waiting capabilities show the number and types of messages, in addition to pre-recorded short messages. Custom messages can be sent to a subscriber via a WWW interface and/or e-mail.

5. Direct Dial

With Direct Dial, subscribers can make multiple calls directly from their mailbox without hanging up and getting a new dial tone after each call.

6. Automatic Callback

With Automatic Callback, subscribers can return important calls right from their mailbox. The Calling Line Identification number is captured while the

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caller leaves a message. A phone call can be returned quickly and conveniently with a few key strokes, directly from the mailbox.

Premium Services:**1. CONSTANT TOUCH®**

With CONSTANT TOUCH service from the MVP system, your subscribers can have the mobility and accessibility they demand by consolidating all of their phone numbers (business, cellular, wireless messaging unit, fax, home and more) into one convenient number.

- "Meet Me" Services - Notifies a subscriber's wireless messaging unit that a caller is on hold. Subscribers can then go to any telephone and, from their mailbox, either take the call or transfer it to voice mail or a personal assistant.
- "Find Me" Services - Can automatically find a subscriber by dialing different devices according to the order and the

schedule that the subscriber has programmed into the system.

2. Fax Messaging

With Fax Messaging, subscribers can receive faxes in their mailbox and retrieve them when and where they want. They can also direct faxes to a machine of choice, so that even the most confidential information is in their control. Fax Messaging gives subscribers all the convenience, security and privacy they're looking for.

3. Voice Dialing

With this Glenayre feature, your subscribers can navigate and place a call from their mailbox using a wireline phone or mobile handset by simply speaking a pre-programmed name, telephone number or command. It's that easy. No numbers to remember; just tell the mailbox



EXHIBIT / ATTACHMENT

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Frequently Asked Questions



Frequently Asked Questions

- Who is Call Sciences?
- What are the key services from Call Sciences?
- What are the main advantages of doing business with Call Sciences?
- Can anyone benefit from Personal Assistant®?
- What is Single Number Service?
- What is a Unified Mailbox?
- Does Personal Assistant work with multiple e-mail addresses – such as a office and at home?
- Can I check for e-mail over the phone?
- Can Personal Assistant work with all the numbers programmed into my phone and all the addresses on my e-mail account?
- Do Call Science services include a Calendar?
- Do Call Sciences services provide a To Do list?
- Can I get weather and news through Personal Assistant?
- If I make a change regarding one of my devices, one of my accounts, or either my Calendar or To Do list, do I have to rekey it over and over?
- Can I access Call Sciences services from an Internet-ready wireless phone?
- What happens if I don't have an e-mail address?
- What is a CASP? And what can it do for me?

Who is Call Sciences?

Call Sciences develops and markets Enhanced Communications solutions that enable our customers to benefit from the use and delivery of enhanced personal communications services.

Since 1993, Call Sciences has continued to build on the idea that technology should make people's lives ever easier, by freeing them from communications chaos—that is, the all too familiar frustration of keeping track of multiple communications devices and services.

By combining their voice, fax, e-mail, conferencing and mobile communications one seamless platform, Call Sciences offers the feature set that makes our customers more productive. Call Sciences customers are easily and consistently reachable, all the time and virtually anywhere! >top<

What are the key services from Call Sciences?

Our flagship products are **Personal Assistant®**, **Onebox Enhanced Communications** and **Call Sciences Calling Cards**. >top<

What are the main advantages of doing business with Call Sciences?

Call Sciences practically invented Unified Communications, and has progressively made it ever easier and more cost-effective for professionals to stay in touch with their most valuable contacts.

There are separate sets of advantages for enterprises and service providers

THE ADVANTAGES FOR ENTERPRISES:

Empower internal and external users to get more information more easily. Your employees are more connected to each other, to your customers and to virtually all communications devices. Anytime. Anywhere.

There's no capital outlay, and no need to dedicate IT staff to corporate e-mail management. Ongoing operational expense is reduced. Conference calls can be initiated with no bridging costs. User training is minimal.

THE ADVANTAGES FOR SERVICE PROVIDERS:

Enhanced Communications from Call Sciences helps service providers to differentiate themselves in the intensely competitive marketplace, to produce profitable new revenue streams, to increase customer loyalty, to drive usage, a

**Personal Assistant
for the Enterprise**

- Overview
- Advantages and Benefits
- Solution Packages
- Download Printable Brochure
- Demonstration

Personal Assistant Solution Packages

Features	Basic	Power	Fax
Find Me Follow Me	▲	▲	
Voice Mail	▲	▲	
Call Screening	▲	▲	
Notifications	▲	▲	
Online Manager	▲	▲	
Fax Access	▲	▲	▲
Fax Management		▲	▲
Conference Calling		▲	
E-Mail Management		▲	
Text-To-Speech		▲	
Contact List		▲	
Calendar and To-Do List		▲	

Plan Pricing

	12 Month Contract			Month-to-Month Contract			Per Minute	Se
	Number of Users			Number of Users				
	1 to 49	50 to 499	500+	1 to 49	50 to 499	500+		
Basic	\$9.99	\$7.99	\$5.99	\$11.99	\$9.99	\$7.99	Local Numbers: \$0.05 Toll-Free Numbers: \$0.10	\$ Per
Power	\$12.99	\$10.99	\$8.99	\$14.99	\$12.99	\$10.99		
Fax	\$4.99	\$3.99	\$2.99	\$6.99	\$5.99	\$4.99		

Package Descriptions

Personal Assistant® Basic

- **Single Number Service:** Your voice mail, faxes, e-mails and conference calling are accessed with just one phone number and password.
- **Find Me Follow Me:** Never miss a call or business opportunity. You can be reached anytime, anywhere. Calls located and connect you wherever you may be. Easily change options, such as Call Screening and Parallel Ringing, from any telephone or PC.
- **Voice Mail:** Call retrieval and management from multiple voice mails is consistently convenient—by phone or PC.
- **Call Screening:** See who is calling before you answer.
- **Notifications:** You get new message alerts at your e-mail-enabled devices.
- **Online Manager:** You have Web-based message access, preference set-up and more management powers.
- **Fax Access:** Receive and create faxes through telephone and Web interfaces.

Personal Assistant® Power

All the features of Personal Assistant Basic, plus:

- **Fax Management:** Powerful faxing tools accessible from multiple devices.
- **Conference Calling:** Connect with up to 24 people simultaneously, and easily control the call.
- **E-Mail Management:** Faster e-mail organization and control, by phone or PC.
- **Text-To-Speech:** Listen to your e-mails and faxes!
- **Contact List:** You information you want—phone numbers, addresses and more—are easily accessed on the Web.
- **Calendar and To-Do List:** Stay up-to-date with online tools.

Personal Assistant® Fax

- **Fax Management from Multiple Devices:** Save time and money with fax retrieval from telephones and desktops—anytime, anywhere!

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**TRANSCRIPTION OF CALL SCIENCES
PERSONAL ASSISTANT® DEMONSTRATION
1/888-877-9099
JANUARY 23, 2003**

John Work phone, fax phone, answering machine, e-mail, wireless phone, home phone, ha. Are you suffering from communications chaos?

John We have the cure! A different kind of service from Call Sciences, called Personal Assistant will handle all your communications needs. It doesn't matter if you are cell phone kind of person, or more comfortable with a PDA or laptop. And it's incredibly simple. Anyone trying to reach you just dials one number and your Personal Assistant delivers the call to you no matter where you are. It tells you who's calling, and gives you the option to answer the call or forward the call to voice mail. I'll give my Personal Assistant a call right now to show you how it works.

John Now, I let my Personal Assistant know it's me by punching in my personal code.

PA You have 4 new voice messages, one new fax message and one e-mail message. To access mailbox services, press 1. [John presses 1.] To listen to your messages, press 1. [John presses 1.] The first new message, message marked urgent.

Caller John, it's Ilene. Did you receive that package? Please call me back as soon as possible.

John Let me just call Ilene. After I listen to a message, I can have Personal Assistant call them back.

PA To dial the caller at 732/555-3791, press the pound sign now. [John presses #.]

John What I like is my Personal Assistant remembers the number and dials it for me. Now, I'd also like to review that fax, so let's go back to my messages.

PA The next message is a fax message -- 1 page.

John This fax is an important contract, so I'll need to sign it and fax it back. Let me print that now. Of course, if I prefer, I can store an electronic copy on my PC instead. I know I'll never miss a message because Personal Assistant also sends e-mail notifications to let me know if I have a new fax or voice message. Now this morning, I won't be at my usual contact numbers, so let me tell Personal Assistant where I'll be.

PA To enter a temporary voice location, press 1. [John presses 1.] Enter the telephone number at which you will be available, terminated with the pound sign. [John enters a series of numbers.]

John Okay. I'm working at my home office on a project for an important client.

PA Enter the number of hours you would like this location to remain in effect.

John Oh, for about 3 hours or so. [John presses 3.] Now, my trusty Personal Assistant knows where to forward my calls and for how long. My clients, friends and family only need to make one call to reach me. It not only makes my life easier, but Personal Assistant makes their lives easier. Let's see what happens when someone tries to reach me.

[Series of Telephone Tones]

PA Hello. You have reached the Personal Assistant for John Smith. Please give me your name and I will see if he's available.

Caller Hi, it's Allen from the agency.

PA Please hold while I try to locate him.

John Because I informed my Personal Assistant of my location, it knows immediately to call me at my home office.

PA This is a call for John Smith.

Caller Hi, it's Allen from the agency.

John Let me get this quickly.

John Hello? Hi, how are you?

Caller I've got those directions you needed.

John Great! I've got to run, but leave them on my voice mail and I'll write them down later. I'll transfer you now.

Caller No problem.

John Thanks. [Telephone tones.]

John It's simple to transfer a call to voice mail. Just press star-9.

PA Transferring the call to voice mail.

John Earlier, I told Personal Assistant to try me at my home office for about 3 hours. Later this afternoon, I'll be in and out, so my Personal Assistant knows to try my regular numbers. Now, I'll get the call even if I happen to be on my wireless phone instead of in the office.

PA John wasn't at the location I just checked. Please hold while I try him at another location, or press 1 now to leave a message.

John Personal Assistant knows to always try my wireless phone too.

John Hello?

PA This is a call for John Smith.

Caller Hi, this is Larry from Johnson Dictionary. We have a special.... [telephone tone]

John We'll just have to send Larry to voice mail. That's one of my favorite things about Personal Assistant, call screening.

PA I'm sorry John isn't available at the moment. Please leave a message at the tone. When you have finished, press the pound sign to leave a return number.

John My customers are using e-mail more and more everyday. But when I'm on the road, it's not always convenient to boot-up my laptop and dial in to manage my messages. Fortunately, Personal Assistant helps me manage e-mail just as easily as voice mail.

PA The next message is an e-mail message. Message number 1. Urgent Meeting notice from Christine Jones. Retrieving contents of message. I have just heard that the project will be discussed at a board meeting on Thursday. I'd like to prepare ahead of time. What time can you meet me on Wednesday morning? Best regards, Christine Jones.

John Not all my e-mail messages are as important as that. It's easy for me to tell Personal Assistant which messages to read over the phone and which ones can wait until I'm back in the office. Now, let's reply to Christine. [Telephone tones.]

PA Please record your reply after the tone.

John "John Smith here. Thanks for letting me know about the Board meeting. I'll be at your office by 10:00 on Wednesday to review the project details."

John Personal Assistant will send my reply as an e-mail attachment. The recipient simply clicks on the attachment and can hear my recorded message. I can also manage my voice and fax messages from my PC and I have direct control over many features via the web. So you see? Personal Assistant really is the cure for communications chaos.

Announcer If you would like a Personal Assistant, or would like more information on the service, please press 0 now, or you can leave your name and address after the tone and we'll send you an information package.

Please leave a message after the tone. When you've finished recording, please press the pound sign to enter a callback number and choose delivery options.



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(To be scanned in place of tab)



BellSouth Intellectual Property
Marketing Corporation
Suite 500
1155 Peachtree Street, N.E.
Atlanta, GA 30309-3610

William A. Hartselle
Director - Patent Licensing

404 249-2461
Fax (404) 249-2822
bill.hartselle@bellsouth.com

December 12 2001

Chuck Ruggieri
Director of Carrier Sales
Call Sciences, Inc.
379 Thomall Street
Suite 1100
Edison, NJ 08837

via FedEx

Dear Chuck:

I enjoyed speaking with you on the phone on Wednesday regarding the BellSouth patents. As we discussed, BellSouth owns numerous patents relating to voice messaging technology, including U.S. Patent Nos. 5,764,747, 5,857,013, and 5,937,050. We have determined that various features of Call Sciences' Personal Assistant service platform are covered by the BellSouth patents and we would like to discuss licensing arrangements for these patents.

Specifically, BellSouth's '747 patent covers Call Sciences' Personal Assistant Single Number Service and find-me/follow-me call routing. BellSouth's '013 patent covers Call Sciences' One Button Return Call feature. Additionally, the '050 patent covers Call Sciences' Pager Notification. We have enclosed a copy of each patent and documentation showing how the various Personal Assistant features are covered by the respective patents. In addition to locating the enclosed documentation, we also accessed the Personal Assistant Demo on your web site and found some of the patented technology demonstrated there.

We are aware that Call Sciences signed a contract in early 2000 with BellSouth Mobility, now part of Cingular Wireless, to incorporate the Personal Assistant Single Number Service platform as part of BellSouth Mobility's One Number Service. Call Sciences' relationship with Cingular is of particular interest to BellSouth given BellSouth's 40% ownership of Cingular. We are hopeful that our mutual interest in the success of Call Sciences' services will help us resolve this matter in a swift and amicable manner. I will contact you soon to set a timetable for arriving at a mutually-beneficial resolution.

Very truly yours,

A handwritten signature in cursive script that reads "William A. Hartselle".

William A. Hartselle

Enclosures

CLAIM CHART FOR U.S. PAT. NO. 5,764,747
and
CALL SCIENCES SINGLE NUMBER SERVICE
(for PERSONAL ASSISTANT)

Claim 1. A method for routing a communication to a subscriber, comprising the steps of:	Single Number Service/Find Me/Follow me call routing routes calls to subscribers
(a) assigning a personal number to said subscriber;	Single Number Service assigns a single number to a subscriber
(b) receiving a first communication directed to said personal number;	With Single Number Service, the caller calls the single number to locate the subscriber
(c) accessing communication routing information in response to said first communication, said communication routing information including a list of destinations on the public switched telephone network, said list of destinations comprising a plurality of said destination hierarchically arranged in order of subscriber preference for communication routing;	Find-Me/Follow-Me allows the subscriber to define up to three telephone locations that Personal Assistant will search according to a subscriber's schedule
(d) selecting the first destination on said list of destinations;	The system forwards the call to any one location at any given time.
(e) placing a further communication to said destination;	The system forwards the call to any one location at any given time.
(f) announcing at said destination the receipt of said first communication;	Personal Assistant announces the caller ...
(g) receiving communication disposition information from said destination; and	... and gives the subscriber the option of accepting the call or transferring the call to voice mail
(h) disposing of said first communication in accordance with said communication disposition information by either routing said first communication to said first destination or by selecting the next hierarchically arranged destination on said list of destinations and repeating steps (e) through (h) at said next destination.	If call isn't routed to the first number, Personal Assistant routes the call to the next number on the list of subscriber-provided telephone numbers

CLAIM CHART FOR U.S. PAT. NO. 5,857,013
and
CALL SCIENCES' RETURN CALL
(for PERSONAL ASSISTANT)

Claim 1. A method for disposal of a voice mail message for a subscriber using a mobile telephone, said voice mail message having been receiving on a first calling line from a source, comprising the steps of:	Return Call is ideal for mobile subscribers
accessing a voice mail service in response to an instruction from said subscriber received on a second calling line from said mobile telephone;	Return Call is available to mobile voice mail subscribers
playing said voice mail message for said subscriber;	A subscriber can hear an incoming message ...
receiving a call back indication from said subscriber;	... and immediately call the person back with the touch of a button
automatically generating a call to the calling line number associated with said first calling line in response to said call back indication from said subscriber; and	A subscriber can hear an incoming message and immediately call the person back with the touch of a button
connecting the subscriber to said first calling line if said call is successful.	Subscriber is connected to the caller who left the message
Claim 18. A method for returning a plurality of voice mail messages for a subscriber by a voice mail service residing within a telephone network platform, comprising the steps of:	See above for Claim 1
receiving a first communication with a voice mail message for said subscriber on a first calling line;	
recording said calling line number in a database associated with said network platform	
receiving a second communication with a request from said subscriber to play said voice mail message;	
playing said voice mail message for said subscriber;	
receiving a call back indication from said subscriber;	
retrieving said first calling line number from said database associated with said network platform;	
automatically generating a third communication to the calling line number associated with said first calling line; and	
connecting said subscriber with said calling line associated with said first calling line number if said call is successful.	

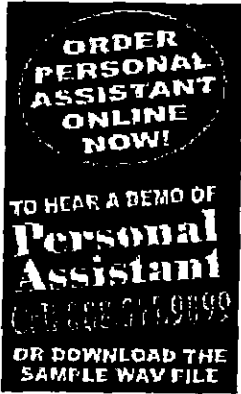
CLAIM CHART FOR U.S. PAT. NO. 5,937,050
and
CALL SCIENCES PAGER NOTIFICATION
(for PERSONAL ASSISTANT)

Claim 1. A method for handling the receipt of a facsimile transmission to a subscriber, comprising the steps of:	Personal Assistant receives faxes
(a) receiving said facsimile transmission on a first calling line, said facsimile transmission comprising source information;	Inherent feature of standard fax services
(b) obtaining said source information;	Obtaining source information from the fax is a standard feature of fax services
(c) storing said facsimile transmission;	Personal Assistant stores the received fax in the fax mailbox for later retrieval by subscriber
(d) notifying said subscriber of said receipt of said facsimile by paging said subscriber; and	Pager Notification provides pager notification for received faxes
(e) providing said subscriber with said source information.	Providing source information is a standard feature of pager notification services



PERSONAL ASSISTANT

Imagine the luxury of having your very own Personal Assistant®, a Personal Assistant who becomes your personal connection to the information that you depend upon each and every day. Personal Assistant from Virtel is more than a single number service. It's a service that conveniently integrates all of your existing communications (voice mail, faxes, e-mail, etc.) into a single service. All of your communications would be available to you by simply making a single phone call or accessing the web. Imagine a service that seamlessly forwards calls and faxes to you even if you are out on a sales call, on a plane, or in a hotel, all within one day. The money you will save on all of your domestic and international calls by using the calling card feature will in itself pay for usage of all the other valuable features. With Personal Assistant you'll benefit from such features as:



demo_pa.wav
(4.4 megs)

- **Single Number for Voice and Fax (toll-free and local numbers available):** This becomes the only number you'll ever need to distribute ever again, no matter how many times you may change jobs, move to different locations, or switch cellular providers.
- **Calling Card:** Let your Personal Assistant save you time and money by making your outbound calls through the service. With a one time log-in there is no need to enter long card numbers and PIN's. Take advantage of our low domestic and international rates and return calls directly from voice mail. Personal Assistant even gives you the convenience of international calling when you use the calling card feature with your cellular phone.
- **Voice Mailbox:** A voice mailbox enables callers to

leave messages for you when your Personal Assistant is unable to locate you or when you choose not to speak with the caller. You are alerted to the status of voice mail messages you've forwarded and you have the option to replay, save, delete or forward your voice mails to anyone, anywhere, anytime.

- **Fax Mailbox:** Your Personal Assistant number is not simply the only phone number you will ever need to distribute, it also becomes your fax number too. It replaces all of your existing fax numbers (office, home, secretary) and whether you're in or out of the office, faxes sent to your Personal Assistant are stored in your fax mailbox and printed only when and where you want. This feature gives you total mobility and added security on the road or in the office.
- **Bonus:** You can also view your faxes over the web or have them forwarded to an existing e-mail address, so if you happen to be in a hotel room, you can simply view your faxes and print only the faxes that are absolutely necessary. This feature saves you money on expensive hotel service costs; and ensures privacy and confidentiality.
- **Call Screening:** Your Personal Assistant not only manages your accessibility at any given time of the day, it also screens all of your incoming calls. Your Personal Assistant simply announces the caller and gives you the option of accepting the call or transferring the call to voice mail, without the caller ever knowing you had the choice.

Find-me/Follow-me call Routing: This feature allows you to define up to three primary telephone locations and your Personal Assistant will search for you at the numbers you have provided according to the time of day and day of week. If for some reason you will not be at any of the numbers in your schedule, you can easily override your permanent schedule to include a temporary location number and the service will only search for you at the specified number for however

long you choose (hours, days, weeks).

- **Online Access:** For greater control and flexibility we present Online Manager, your one stop for listening to messages, viewing faxes or making changes to your schedule.

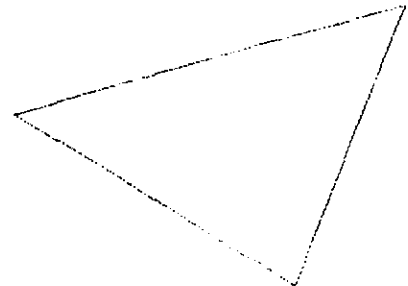
ONLINE MANGER LOGIN

- **Scheduled Message Delivery:** You have the option to schedule (or defer) the delivery of a voice or fax message to a specific date and time. It's great if you're traveling within different time zones.

- **Conferencing on the fly:** Easy to set up conference calling right through Personal Assistant. No need to contract outside services, no wasted time trying to decide which of the participants will set up the call, no distributing of conference call numbers and passwords. Through Personal Assistant you can conference up to 6 participants and have the option of greeting each conferee publicly or privately.

- **Pager Notification:** As an added convenience and cost saver, we offer you the choice of being notified of any voice or fax messages that you have received via your pager. This way you only need to access the service when you know that you have new messages waiting for you to review.

Personal Assistant makes sure that all your communications tools work together to help save you time and money and to keep you in touch. You will be given access to all the information you need via phone, e-mail or the web. Personal Assistant means no more missed opportunities ever again! For people and businesses that don't want to change their existing phone numbers, Personal Assistant can be configured to work with your current phone service. Speak to



Who we are
Founded in 1993, Call Sciences
is a leading provider of unified
communications solutions. Our
mission is to provide the most
effective and efficient
communications solutions to our
customers. Call Sciences' Unified
Communications
is Call Sciences' revolutionary
and unique idea that advances the
communications technology should
make life easier.

Unified Communications...

What it is – Unified Communications is as simple to define as it is to use. *It is the joining of all communication devices in real-time to simplify and streamline the exchange of information.*

Why you should have it – If you want to attract and keep customers in a fast-changing, new-technology-everyday world, Unified Communications is the answer. It gives you the ability to migrate customers to a comprehensive product that will keep them loyal: a single number that connects all their devices, with only a single set of commands to remember.

What it can do for you – Call Sciences' Unified Communications can differentiate you in the marketplace, help you develop new revenue streams, increase customer loyalty, drive usage, and give you what you need to target new market segments, just to name a few.

The Cure for Communications Chaos™

The frustration of keeping track of too many communications gadgets, too many phone numbers, PINS, passwords, and the fear of being out of touch has created Communications Chaos™ for the consumer. Call Sciences' Unified Communications is literally the cure for the chaos. There's no more juggling devices to stay in touch. No more playing "Match the Gadget With the PIN" every time you try to reach someone. Now, there is a technology that turns all our devices, commands, PINs and codes into one simple and efficient form of communication.

Finally, a Technology That Gives People What They Want: Control

In a world of a million devices, consumers are longing to be totally connected, in every way possible, to all the information they depend on each day. Imagine the sense of control people will feel with their cell phones, office phones, faxes, PCs, pagers and PDAs all working together. Thanks to Call Sciences, there's no need to imagine – Unified Communications is a reality; and it's a fascinating technology that puts people in control.

Both mobile communications and Internet growth have driven the consumer to the point of too much information and not enough control. Call waiting, call forwarding and caller ID have provided some relief. But not enough. Total relief of "communication overload" comes from a unique brand of Unified Communications brought to you by Call Sciences.

Unified Communications Is More Than a Product...

It's a strategy designed to build your business. Call Sciences' Unified Communications is more than a small selection of products. It's the most complete set of enhanced communication services available today. It's a smart business strategy that retains current customers, adds new customers, and encourages increased minutes and usage.

Whether you're a CLEC, ISP, or a wireless provider, our brand of Unified Communications is a unique service that will help you stand apart from the rest. It lets you add a variety of enhanced features in one package to encourage usage and increase loyalty to your service. Why would customers switch to another phone or wireless company when you already offer everything? With conveniences such as the ability to hear an incoming message and immediately call the person back with the touch of a button, you can increase call completion dramatically. Partnering with a leading-edge company like Call Sciences is a sound, strategic way to grow your customer base.

A Single Number Does It All

In the midst of Communications Chaos, a single number is a very appealing solution to consumers. And since Call Sciences is on the leading edge of Unified Communications, we can provide your customers with a *single number* that does everything they need and more, including:

- single-number convenience
- find-me/follow-me capabilities for voice and faxes with call screening
- a fast, simple way to set up a conference call via the telephone or the Web
- a unified mailbox to manage messages by phone or Web
- notification of new messages
- the convenience of listening to emails from any phone
- the ability to view a fax or hear voice messages from a PC
- synchronizing tools to ensure email, address books and calendars are always up-to-date
- 24/7 Web access so users can easily change their daily profiles on the fly
- the ability to hear a message and immediately call the person back with the push of a button
- access to news, weather and stock info

The Call Sciences Advantages:

...We Take Care of Everything for You

Unified Communications can simplify and streamline the lives of your customers. On your end, Call Sciences makes things simple as well. Because *with us, there's no capital investment. There's total integration with existing legacy systems, a clear migration path to next-generation network services, and the CASP advantage.*

Call Sciences has a wealth of experience delivering solutions as a communications applications service provider (CASP). Through this innovative approach, Call Sciences can integrate its solutions with next-generation application features to meet the needs of fast-changing communications technologies. Our solutions are hosted and managed using our own facilities, so there's no costly equipment to purchase.

Other benefits of the Call Sciences CASP approach:

- email hosting OR integration with existing email systems
- proven security tools to help ensure the integrity of your operations
- assurance that your solution will always have the most up-to-date technology
- helps lower the cost of operations
- industry standards that meet the reliability of the largest telecom carriers
- ability to introduce new services quickly and easily

...The Future-Proof Solution

With technology changing so rapidly, the future is today, not tomorrow. That's why you need to partner with a company like Call Sciences. Our telco-grade platform is flexible enough to let you customize solutions that meet your customers' needs today, while providing the scalability to add future technologies when you're ready. No matter how technologically savvy and demanding your customers become, we'll be there to provide you with Unified Communications solutions that enable you to stand apart from the competition and continue growing.

A Personal Assistant Is What Everyone Needs Today*

Allow us to introduce how we package Unified Communications. We call it **Personal Assistant®**. It's a catchy name that appeals to your customers because it does what it says – it acts like an assistant that's with your customers 24/7/365, wherever they are. Personal Assistant from Call Sciences gives your customers *one number to remember* in order to get practically any message and important document delivered wherever they are, over whichever device suits them best.

Any consumer who has experienced the frustration of Communications Chaos (which is probably everyone) is a candidate for Personal Assistant. Every customer is a type of warrior who needs to conquer the chaos:

■ **The Executive Warrior:** They spend a significant amount of time traveling by air all over the country and/or the world. These are the "rainmakers" and senior level managers who spend a great deal of their time in hotels. They use cell phones, laptops or any device to make them communication-efficient.

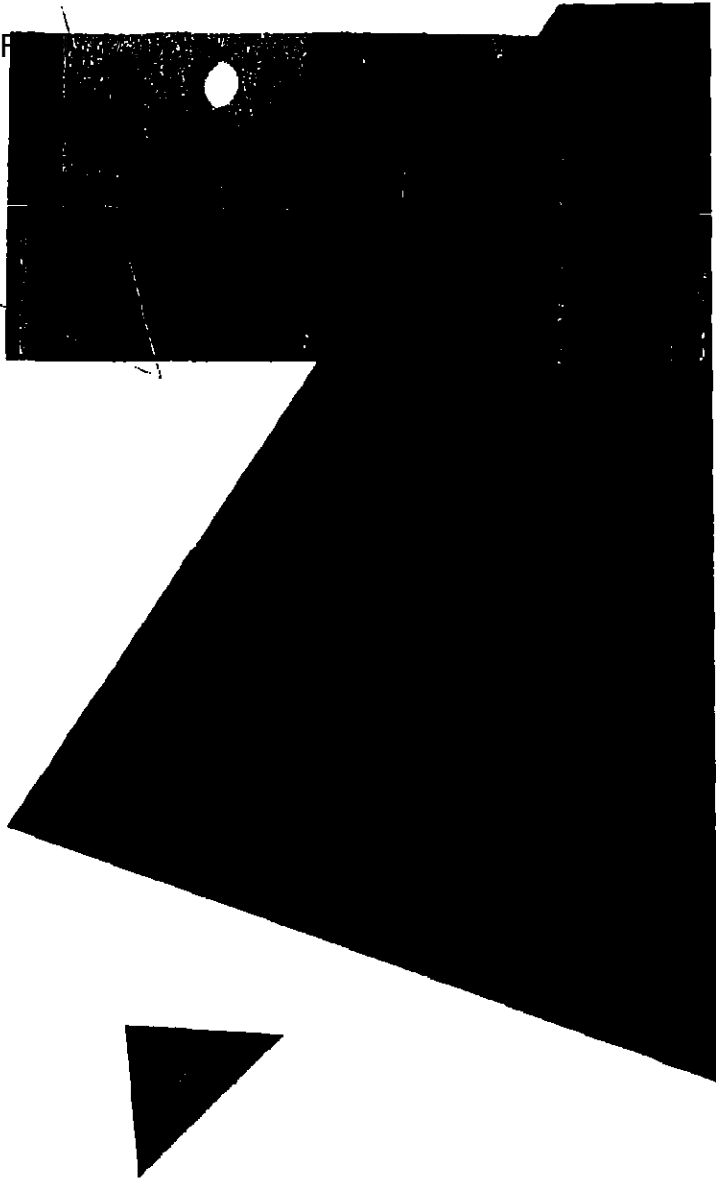
■ **The Road Warrior:** This worker does a lot of driving. They make trips to multiple locations as well as working in a central company office. They depend on cell phones and pagers. They rely on back office operation for support.

■ **The Desk Warrior:** Found mostly in the management ranks, these workers use a desk PC and are frequently at meetings. They rely on voicemail and email boxes to manage messages and may be the victims of "telephone tag."

■ **The Message Warrior:** These are very busy workers who prefer to take messages rather than answer their devices. They screen calls often, reply to email later on, and need the control and management of messages in order to get work done efficiently.

■ **The SOHO Warrior:** These are people who are away from their offices frequently, often with no back office support. They work at different locations and rely on devices such as cell phones, laptops, pagers, and PDAs.

■ **The Active Individual:** These are enthusiastic, social people, "soccer moms" and working parents who are always on the go. This group needs to collaborate in real-time to coordinate their schedules. They love new communications technology and use it all – cell phones, laptops, pagers, PCs, and PDAs.



"IDC predicts the total number of U.S. subscribers for Unified Communications will reach 28.4 million by year-end 2004, increasing at a compound annual growth rate of 71.4% over the forecast period and generating \$5.7 billion in retail service revenue."

–IDC

"By building services such as voice messaging, cellular, paging, one number, and find-me/follow-me, providers can better retain customers, while attracting new clients with the allure of enhanced services."

–Pelorus Group

"Wireless carriers will also look to bundle Unified Communications services into high-end bundles to minimize churn and increase minutes of use, network traffic, and call completion rates."

–IDC

PERSONAL ASSISTANT™

Features for Home

Voice

- Single-Number Service
- Personal Address Book
- Speed Dial
- Inbound Domestic and International Calling
- Outbound Domestic and International Calling
- Conferencing
- One-Button Return Call
- Call Screening
- Find Me/Follow Me
- Manage Voice Messages (Listen, Compose, Forward, Reply, Save, Delete, Undelete)
- Forward Voice Message to Phone Number
- Scheduled Message Delivery
- Transfer Call
- SS7 Signaling
- S41 – Is Cell Phone Turned On?
- Extension Dialing
- Route Call to Attendant
- Personalized Greetings
- Extended Absence Greeting
- Distribution Lists

Email

- Listen to Header Information
- Listen via Text-to-Speech
- Manage (Reply with Voice Attachment, Delete, Save)
- Filters

Fax

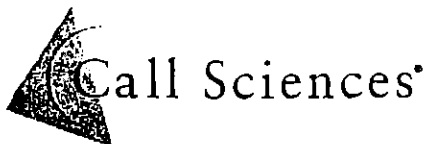
- Single-Number Service
- Speed Dial
- Store or Forward to Fax
- Listen to Header
- Distribution Lists

Personal Address Book

- Contact Information
- Outbound Dialing
- Corporate Directory

Notifications

- Pager
- SMS
- Message Announcement upon Log in



Finally, the Cure for Communications Chaos™



PERSONAL ASSISTANT™

Features for Personal Companies

Web Interface - "Online Manager"

- Unified Inbox for all Voice, Fax or Email Messages
- Manage Voice Mail (Listen, Forward, Reply, Save, Delete)
- Manage User Account Profile
- Manage Speed Dial Codes and Distribution Lists
- Set Email Text-to-Speech Filters

Fax

- Store or Forward to Fax
- View Fax and Header
- Forward to Email

Personal Address Book

- Contact Information
- Delete Entries
- Add Entries
- Corporate Directory
- Import from Outlook®

Notifications

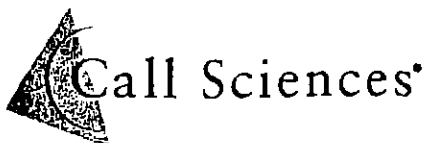
- Email

Personal Teleconferencing

- Multiple Participant Conferencing
- Dial Participants via Phone Network
- Add or Drop Participants from Call via the Web
- Enter Numbers Manually or from Personal Address Book

Email

- Hosted Solution or Use Existing Email Solution
- Manage Email (Compose, Forward, Reply, Save, Delete)
- Integrates with Personal Address Book



Finally, the Cure for Communications Chaos™

379 Thornall Street, Suite 1100, Edison, NJ 08837 • 1-800-669-5400
315 Park Avenue, Glencoe, IL 60022 • 847-835-6700
26565 W. Agoura Road, Suite 305, Calabasas, CA 91302 • 818-871-8000
www.callsciences.com

AVAILABILITY NOTE- THIS IS THE COMPLETE ARTICLE

PUBLICATION COUNTRY- United States

SOURCE OF ARTICLE(S)- Regional Newspaper

INDUSTRY- Mobile communications; Telecom services; Telecommunications

WORD COUNT- 362

LANGUAGE- English

NO-ABSTRACT

Mar. 2--Are people having a tough time tracking you down between your home and office phones, wireless handset or fax? Call Sciences thinks it may have your number.

The Edison-based communications technology firm just won a three-year contract with BellSouth to provide single number service for the Baby Bell in 10 Southeastern markets, including Atlanta, Nashville, Tenn., and New Orleans. And it's pursuing wireless deals with two other undisclosed carriers.

"It's an exciting market right now in the wireless space," said James Healy, Call Sciences' director of product management.

Customers of the single-number service can program up to six phones to ring simultaneously in different locations when their mobile phone number is dialed. Or they can program one particular phone to ring first, with the others chiming sequentially if no one picks up.

"People make calls to people, not places," Ed Reynolds, president of BellSouth Mobility, said in a statement.

Call Science's product, called Personal Assistant, also has an option for callers to announce their names when connection first goes through, so a subscriber can decide to pick up or shunt the call to voice mail.

Founded six years ago by Bellcore and Bell Labs veterans, Call Sciences set up 12 hubs across the United States to permit unified messaging, single-number service and other enhanced services for wireless carriers. Carriers who use Call Sciences' platform can have service up and running in as little as 60 days, said Bill Wang, a product manager for the company.

"Speed to market is one of the most critical things out there," Wang said.

It can take 18 to 24 months for carriers that are building their own systems, he said.

U S West has been offering single-number service on its own since 1998, and AT&T has its own version. A number of independent companies offer the capability, too.

Call Sciences has 120 employees in Edison, and 50 or so in Europe. Terms of the private company's deal with BellSouth weren't disclosed.

After a promotional period ends, BellSouth plans to charge customers \$9.95 a month for the new service.

-----To see more of The Star-Ledger, or to subscribe to the newspaper, go to <http://www.nj.com/news>

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ORIGINAL United States District Court

NORTHERN

DISTRICT OF

GEORGIA

BELLSOUTH INTELLECTUAL PROPERTY CORP.

SUMMONS IN A CIVIL CASE

V.

CASE NUMBER: **1 03 CV 0241**

GLENAYRE TECHNOLOGIES, INC.
and
CALL SCIENCES, INC.

TO: (Name and address of defendant)

Call Sciences, Inc.
c/o Corporation Service Company
4845 Jimmy Carter Boulevard
Norcross, Georgia 30093

YOU ARE HEREBY SUMMONED and required to serve upon PLAINTIFF'S ATTORNEY (name and address)

Samuel J. Najin, Esq.
JONES DAY
3500 SunTrust Plaza
303 Peachtree Street, NE
Atlanta, Georgia 30308

an answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the day of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in the complaint. You must also file your answer with the Clerk of this Court within a reasonable period of time after service.

LUTHER D. THOMAS

JAN 28 2003

CLERK

DATE

J. Williams

(BY) DEPUTY CLERK

DUPLICATE

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CASE NUMBER

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GLENAYRE TECHNOLOGIES, INC.
and
CALL SCIENCES, INC.

TO: (Name and address of defendant)

Glenayre Technologies, Inc.
c/o C.T. Corporation System
1201 Peachtree Street, NE
Atlanta, Georgia 30361

YOU ARE HEREBY SUMMONED and required to serve upon PLAINTIFF'S ATTORNEY (name and address)

Samuel J. Najim, Esq.
JONES DAY
3500 SunTrust Plaza
303 Peachtree Street, NE
Atlanta, Georgia 30308

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