IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF ILLINOIS
EASTERN DIVISION

PARUS HOLDINGS, INC.,

Plaintiff,

v.

GOSOLUTIONS, INC.,

Defendant.

Case No. 04C 6895
Judge: JUDGE MANNING
Magistrate Judge: MAGISTRATE JUDGE MASON
JURY TRIAL DEMANDED

FILED-EDA
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U.S. DISTRICT COURT
CLERK

COMPLAINT

Plaintiff, Parus Holdings, Inc. ("Parus"), by and through its attorneys, for its complaint against Defendant GoSolutions, Inc. ("GoSolutions"), alleges as follows:

NATURE OF THE ACTION

1. This is an action for infringement of U.S. Patent Nos. 6,775,264 and 6,807,257 entitled "Computer, Internet and Telecommunications Based Network," (hereinafter referred to as "the '264 Patent" and "the '257 Patent," respectively) A true and correct copy of the '264 Patent is attached hereto as Exhibit 1. A true and correct copy of the '257 Patent is attached hereto as Exhibit 2.

2. Parus seeks injunctive relief to prevent GoSolutions from continuing its infringement of the '264 Patent and the '257 Patent.

3. In addition, Parus seeks monetary damages for GoSolutions' infringement of the '264 Patent and the '257 Patent.

DOCKETED
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THE PARTIES

4. Parus is a corporation organized under the laws of the State of Delaware. Its principal place of business is located at 3000 Lakeside Drive, Suite 300N, Bannockburn, Illinois 60015.

5. GoSolutions is a corporation organized under the laws of the State of Florida. Its principal place of business is located at 1901 Ulmerton Road, Suite 400, Clearwater, Florida 33762.

FACTUAL BACKGROUND

Parus' Patented Technology

6. In about 1997, a predecessor-in-interest company of Parus, Webley Systems, Inc., began developing a unique speaker independent system for unified communications via telephone and internet. This unique system had a number of important features and was capable of serving an unlimited number of customers. In 2003, Webley became a division of Parus Holdings, Inc. (Webley Systems, Inc. and the Webley division of Parus will hereinafter be collectively referred to as "Webley".)

7. Since 1997, Webley has worked on and has raised and invested millions of dollars on developing and improving this unique speaker independent system technology in facilities located in the suburbs of Chicago.

8. Specifically, since 1996 Webley invested millions of dollars to develop, improve and commercialize the unique innovative technology which is the subject of the '264 Patent and the '257 Patent.

9. Webley has become a leading provider of unified speaker-independent communication systems and services, including unified messaging, audio conferencing, and other communication services, to a diverse range of customers including corporations, organizations, enterprises and individuals.

10. Currently, Webley has tens of thousands of customers who rely on it to conveniently and efficiently manage their telephone calls, voicemails, emails, and faxes through a single unified communications system. Webley's services are Internet Protocol (IP)-based and are powered by advanced voice recognition and session initiation protocol (SIP) technologies.

11. To maintain its technological leadership, Webley continues to invest millions of dollars for research and development relating to its unified computer and telecommunication network and services.

12. Subscribers access Webley's unified computer and telecommunications systems by telephone or the Internet. When Webley's services are accessed using a telephone, the subscriber is aided by a voice-activated virtual assistant named "Kate." "Kate" assists subscribers in navigating through Webley's call management options. Kate's "voice" is the recorded voice of an actual woman who was hired by one of Parus' predecessors-in-interest.

13. To protect its investment and rights in and to its unified computer and telecommunications networks and services, Webley filed several patent applications in the United States Patent and Trademark Office describing and claiming the various unique features and advantages of the Webley System. One of these patent applications, originally filed on March 2, 1998, was allowed and issued on August 10, 2004 by the United States Patent and Trademark Office as the '264 Patent. Another of these patent applications was allowed and issued on October 19, 2004 by the United States Patent and Trademark Office as the '257 Patent.

14. Webley has also sought to protect its inventions abroad and filed an international application containing substantially the same description of the invention as set forth in the applications filed in 1997 and 1998 in the United States Patent and Trademark Office.

GoSolutions Appropriated Parus' Technology

15. GoSolutions was incorporated on or about 1999 in Delaware.

16. In about May 1999, GoSolutions obtained a subscription to Webley's unified computer and telecommunications system. For the next six months, until about November 1999, GoSolutions explored the features of the Webley system.

17. Upon information and belief, GoSolutions also obtained information about the Webley system from other sources, including information from a former representative of Webley.

18. On September 10, 1999, Webley's international patent application was published, and the description of the unique innovative Webley technology became available to the public.

19. On about March 2000, GoSolutions launched its unified communication system. The GoSolutions unified communication system has the important features of the Webley system, which GoSolutions employee had known of, studied, and explored prior to implementing its system.

20. Specifically, GoSolutions has manufactured and uses a unified computer and telecommunications network which allows subscribers to send, receive, and manage telephone calls, voicemails, emails, and facsimiles and participate in conference calls all from one central location.

21. Currently, GoSolutions uses and sells its unified communication services under the trade name "GoSolo UCS."

22. In addition to adopting the technical features of the Webley unified computer and telecommunications network, GoSolo's personal (virtual) receptionist, who aids subscribers with managing their telephone calls, voicemails, emails, and facsimiles, has substantially the same voice as the personal (virtual) receptionist in Webley's System.

Plaintiffs' Patents

23. The inventor of both the '264 Patent and the '257 Patent is Alex Kurganov. Pursuant to a written agreement, Mr. Kurganov assigned his right, title and interest to the applications that matured into '264 Patent and the '257 Patent, including the right to sue for an injunction and to recover damages from past infringement. As part of the consideration for assigning his invention, Mr. Kurganov received part ownership in the companies which owned the right to the '264 Patent and the '257 Patent.

24. The applications that matured into the '264 Patent and the '257 Patent received thorough examinations in the United States Patent Office. A Patent Office Examiner researched the prior art and selected the best art for consideration. The Patent Office also considered numerous prior art references and other materials submitted by Webley during the prosecution of the patent application. After a review of numerous prior art patents and publications, the Patent Office allowed the claims of the application for the '264 Patent, which issued on August 10, 2004, and the claims of the application for the '257 Patent, which issued on October 19, 2004.

25. Parus (which includes the Webley division) is the owner of the entire right, title and interest in and to the '264 Patent and the '257 Patent, including the right to sue for an injunction and to recover damages for past infringement.

26. The '264 Patent and the '257 Patent disclose and claim speaker-independent unified computer and telecommunication networks which allow subscribers to send, receive, and manage telephone calls, voicemails, emails, and facsimiles and participate in conference calls all from one central location. These patents also disclose and claim methods for allowing subscribers to perform these functions through Webley's unified computer and telecommunications network. Webley has

offered the unified computer and telecommunications network services under a number of tradenames, including the trade name CommuniKate™ Unified Communications.

27. Webley's unified computer and telecommunications system and CommuniKate™ services, which are covered by the '264 Patent and the '257 Patent, have enjoyed tremendous commercial success.

Parus Is Suffering Harm
Due To GoSolutions' Continued Infringement

28. Parus and its Webley division, is being damaged by GoSolutions' use of the inventions described and claimed in the '264 Patent and the '257 Patent in several respects. First, GoSolutions' infringement of these patents is depriving Parus of profits on sales of its patented unified computer and telecommunications network and services that would have been made but for GoSolutions' infringement.

29. Second, Parus and its Webley division, is being placed at a competitive disadvantage by GoSolutions' improper taking of the innovative results of Webley's research and development without paying for them.

30. Third, GoSolutions' continuing infringement damages Parus and its Webley division's goodwill and reputation as a leading source of technological advancements in the unified communications industry. The public and marketplace perception of Parus and Webley as the source of innovative unified communications networks and service is harmed when infringers like GoSolutions use Webley's innovative developments without authorization or license.

31. Fourth, GoSolutions' unauthorized and infringing, making, using, selling, offering to sell and/or selling GoSolutions unified computer and telecommunications network in violation of the '264 Patent and the '257 Patent threatens the value of Parus' intellectual property as does

GoSolutions' inducement of others to infringe the '264 Patent and the '257 Patent when subscribers use GoSolutions' unified computer and telecommunications network. Accordingly, unless and until GoSolutions' continued acts of infringement are enjoined, Parus and its Webley division will continue to suffer irreparable harm for which there is no adequate remedy at law.

COUNTS

Count 1: Direct Infringement Of The '264 Patent

32. Paragraphs 1 through 31 are incorporated by reference as if stated fully herein.

33. GoSolutions' making, using, selling, offering to sell and/or selling its unified computer and telecommunications network for receiving, sending and managing information from a subscriber, through a subscriber communication device, to the network and from the network to the subscriber communication device directly infringes the claims of the '264 Patent.

34. GoSolutions' use of its unified computer and telecommunications network for receiving, sending and managing information from a subscriber, through a subscriber communication device, to the network and from the network to the subscriber communication device directly also infringes the claims of the '264 Patent.

35. Parus has been damaged by GoSolutions' infringement and Parus and its Webley division will continue to suffer irreparable harm unless enjoined by this Court.

Count 2: Inducement To Infringe The '264 Patent

36. Paragraphs 1 through 31 are incorporated by reference as if stated fully herein.

37. GoSolutions has actively induced and is inducing infringement of the '264 Patent by knowingly aiding and abetting the direct infringement of the claims of the '264 Patent.

38. In particular, subscribers of GoSolutions' GoSolo UCS directly infringe the claims of the '264 Patent by using the claimed network when sending, receiving, and/or managing telephone calls, voicemails, emails and facsimiles.

39. Parus has been damaged by GoSolutions' inducement to infringe and will continue to suffer irreparable harm unless enjoined by this Court.

Count 3: Direct Infringement Of The '257 Patent

40. Paragraphs 1 through 31 are incorporated by reference as if stated fully herein.

41. GoSolutions' making, using, selling, offering to sell and/or selling its unified computer and telecommunications network for receiving, sending and managing information from a subscriber, through a subscriber communication device, to the network and from the network to the subscriber communication device directly infringes the claims of the '257 Patent.

42. GoSolutions' use of its unified computer and telecommunications network for receiving, sending and managing information from a subscriber, through a subscriber communication device, to the network and from the network to the subscriber communication device directly also infringes the claims of the '257 Patent.

43. Parus has been damaged by GoSolutions' infringement and Parus and its Webley division will continue to suffer irreparable harm unless enjoined by this Court.

Count 4: Inducement To Infringe The '257 Patent

44. Paragraphs 1 through 31 are incorporated by reference as if stated fully herein.

45. GoSolutions has actively induced and is inducing infringement of the '257 Patent by knowingly aiding and abetting the direct infringement of the claims of the '257 Patent.

46. In particular, subscribers of GoSolutions' GoSolo UCS directly infringe the claims of the '257 Patent by using the claimed network when sending, receiving, and/or managing telephone calls, voicemails, emails and facsimiles.

47. Parus has been damaged by GoSolutions' inducement to infringe and will continue to suffer irreparable harm unless enjoined by this Court.

JURISDICTION AND VENUE

48. This action arises under the Patent Statute Title 35 of U.S. Code, and this Court has subject matter jurisdiction over this patent infringement action pursuant to 28 U.S.C. § 1338(a).

49. This Court has specific personal jurisdiction over GoSolutions pursuant to the Illinois long arm statute because GoSolutions transacts business in this Judicial District using a fully interactive web site at www.gosolo.com.

50. This Court has general jurisdiction over GoSolutions because GoSolutions conducts persistent and continuous business in this Judicial District.

51. Specifically, GoSolutions conducts business in this District, including the advertising and sale of its "GoSolo Unified Communications Service" ("UCS") through an interactive web site accessible to Illinois corporations and individuals. In addition, GoSolutions has subscribers to its GoSolo UCS in Illinois. GoSolutions offers for sale and sells its GoSolo UCS in violation of Parus' patent rights and, therefore, has committed acts of infringement of the Parus '264 Patent and the '257 Patent in this judicial district. GoSolutions www.gosolo.com web site is readily accessible in Illinois by residents, including individuals and corporations in Illinois, through a standard dial-up, cable or high-speed internet connection.

52. At GoSolutions' www.gosolo.com web site, Illinois residents may sign-up for, pay for, and activate via an internet connection GoSolutions' GoSolo UCS, including GoSolo, Go800,

mBox, Virtual Office and GoConferencing services. Upon information and belief, GoSolutions has hundreds of subscribers paying for and utilizing the GoSolo UCS in Illinois. Accordingly, GoSolutions has purposefully availed itself of the privilege of conducting activities in Illinois, and specifically within the Northern District, such that GoSolutions reasonably should have anticipated being haled into court in Illinois.

53. GoSolutions' offering for sale and sales of its GoSolo UCS and subscribers' use of the GoSolo UCS in Illinois infringe at least one claim of the '264 Patent and one claim of the '257 Patent. Thus, Parus' claim for patent infringement arises out of and is directly related to GoSolutions' offers for sale and sales of its GoSolo UCS over the Internet.

54. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(c) and 1400(b), because GoSolutions does business and has committed acts of infringement in this judicial District and because this Court has personal jurisdiction over GoSolutions.

JURY DEMAND

Plaintiff demands trial by jury of all issues triable by jury.

REQUESTED RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court:

A. Enjoin Defendant GoSolutions, its officers, agents, servants, employees, and attorneys, and those persons in active concert or participation with them who receive actual notice of the order by personal service or otherwise, from making, using, selling, offering to sell, importing, or otherwise engaging in acts of infringement of the '264 Patent and the '257 Patent;

B. Award to Plaintiff the actual damages suffered by Parus as the result of said infringement by GoSolutions;

C. Declare that GoSolutions' infringement is willful and wanton and award to Plaintiff increased damages up to three times the actual damages, pursuant to 35 U.S.C. § 284;

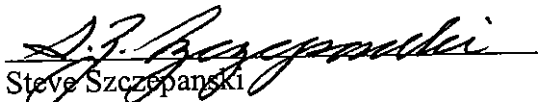
D. Declare this action to be an exceptional case pursuant to 35 U.S.C. § 285 and award to Plaintiff its attorneys' fees in this exceptional case;

E. Award to Plaintiff its costs; and

F. Grant to Plaintiff such other and further relief as may be just and proper.

Dated: October 27, 2004

Respectfully submitted,



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Attorneys for Plaintiff
PARUS HOLDINGS, INC.

Exhibit 1

US006775264B1

(12) **United States Patent**
Kurganov

(10) **Patent No.: US 6,775,264 B1**
(45) **Date of Patent: *Aug. 10, 2004**

(54) **COMPUTER, INTERNET AND TELECOMMUNICATIONS BASED NETWORK**

(75) Inventor: **Alex Kurganov**, Buffalo Grove, IL (US)

(73) Assignee: **Webley Systems, Inc.**, Bannockburn, IL (US)

(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/033,335**

(22) Filed: **Mar. 2, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/040,056, filed on Mar. 3, 1997.

(51) **Int. Cl.**[7] **H04L 12/66**

(52) **U.S. Cl.** **370/352**; 370/390; 370/392

(58) **Field of Search** 370/352, 353, 370/355, 356, 260, 354, 400, 401, 389, 390, 391, 392, 261; 379/900, 88.02, 88.07, 88.11, 88.12, 88.13, 88.16, 88.17, 905, 907; 704/231, 270, 275

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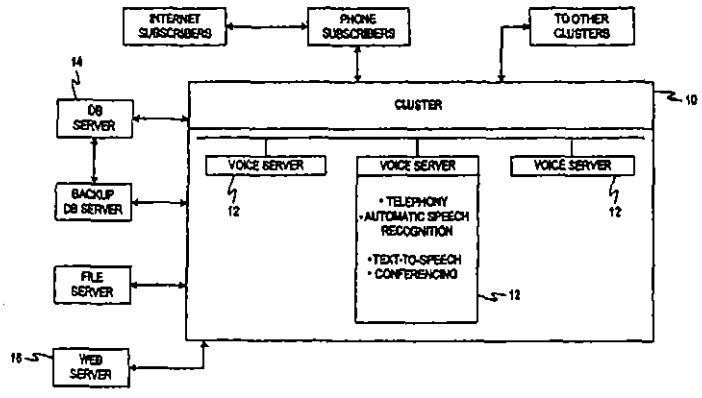
Primary Examiner—Dan Ton
Assistant Examiner—Inder Pal Mehra
(74) *Attorney, Agent, or Firm*—Jenkens & Gilchrist

(57) **ABSTRACT**

A method and apparatus for a computer and telecommunication network which can receive, send and manage information from or to a subscriber of the network, based on the subscriber's configuration. The network is made up of at least one cluster containing voice servers which allow for telephony, speech recognition, text-to-speech and conferencing functions, and is accessible by the subscriber through standard telephone connections or through internet connections. The network also utilizes a database and file server allowing the subscriber to maintain and manage certain contact lists and administrative information. A web server is also connected to the cluster thereby allowing access to all functions through internet connections.

28 Claims, 27 Drawing Sheets



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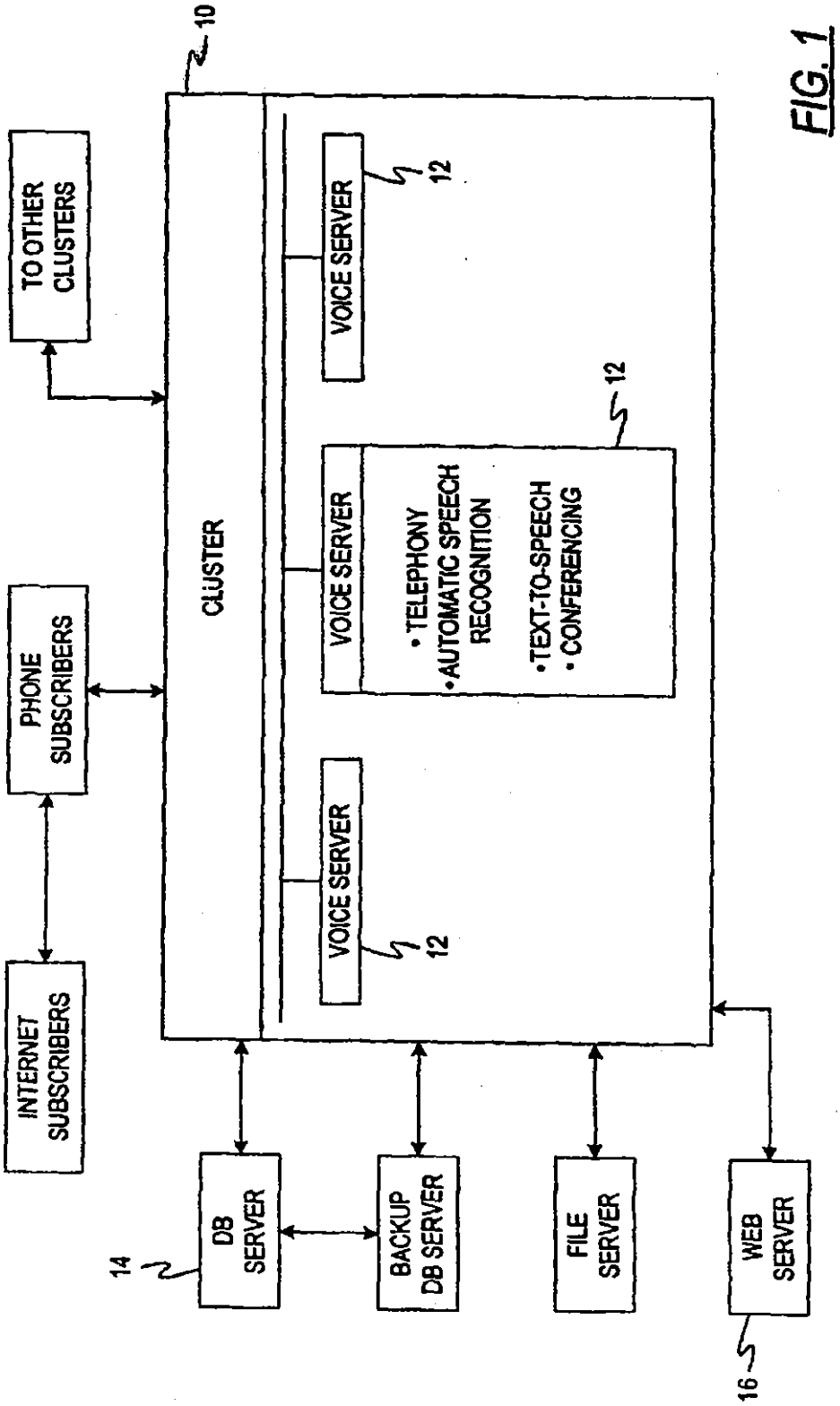
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TO OTHER CLUSTERS
PHONE SUBSCRIBERS
INTERNET SUBSCRIBERS
CLUSTER
VOICE SERVER
12
VOICE SERVER
12
• TELEPHONY
• AUTOMATIC SPEECH RECOGNITION
• TEXT-TO-SPEECH
• CONFERENCING
VOICE SERVER
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DB SERVER
BACKUP DB SERVER
FILE SERVER
WEB SERVER
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FIG. 1

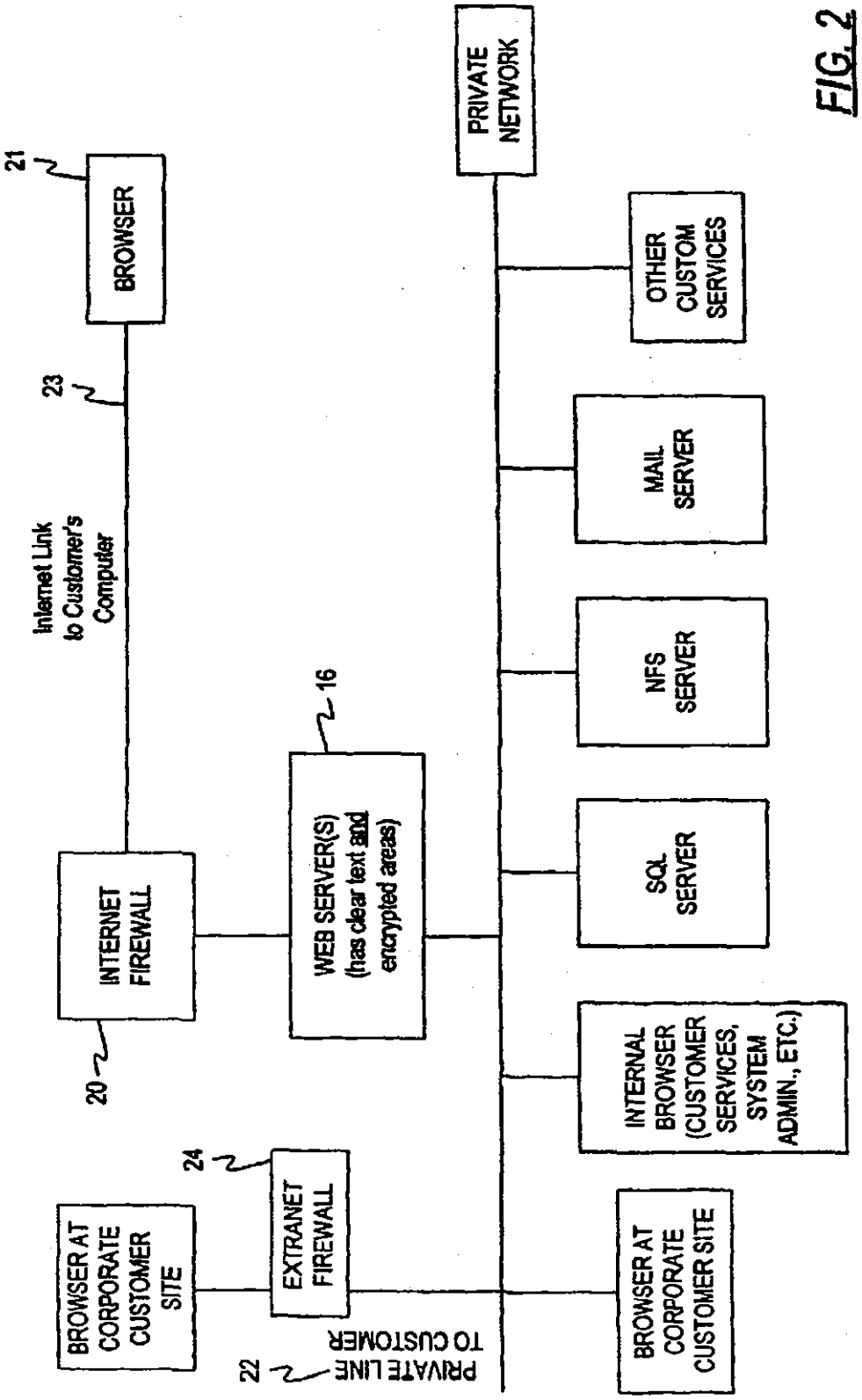

PRIVATE NETWORK
21
BROWSER
23
Internet Link to Customer's Computer
OTHER CUSTOM SERVICES
MAIL SERVER
NFS SERVER
16
WEB SERVER(S) (has clear text and encrypted areas)
SQL SERVER
INTERNAL BROWSER (CUSTOMER SERVICES, SYSTEM ADMIN., ETC.)
INTERNET FIREWALL
20
24
EXTRANET FIREWALL
BROWSER AT CORPORATE CUSTOMER SITE
BROWSER AT CORPORATE CUSTOMER SITE
PRIVATE LINE TO CUSTOMER
22

FIG. 2

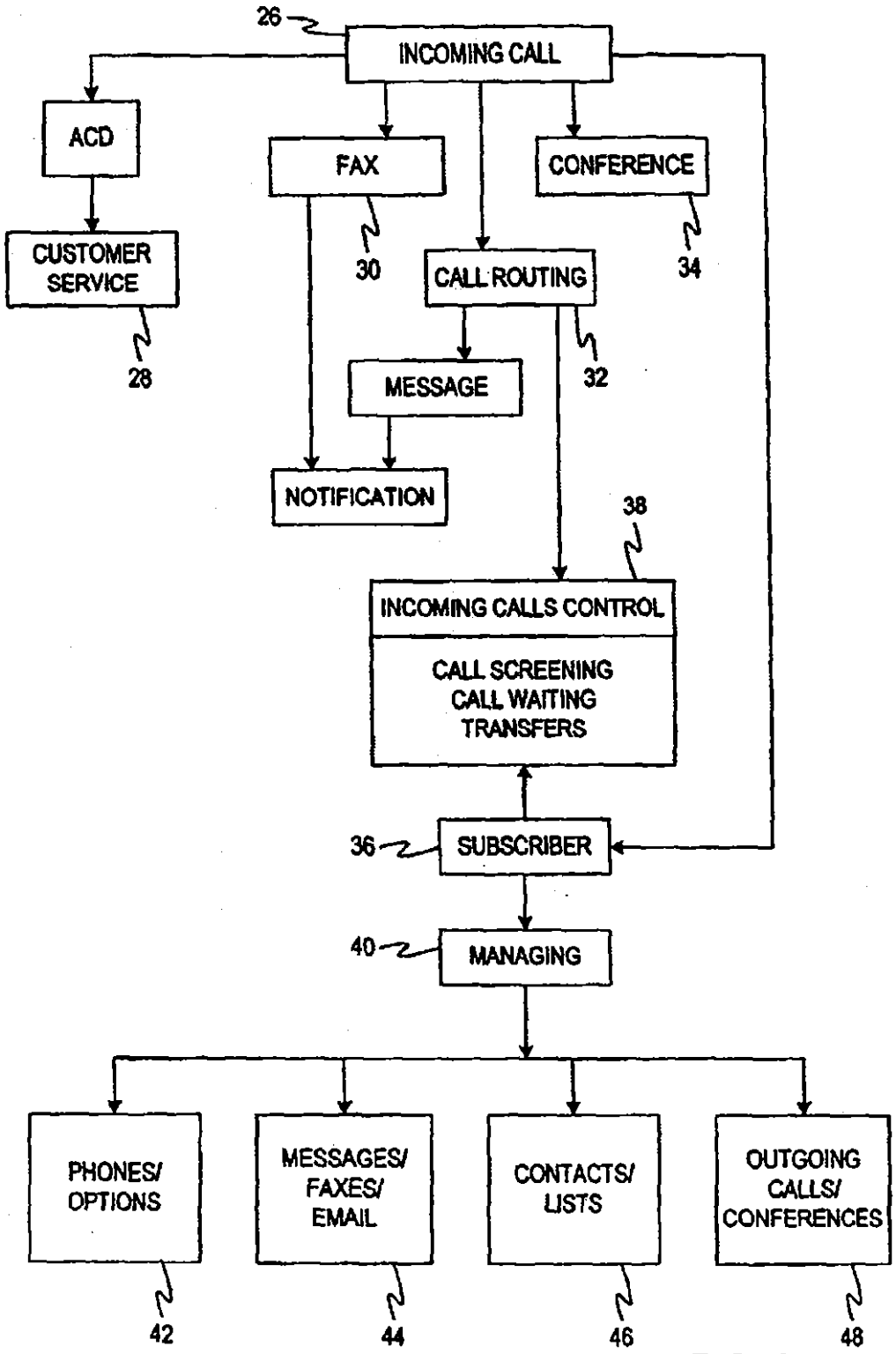

26
INCOMING CALL
ACD
FAX
CONFERENCE
CUSTOMER SERVICE
30
CALL ROUTING
34
28
MESSAGE
32
NOTIFICATION
38
INCOMING CALLS CONTROL
CALL SCREENING
CALL WAITING
TRANSFERS
36
SUBSCRIBER
40
MANAGING
PHONES/ OPTIONS
MESSAGES/ FAXES/ EMAIL
CONTACTS/ LISTS
OUTGOING CALLS/ CONFERENCES
42
44
46
48

FIG. 3

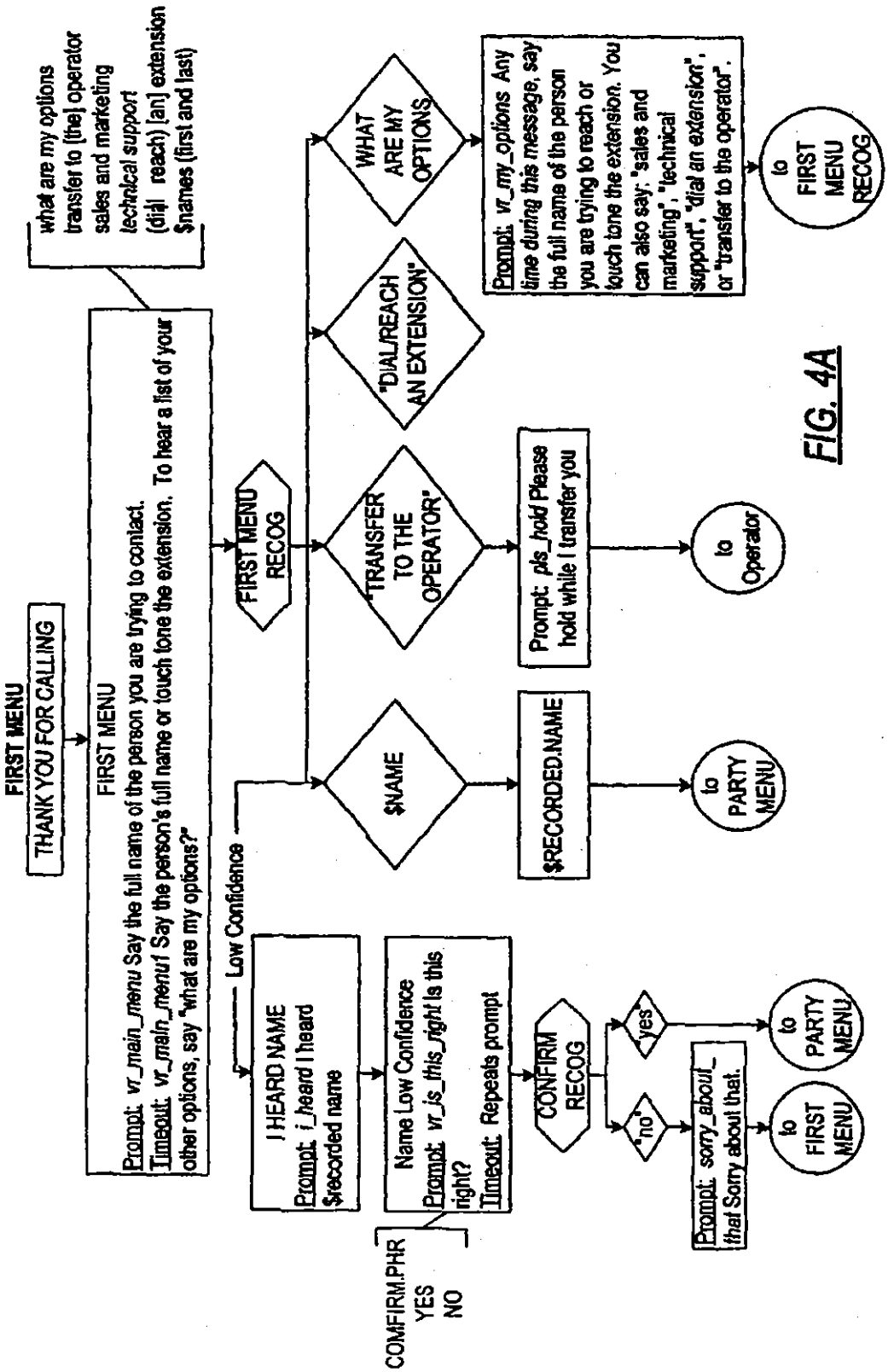

FIRST MENU
THANK YOU FOR CALLING
FIRST MENU
Prompt: vr_main_menu Say the full name of the person you are trying to contact.
Timeout: vr_main_menu1 Say the person's full name or touch tone the extension. To hear a list of your other options, say "what are my options?"
what are my options
transfer to (the) operator
sales and marketing
technical support
(dial reach) (an) extension
$names (first and last)
FIRST MENU RECOG
Low Confidence
$NAME
"TRANSFER TO THE OPERATOR"
"DIAL/REACH AN EXTENSION"
WHAT ARE MY OPTIONS
Prompt: pls_hold Please hold while I transfer you
to Operator
$RECORDED.NAME
to PARTY MENU
I HEARD NAME
Prompt: i_heard I heard $recorded name
Name Low Confidence
Prompt: vr_is_this_right Is this right?
Timeout: Repeats prompt
COMFIRM.PHR
YES
NO
CONFIRM RECOG
yes
no
Prompt: sorry_about_that Sorry about that.
to PARTY MENU
to FIRST MENU
Prompt: vr_my_options Any time during this message, say the full name of the person you are trying to reach or touch tone the extension. You can also say: "sales and marketing", "technical support", "dial an extension", or "transfer to the operator".
to FIRST MENU RECOG

FIG. 4A

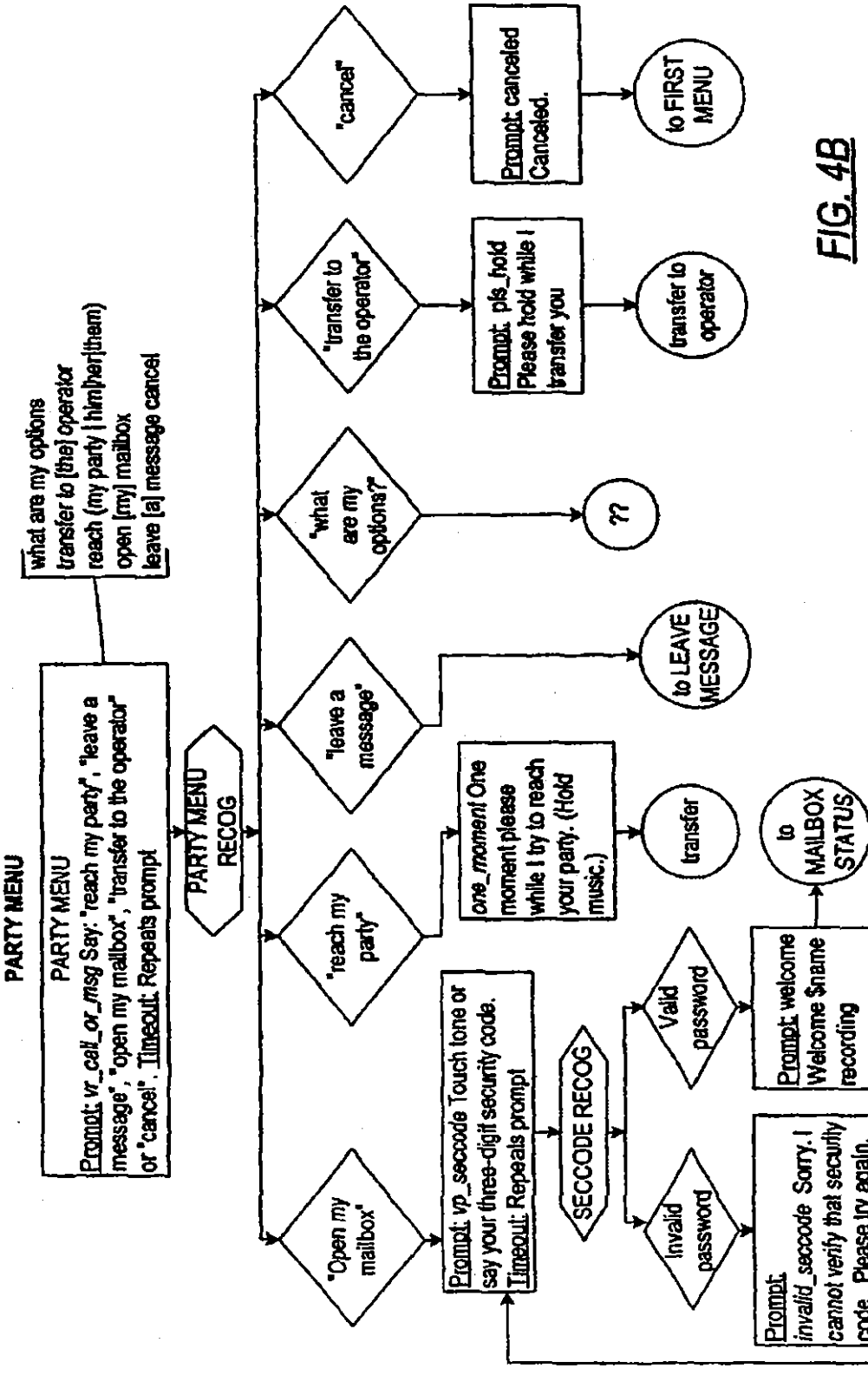

PARTY MENU
PARTY MENU
Prompt: vr_call_or_msg Say: "reach my party", "leave a message", "open my mailbox", "transfer to the operator" or "cancel". Timeout: Repeats prompt
what are my options
transfer to [the] operator
reach (my party | him|her|them)
open [my] mailbox
leave [a] message cancel
PARTY MENU RECOG
"Open my mailbox"
Prompt: vp_seccode Touch tone or say your three-digit security code. Timeout: Repeats prompt
SECCODE RECOG
Invalid password
Prompt: invalid_seccode Sorry. I cannot verify that security code. Please try again.
Valid password
Prompt: welcome Welcome $name recording
to MAILBOX STATUS
"reach my party"
one_moment One moment please while I try to reach your party. (Hold music.)
transfer
"leave a message"
to LEAVE MESSAGE
"what are my options?"
??
"transfer to the operator"
Prompt: pls_hold Please hold while I transfer you
transfer to operator
"cancel"
Prompt: canceled Canceled.
to FIRST MENU

FIG. 4B

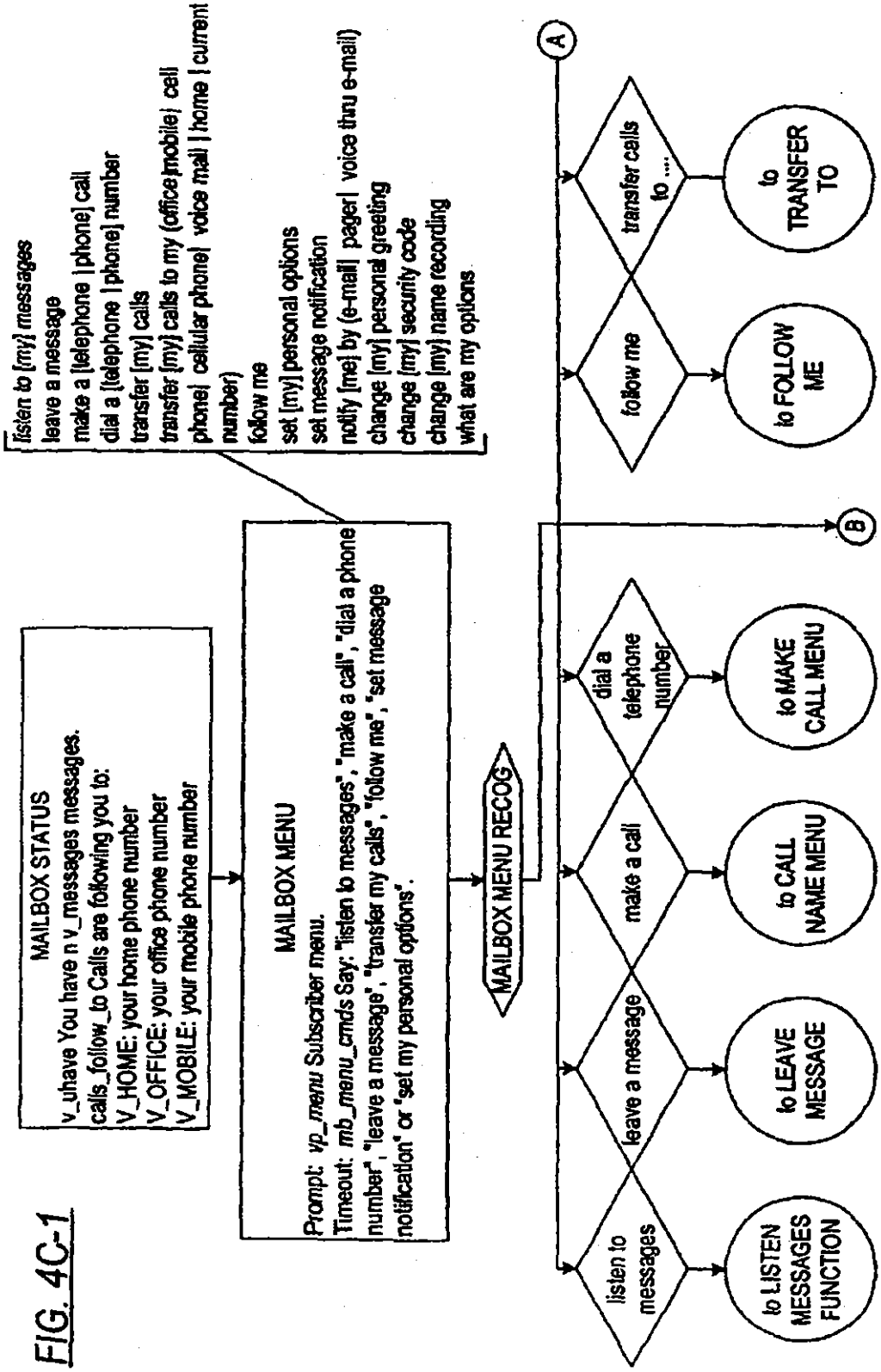

MAILBOX MENU
MAILBOX STATUS
v_uhave You have n v_messages messages.
calls_follow_to Calls are following you to:
V_HOME: your home phone number
V_OFFICE: your office phone number
V_MOBILE: your mobile phone number
MAILBOX MENU
Prompt: vp_menu Subscriber menu.
Timeout: mb_menu_cmds Say: "listen to messages", "make a call", "dial a phone number", "leave a message", "transfer my calls", "follow me", "set message notification" or "set my personal options".
listen to [my] messages
leave a message
make a [telephone | phone] call
dial a [telephone | phone] number
transfer [my] calls
transfer [my] calls to my (office|mobile| cell phone| cellular phone| voice mail | home | current number)
follow me
set [my] personal options
set message notification
notify [me| by (e-mail| pager| voice thru e-mail)
change [my] personal greeting
change [my] security code
change [my] name recording
what are my options
MAILBOX MENU RECOG
A
B
listen to messages
leave a message
make a call
dial a telephone number
follow me
transfer calls to ....
to LISTEN MESSAGES FUNCTION
to LEAVE MESSAGE
to CALL NAME MENU
to MAKE CALL MENU
to FOLLOW ME
to TRANSFER TO

FIG. 4C-1

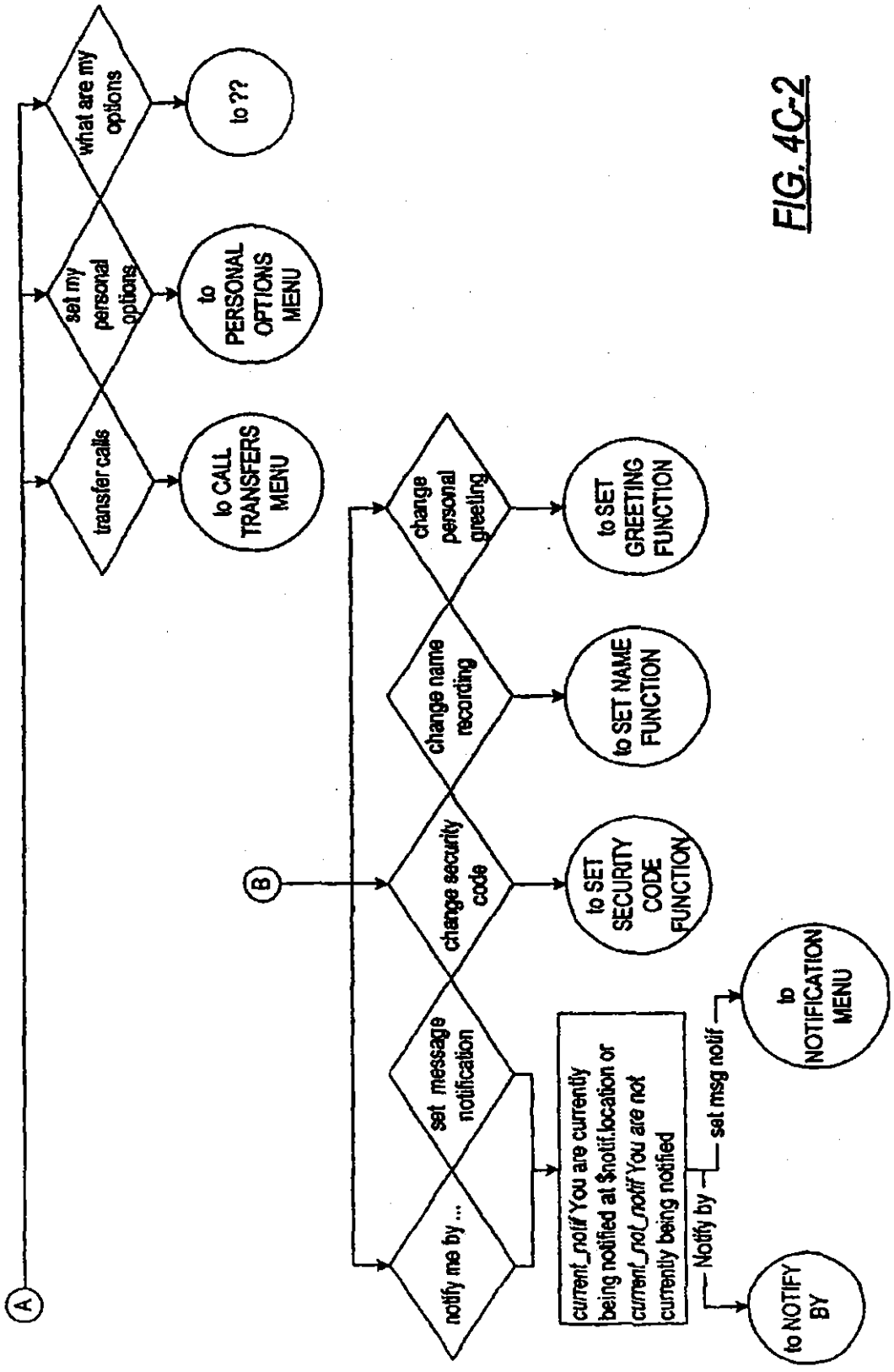

A
what are my options
to ??
set my personal options
to PERSONAL OPTIONS MENU
transfer calls
to CALL TRANSFERS MENU
B
change personal greeting
to SET GREETING FUNCTION
change name recording
to SET NAME FUNCTION
change security code
to SET SECURITY CODE FUNCTION
set message notification
notify me by ...
current_notif You are currently being notified at $notif.location or current_not_notif You are not currently being notified
Notify by
set msg notif
to NOTIFICATION MENU
to NOTIFY BY

FIG. 4C-2

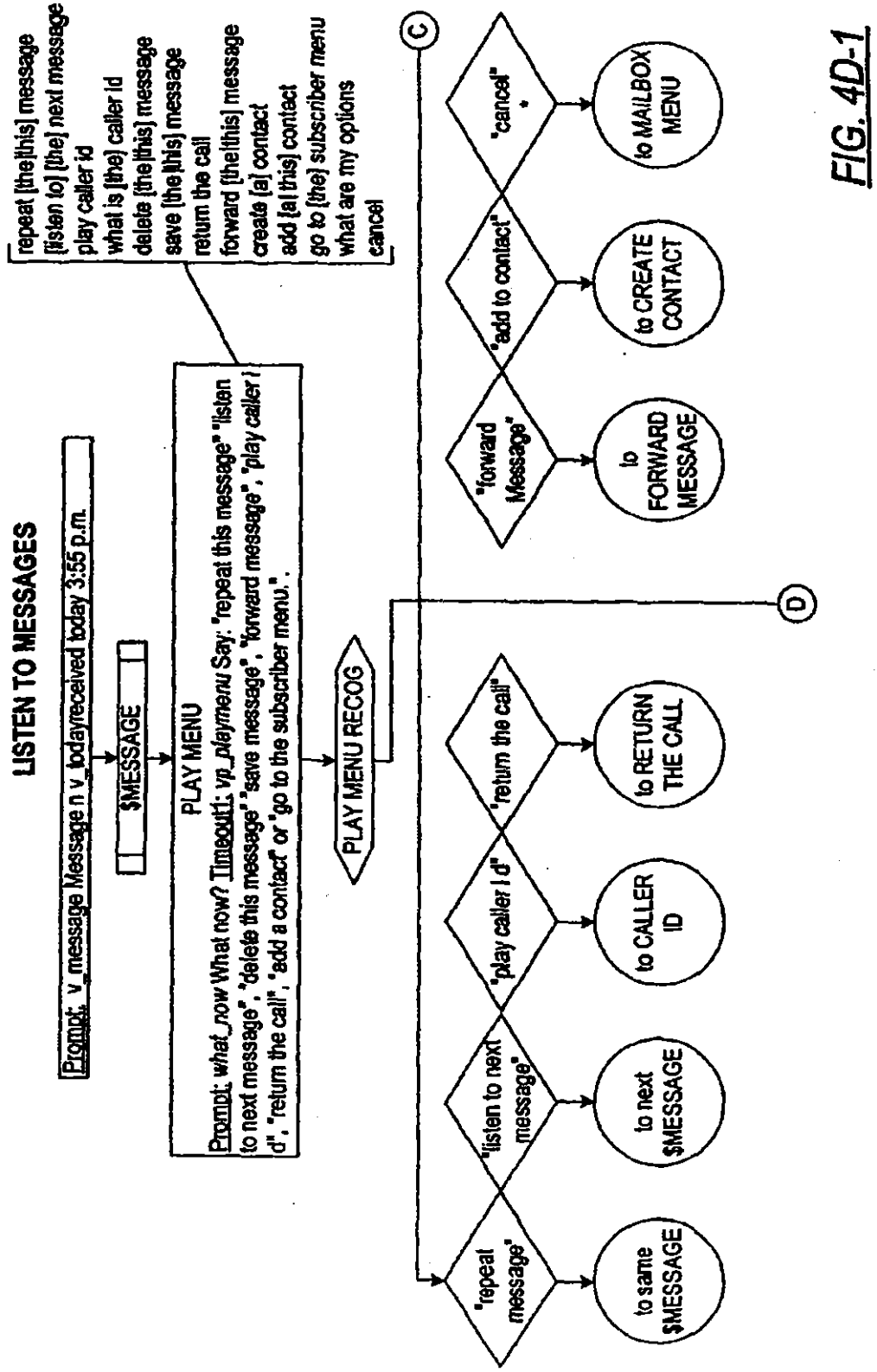

LISTEN TO MESSAGES
Prompt: v_message Message n v_todayreceived today 3:55 p.m.
$MESSAGE
PLAY MENU
Prompt: what_now What now? Timeout1: vp_playmenu Say: "repeat this message" "listen to next message", "delete this message" "save message", "forward message", "play caller I d", "return the call", "add a contact" or "go to the subscriber menu.".
repeat [the|this] message
[listen to] [the] next message
play caller id
what is [the] caller id
delete [the|this] message
save [the|this] message
return the call
forward [the|this] message
create [a] contact
add [a|this] contact
go to [the] subscriber menu
what are my options
cancel
PLAY MENU RECOG
C
D
"repeat message"
to same $MESSAGE
"listen to next message"
to next $MESSAGE
"play caller I d"
to CALLER ID
"return the call"
to RETURN THE CALL
"forward Message"
to FORWARD MESSAGE
"add to contact"
to CREATE CONTACT
"cancel"
to MAILBOX MENU

FIG. 4D-1

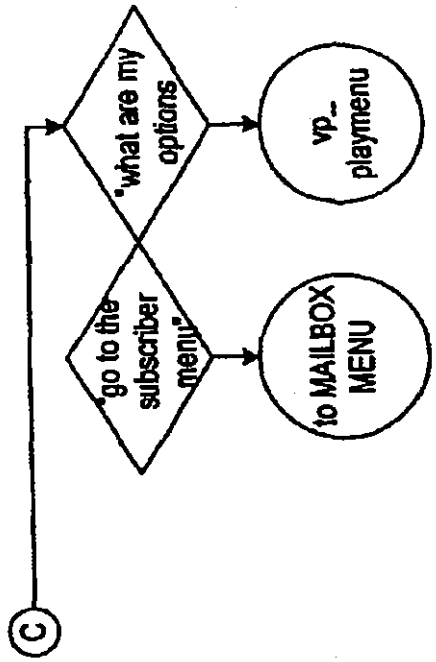
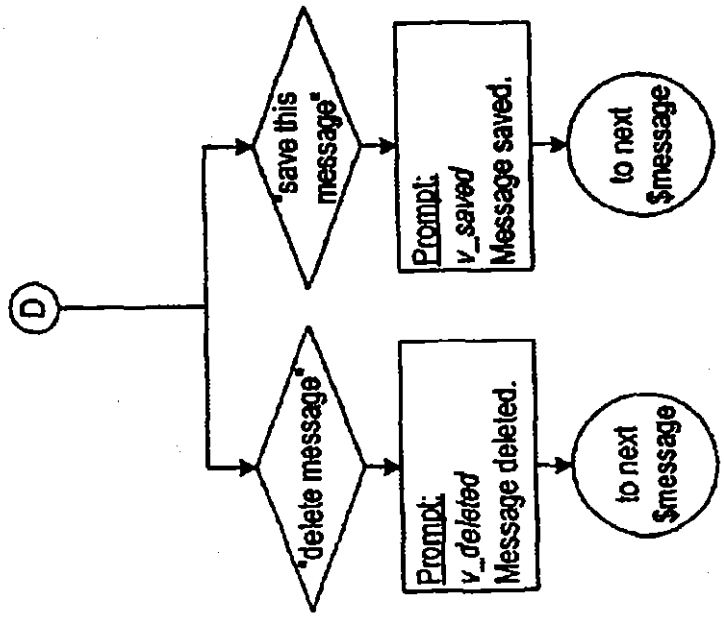

C
"what are my options"
vp_ playmenu
"go to the subscriber menu"
to MAILBOX MENU

FIG. 4D-2


D
"save this message"
Prompt: v_saved Message saved.
to next $message
"delete message"
Prompt: v_deleted Message deleted.
to next $message

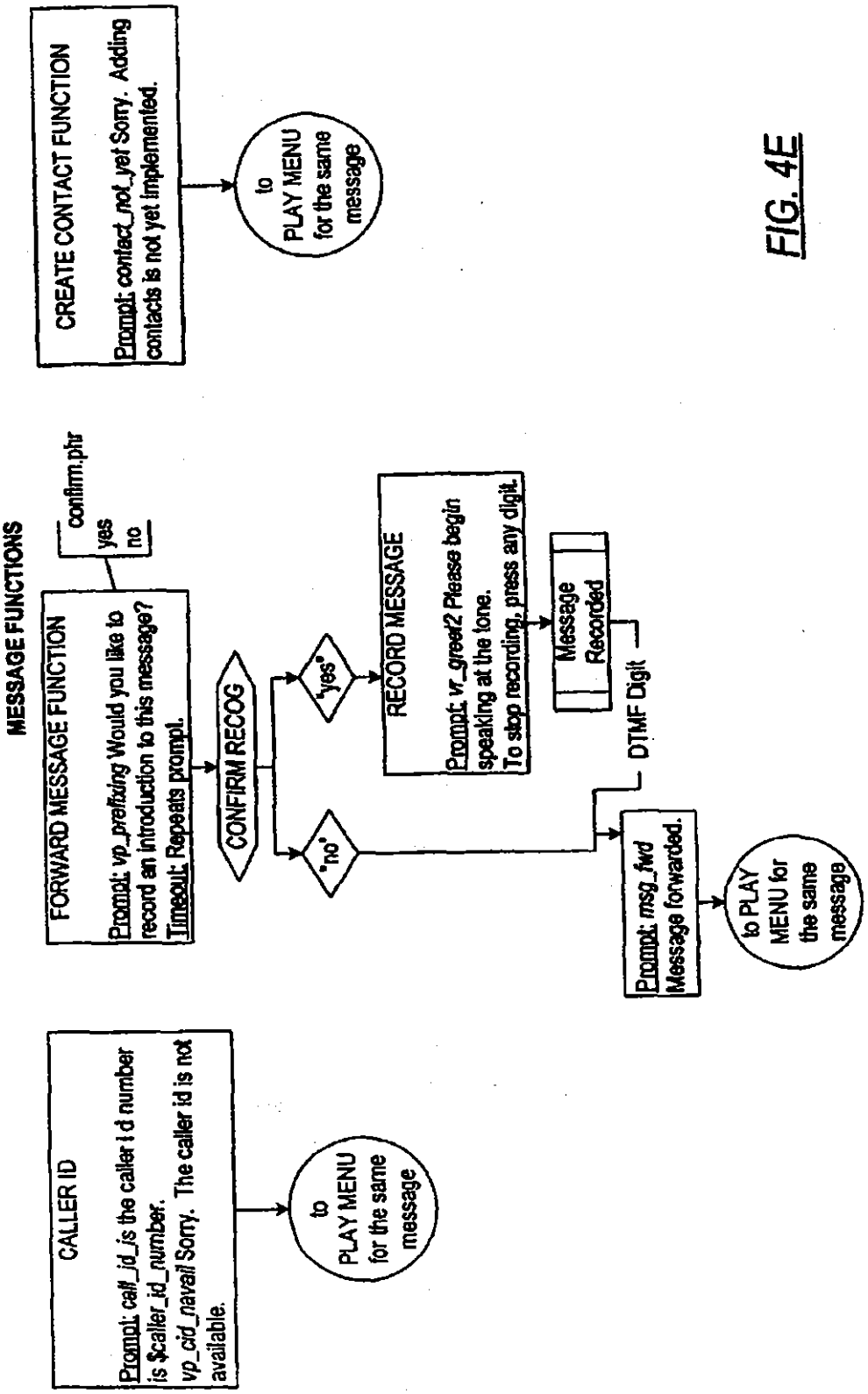

MESSAGE FUNCTIONS
FORWARD MESSAGE FUNCTION
Prompt: vp_prefixing Would you like to record an introduction to this message?
Timeout: Repeats prompt.
confirm.phr
yes
no
CONFIRM RECOG
'yes'
'no'
RECORD MESSAGE
Prompt: vr_greet2 Please begin speaking at the tone.
To stop recording, press any digit.
Message Recorded
DTMF Digit
Prompt: msg_fwd Message forwarded.
to PLAY MENU for the same message
CREATE CONTACT FUNCTION
Prompt: contact_not_yet Sorry. Adding contacts is not yet implemented.
to PLAY MENU for the same message
CALLER ID
Prompt: call_id_is the caller i d number is $caller_id_number.
vp_cid_navail Sorry. The caller id is not available.
to PLAY MENU for the same message

FIG. 4E

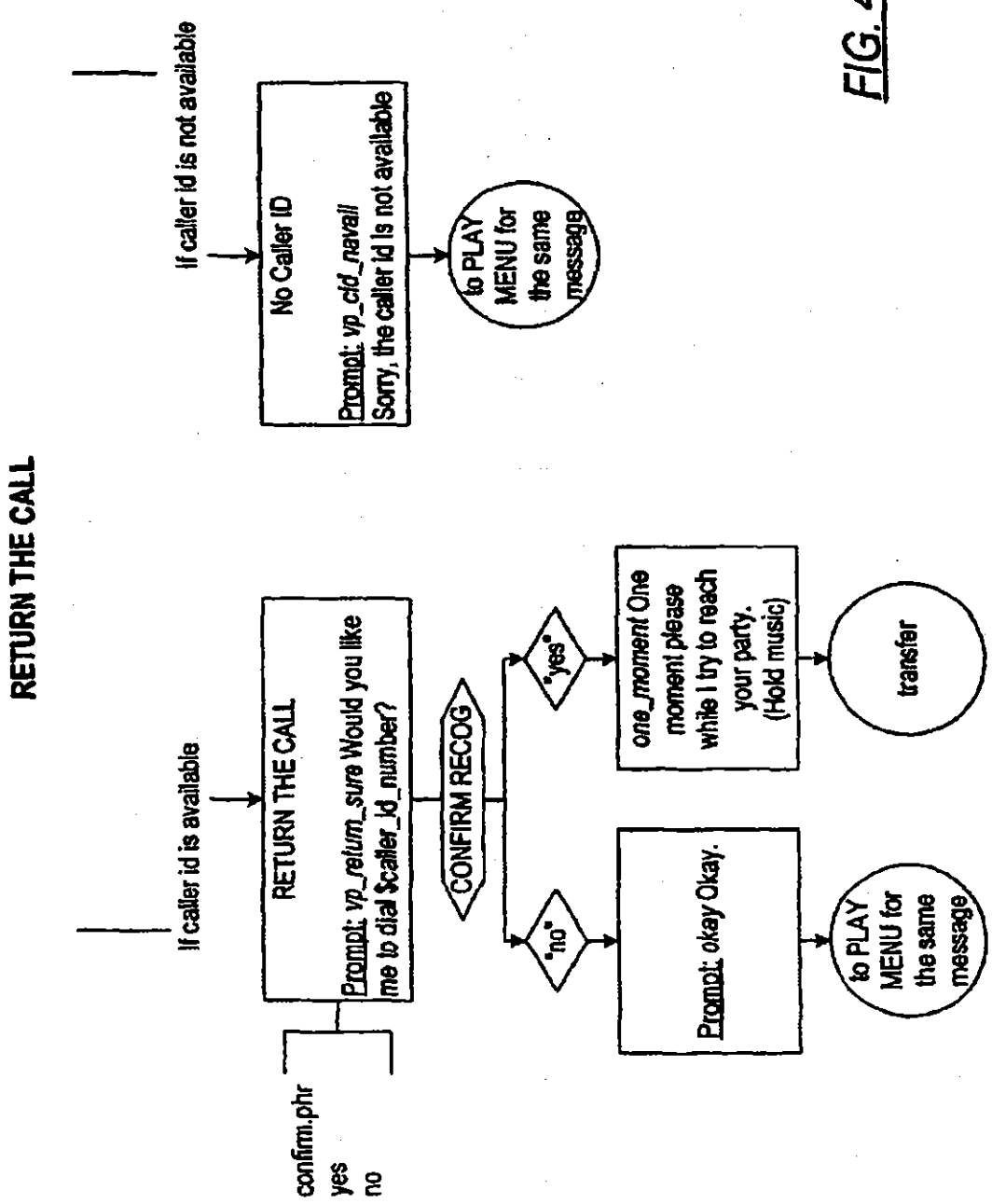

RETURN THE CALL
If caller id is not available
No Caller ID
Prompt: vp_cid_navail
Sorry, the caller id is not available
to PLAY MENU for the same message
If caller id is available
RETURN THE CALL
Prompt: vp_return_sure Would you like me to dial $caller_id_number?
confirm.phr
yes
no
CONFIRM RECOG
"yes"
one_moment One moment please while I try to reach your party. (Hold music)
transfer
"no"
Prompt: okay Okay.
to PLAY MENU for the same message

FIG. 4F

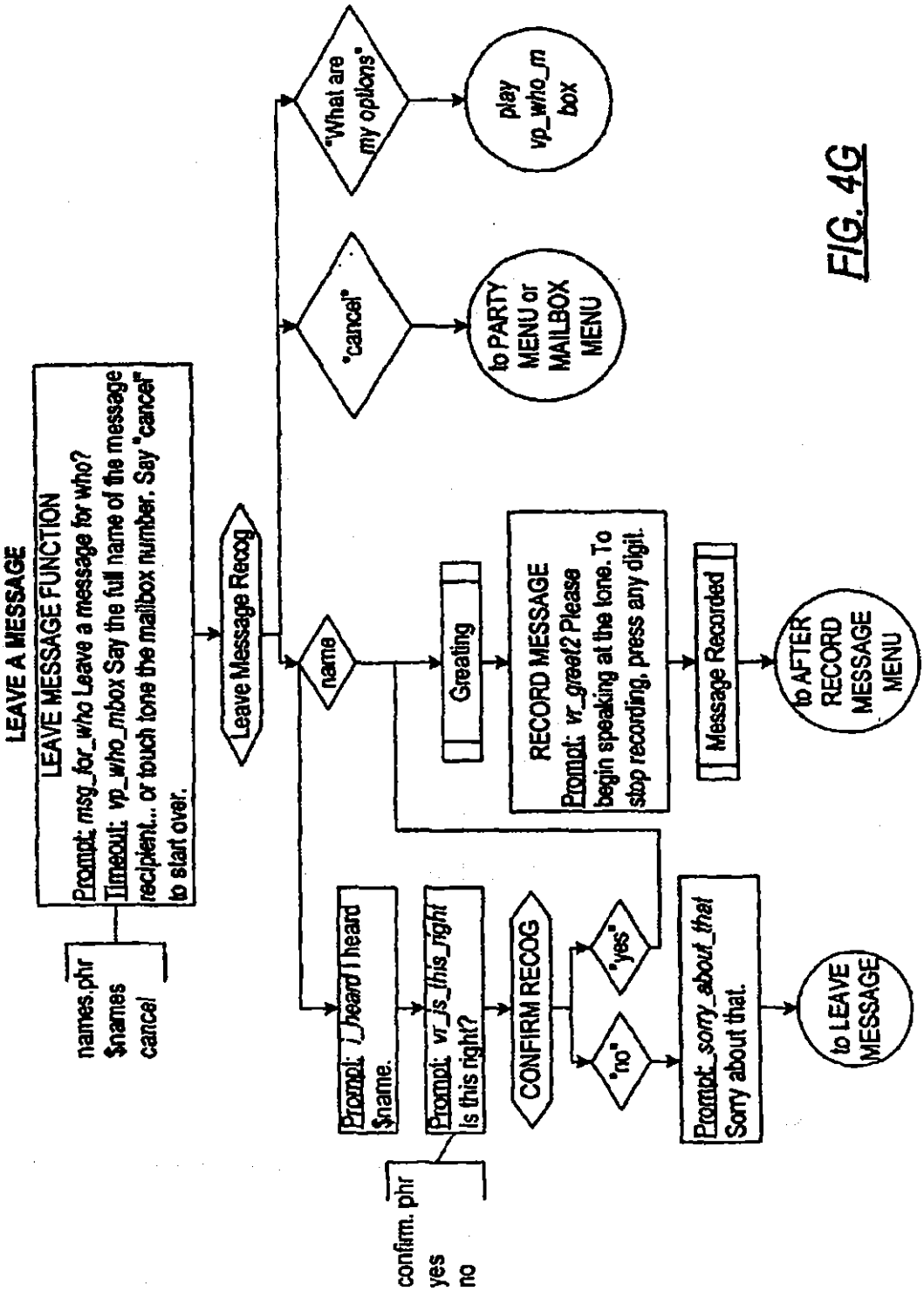

LEAVE A MESSAGE
LEAVE MESSAGE FUNCTION
Prompt: msg_for_who Leave a message for who?
Timeout: vp_who_mbox Say the full name of the message recipient... or touch tone the mailbox number. Say "cancel" to start over.
names.phr
$names
cancel
Leave Message Recog
"What are my options"
play vp_who_m box
"cancel"
to PARTY MENU or MAILBOX MENU
name
Greating
RECORD MESSAGE
Prompt: vr_greet2 Please begin speaking at the tone. To stop recording, press any digit.
Message Recorded
to AFTER RECORD MESSAGE MENU
Prompt: I_heard I heard $name.
Prompt: vr_is_this_right Is this right?
CONFIRM RECOG
"yes"
"no"
Prompt: sorry_about_that Sorry about that.
to LEAVE MESSAGE
confirm. phr
yes
no

FIG. 4G

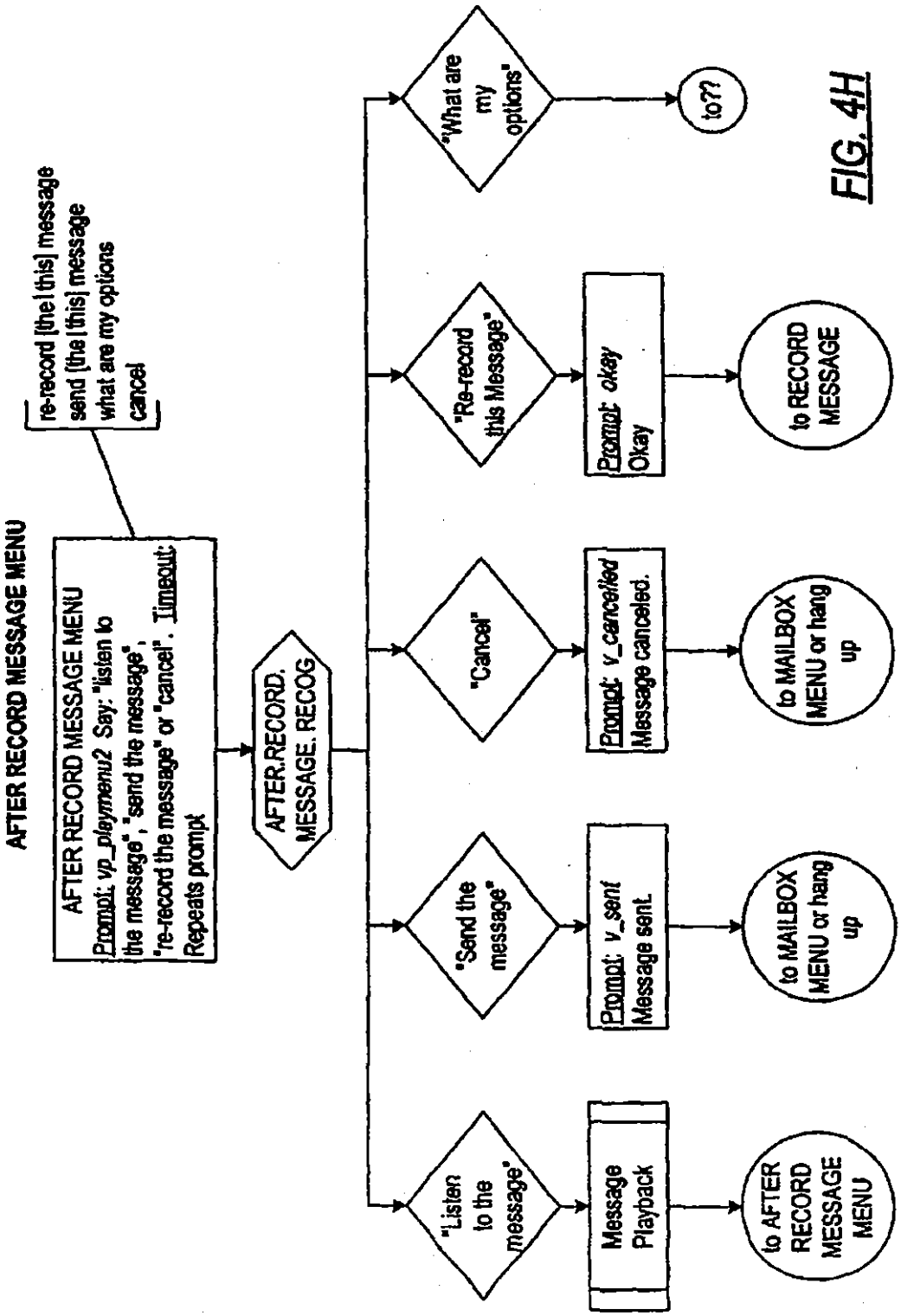

AFTER RECORD MESSAGE MENU
AFTER RECORD MESSAGE MENU
Prompt: vp_playmenu2 Say: "listen to the message", "send the message", "re-record the message" or "cancel". Timeout: Repeats prompt
re-record [the | this] message
send [the | this] message
what are my options
cancel
AFTER.RECORD. MESSAGE. RECOG
"What are my options"
to??
"Re-record this Message"
Prompt: okay Okay
to RECORD MESSAGE
"Cancel"
Prompt: v_cancelled Message canceled.
to MAILBOX MENU or hang up
"Send the message"
Prompt: v_sent Message sent.
to MAILBOX MENU or hang up
"Listen to the message"
Message Playback
to AFTER RECORD MESSAGE MENU

FIG. 4H

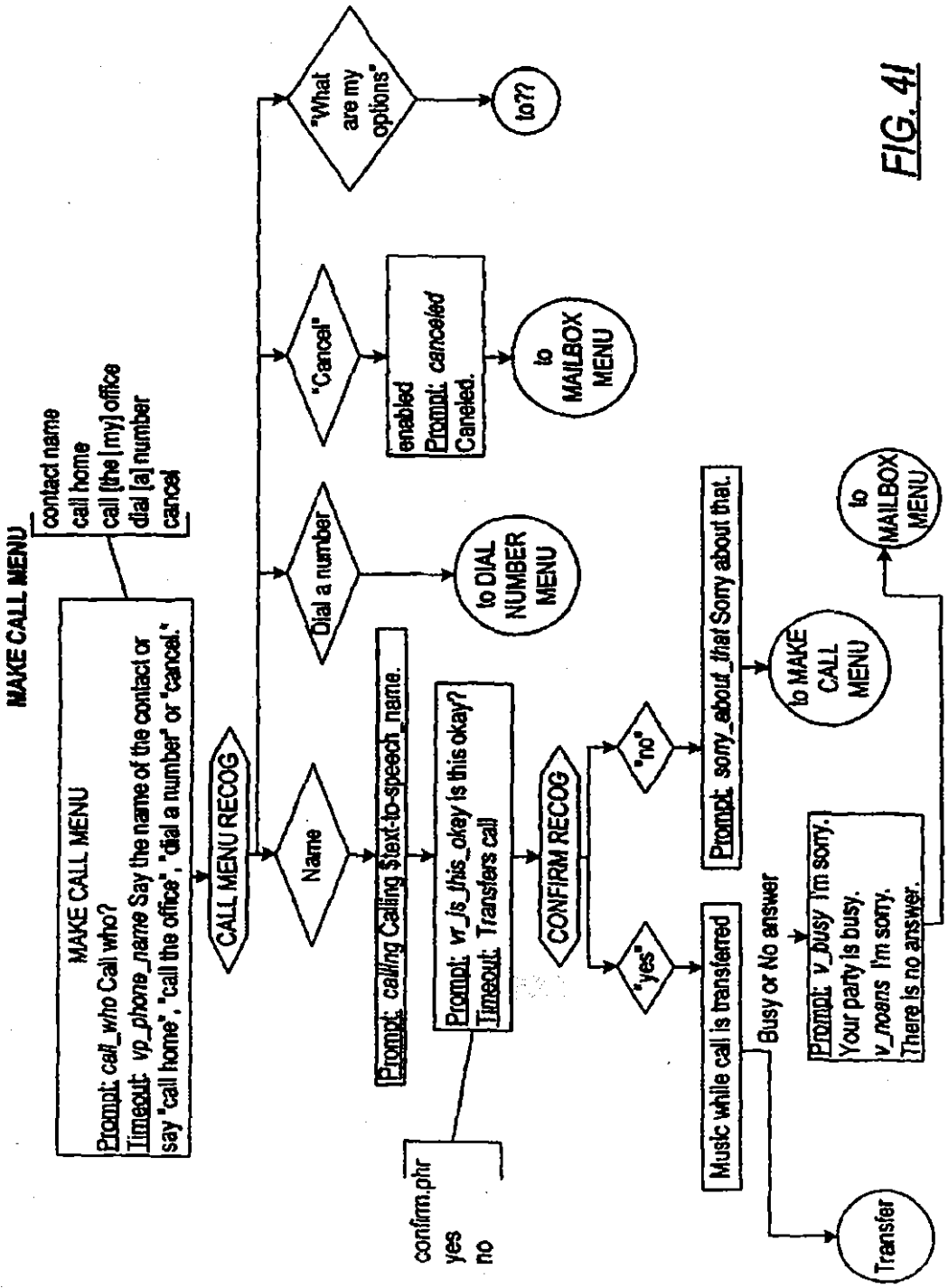

MAKE CALL MENU
contact name
call home
call [the | my] office
dial [a] number
cancel
MAKE CALL MENU
Prompt: call_who Call who?
Timeout: vp_phone_name Say the name of the contact or say "call home", "call the office", "dial a number" or "cancel."
CALL MENU RECOG
Name
Prompt: calling Calling $text-to-speech_name.
Prompt: vr_is_this_okay is this okay?
Timeout: Transfers call
confirm.phr
yes
no
CONFIRM RECOG
"yes"
"no"
Music while call is transferred
Busy or No answer
Prompt: v_busy I'm sorry. Your party is busy. v_noans I'm sorry. There is no answer.
Prompt: sorry_about_that Sorry about that.
to MAKE CALL MENU
to MAILBOX MENU
Transfer
Dial a number
to DIAL NUMBER MENU
"Cancel"
enabled
Prompt: canceled Canceled.
to MAILBOX MENU
"What are my options"
to??

FIG. 4I

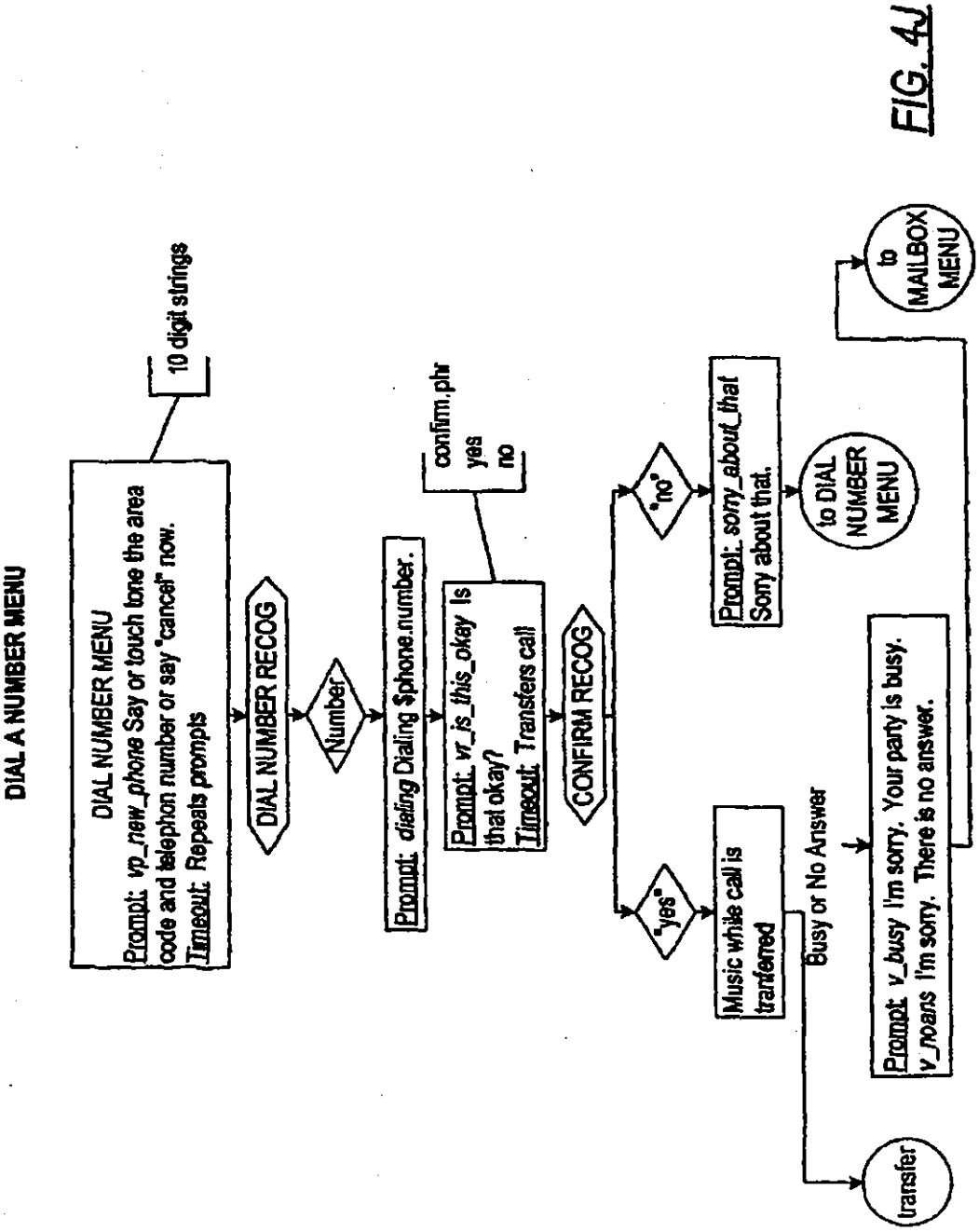

DIAL A NUMBER MENU
DIAL NUMBER MENU
Prompt: vp_new_phone Say or touch tone the area code and telephon number or say "cancel" now.
Timeout: Repeats prompts
10 digit strings
DIAL NUMBER RECOG
Number
Prompt: dialing Dialing $phone.number.
Prompt: vr_is_this_okay Is that okay?
Timeout: Transfers call
confirm.phr
yes
no
CONFIRM RECOG
"no"
Prompt: sorry_about_that Sorry about that.
to DIAL NUMBER MENU
to MAILBOX MENU
"yes"
Music while call is transferred
Busy or No Answer
Prompt: v_busy I'm sorry. Your party is busy.
v_noans I'm sorry. There is no answer.
transfer

FIG. 4J

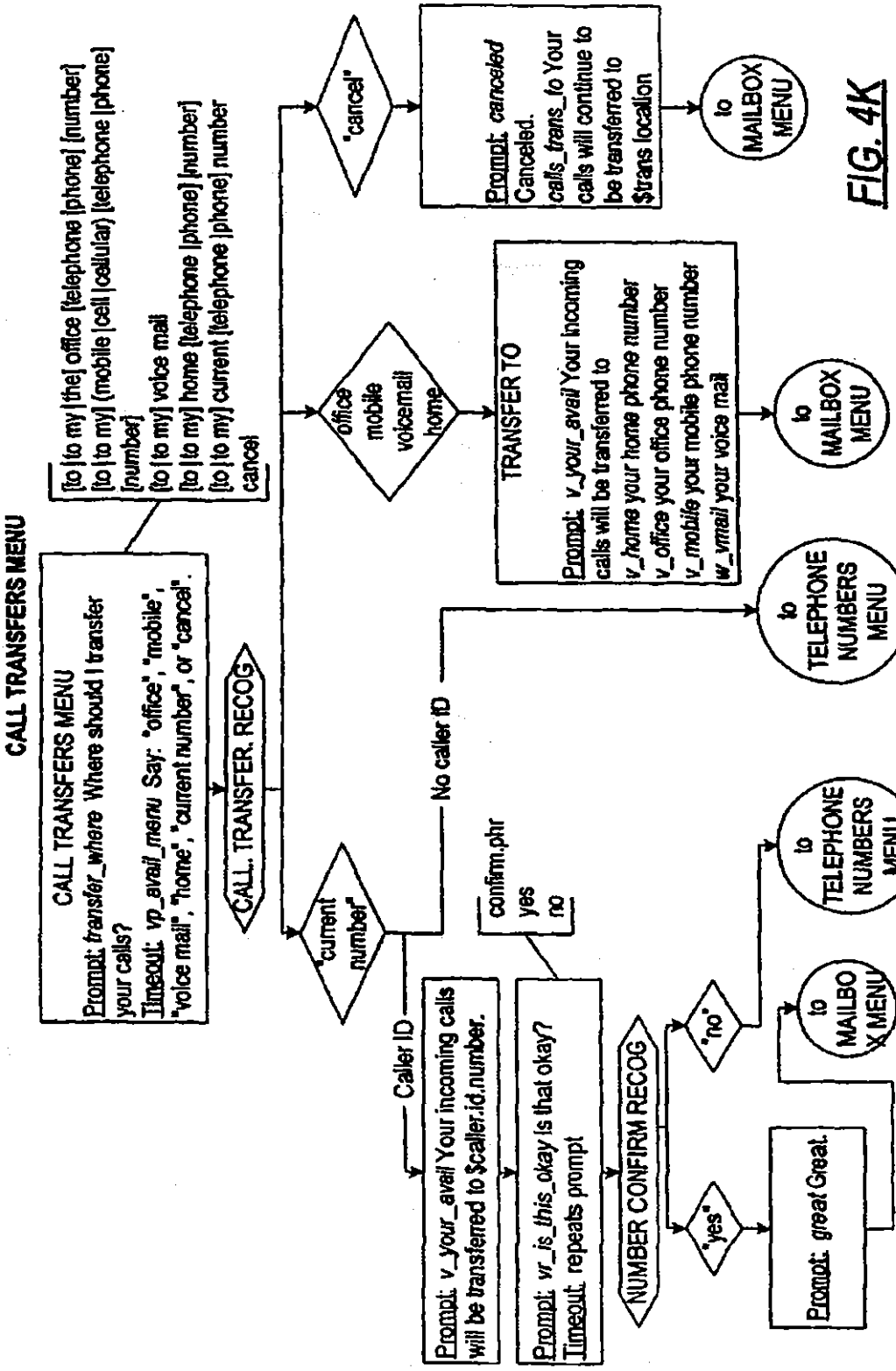

CALL TRANSFERS MENU
CALL TRANSFERS MENU
Prompt: transfer_where Where should I transfer your calls?
Timeout: vp_avail_menu Say: "office", "mobile", "voice mail", "home", "current number", or "cancel".
[to |to my |the] office [telephone |phone] [number]
[to |to my] [mobile |cell |cellular] [telephone |phone] [number]
[to |to my] voice mail
[to |to my] home [telephone |phone] [number]
[to |to my] current [telephone |phone] number
cancel
CALL. TRANSFER. RECOG
"cancel"
Prompt: canceled. Canceled. calls_trans_to Your calls will continue to be transferred to $trans location
to MAILBOX MENU
office mobile voicemail home
TRANSFER TO
Prompt: v_your_avail Your incoming calls will be transferred to v_home your home phone number v_office your office phone number v_mobile your mobile phone number w_vmail your voice mail
to MAILBOX MENU
"current number"
No caller ID
to TELEPHONE NUMBERS MENU
Caller ID
Prompt: v_your_avail Your incoming calls will be transferred to $caller.id.number.
confirm.phr
yes
no
Prompt: vr_is_this_okay Is that okay? Timeout: repeats prompt
NUMBER CONFIRM RECOG
"no"
to TELEPHONE NUMBERS MENU
"yes"
Prompt: great Great.
to MAILBOX MENU

FIG. 4K

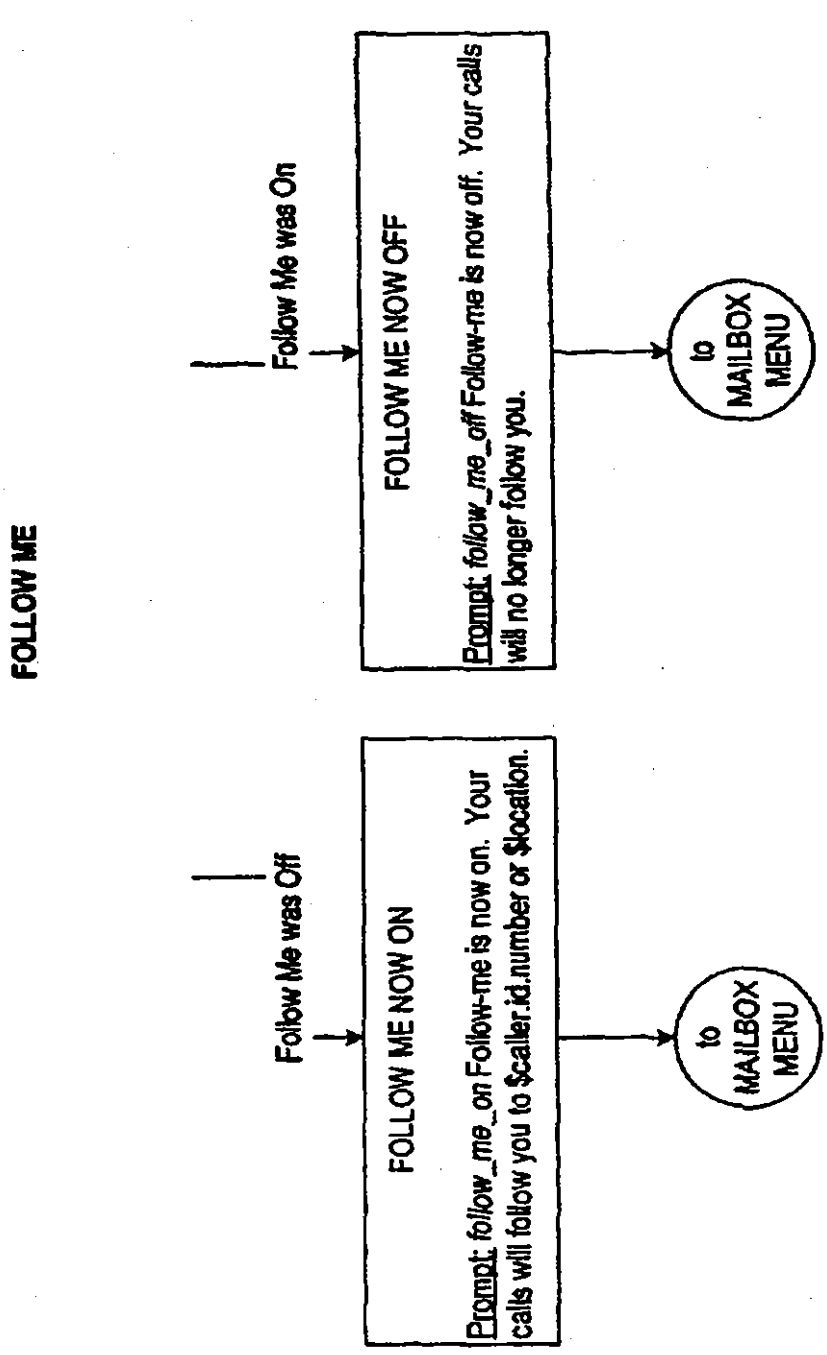

FOLLOW ME
Follow Me was On
FOLLOW ME NOW OFF
Prompt: follow_me_off Follow-me is now off. Your calls will no longer follow you.
to MAILBOX MENU
Follow Me was Off
FOLLOW ME NOW ON
Prompt: follow_me_on Follow-me is now on. Your calls will follow you to $caller.id.number or $location.
to MAILBOX MENU

FIG. 4L

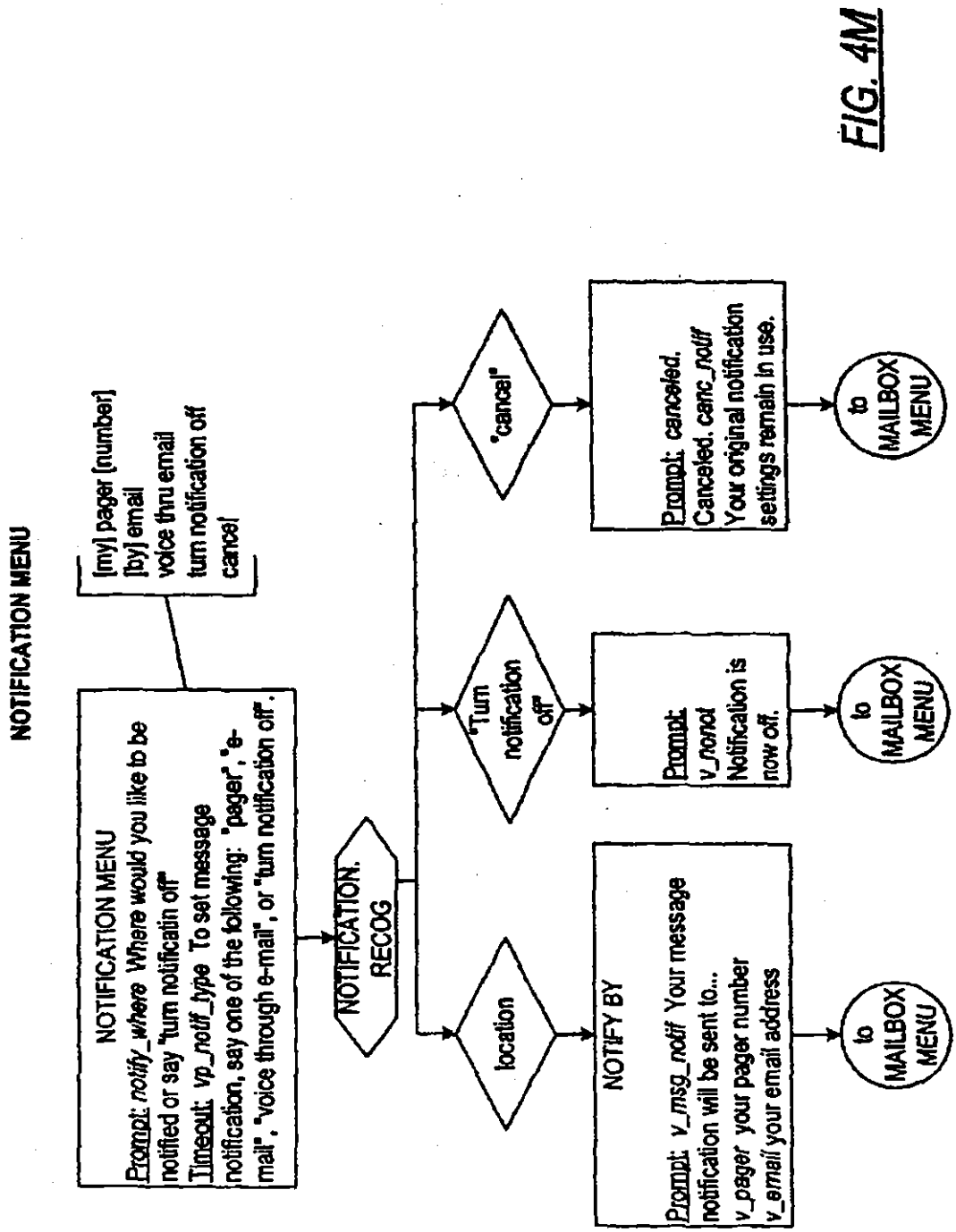

NOTIFICATION MENU
NOTIFICATION MENU
Prompt: notify_where Where would you like to be notified or say "turn notificatin off"
Timeout: vp_notif_type To set message notification, say one of the following: "pager", "e-mail", "voice through e-mail", or "turn notification off".
[my] pager [number]
[by] email
voice thru email
turn notification off
cancel
NOTIFICATION. RECOG
"cancel"
"Turn notification off"
location
Prompt: canceled. Canceled. canc_notif Your original notification settings remain in use.
Prompt: v_nonot Notification is now off.
NOTIFY BY
Prompt: v_msg_notif Your message notification will be sent to... v_pager your pager number v_email your email address
to MAILBOX MENU
to MAILBOX MENU
to MAILBOX MENU

FIG. 4M

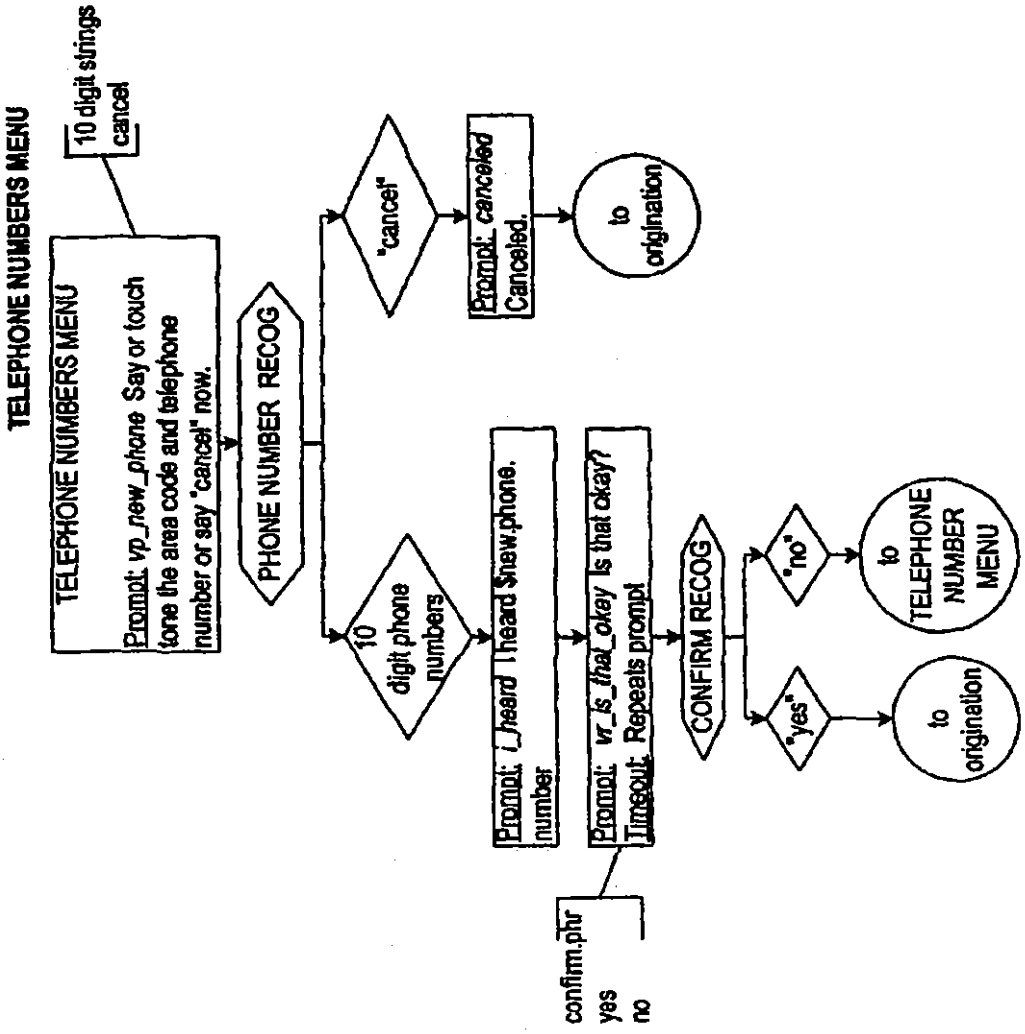

TELEPHONE NUMBERS MENU
TELEPHONE NUMBERS MENU
Prompt: vp_new_phone Say or touch tone the area code and telephone number or say "cancel" now.
10 digit strings
cancel
PHONE NUMBER RECOG
"cancel"
Prompt: canceled Canceled.
to origination
10 digit phone numbers
Prompt: I_heard I heard $new.phone. number
Prompt: vr_is_that_okay Is that okay? Timeout: Repeats prompt
confirm.phr
yes
no
CONFIRM RECOG
"no"
to TELEPHONE NUMBER MENU
"yes"
to origination

FIG. 4N

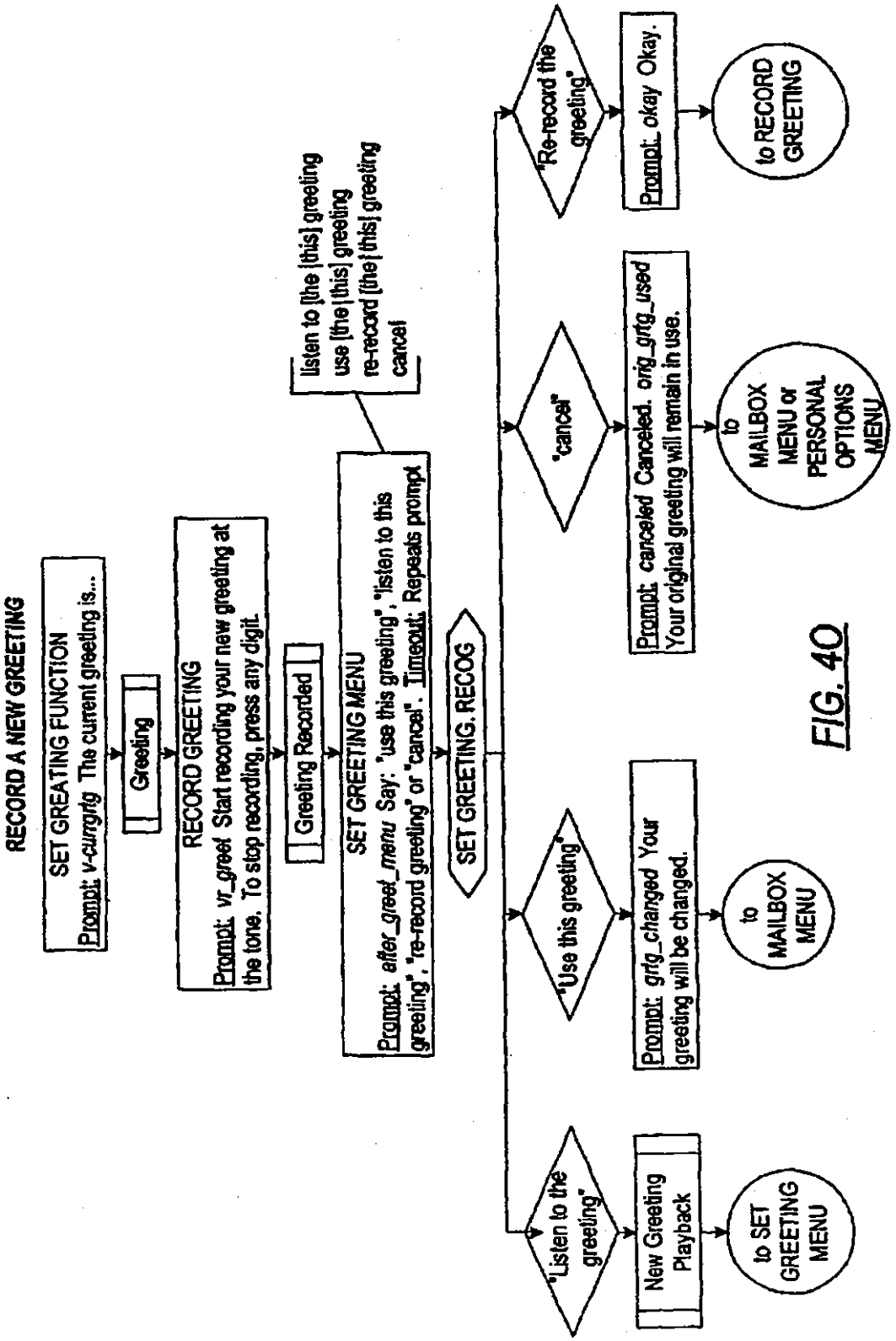

RECORD A NEW GREETING
SET GREATING FUNCTION
Prompt: v-currgrtg The current greeting is...
Greeting
RECORD GREETING
Prompt: vr_greet Start recording your new greeting at the tone. To stop recording, press any digit.
Greeting Recorded
SET GREETING MENU
Prompt: after_greet_menu Say: "use this greeting", "listen to this greeting", "re-record greeting" or "cancel". Timeout: Repeats prompt
listen to [the | this] greeting
use [the | this] greeting
re-record [the | this] greeting
cancel
SET GREETING. RECOG
"Listen to the greeting"
New Greeting Playback
to SET GREETING MENU
"Use this greeting"
Prompt: grtg_changed Your greeting will be changed.
to MAILBOX MENU
"cancel"
Prompt: canceled Canceled. orig_grtg_used Your original greeting will remain in use.
to MAILBOX MENU or PERSONAL OPTIONS MENU
"Re-record the greeting"
Prompt: okay Okay.
to RECORD GREETING

FIG. 40

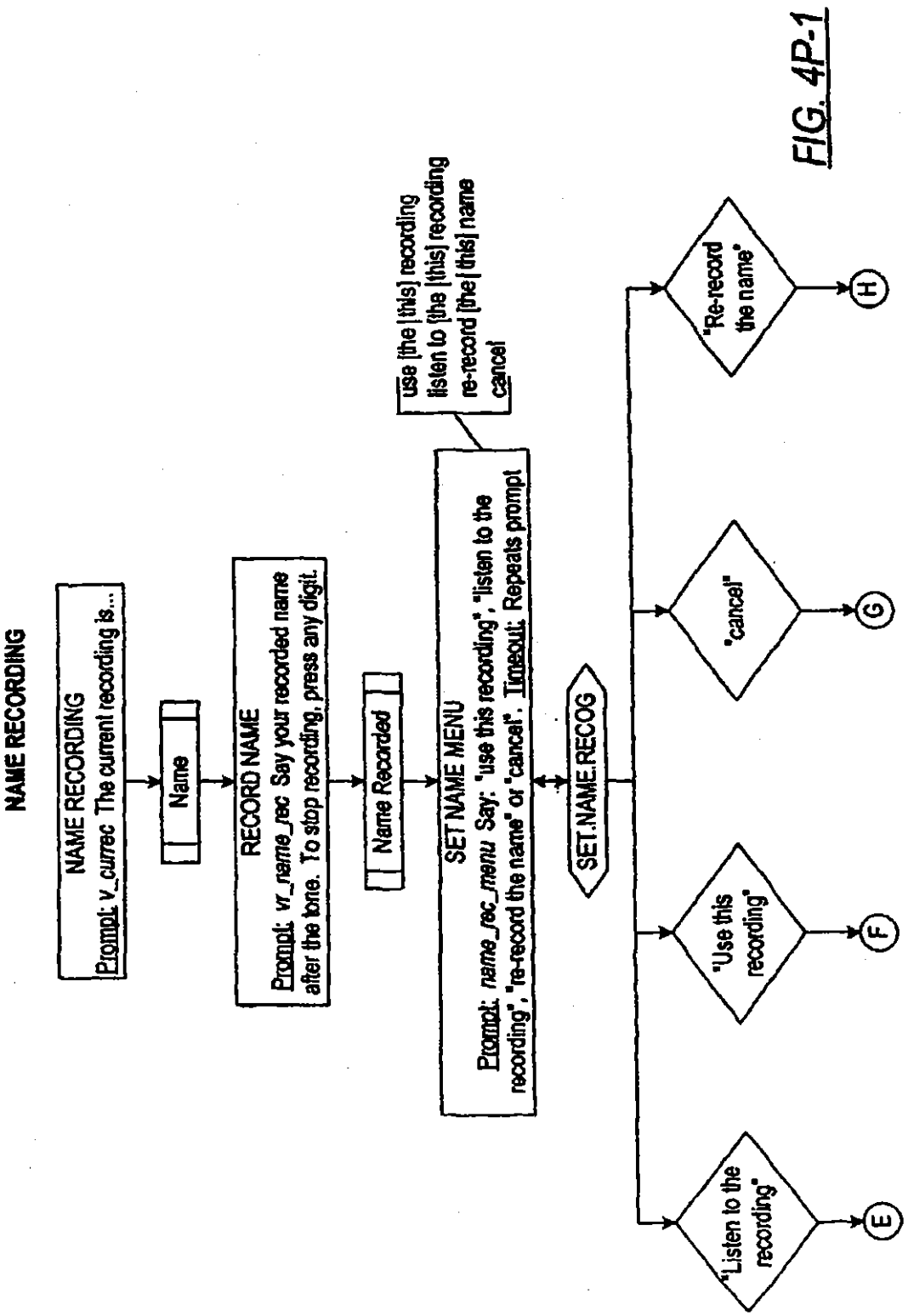

NAME RECORDING
NAME RECORDING
Prompt: v_currec The current recording is...
Name
RECORD NAME
Prompt: vr_name_rec Say your recorded name after the tone. To stop recording, press any digit.
Name Recorded
SET NAME MENU
Prompt: name_rec_menu Say: "use this recording", "listen to the recording", "re-record the name" or "cancel". Timeout: Repeats prompt
use [the | this] recording
listen to [the | this] recording
re-record [the | this] name
cancel
SET.NAME.RECOG
"Re-record the name"
"cancel"
"Use this recording"
"Listen to the recording"
H
G
F
E

FIG. 4P-1

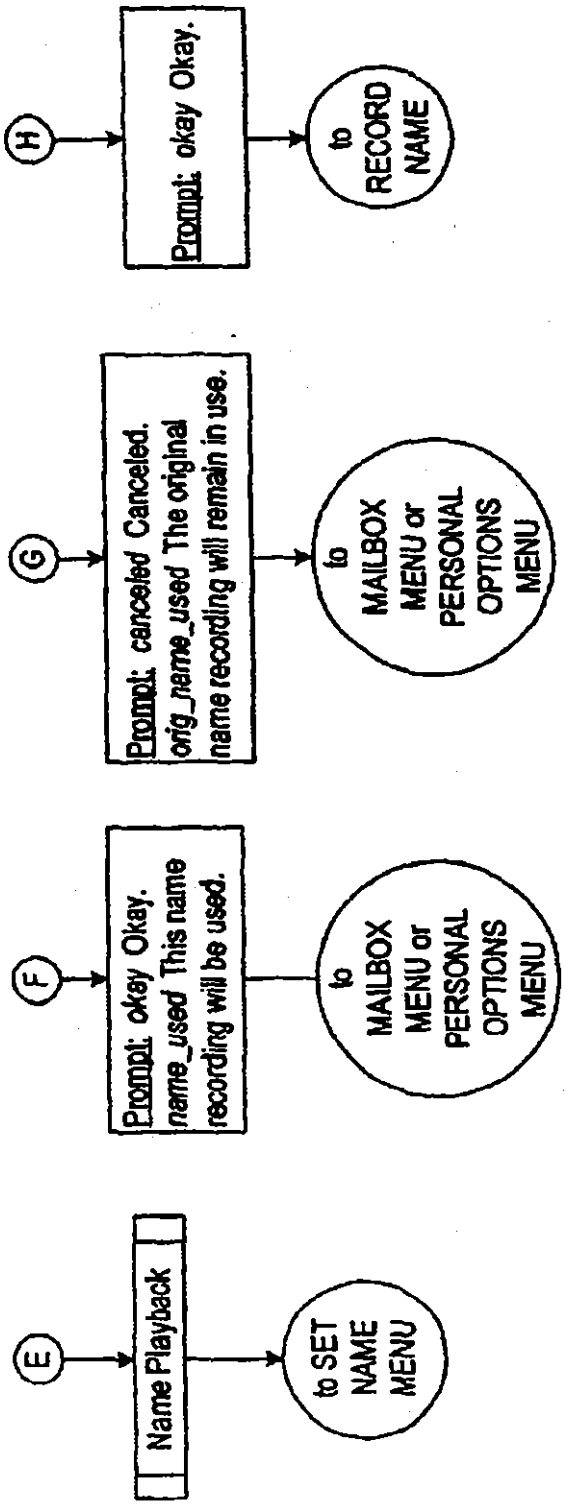

H
Prompt: okay Okay.
to RECORD NAME
G
Prompt: canceled Canceled. orig_name_used The original name recording will remain in use.
to MAILBOX MENU or PERSONAL OPTIONS MENU
F
Prompt: okay Okay. name_used This name recording will be used.
to MAILBOX MENU or PERSONAL OPTIONS MENU
E
Name Playback
to SET NAME MENU

FIG. 4P-2

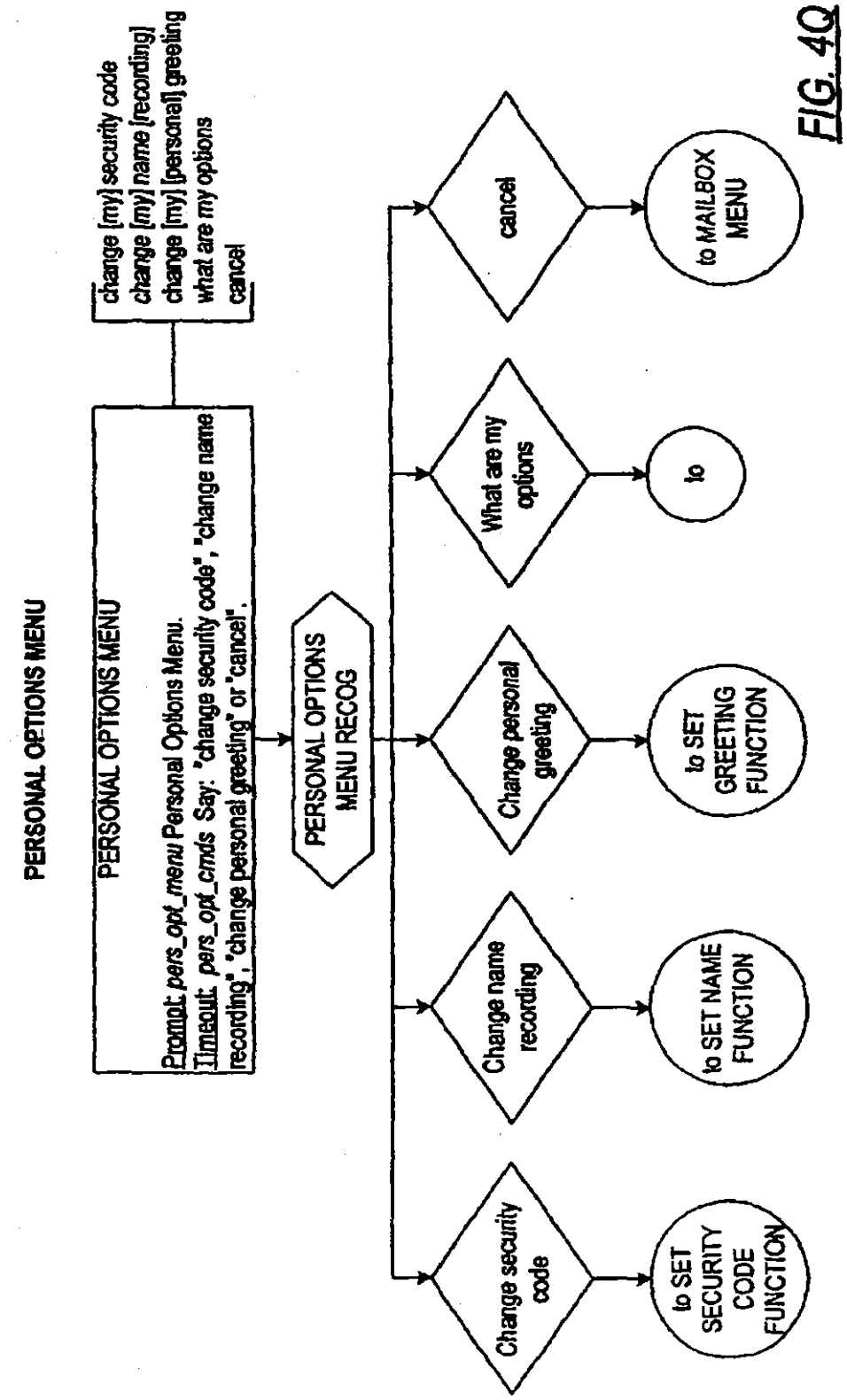

PERSONAL OPTIONS MENU
PERSONAL OPTIONS MENU
Prompt: pers_opt_menu Personal Options Menu.
Timeout: pers_opt_cmds Say: "change security code", "change name recording", "change personal greeting" or "cancel".
change [my] security code
change [my] name [recording]
change [my] [personal] greeting
what are my options
cancel
PERSONAL OPTIONS MENU RECOG
cancel
to MAILBOX MENU
What are my options
to
Change personal greeting
to SET GREETING FUNCTION
Change name recording
to SET NAME FUNCTION
Change security code
to SET SECURITY CODE FUNCTION

FIG. 4Q

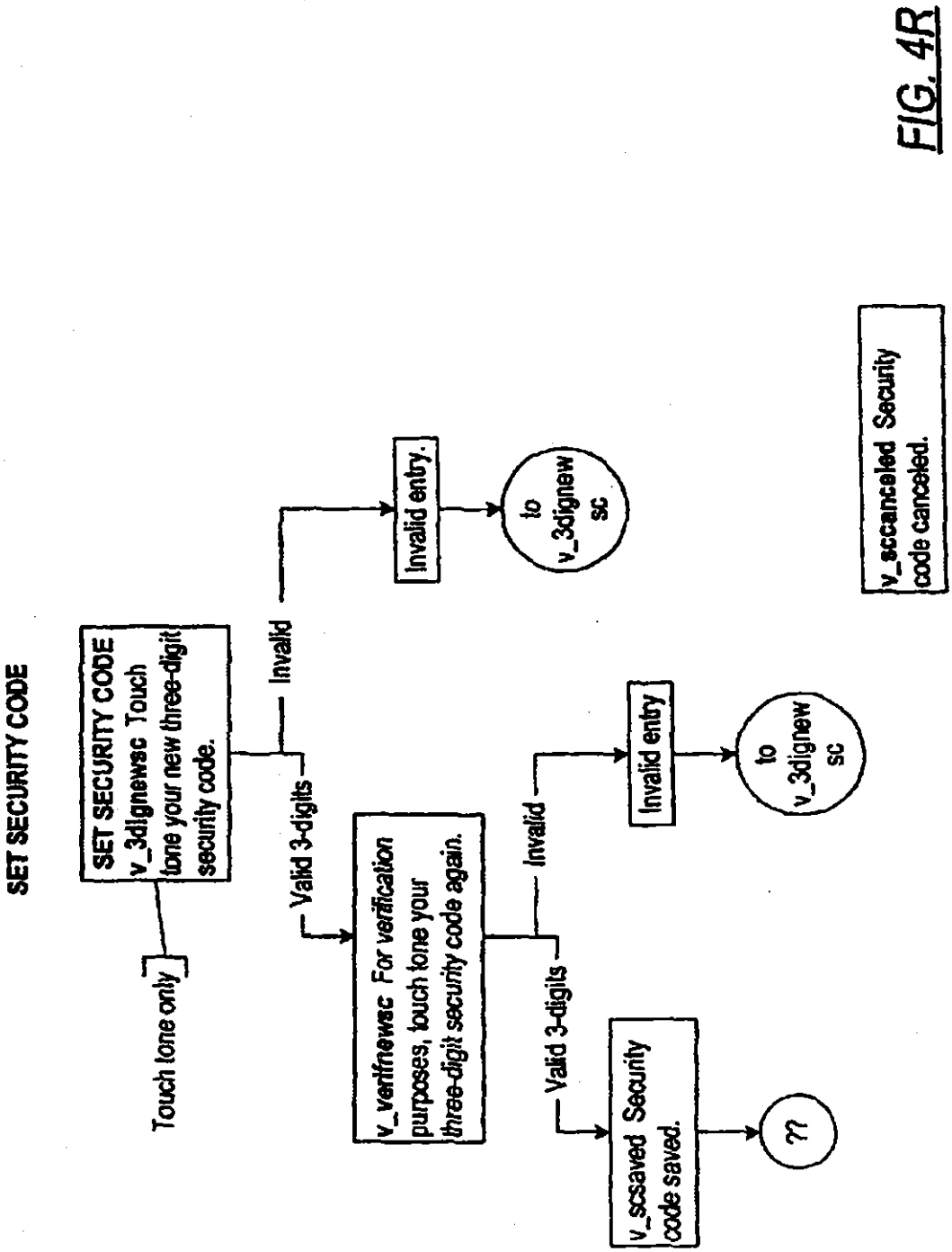

SET SECURITY CODE
SET SECURITY CODE v_3dignewsc Touch tone your new three-digit security code.
Touch tone only
Invalid
Invalid entry.
to v_3dignew sc
Valid 3-digits
v_verifnewsc For verification purposes, touch tone your three-digit security code again.
Invalid
Invalid entry
to v_3dignew sc
Valid 3-digits
v_sscaved Security code saved.
??
v_sccanceled Security code canceled.

FIG. 4R

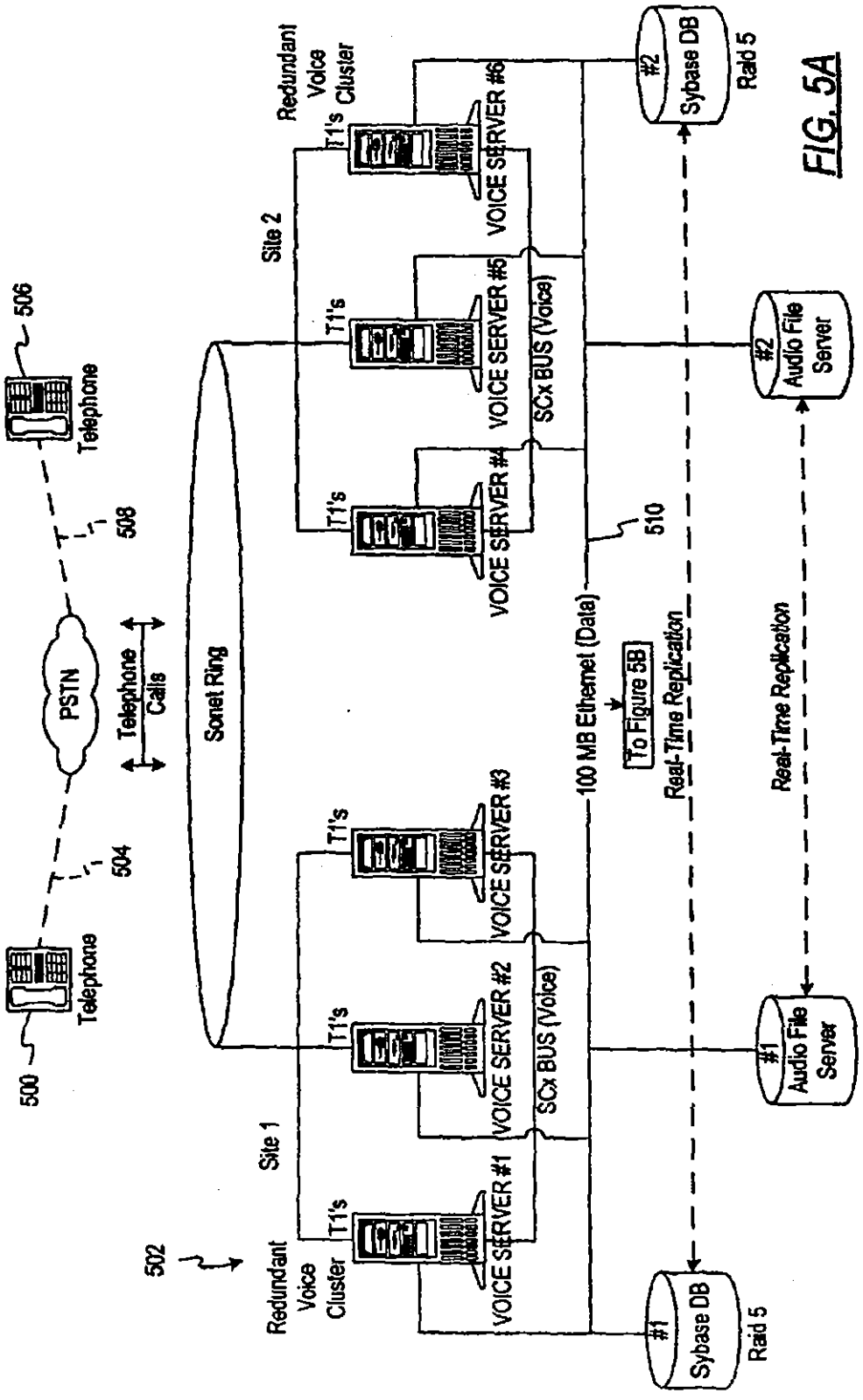

Redundant Voice Cluster
T1's
VOICE SERVER #6
VOICE SERVER #5
VOICE SERVER #4
VOICE SERVER #3
VOICE SERVER #2
VOICE SERVER #1
Site 2
Site 1
SCx BUS (Voice)
100 MB Ethernet (Data)
To Figure 5B
Real-Time Replication
Sybase DB
Raid 5
#2
#1
Audio File Server
Sonet Ring
PSTN
Telephone Calls
Telephone
500
502
504
506
508
510

FIG. 5A

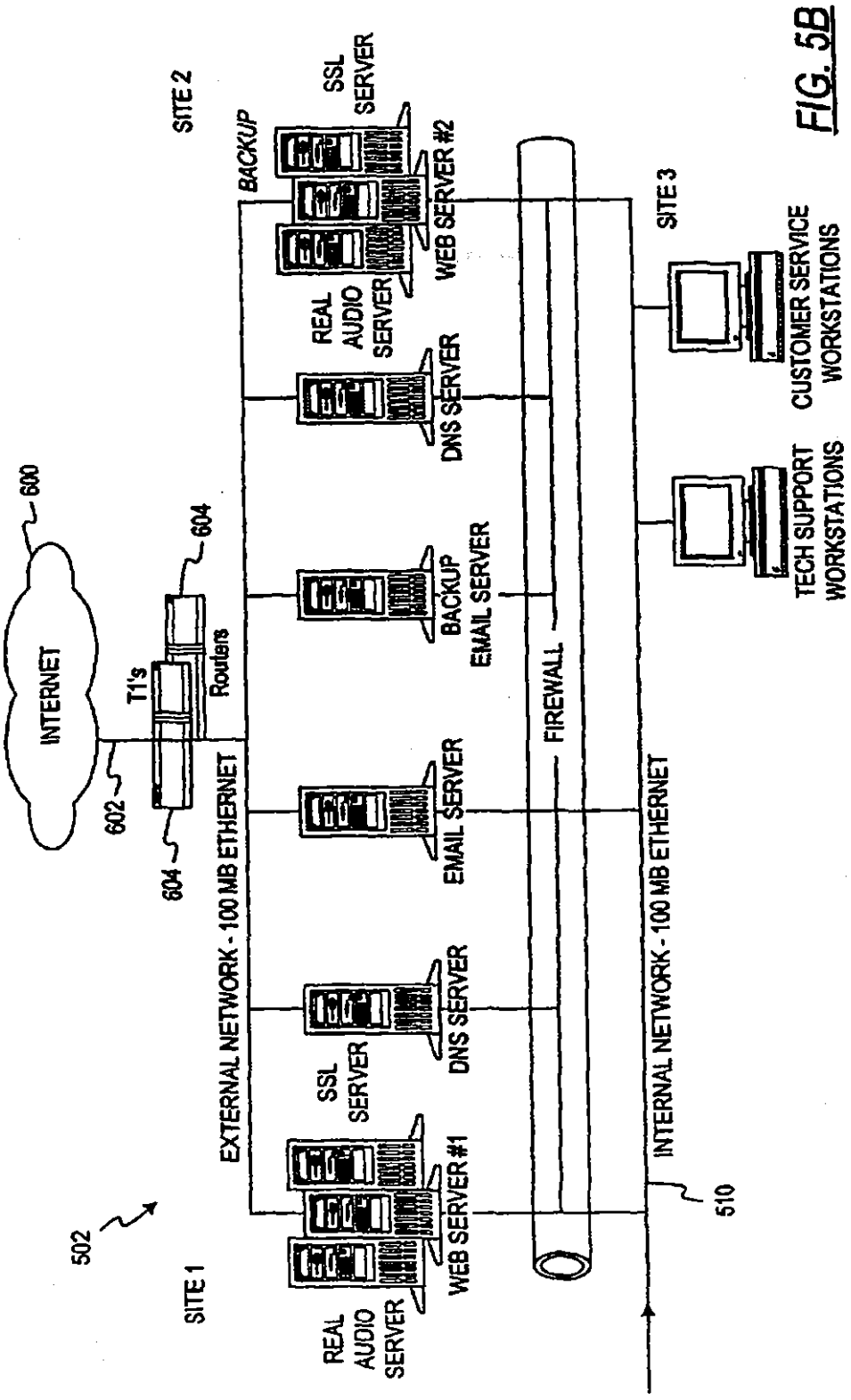

INTERNET
600
T1's
Routers
604
602
604
EXTERNAL NETWORK - 100 MB ETHERNET
SITE 1
SITE 2
BACKUP
SSL SERVER
WEB SERVER #2
REAL AUDIO SERVER
DNS SERVER
BACKUP EMAIL SERVER
EMAIL SERVER
DNS SERVER
SSL SERVER
WEB SERVER #1
REAL AUDIO SERVER
FIREWALL
SITE 3
CUSTOMER SERVICE WORKSTATIONS
TECH SUPPORT WORKSTATIONS
INTERNAL NETWORK - 100 MB ETHERNET
502
510

FIG. 5B

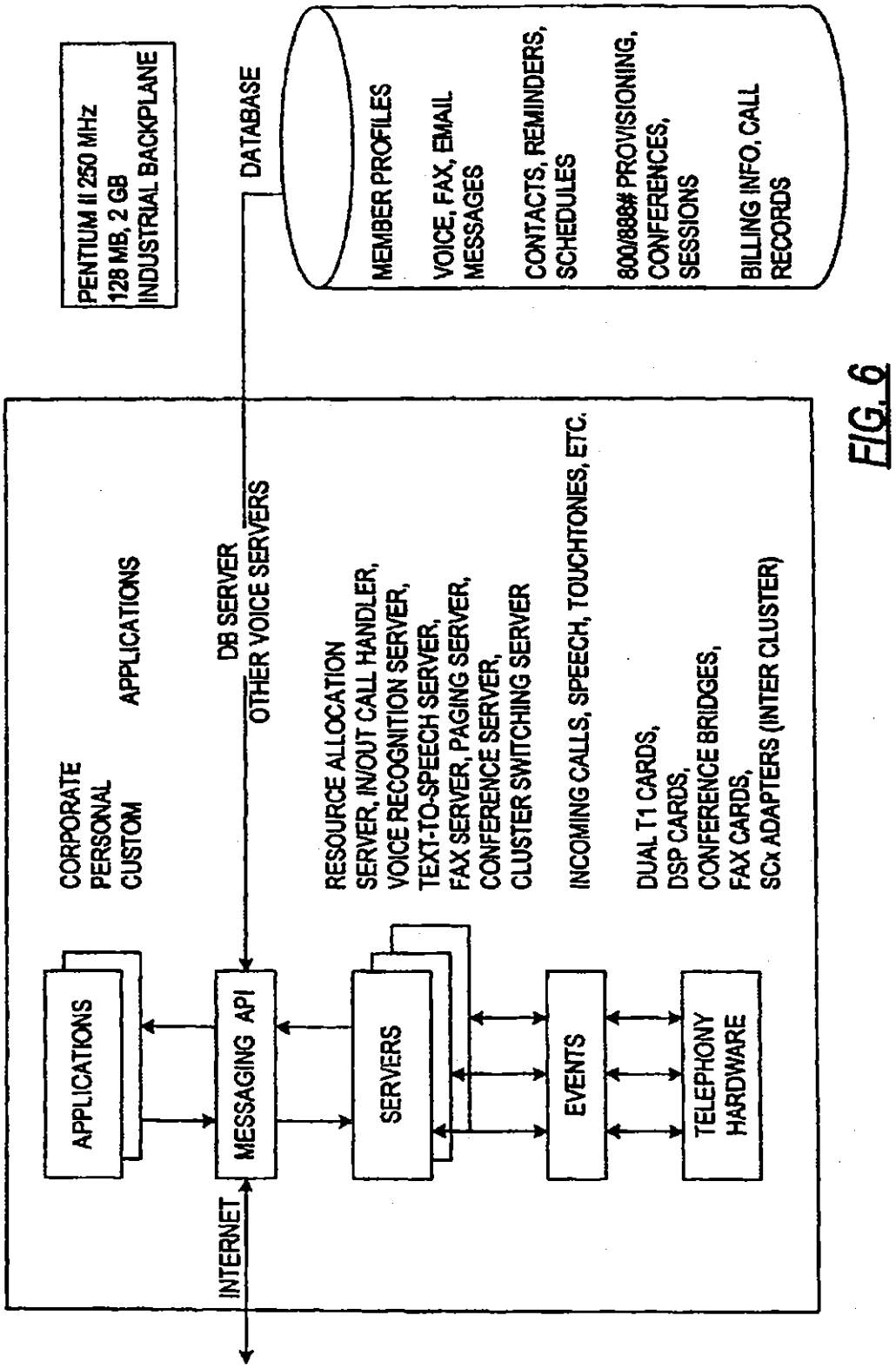

PENTIUM II 250 MHz
128 MB, 2 GB
INDUSTRIAL BACKPLANE
DATABASE
MEMBER PROFILES
VOICE, FAX, EMAIL MESSAGES
CONTACTS, REMINDERS, SCHEDULES
800/888# PROVISIONING, CONFERENCES, SESSIONS
BILLING INFO, CALL RECORDS
APPLICATIONS
CORPORATE
PERSONAL
CUSTOM
DB SERVER
OTHER VOICE SERVERS
RESOURCE ALLOCATION
SERVER, IN/OUT CALL HANDLER,
VOICE RECOGNITION SERVER,
TEXT-TO-SPEECH SERVER,
FAX SERVER, PAGING SERVER,
CONFERENCE SERVER,
CLUSTER SWITCHING SERVER
INCOMING CALLS, SPEECH, TOUCHTONES, ETC.
DUAL T1 CARDS,
DSP CARDS,
CONFERENCE BRIDGES,
FAX CARDS,
SCx ADAPTERS (INTER CLUSTER)
APPLICATIONS
MESSAGING API
SERVERS
EVENTS
TELEPHONY HARDWARE
INTERNET

FIG. 6

COMPUTER, INTERNET AND TELECOMMUNICATIONS BASED NETWORK

The present patent application is a continued prosecution application based on the provisional patent application Ser. No. 60/040,056, filed Mar. 3, 1997. The present patent application incorporates by reference herein provisional patent application Ser. No. 60/040,056.

Computer Program Listing Appendix

Compact disks containing a computer program listing are attached to this specification. The computer program listing contained on these compact discs is hereby incorporated by reference into the specification. The appendix comprises one compact disk containing the file "program_listing.txt" which is 1.09 MB in size. This file was created on Nov. 6, 2002 and contains the source code which was part of the provisional application with Ser. No. 60/040,056 to which this application claims priority. One duplicate copy of this compact disk is also included.

FIELD OF THE INVENTION

The present invention relates to a telecommunication system, and more specifically, the present invention relates to a network system based on internet, computer and telecommunication standards, utilizing internet and computer technology, a graphical user interface, integrated telecommunication applications and interactive voice recognition technology, facilitating the computation and telecommunication of voice and electronic data.

BACKGROUND OF THE INVENTION

Individuals and business people seek to communicate with each other, obtain useful information, interact commercially and entertain themselves in an increasingly mobile society. In order to fulfill these needs, one requires the ability to send and receive messages, access information and entertainment, conduct business transactions, organize daily schedules and stay in touch with homes and offices from almost anywhere, at any time, as easily as making a telephone call.

Continued demand for products and services that address these needs is evidenced by the increasing number of electronic devices, and the explosive growth of the internet and network services. Advances in wireless telecommunication technologies led to the development of such devices as personal digital assistants, and enabled the growth of paging and cellular telephone networks. Devices such as notebook and sub-notebook computers with modems (both wireline and wireless) have allowed mobile professionals to connect to their PCs from almost any location, as well as to access on-line information and electronic mail services while traveling worldwide.

In addition, communication and information needs have stimulated the growth of the internet, on-line networks and corporate intranets. These networks now host a variety of services such as e-mail, database searching, conferencing, electronic commerce, games, software libraries and electronic newspapers and magazines. However, despite the proliferation of communication devices and the development of the internet, on-line networks and corporate intranets, significant barriers remain to fulfilling user needs for access to and management of personal, professional and public information.

The hardware designs and software technologies which enable today's communication are complex. Information, though widely available, can be either inaccessible or accessible only by navigating through a host of phone systems, operating system platforms, databases and networks. As a result significant amounts of time and effort are required of those who use and depend on these devices, networks and services to communicate and obtain information.

The problem of accessing and processing all of the information available from communication devices, networks and services is particularly acute for mobile business professionals. Today's mobile professional, working out of the home or small office, may have a cellular phone, a pager, a computer, a fax machine, an electronic mailbox on the internet, and a voice-mail service. Whether on the road, in a plane or at the office, success for the mobile professional depends in large part on the ability to easily and quickly access, sort through and respond to the messages delivered to each of these communication devices, and to obtain information necessary to the conduct of business from proliferating networks and services.

SUMMARY OF THE INVENTION

The present invention is a network system, which is based on internet, computing and telecommunications standards, utilizing computer and internet technology, an innovative graphical user interface, integrated communication applications and interactive voice recognition technology. The present invention is a unified messaging service which will be accessible from any standard communication device (telephone, computer or internet), and will give the user intuitive voice command of personal, professional and public information.

This unified messaging service is a useful tool to those whose time and resources are limited and for whom communication is critical, such as mobile business professionals in the small office, home office market. The mobile business professional must maintain access to personal and professional information and developments, respond to customers and communicate with colleagues, family and friends at any time and from any location. The unified messaging service is designed to meet these objectives by offering a single point of access to all communications, integrated with personal information management tools and customized public content delivery.

Small office, home office professionals, most of whom do not have access to dedicated information management systems or the benefit of administrative support staff, may derive unique value from this shared network solution.

An embodiment of the present invention is an Internet controlled telephony system that can be accessed either through a telephone handset or a web page. When accessed by a telephone handset it can be manipulated by DTMF or voice recognition. When accessed by a web page, it can be driven by Java or cgi.

An embodiment of the present invention works by giving each subscriber a local phone number, an 800 number or a 500 number. Through the use of this number the system may implement follow me calling. Follow me calling may also use a pager and can use pagers for notification or meet me paging.

In an embodiment of the present invention, incoming calls can be screened for both a message from the caller and playing the caller's identification.

An embodiment of the present invention also provides voice mail and all typical voice mail features.

An embodiment of the present invention also allows the user to make outbound calls from the handset.

Another embodiment of the present invention receives faxes on the same number as it receives phone calls. These faxes can be forwarded to email, another fax machine or can be stored and forwarded at a later time by a subscriber.

An additional embodiment enables email to be read to a subscriber through a handset and the system has the ability to read headers to inform the subscriber of the length of the message and to summarize the email.

In other embodiment of the invention, the system can ocr faxes and forward them to the subscriber.

An embodiment of the present invention allows the subscriber to make calls from his web page. This allows, among other things, international call back.

Another embodiment of the present invention enables the subscriber to see his voice mail on his web page. Information such as call duration and caller ID may be displayed. This information is updated as new messages are received.

An embodiment of the present invention enables the subscriber to respond to email messages using a voice attachment to an email.

In another embodiment of the present invention, the system allows the subscriber to change the status of his particular environment on the web or handset.

Another embodiment of the present invention allows a subscriber to obtain all billing information via a web page.

A further embodiment of the present invention allows the subscriber to display the Automatic Number Identification of a voice mail message and then return the call by clicking the appropriate button on the web page.

Another embodiment allows conference calls can be initiated either from the handset or a web page.

A still further embodiment allows calls to be received and screened while another call is active. Additionally, calls may be put on hold and retrieved.

Another embodiment of the present invention keeps and manages phone directories of the subscriber and allows the subscriber to call telephone numbers from other applications. These phone directories are available either from the web page or the handset.

An embodiment of the present invention, all or some of the information about follow me calling is maintained by and managed on the web page but may also be modified through the use of the handset.

Another embodiment of the present invention informs subscribers via a web page who is calling and allows the subscriber to decide whether to take the call.

An embodiment of the present invention will deal with security and fraud issues.

An embodiment of the present invention will have multiple prompt levels.

Another embodiment of the present invention will have the ability to create and send faxes from a computer application.

A further embodiment of the present invention will be able to do predictive dialing and leave messages. It will be able to make calls from a list using its predictive dialing features.

An embodiment of the present invention will keep a complete record of all calling activity.

An embodiment of the present invention will be able to make multiple calls from the web without hanging up. Only the outbound leg of the call will be terminated.

In another embodiment of the invention, the API of the system is open and published. With proper authorization, anyone using Java or other programming tool can program the system and create applications. This can be done from any client and any client can drive the server.

An embodiment of the invention has the ability to import phone directories.

BRIEF DESCRIPTION OF THE DRAWINGS

A Preferred embodiments of the invention are explained below with references to the accompanying drawings in which:

FIG. **1** is a functional block diagram of the hardware platform embodying the present invention;

FIG. **2** is a functional block diagram of the internet platform embodying the present invention;

FIG. **3** is a general application flow chart embodying the present invention; and

FIGS. **4A–4R** are detailed application flow charts embodying the present invention.

FIGS. **5A–5B** are the functional block diagrams for the computer telephony platform and network architecture embodying the present invention.

FIG. **6** is the software architecture embodying the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is a network system that works, among other things, as your voice-mail system, using an 800/888 number that receives all your calls, faxes, pages and e-mail. The system provides a contact database facilitating the placing of calls, screening of calls, and tracking you down wherever you are.

Regardless of how the message was transmitted, every message is delivered to you through a single source, whether telephone, internet or computer. You can also review your latest call records and billing information and change or add to your phone listings, contact numbers and service preferences through this source.

The present invention utilizes a fault resilient redundant system, residing in two separate sites. There are multiple T-3 (45 Mbps) facilities going into each of those sites. Both sites sit on a fiber-channel fiber optic loop, which is theoretically "self healing" in case of a disaster and can route a phone call to either site, depending on where the route is broken.

The configuration at each site is a cluster of servers. FIG. **1** is a block diagram of the hardware platform showing one of these clusters **10** which consists of some voice servers **12**, some mirrored Sybase database servers **14**, and some web servers **16** where the web access and services are located. The computers (not shown) are 200 MHz Intel-based 19" rackmount servers running a combination of Solaris and SCO UNIX operating systems. The voice server **12** includes certain functions, such as telephony, automatic speech recognition, text-to-speech, conferencing, etc. Subscribers are connected to these clusters by either normal telephone connections or by internet connections.

Each cluster can serve about 10,000 customers. The system is open-ended allowing for the addition of subscribers as needed. Further the design facilitates the easy addition of hardware and software.

FIG. **2** shows a block diagram of the internet platform. The system may be accessed via the internet instead of a normal telephone connection (voice or touchtone). The subscriber can access the web server **16** through an internet

firewall **20**. The subscriber merely enters the system's web site and then can access his account through a security program. Once in his account, the subscriber can access various features such as playing voice mail, reading e-mail and faxes, managing contacts and schedules, among other services. Further, the system can provide a private line **22** for corporate and other subscribers which can enter the web server **18** through an extranet firewall **24**.

FIG. **3** shows a general application flow chart for an incoming call **26** to the system. The incoming call **26** whether by telephone connection or internet connection is directed either to customer service **28** (through an automatic call distribution-ACD), fax **30**, call routing **32**, or conference **34** function. Call routing **32** is determined by the incoming call control **38**, previously set by the subscriber, and can include a message and notification to the subscriber, call screening, call waiting, and the transfer of the call. Further, if the incoming call **26** is a subscriber **36**, the system will provide additional functions to the subscriber, such as controlling incoming calls **38**, including call screening, call waiting and transferring calls. The subscriber may set priorities to certain callers allowing only certain callers to reach the subscriber while all others are sent to voice-mail to record a message for playback later.

Also, the subscriber will be able to manage **40** his account. Managing **40** includes setting the options for telephone calls **42**, setting the options for sending and receiving messages, faxes and e-mail **44**, managing the database containing the subscriber's contacts and other lists **46**, and setting the parameters for outgoing call and setting up conferences **48**.

FIGS. 4A through 4R show a more detailed flowchart of the present invention. FIG. **4A** shows the First Menu encountered by a subscriber or an individual calling the system's **800** telephone number. The caller is explained the different options and then the system, if requested, attempts to recognize the subscriber or party's name or extension that the caller is trying to reach.

FIG. **4B** shows the Party Menu which allows the caller to begin the transfer to the party he is trying to reach, leave a message, or, if the caller is a subscriber, open his mailbox. FIG. **4C** shows the Mailbox Menu which allows the subscriber to listen to his messages, leave a message, make a call (using the database), dial a telephone number, request the system to follow the subscriber, transfer calls, and set other personal options, including the greeting, security codes, etc.

FIG. **4D** shows the Listen to Messages Menu which allows the subscriber to listen to, forward, or return the message, along with other options such as adding a contact, etc. FIG. **4E** shows the Message Menu such as forwarding the message, providing caller identification information, and updating the contact database.

FIG. **4F** shows the Return a Call Menu which will attempt to use caller identification to return the call. FIG. **4G** shows the Leave a Message Menu which allows the caller to leave a message to the intended party. FIG. **4H** shows the After Record Message Menu which allows the caller to listen to the message, re-record the message, send the message, or cancel the message. FIG. **4I** shows the Make Call Menu which allows the subscriber to dial a number, cancel, or attempt to obtain a contact and transfer to that contact.

FIG. **4J** shows the Dial a Number Menu which allows the subscriber to dial a telephone number. FIG. **4K** is the Call Transfers Menu which allows the subscriber to transfer incoming calls to either his caller identification, a telephone number, or some other number of choice. FIG. **4L** is the Follow Me Menu which allows the subscriber to receive calls wherever he may be located. FIG. **4M** shows the Notification Menu which allows the subscriber to be notified either by pager or e-mail in certain situations. FIG. **4N** shows the Telephone Numbers Menu which allows the subscriber to dial a telephone number either by depressing the telephone keypad or speaking the number.

FIG. **4O** shows the Record a New Greeting Menu which allows the subscriber to record, listen, or re-record a greeting which a caller will hear upon reaching the subscriber. FIG. **4P** shows the Name Recording Menu which allows the subscriber to set a particular name in the system. FIG. **4Q** shows the Personal Options Menu which allows the subscriber to change the security code, the name recording, and the personal greeting. FIG. **4R** shows the Set Security Code Menu which allows the subscriber to set a new security code.

FIG. **5A** shows the computer telephony platform in accordance with FIG. **1** in more detail. FIG. **5B** shows the network architecture in accordance with FIG. **2** in more detail. FIG. **6** shows the software architecture utilized in the present invention.

FIGS. **5A** and **5B** depict how the unified network system can be used to transmit an receive messages between subscribers and other callers using both telephone connections and internet connections. Turning to FIG. **5A**, telephone **500** is a subscriber communication device through which a subscriber can access the unified network system **502**. The subscriber can access the unified network system **502** using the telephone **500** via a first telephone connection **504**. This telephone connection **504** uses the Public Switched Telephone Network (PSTN) to access one of the redundant sites of the unified network system **502**. Additional callers may also access the unified network system **502** in a similar manner. These additional callers may be other subscribers or non-subscribers. The caller may use telephone **506** in FIG. **5A** in an attempt to contact a subscriber. The caller would be connected to the unified network system over a second telephone connection **508** using the PSTN.

Users of the unified network system **502** can also transmit and receive messages via internet connections. FIG. **5B** depicts how the unified network system **502** can be connected to the Internet **600**. In the embodiment depicted in FIG. **5B**, several T1 communication lines **602** are coupled with routers **604** to provide a plurality of internet connections between the system **502** and subscribers and non-subscribers. These users are able to connect to the unified network system **502** via a connection between a data device, such as personal computer, and the Internet **600**. Through T1 lines **602** and routers **604**, user can then access the unified network system **502** to transmit and receive messages to other users. FIG. **2** also depicts how the internet browser **21** of a customer's computer is connected via an internet connection **23** to the web servers **16** which are a part of the unified network system **502**.

Because the unified network system **502** of the present invention includes both telephone connections and internet connections, messages, including telephone calls, can be transmitted to or from subscribers of the system **502** using both connection types. In an embodiment of the present invention, a caller wishing to contact a subscriber may access the system **502** using either telephone connection **508** or an internet connection **23** (FIG. **2**) established using a portion of one of the T1 lines **602** (FIG. **5B**). Once the caller establishes a connection with the system **502**, the system **502**

presents the caller with the "First Menu" options outlined in FIG. 4A. One option presented to the caller is to speak the name of a subscriber that the caller is attempting to reach. If the system **502** recognizes the spoken name, control is then transferred to the "Party Menu" shown in FIG. 4B. At this point, the caller may choose to contact the party by speaking "reach my party" or the caller my choose to simply leave a message by speaking "leave a message." If the caller wishes to speak with the subscriber, the caller chooses the option "reach my party" and the system **502** will establish a connection with the subscriber using either the telephone connection **504** or an internet connection **23** (FIG. 2) (established using a portion of one of the T1 lines **602** (FIG. 5B)) according to the call routing instructions set up by the subscriber.

Alternatively, the caller may choose to simply "leave a message" for the subscriber. In this case, the caller is prompted to record a message as outline in FIG. 4G. After the message is recorded, the caller is presented with the options to listen to the message, send the message, cancel the message, or re-record the message as outlined in the "After Record Message Menu" depicted in FIG. 4H. Once the caller selects the option to "send the message", the message is delivered to the subscriber using either the telephone connection **504** or an internet connection **23** (FIG. 2) (established using a portion of one of the T1 lines **602** (FIG. 5B)) according to the notification settings set up by the subscriber (see, e.g., FIG. 4M).

The subscriber can also initiate the transmission of messages, including telephone calls to other subscribers or non-subscribers. As discussed above, the subscriber accesses the system **502** using either a telephone connection **504** or an internet connection **23** (FIG. 2). Once connected with the system **502**, a subscriber can perform several functions. For example, a subscriber can choose to make calls to other users via the "Make a Call Menu" depicted in FIG. 4I. The system **504** would then establish a connection with another user using either the telephone connection **508** or via an internet connection internet connection **23** (FIG. 2) established using a portion of one of the T1 lines **602** (FIG. 5B).

The system provides three ways for the subscriber to handle his communications. First and foremost is the voice recognition software using natural voice recognition (phonemes based), not pattern based as many of the current systems utilize. Therefore, the system does not have to be trained to identify your voice. Second, the subscriber may use the standard telephone touchtones. And third, the subscriber can utilize the internet to access a secure web site.

The system can act as a "follow me" service, capable of tracking you down whether you're at home, the office, airport, in a hotel room, in another office or in your car. The subscriber can configure the system to follow him, or the subscriber can disengage the follow me with a simple command. It also lets you know who is calling before you accept the call.

As for Web connections, you can boot up your computer, sign onto the internet, go through the system's secure web site and play your voice mails, read your e-mail and faxes, manage your contacts and schedule conferences. The website thus becomes a unified-messaging system. If you get a message from somebody who's not in your address book and you want to call him or her, you just go to the web site again and add a contact.

If you're on the secure website and you walk away, the system even times out after a few minutes so no one can sit at your computer and obtain your messages and contacts without your permission.

While on the system's web site, you'll be communicating over the internet via the Secure Socket Layer (SSL), a transport level technology (developed by Netscape) for authentication and data encryption between a Web server and a Web browser. SSL sends data over a "socket," a secure channel at the connection layer existing in most TCP/IP applications.

The system also utilizes text-to-speech so you can listen to your e-mail over the phone, or the subscriber can display his e-mail on his computer where he can reply to it and send e-mail to his contacts with audio (using audio attachments). Further, using Vosaic's internet audio program, the system can deliver voice mail via streaming audio over the internet using Java without a plug-in.

During a session on the web site, using text-to-speech, you could type in a name like "Harry Newton" and his phone number so that, when you eventually use the system the phone and you say, "call Harry Newton at the office," the system will recognize the name and dial the number you keyed in previously. Based on what you input now ("Harry Newton") is what the system utters later and compares the phonemes of what you input now to what you'll be speaking later.

The system also facilitates conference calls by allowing the subscriber two ways in which to set up a conference call. First, inbound conference calls can be set up for 32 people if you've registered a pre-scheduled meeting time. Subscribers call in to the system to get an assigned conference number. The conference participants then call in and asks to "join the conference". The system then asks for a conference number, which is entered via touchtones. All the parties are then connected and the conference begins.

Second, outbound conference calls can also be set up, even if you're "on the fly." Whether you're at your desk, at a hotel or even a phone booth, you can simply dial up and tell the system to "set up a conference call." Then you only have to dial up all the various parties to connect each of them to your conference.

The present invention is a compilation of hardware and software, including voice processing using Dialogic's SCSA extended bus and board-level resources, Purespeech speech recognition running on Dialogic Antares boards, and database management using Sybase System **10** and **11**. Further, the system utilizes data networking, particularly TCP/IP and distributed systems, object-oriented design and programming, multi-processing with Intel hardware, SCO UNIX and Solaris operation systems, Java and JavaScript languages, U.S. and international long distance protocols, internet and web protocols, credit and payment processing, a help desk, customer service system, and network and service management.

For the voice and fax processing servers, the system relies on Dialogic hardware, including, voice boards, Antares cards (for speech recognition and fax) and digital switching cards. The system also uses the SCSA extended bus. The Purespeech ASR algorithms, which are used for speech recognition, run on the Antares cards plugged into the computers running the Solaris OS.

The system combines state-of-the-art speech recognition, computer and telephony technology. Along with the ability to recognize an extensive set of simple, intuitive, speaker-independent speech commands and respond by performing a wide variety of complex tasks. Each subscriber has their own secure Web page on which all the features can be

accessed, allowing almost every aspect of the present invention to be maintained on-line. Subscribers can use voice commands to (1) build, edit and manage their contact lists, (ii) review, play back, read, reply to and/or reroute voice mail and e-mail, (iii) schedule conference calls with 800 number access, and (iv) maintain an itemized calling log listing all calls with a running total of all charges.

The system also transfers calls as instructed or upon command will follow the subscriber according to predetermined contact numbers for office, home, cellular, pager or other designated locations. Every time a subscriber calls in, the system logs the originating number for the inbound call and then uses that number to re-contact the subscriber.

In accordance with the present invention, every subscriber or participant is given their own 800 number that is then used by all contacts calling in to the subscriber. The 800 number can also be used in scheduling conference calls for up to 32 participants on a given day and time. Each participant uses the 800 number and calls in to join the conference call, thereby effecting call conferencing for a fraction of the cost otherwise incurred.

Basically, the system provides a unified solution to the many varied communications and messaging devices used daily by mobile professionals and active consumers. With simple voice commands, subscribers can easily access and respond to all of their communications and messaging media in the same session.

The system takes inbound calls and contacts the subscriber, using call transfer or follow me features, and advises the subscriber of the call, the number of the calling party and/or the callers identity from the subscribers contact list. If the subscriber is on the telephone, the system will whisper the pending call information, giving the subscriber the option of taking the call or sending the caller into voice mail. The subscriber can also set priorities for certain calls which the system will follow, permitting selected calls to be put on call waiting, transferred or directed through call forwarding, while other calls are direct to voice mail messaging. Subscribers can conveniently make calls from their contact list by voice commands giving the contacts name and, if applicable, the location to be called (i.e. "home," "office," "cellular," etc.)

Subscribers can access and play back their voice mail from any telephone or from their personal Web page. Voice mail messages can be saved, retrieved, deleted or rerouted to other individuals, groups or broadcast and voice responses can be returned immediately to the caller. Also, e-mail messages can be viewed on the subscriber's personal home page or the system will read the e-mail to the subscriber from any telephone using text-to-speech technology. Subscribers can immediately respond to e-mail with voice messages, marking, saving or deleting messages during the same session. E-mail messages can also be sent to any fax machine. Further, subscribers can immediately respond to faxes rather than waiting to retrieve copies and delay responses. Incoming faxes are received, the subscriber is notified of the arrival of the new fax, the fax can then be stored for later viewing and/or redirected to any fax machine or e-mail address from the subscribers contact list or any other number. Subscribers can also be notified of any incoming communications and messages by pager, whether an inbound call, voice mail, e-mail or fax.

The system will automate conference calling and eliminate the need for conference call operators or complex, confusing PBX systems. The subscriber remains in control and can add or drop callers, mute the call and otherwise control all aspects of the conference call. By pre-scheduling conference calls by date and time, subscribers can notify participants, giving them an 800 number to call and join the conference. Up to 32 participants can be included in the present conference call feature.

The system further acts as an efficient secretary retaining complete contact logs of all call statistics. The subscriber maintains the contact list using simple voice or keyboard commands and can establish contact groups for broadcast communications and setting up conference calls. The contact database is easily accessible to all features.

The system includes a feature which enables subscribers to retrieve on demand or at predetermined intervals selected information from the internet or on-line service providers, allowing subscribers to establish "filter and forward" criteria specifying the type of information desired. A search engine will then retrieve the requested information, transmit the information to the system platform and notify the subscriber by page, telephone or other desired means. The system will provide direct access to news, weather, sports, financial, travel and other custom content directly from a computer or any telephone. The subscriber will then access the information by all available options, including text-to-speech capabilities.

The system provides long distance and international calling over the internet through the subscriber's personal home page, thereby significantly reducing the costs of long distance and international calling. The system further provides video conferencing features.

It is to be understood that the form of this invention is merely a preferred embodiment. Various changes may be made in the function and arrangement of parts; equivalent means may be substituted for those illustrated and described; and certain features may be used independently from others without departing from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

1. A computer and telecommunications network for receiving, sending and managing information from a subscriber through a subscriber communication device to the network and from the network to the subscriber communication device, comprising:

at least one cluster, said cluster containing at least one voice server, said voice server containing telephony and speaker-independent speech command recognition and execution functions, such that said subscriber can access said cluster via a first standard telephone connection and also via a first internet connection;

at least one database server, said database server being connected to said cluster and containing contact lists, and administrative data, such that said subscriber can manipulate and manage said data and said contact lists;

at least one file server, said file server being connected to said cluster; and

a web server, said web server being connected to said cluster such that said subscriber can access said network by connecting to said web server via said first internet connection;

wherein said network can receive a first message from a second telephone connection and from a second internet connection and transmit said first message to said subscriber communication device or transmit a notification to said subscriber communication device about said first message via said first telephone connection or said first internet connection, and said network can receive a second message from said subscriber com-

munication device via said first telephone connection and via said first internet connection and transmit said second message via said second telephone connection or said second internet connection based on commands received from said subscriber.

2. The computer and telecommunications network described in claim 1, wherein said first message and said second message comprises telephone calls, e-mail, faxes, conference calls or voice-mail.

3. The computer and telecommunications network described in claim 1, wherein manipulating and managing said data and said contact lists comprises creating and modifying a contact list.

4. The computer and telecommunications network described in claim 3, wherein manipulating and managing said data and said contact lists comprises utilizing said contact lists to place telephone calls, send e-mail, voice-mail and faxes, and create or modify conference calls.

5. A method for receiving, sending and managing information between a computer and telecommunications network and a subscriber communication device of a subscriber comprising the steps of:

providing at least one cluster, said cluster containing at least one voice server, said voice server containing telephony and speaker-independent speech command recognition and execution functions, such that said subscriber can access said cluster via a first standard telephone connection and also via a first internet connection;

providing at least one database server, said database server being connected to said cluster and containing contact lists, and administrative data, such that said subscriber can manipulate and manage said data and said contact lists;

providing at least one file server, said file server being connected to said cluster; and

providing a web server, said web server being connected to said cluster such that said subscriber can access said network by connecting to said web server via said first internet connection;

receiving a first message from a second telephone connection and receiving a second message from a second internet connection and transmitting said first message and said second message to said subscriber communication device or transmitting a notification to said subscriber communication device about said first message and said second message via said first telephone connection or said first internet connection, based on commands received by the network from said subscriber.

6. The computer and telecommunications network described in claim 5, wherein said message comprises telephone calls, e-mail, faxes, conference calls or voice-mail.

7. The computer and telecommunications network described in claim 5, wherein manipulating and managing said data and said contact lists comprises creating and modifying a contact list.

8. The computer and telecommunications network described in claim 7, wherein manipulating and managing said data and said contact lists comprises utilizing said contact list to place telephone calls, send e-mail, voice-mail and faxes, and create or modify conference calls.

9. A method for receiving, sending and managing information between a computer and telecommunications network and a subscriber communication device of a subscriber comprising the steps of:

providing at least one cluster, said cluster containing at least one voice server, said voice server containing telephony and speaker-independent speech command recognition and execution functions, such that said subscriber can access said cluster via a first standard telephone connection and also via a first internet connection;

providing at least one database server, said database server being connected to said cluster and containing contact lists, and administrative data, such that said subscriber can manipulate and manage said data and said contact lists;

providing at least one file server, said file server being connected to said cluster, and

providing a web server, said web server being connected to said cluster such that said subscriber can access said network by connecting to said web server via said first internet connection;

receiving a first message from said subscriber via said first telephone connection;

receiving a second message from said subscriber via said first internet connection; and

transmitting said first message and said second message via a second telephone connection or a second internet connection, based on commands received by said network from said subscriber.

10. The computer and telecommunications network described in claim 9, wherein said message comprises telephone calls, e-mail, faxes, conference calls or voice-mail.

11. The computer and telecommunications network described in claim 9, wherein manipulating and managing said data and said contact lists comprises creating and modifying a contact list.

12. The computer and telecommunications network described in claim 11, wherein manipulating and managing said data and said contact lists comprises utilizing said contact list to place telephone calls, send e-mail, voice-mail and faxes, and create or modify conference calls.

13. The computer and telecommunications network of claim 1, wherein said subscriber may issue commands to manipulate and manage said contact lists and administrative data.

14. The computer and telecommunications network of claim 13 wherein said commands are speech commands which are interpreted by said speaker-independent speech command recognition of said at least one voice server.

15. The computer and telecommunications network of claim 1, wherein said commands received from said subscriber are speech commands which are interpreted by said speaker-independent speech command recognition of said at least one voice server.

16. The computer and telecommunications network of claim 15 wherein said speech commands are utilized to place telephone calls, create and send e-mail, voice-mail and faxes, and to create or modify conference calls.

17. The computer and telecommunications network of claim 1 wherein said speaker-independent speech command recognition of said at least one voice server recognizes naturally spoken speech commands.

18. The method of claim 5, comprising the additional step of issuing commands from said subscriber for manipulating and managing said contact lists and administrative data.

19. The method of claim 18 wherein said step of issuing commands comprises issuing speech commands spoken by said subscriber.

20. The method of claim 5, wherein said commands received by said network from said subscriber are speech commands; and

interpreting said speech commands by said speaker-independent speech command recognition of said at least one voice server.

21. The method of claim 20 further comprising the steps of placing telephone calls, creating and sending e-mail, voice-mail and faxes, and creating and modifying conference calls based upon said speech commands.

22. The method of claim 5 comprising the further step of recognizing naturally spoken speech commands using said speaker-independent speech command recognition.

23. The method for of claim 9, wherein said commands received by said network from said subscriber are speech commands; and

interpreting said speech commands by said speaker-independent speech command recognition of said at least one voice server.

24. The method of claim 23 further comprising the steps of placing telephone calls, creating and sending e-mail, voice-mail and faxes, and creating and modifying conference calls based upon said speech commands.

25. The method of claim 9 comprising the further step of recognizing naturally spoken speech commands using said speaker-independent speech command recognition.

26. The computer and telecommunications network of claim 1 wherein said subscriber communication device comprises a cellular phone, a pager, a personal computer, a fax machine, an electronic mailbox or a voice-mail service.

27. The method of claim 5 wherein said subscriber communication device comprises a cellular phone, a pager, a personal computer, a fax machine, an electronic mailbox or a voice-mail service.

28. The method of claim 9 wherein said subscriber communication device comprises a cellular phone, a pager, a personal computer, a fax machine, an electronic mailbox or a voice-mail service.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,775,264 B1
DATED : August 10, 2004
INVENTOR(S) : Alex Kurganov

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,
Item [56], **References Cited**, U.S. PATENT DOCUMENTS, delete "5,404,234" and replace with -- 5,404,231 --;
Delete "4,809,328" and replace with -- 4,809,321 --; and
Add reference -- 5,029,196 --.

Column 14,
Add claims 29, 30, and 31,
-- 29. The voice server of claim 1 further comprising at least one of text-to-speech, speech-to-text, or telephone conferencing functions.

30. The voice server of claim 5 further comprising at least one of text-to-speech, speech-to-text, or telephone conferencing functions.

31. The voice server of claim 9 further comprising at least one of text-to-speech, speech-to-text, or telephone conferencing functions. --

Signed and Sealed this

Twelfth Day of October, 2004

JON W. DUDAS
Director of the United States Patent and Trademark Office

Exhibit 2

US006807257B1

(12) **United States Patent**
Kurganov

(10) **Patent No.: US 6,807,257 B1**
(45) **Date of Patent: Oct. 19, 2004**

(54) **COMPUTER, INTERNET AND TELECOMMUNICATIONS BASED NETWORK**

(75) Inventor: **Alex Kurganov**, Buffalo Grove, IL (US)

(73) Assignee: **Webley Systems, Inc.**, Deerfield, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/260,279**

(22) Filed: **Mar. 2, 1999**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/033,335, filed on Mar. 2, 1998, now Pat. No. 6,775,264.
(60) Provisional application No. 60/040,056, filed on Mar. 3, 1997.

(51) **Int. Cl.**[7] **H04M 1/64**

(52) **U.S. Cl.** **379/88.22**; 379/67.1; 379/88.12; 379/88.17; 379/88.18; 379/88.19; 379/72

(58) **Field of Search** 379/67.1, 68, 74, 379/83, 88.13, 88.17, 88.18, 88.22, 88.26, 88.27, 201.01, 201.02, 201.03, 205.01, 211.02, 212.02, 265.09, 902, 907, 908; 704/260, 270, 271, 275

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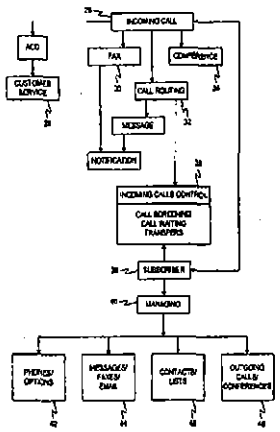
Primary Examiner—Allan Hoosain
(74) *Attorney, Agent, or Firm*—Jenkens & Gilchrist

(57) **ABSTRACT**

A method and apparatus for a computer and telecommunication network which can receive, send and manage information from or to a subscriber of the network, based the subscriber's configuration. The network is made up of at least one cluster containing voice servers which allow for telephony, speech recognition, text-to-speech and conferencing functions, and is accessible by the subscriber through standard telephone connections or through internet connections. The network also utilizes a database and file server allowing the subscriber to maintain and manage certain contact lists and administrative information. A web server is also connected to the cluster thereby allowing access to all functions through internet connections.

29 Claims, 27 Drawing Sheets



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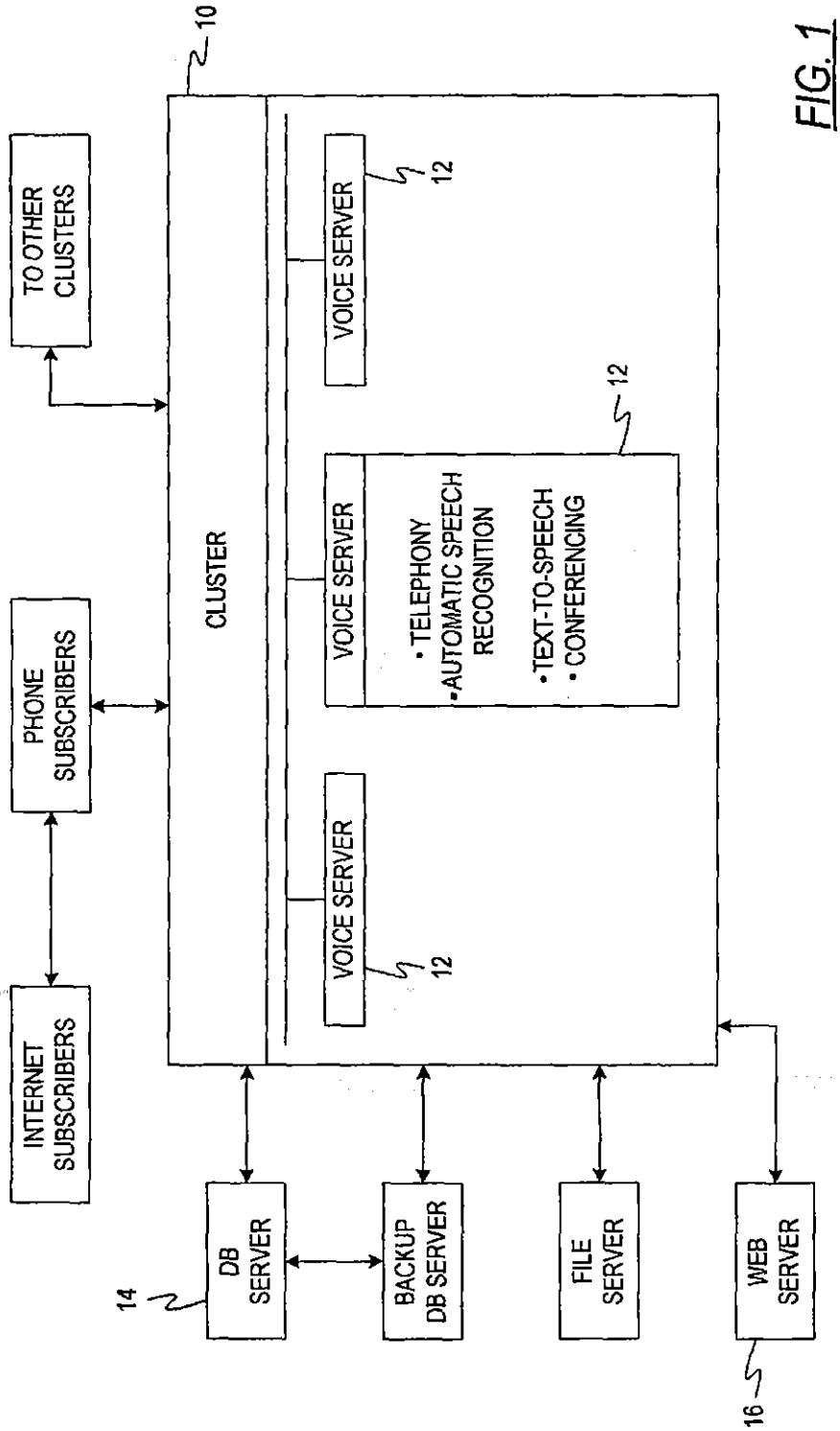
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TO OTHER CLUSTERS
PHONE SUBSCRIBERS
INTERNET SUBSCRIBERS
CLUSTER
VOICE SERVER
12
VOICE SERVER
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VOICE SERVER
12
• TELEPHONY
• AUTOMATIC SPEECH RECOGNITION
• TEXT-TO-SPEECH
• CONFERENCING
12
14
DB SERVER
BACKUP DB SERVER
FILE SERVER
WEB SERVER
16

FIG. 1

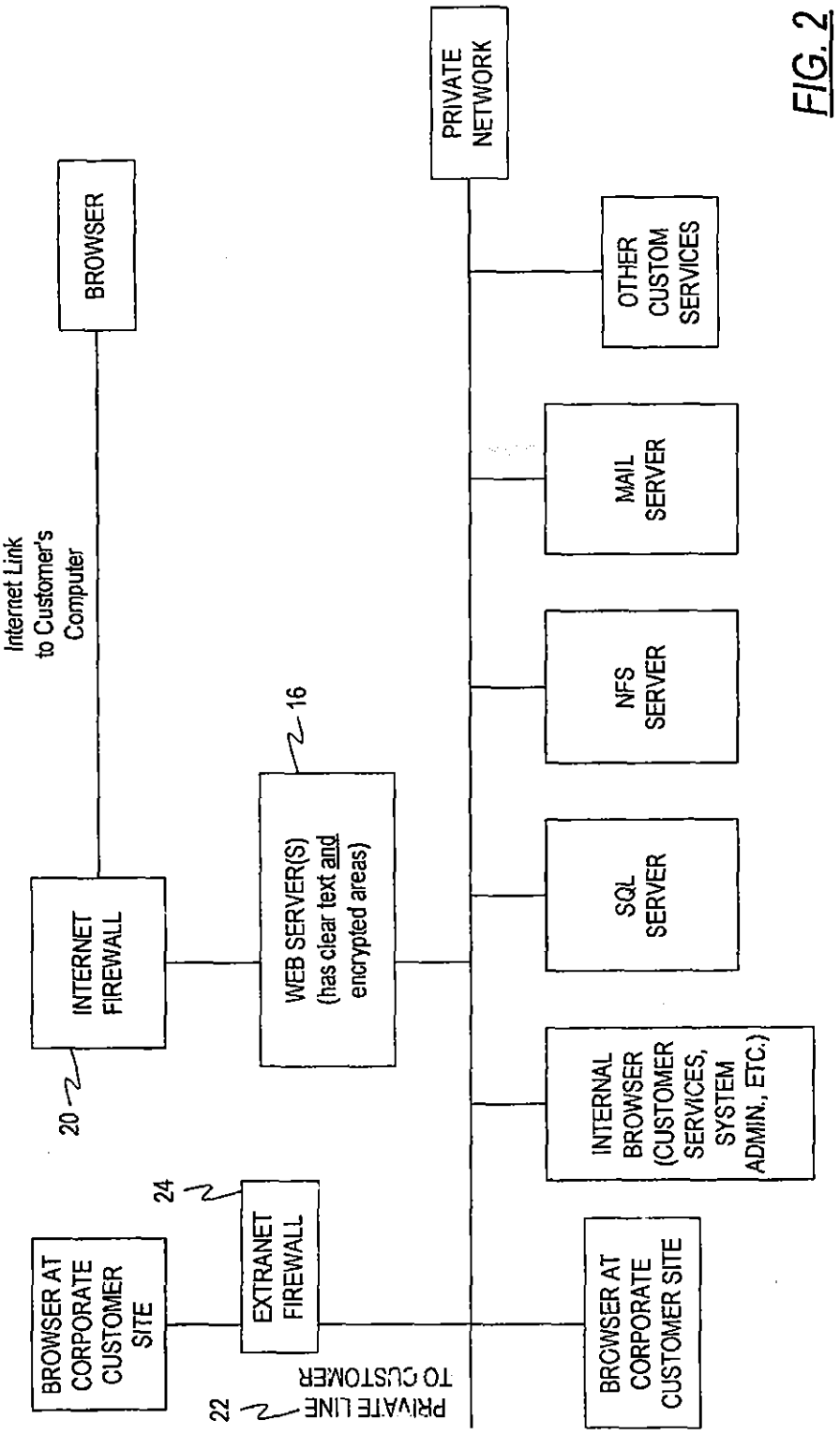

PRIVATE NETWORK
BROWSER
OTHER CUSTOM SERVICES
MAIL SERVER
Internet Link to Customer's Computer
NFS SERVER
16
WEB SERVER(S) (has clear text and encrypted areas)
SQL SERVER
INTERNAL BROWSER (CUSTOMER SERVICES, SYSTEM ADMIN., ETC.)
INTERNET FIREWALL
20
24
EXTRANET FIREWALL
BROWSER AT CORPORATE CUSTOMER SITE
BROWSER AT CORPORATE CUSTOMER SITE
PRIVATE LINE TO CUSTOMER
22

FIG. 2

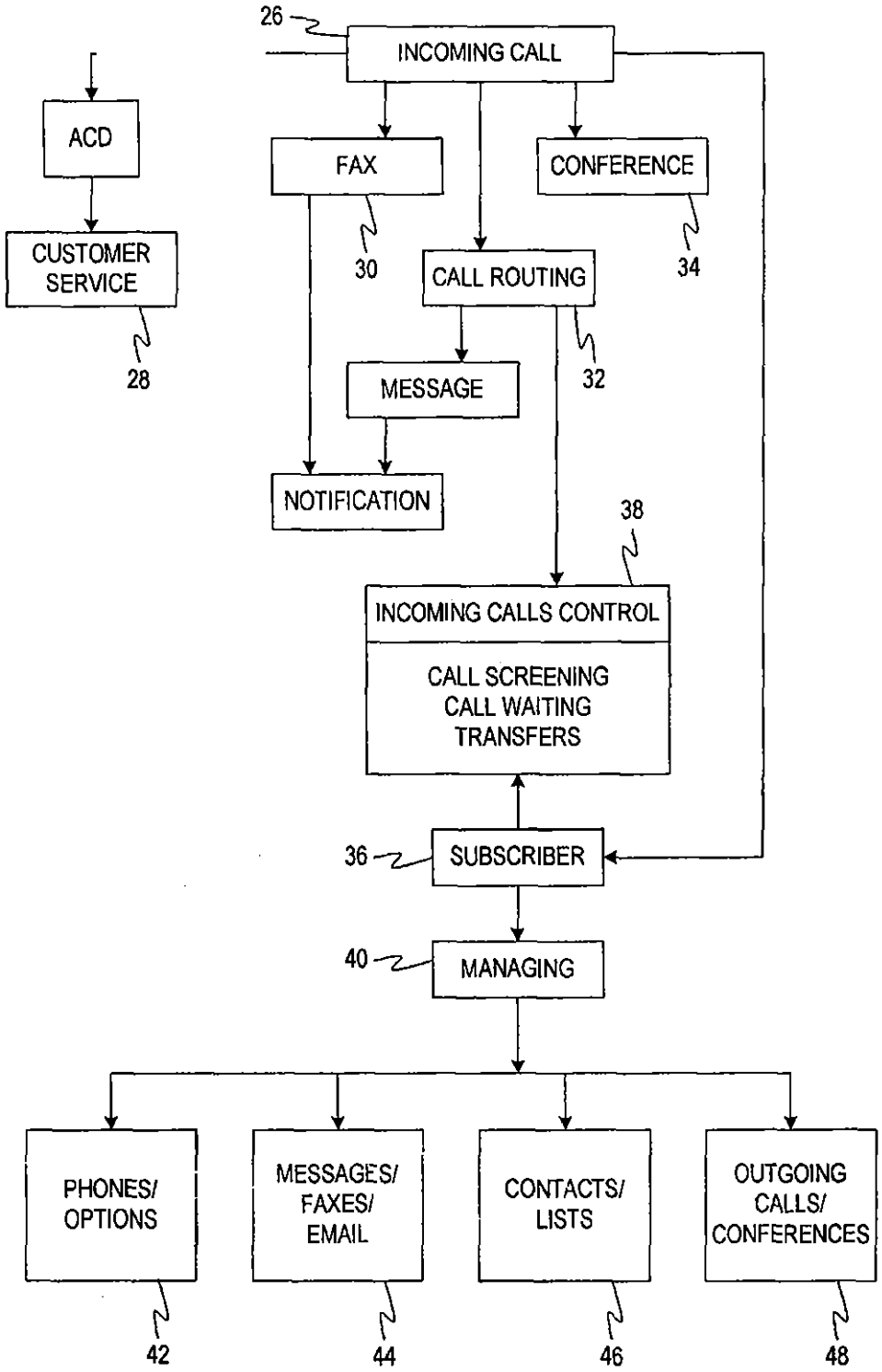

26
INCOMING CALL
ACD
CUSTOMER SERVICE
28
FAX
30
CONFERENCE
34
CALL ROUTING
32
MESSAGE
NOTIFICATION
38
INCOMING CALLS CONTROL
CALL SCREENING
CALL WAITING
TRANSFERS
36
SUBSCRIBER
40
MANAGING
PHONES/ OPTIONS
42
MESSAGES/ FAXES/ EMAIL
44
CONTACTS/ LISTS
46
OUTGOING CALLS/ CONFERENCES
48

FIG. 3

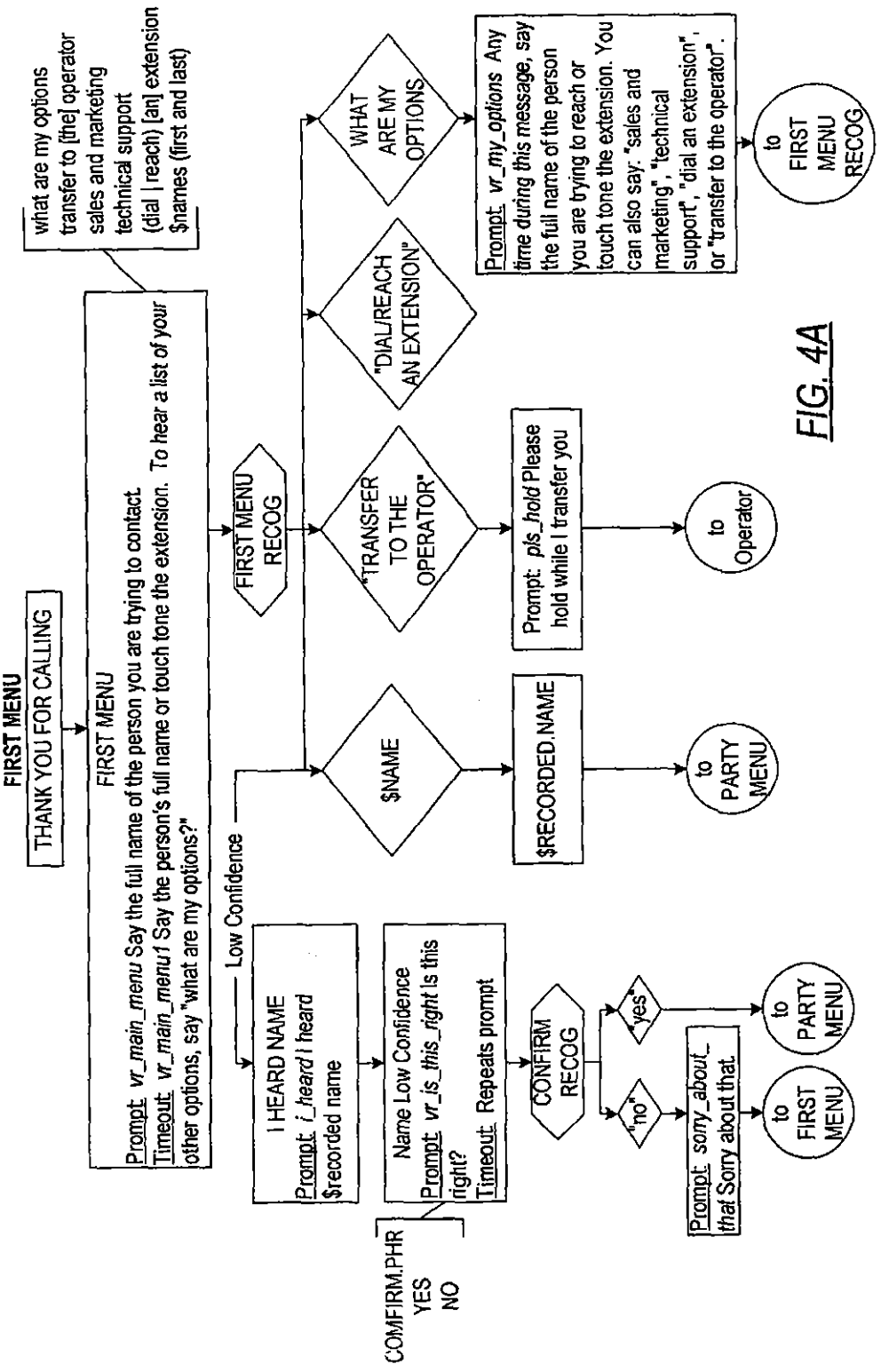

FIRST MENU
THANK YOU FOR CALLING
FIRST MENU
Prompt: vr_main_menu Say the full name of the person you are trying to contact
Timeout: vr_main_menu1 Say the person's full name or touch tone the extension. To hear a list of your other options, say "what are my options?"
what are my options
transfer to [the] operator
sales and marketing
technical support
(dial | reach) [an] extension
$names (first and last)
FIRST MENU RECOG
Low Confidence
$NAME
I HEARD NAME
Prompt: i_heard I heard
$recorded name
Name Low Confidence
Prompt: vr_is_this_right Is this right?
Timeout: Repeats prompt
COMFIRM.PHR
YES
NO
CONFIRM RECOG
"yes"
"no"
Prompt: sorry_about_that Sorry about that
to FIRST MENU
to PARTY MENU
$RECORDED.NAME
to PARTY MENU
"TRANSFER TO THE OPERATOR"
Prompt: pls_hold Please hold while I transfer you
to Operator
"DIAL/REACH AN EXTENSION"
WHAT ARE MY OPTIONS
Prompt: vr_my_options Any time during this message, say the full name of the person you are trying to reach or touch tone the extension. You can also say: "sales and marketing", "technical support", "dial an extension", or "transfer to the operator".
to FIRST MENU RECOG

FIG. 4A

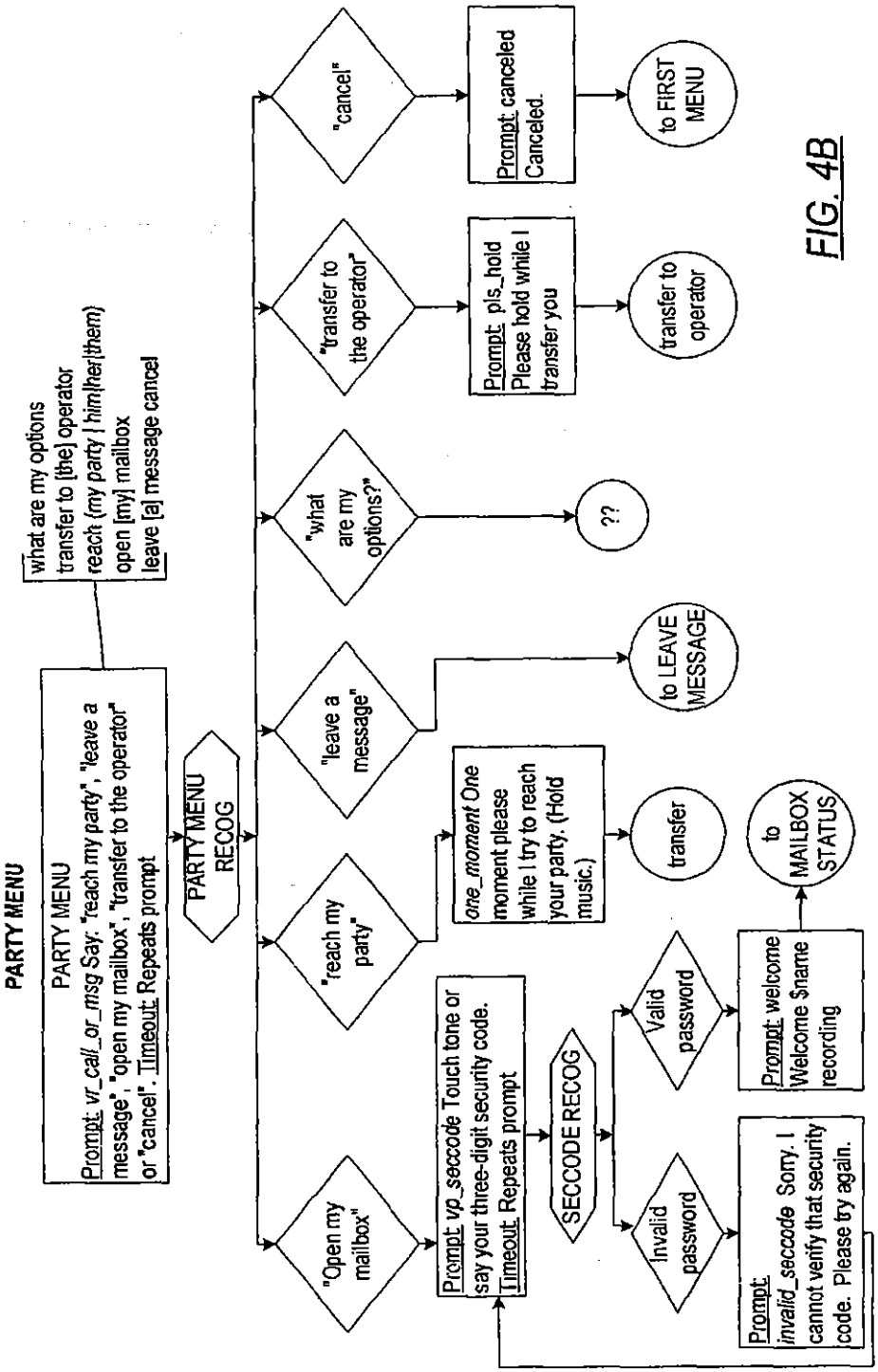

PARTY MENU
PARTY MENU
Prompt: vr_call_or_msg Say: "reach my party", "leave a message", "open my mailbox", "transfer to the operator" or "cancel". Timeout Repeats prompt
what are my options
transfer to [the] operator
reach [my party | him|her|them]
open [my] mailbox
leave [a] message cancel
PARTY MENU RECOG
"Open my mailbox"
"reach my party"
"leave a message"
"what are my options?"
"transfer to the operator"
"cancel"
Prompt vp_seccode Touch tone or say your three-digit security code. Timeout Repeats prompt
SECCODE RECOG
Invalid password
Valid password
Prompt invalid_seccode Sorry. I cannot verify that security code. Please try again.
Prompt welcome Welcome $name recording
to MAILBOX STATUS
one_moment One moment please while I try to reach your party. (Hold music.)
transfer
to LEAVE MESSAGE
??
Prompt pls_hold Please hold while I transfer you
transfer to operator
Prompt canceled Canceled.
to FIRST MENU

FIG. 4B

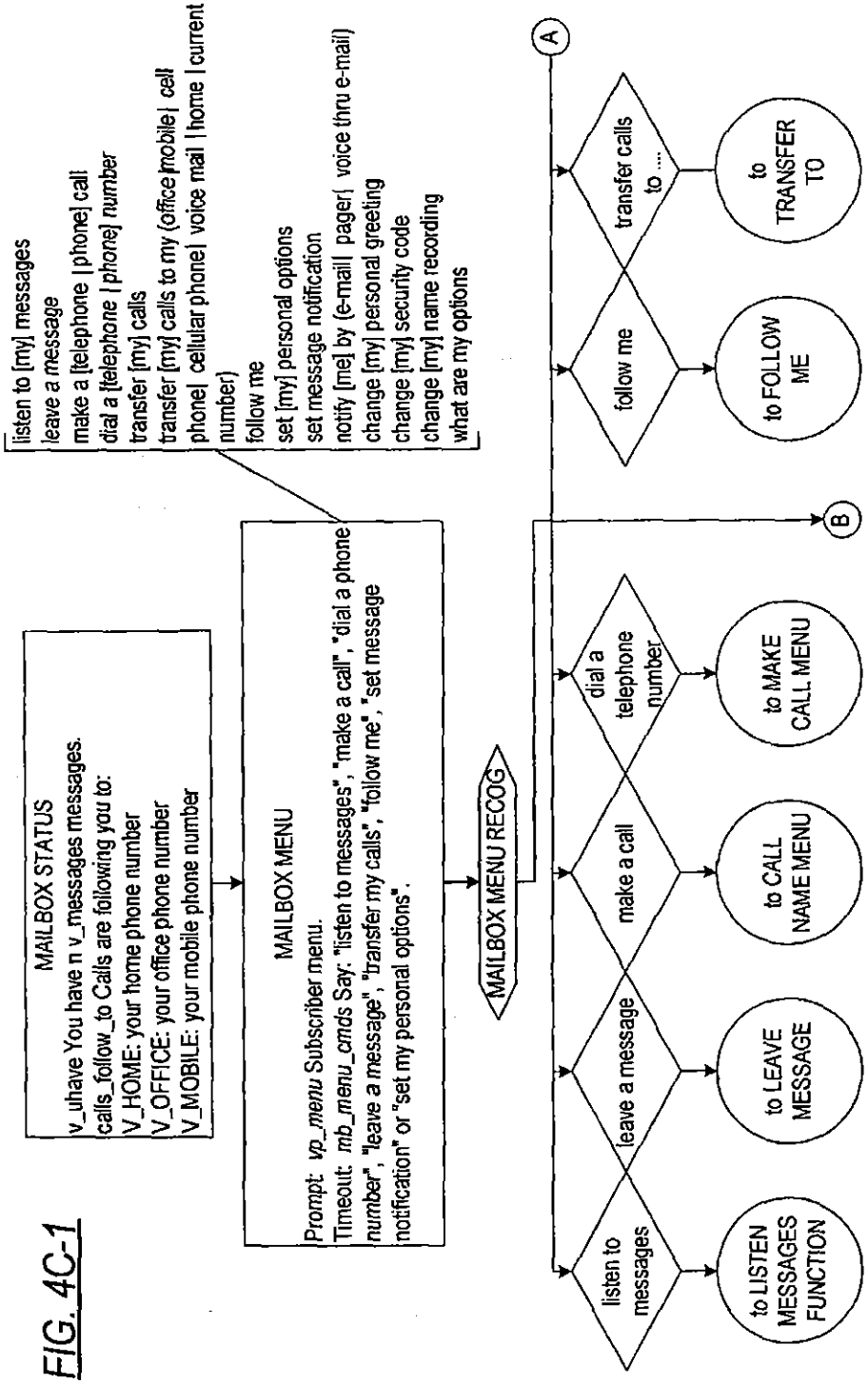

MAILBOX MENU
MAILBOX STATUS
v_uhave You have n v_messages messages.
calls_follow_to Calls are following you to:
V_HOME: your home phone number
V_OFFICE: your office phone number
V_MOBILE: your mobile phone number
MAILBOX MENU
Prompt: vp_menu Subscriber menu.
Timeout: mb_menu_cmds Say: "listen to messages", "make a call", "dial a phone number", "leave a message", "transfer my calls", "follow me", "set message notification" or "set my personal options".
listen to [my] messages
leave a message
make a [telephone | phone] call
dial a [telephone | phone] number
transfer [my] calls
transfer [my] calls to my (office|mobile| cell phone| cellular phone| voice mail | home | current number)
follow me
set [my] personal options
set message notification
notify [me] by (e-mail| pager| voice thru e-mail)
change [my] personal greeting
change [my] security code
change [my] name recording
what are my options
MAILBOX MENU RECOG
A
B
listen to messages
leave a message
make a call
dial a telephone number
follow me
transfer calls to ....
to LISTEN MESSAGES FUNCTION
to LEAVE MESSAGE
to CALL NAME MENU
to MAKE CALL MENU
to FOLLOW ME
to TRANSFER TO

FIG. 4C-1

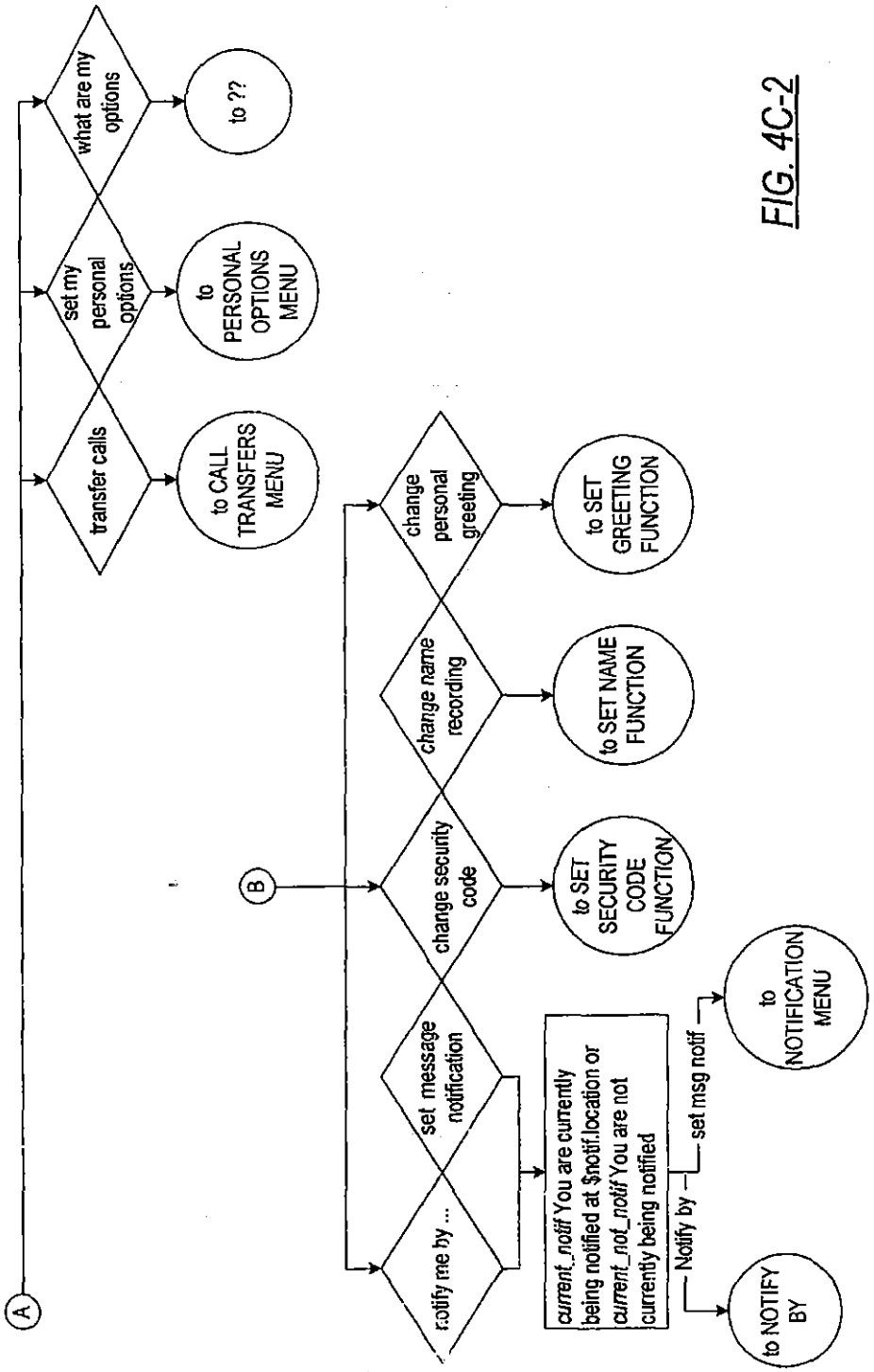

A
what are my options
to ??
set my personal options
to PERSONAL OPTIONS MENU
transfer calls
to CALL TRANSFERS MENU
B
change personal greeting
to SET GREETING FUNCTION
change name recording
to SET NAME FUNCTION
change security code
to SET SECURITY CODE FUNCTION
set message notification
notify me by ...
current_notif You are currently being notified at $notif.location or current_not_notif You are not currently being notified
Notify by
set msg notif
to NOTIFICATION MENU
to NOTIFY BY

FIG. 4C-2

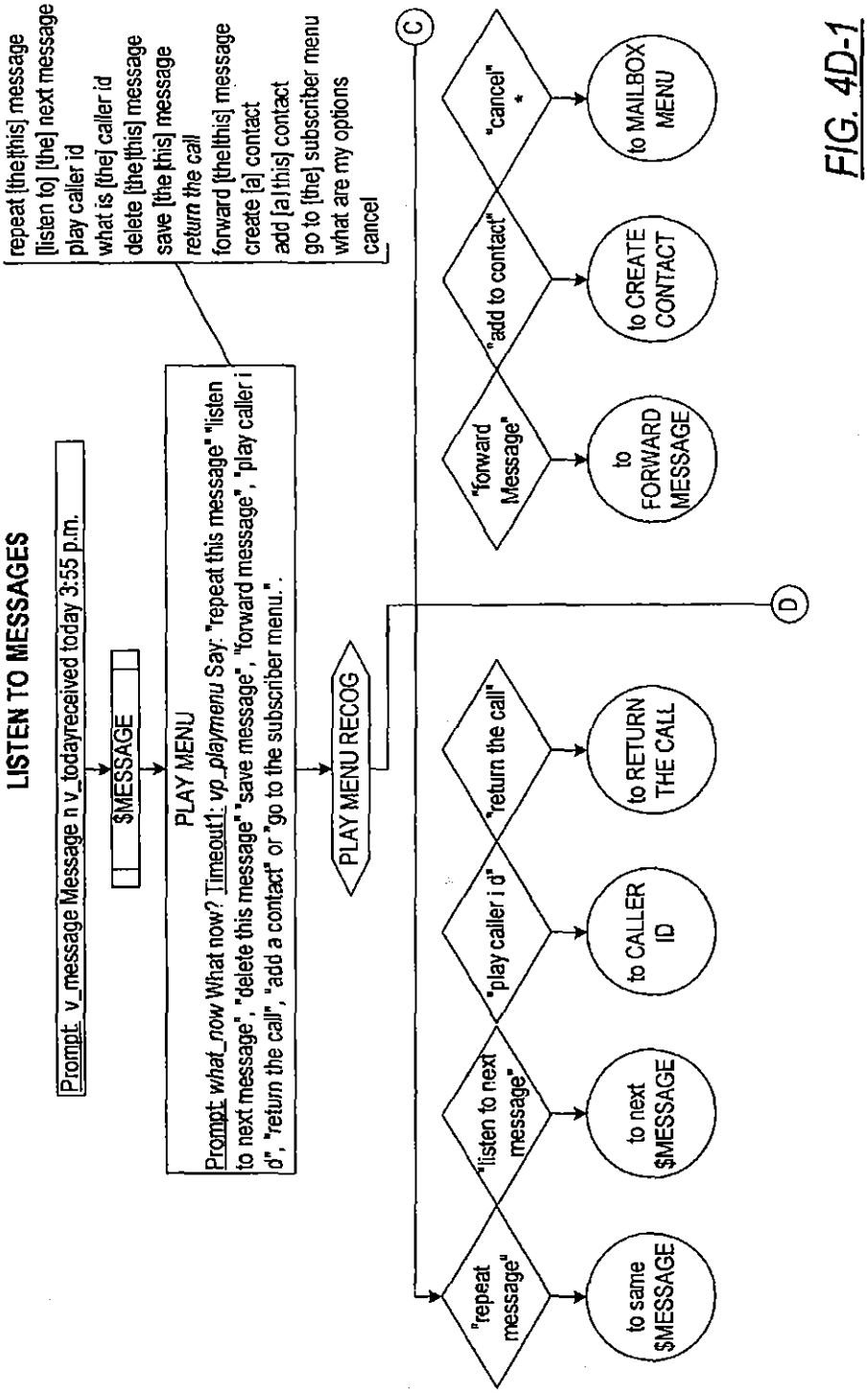

LISTEN TO MESSAGES
Prompt v_message Message n v_todayreceived today 3:55 p.m.
$MESSAGE
PLAY MENU
Prompt what_now What now? Timeout1: vp_playmenu Say: "repeat this message" "listen to next message", "delete this message" "save message", "forward message", "play caller i d", "return the call", "add a contact" or "go to the subscriber menu.".
PLAY MENU RECOG
repeat [the][this] message
[listen to] [the] next message
play caller id
what is [the] caller id
delete [the][this] message
save [the][this] message
return the call
forward [the][this] message
create [a] contact
add [a][this] contact
go to [the] subscriber menu
what are my options
cancel
C
D
"repeat message"
to same $MESSAGE
"listen to next message"
to next $MESSAGE
"play caller i d"
to CALLER ID
"return the call"
to RETURN THE CALL
"forward Message"
to FORWARD MESSAGE
"add to contact"
to CREATE CONTACT
"cancel"
to MAILBOX MENU

FIG. 4D-1

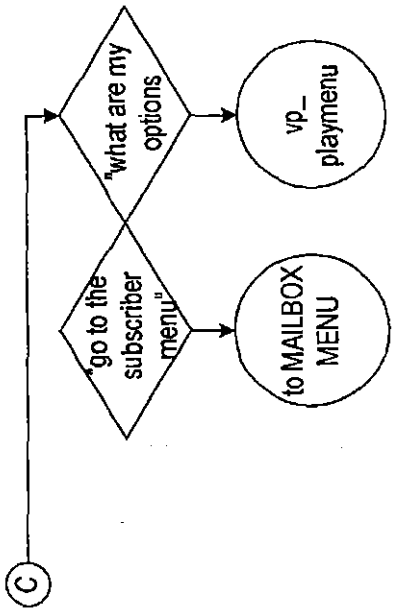
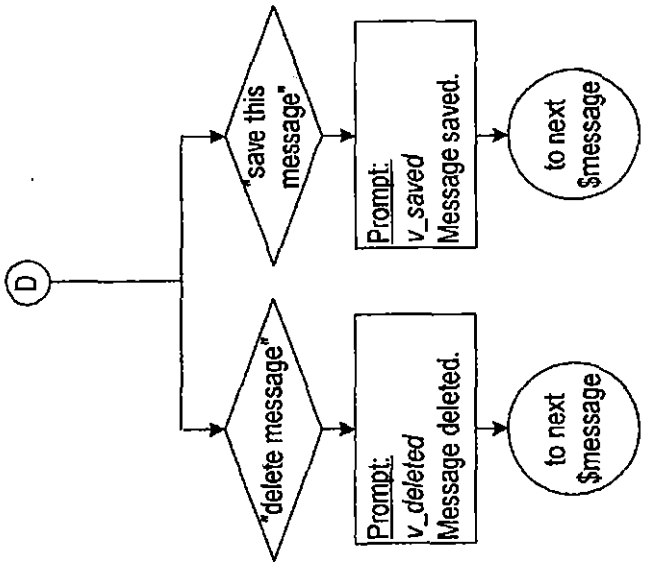

C
"what are my options
vp_ playmenu
"go to the subscriber menu"
to MAILBOX MENU

FIG. 4D-2


D
"save this message"
Prompt: v_saved Message saved.
to next $message
"delete message"
Prompt: v_deleted Message deleted.
to next $message

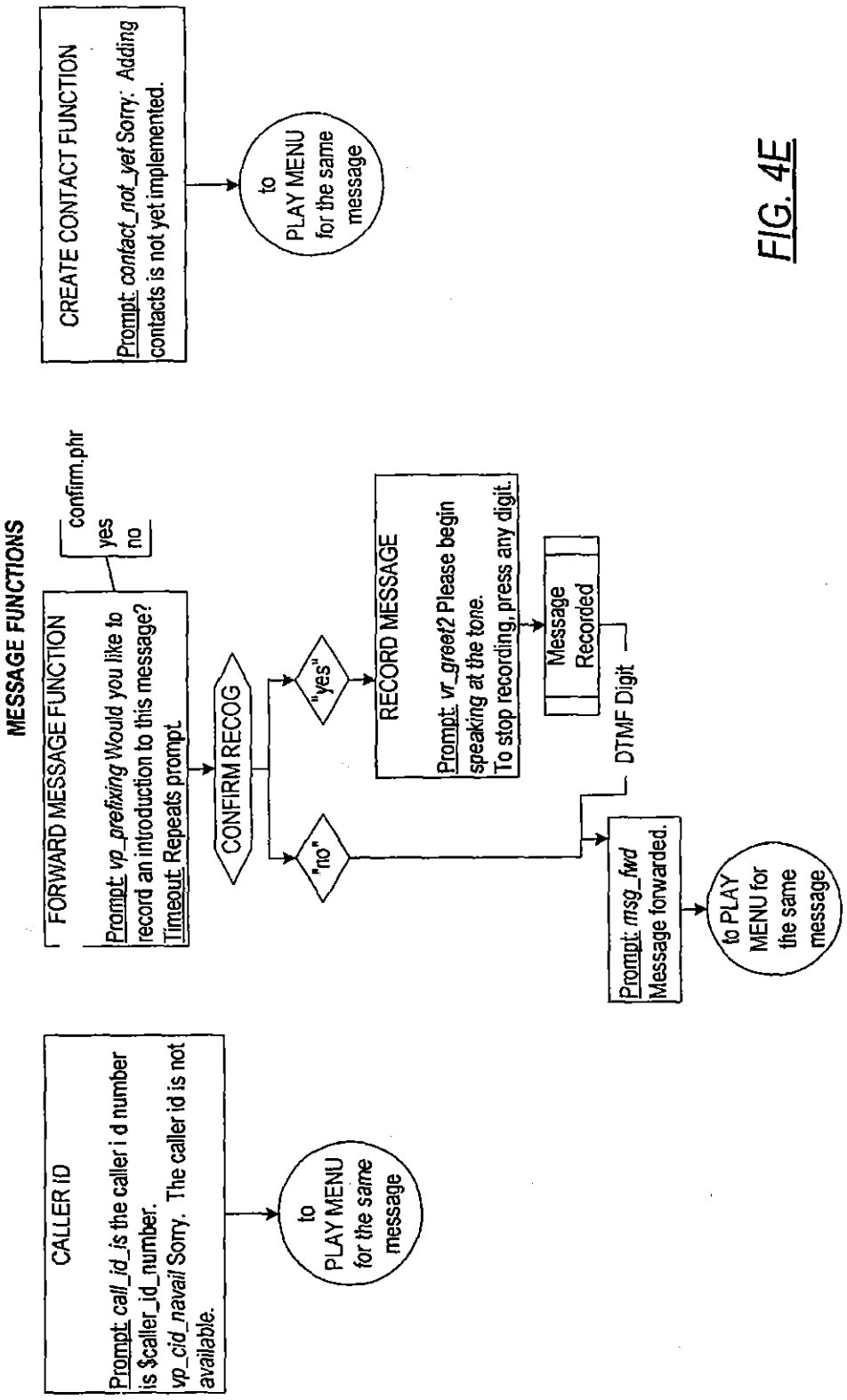

MESSAGE FUNCTIONS
CREATE CONTACT FUNCTION
Prompt: contact_not_yet Sorry: Adding contacts is not yet implemented.
to PLAY MENU for the same message
FORWARD MESSAGE FUNCTION
Prompt: vp_prefixing Would you like to record an introduction to this message?
Timeout: Repeats prompt
confirm.phr
yes
no
CONFIRM RECOG
"yes"
"no"
RECORD MESSAGE
Prompt: vr_greet2 Please begin speaking at the tone.
To stop recording, press any digit.
Message Recorded
DTMF Digit
Prompt: msg_fwd Message forwarded.
to PLAY MENU for the same message
CALLER ID
Prompt: call_id_is the caller i d number is $caller_id_number.
vp_cid_navail Sorry. The caller id is not available.
to PLAY MENU for the same message

FIG. 4E

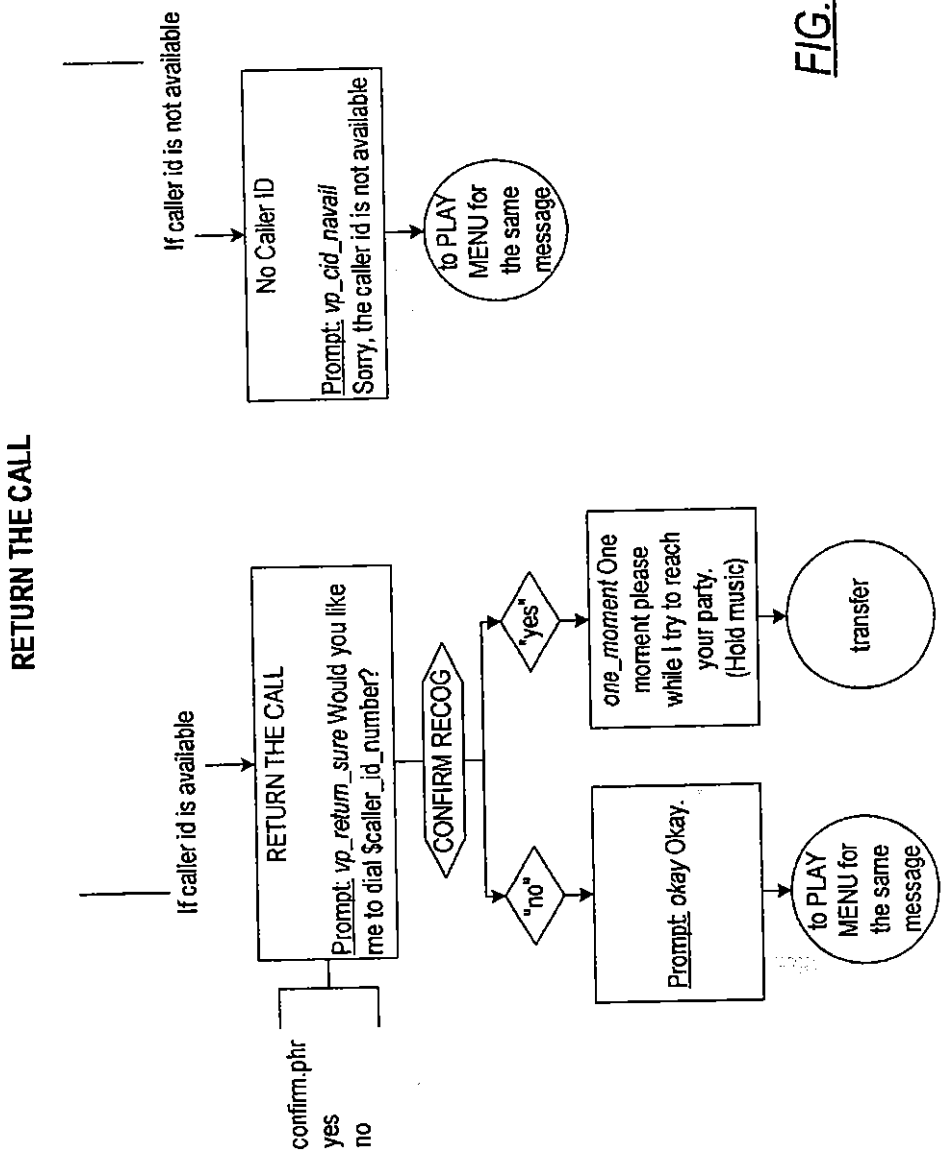

RETURN THE CALL
If caller id is available
RETURN THE CALL
Prompt: vp_return_sure Would you like me to dial $caller_id_number?
confirm.phr
yes
no
CONFIRM RECOG
"yes"
one_moment One moment please while I try to reach your party. (Hold music)
transfer
"no"
Prompt: okay Okay.
to PLAY MENU for the same message
If caller id is not available
No Caller ID
Prompt: vp_cid_navail Sorry, the caller id is not available
to PLAY MENU for the same message

FIG. 4F

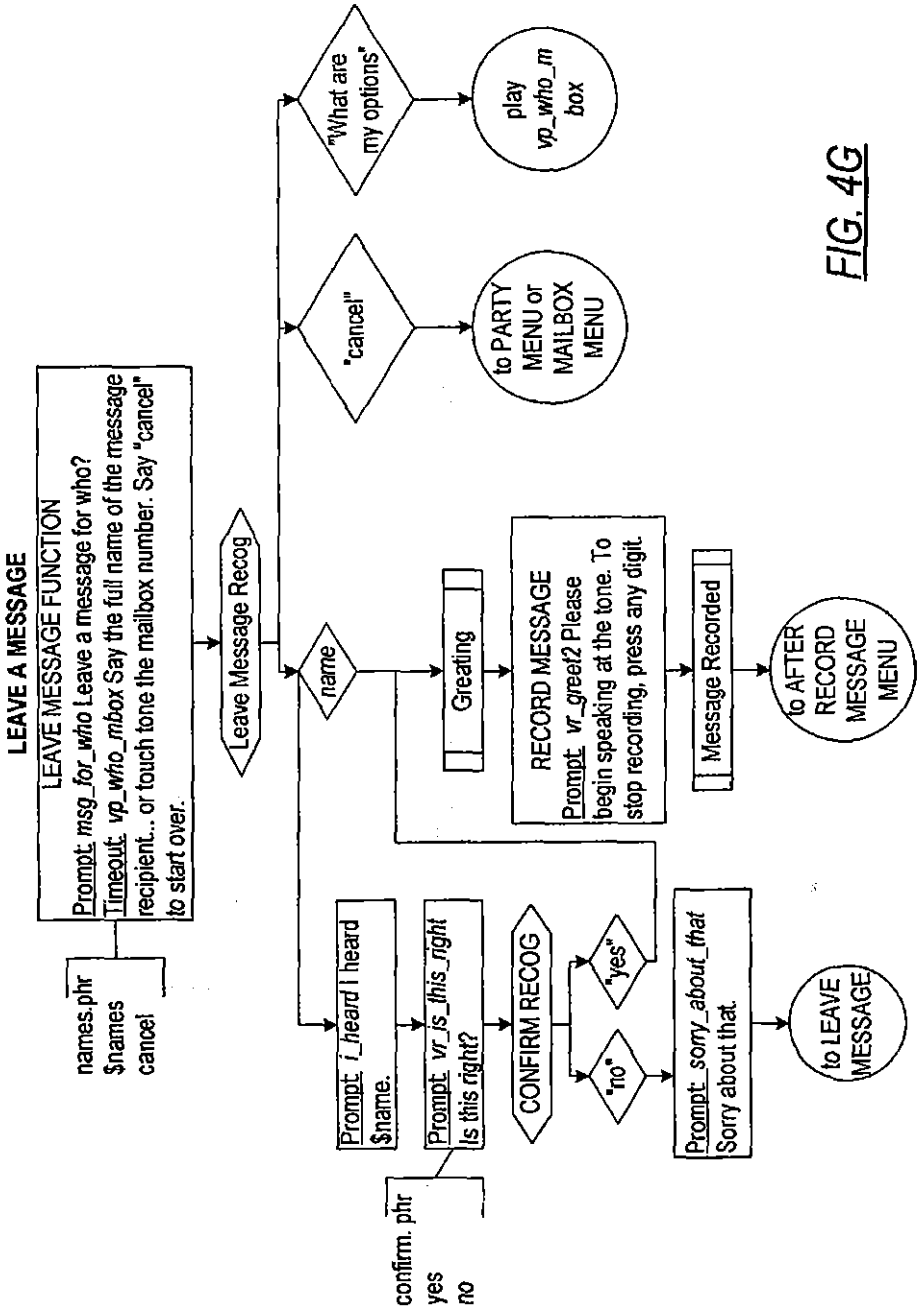

LEAVE A MESSAGE
LEAVE MESSAGE FUNCTION
Prompt msg_for_who Leave a message for who?
Timeout vp_who_mbox Say the full name of the message recipient... or touch tone the mailbox number. Say "cancel" to start over.
names.phr
$names
cancel
Leave Message Recog
name
"What are my options"
play vp_who_m box
"cancel"
to PARTY MENU or MAILBOX MENU
Greating
RECORD MESSAGE
Prompt vr_greet2 Please begin speaking at the tone. To stop recording, press any digit.
Message Recorded
to AFTER RECORD MESSAGE MENU
Prompt i_heard I heard $name.
Prompt vr_is_this_right Is this right?
confirm. phr
yes
no
CONFIRM RECOG
"yes"
"no"
Prompt sorry_about_that Sorry about that.
to LEAVE MESSAGE

FIG. 4G

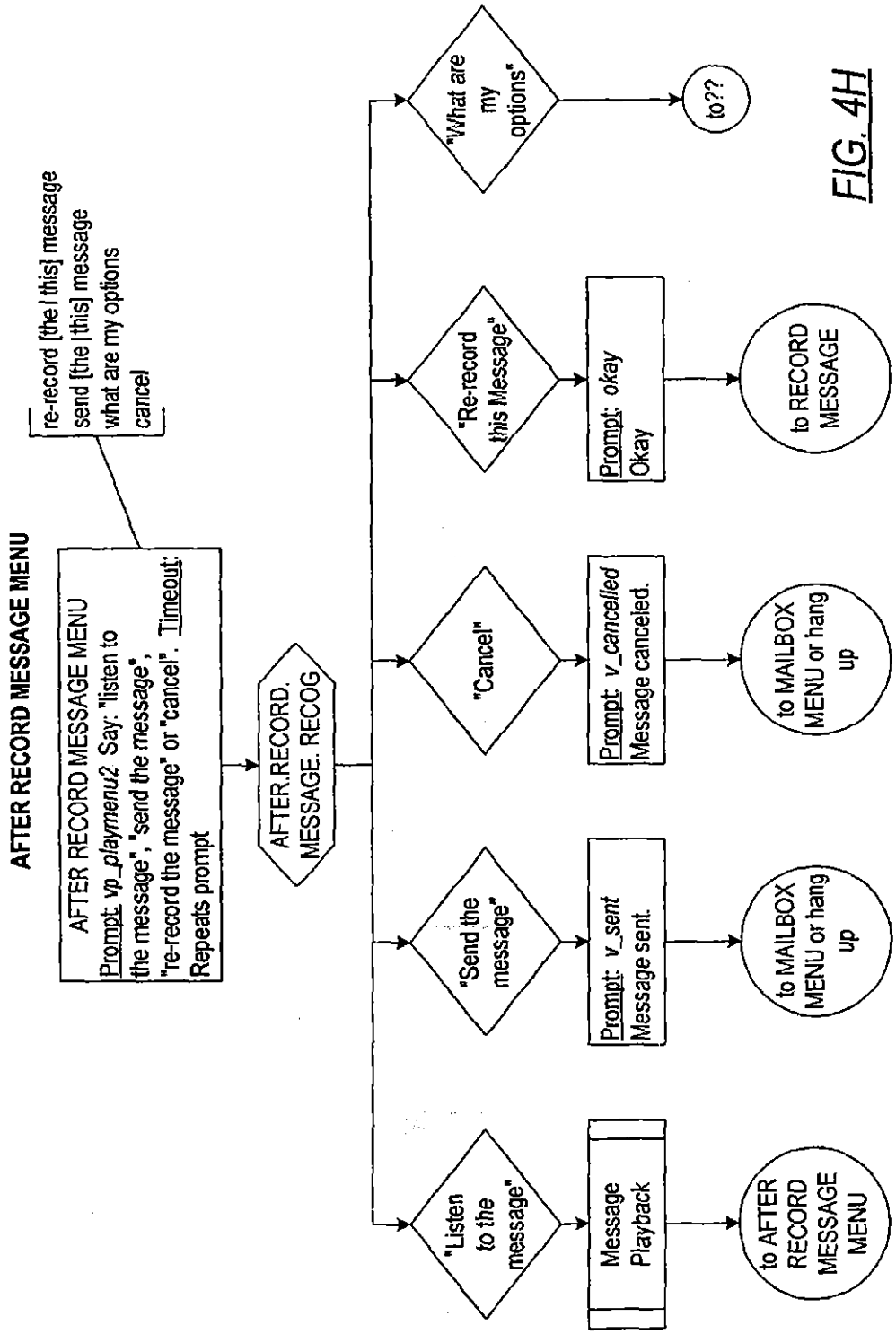

AFTER RECORD MESSAGE MENU
AFTER RECORD MESSAGE MENU
Prompt: vp_playmenu2 Say: "listen to the message", "send the message", "re-record the message" or "cancel". Timeout: Repeats prompt
re-record [the | this] message
send [the | this] message
what are my options
cancel
AFTER.RECORD. MESSAGE. RECOG
"Listen to the message"
Message Playback
to AFTER RECORD MESSAGE MENU
"Send the message"
Prompt: v_sent Message sent.
to MAILBOX MENU or hang up
"Cancel"
Prompt: v_cancelled Message canceled.
to MAILBOX MENU or hang up
"Re-record this Message"
Prompt: okay Okay
to RECORD MESSAGE
"What are my options"
to??

FIG. 4H

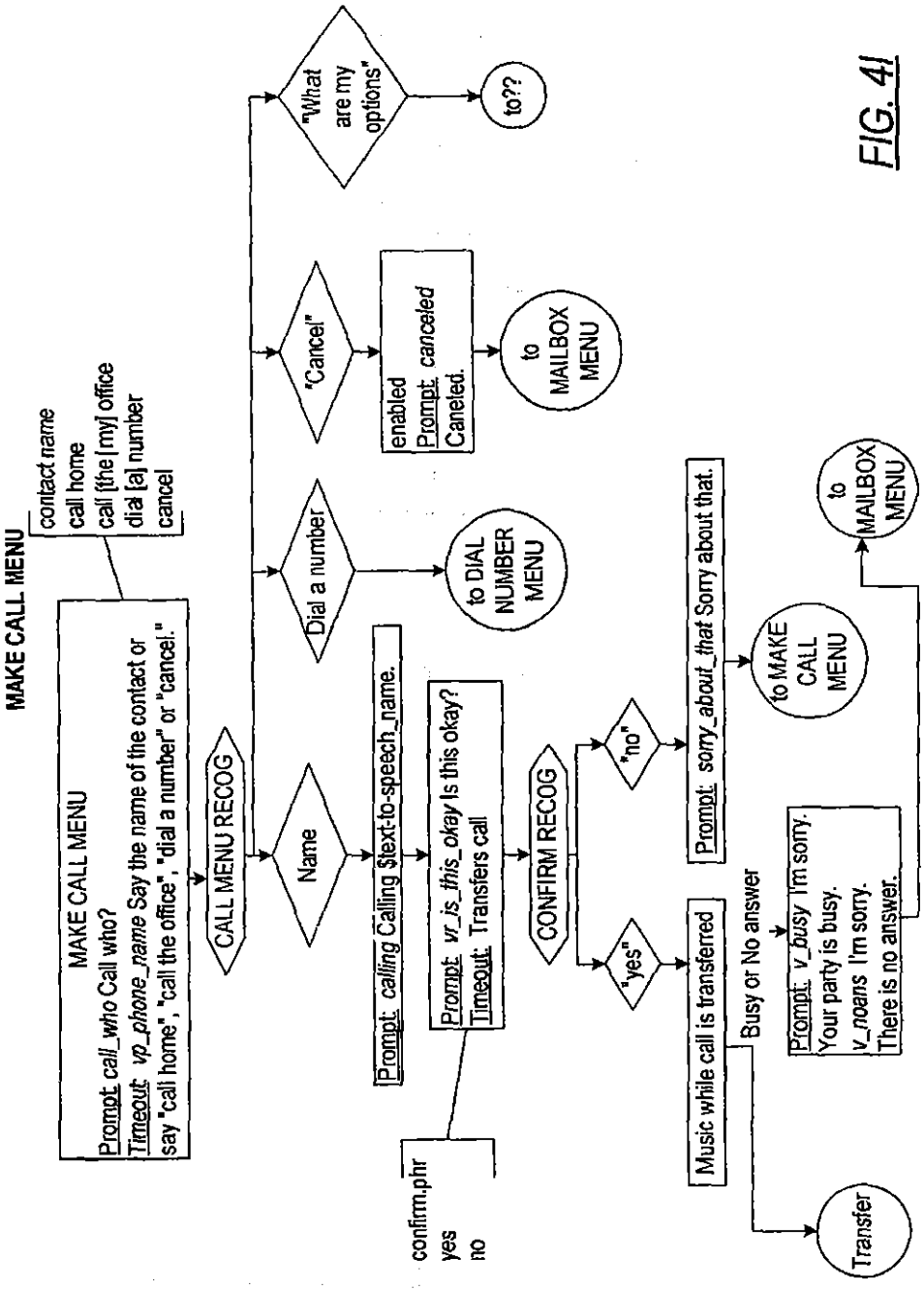

MAKE CALL MENU
contact name
call home
call [the | my] office
dial [a] number
cancel
MAKE CALL MENU
Prompt: call_who Call who?
Timeout: vp_phone_name Say the name of the contact or say "call home", "call the office", "dial a number" or "cancel."
CALL MENU RECOG
Name
Prompt: calling Calling $text-to-speech_name.
Prompt: vr_is_this_okay Is this okay?
Timeout: Transfers call
confirm.phr
yes
no
CONFIRM RECOG
"yes"
"no"
Music while call is transferred
Busy or No answer
Prompt: v_busy I'm sorry. Your party is busy.
v_noans I'm sorry. There is no answer.
Prompt: sorry_about_that Sorry about that.
to MAKE CALL MENU
to MAILBOX MENU
Transfer
Dial a number
to DIAL NUMBER MENU
"Cancel"
enabled
Prompt: canceled Canceled.
to MAILBOX MENU
"What are my options"
to??

FIG. 4I

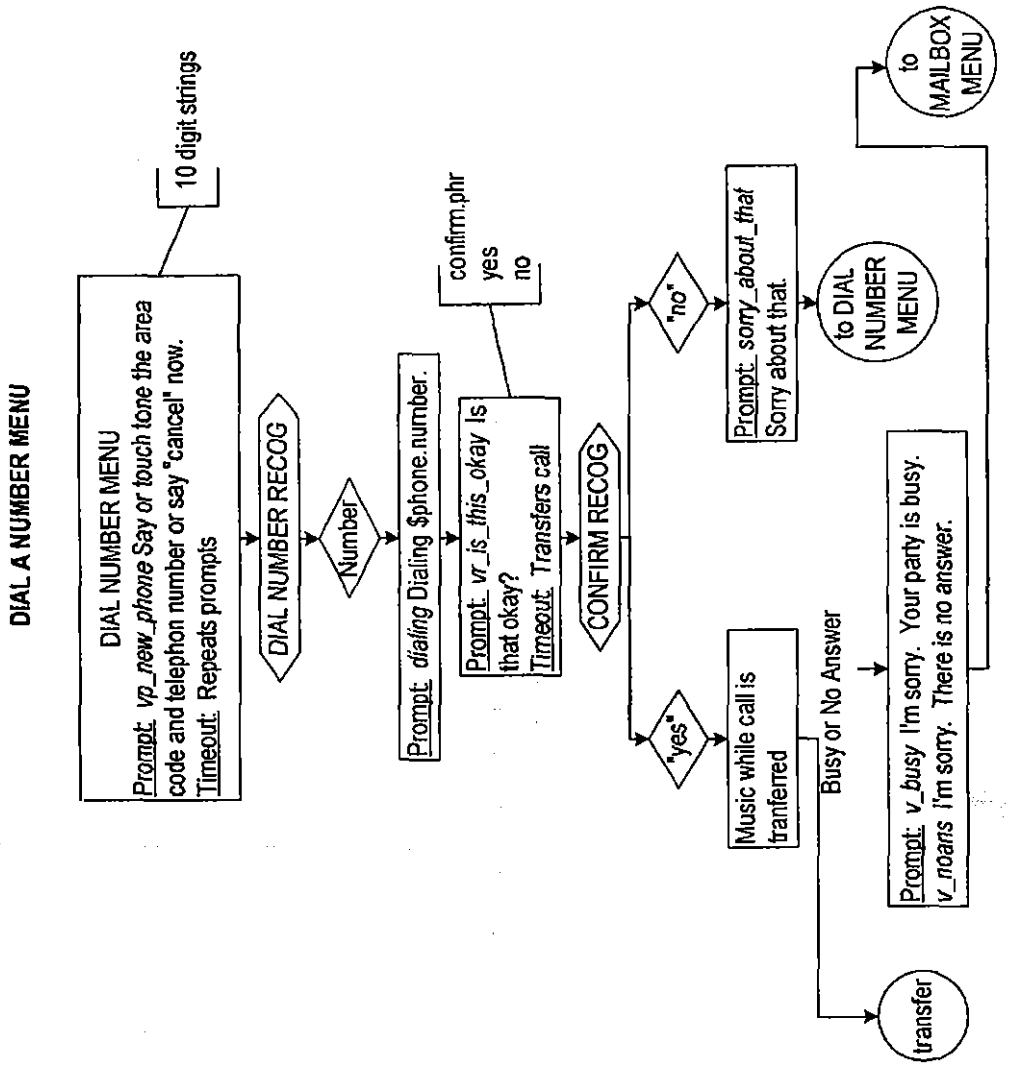

DIAL A NUMBER MENU
DIAL NUMBER MENU
Prompt: vp_new_phone Say or touch tone the area code and telephon number or say "cancel" now.
Timeout: Repeats prompts
10 digit strings
DIAL NUMBER RECOG
Number
Prompt: dialing Dialing $phone.number.
Prompt: vr_is_this_okay Is that okay?
Timeout: Transfers call
confirm.phr
yes
no
CONFIRM RECOG
"yes"
"no"
Music while call is tranferred
Prompt: sorry_about_that Sorry about that.
to DIAL NUMBER MENU
to MAILBOX MENU
Busy or No Answer
Prompt: v_busy I'm sorry. Your party is busy.
v_noans I'm sorry. There is no answer.
transfer

FIG. 4J

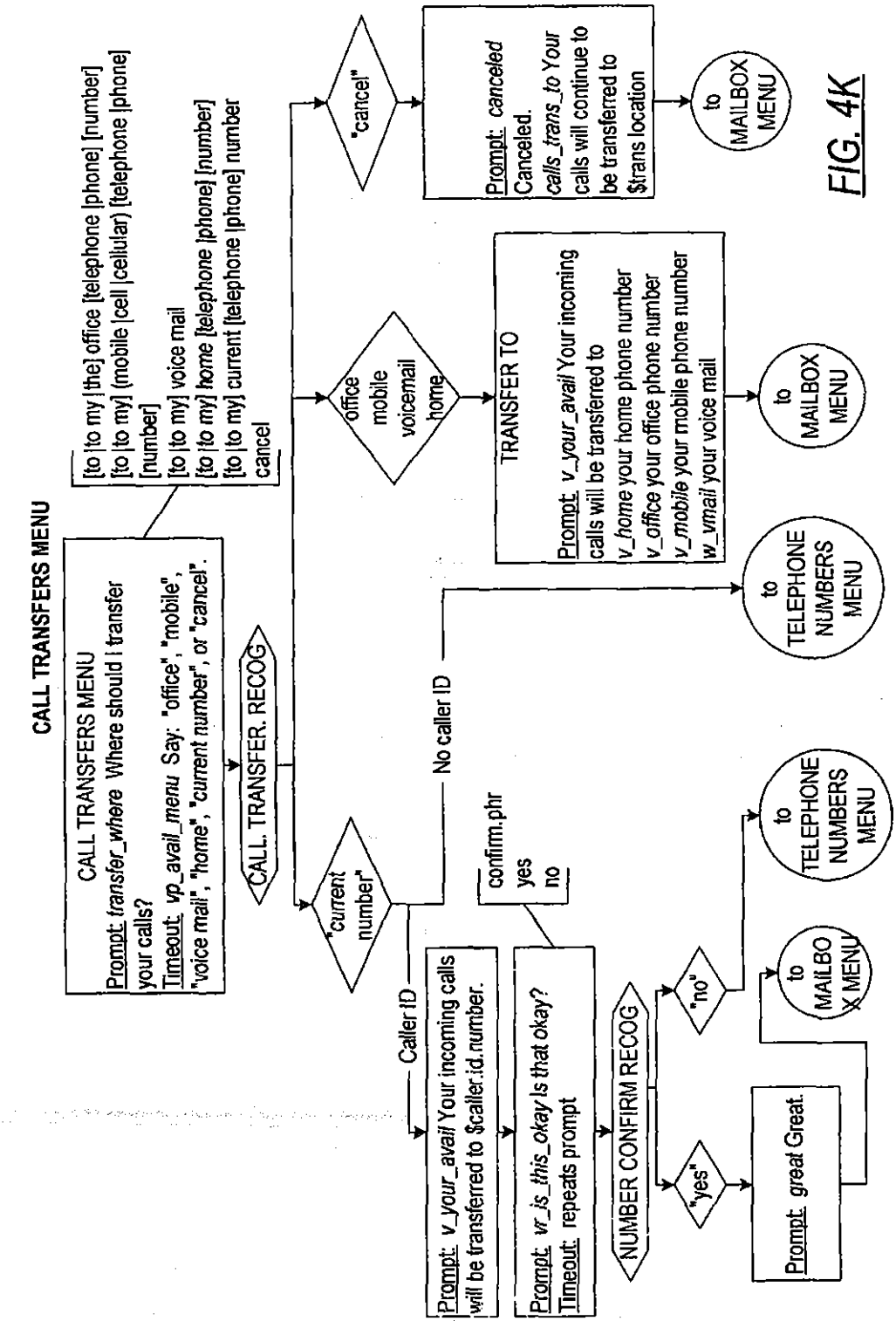

CALL TRANSFERS MENU
CALL TRANSFERS MENU
Prompt: transfer_where Where should I transfer your calls?
Timeout: vp_avail_menu Say: "office", "mobile", "voice mail", "home", "current number", or "cancel".
[to |to my |the] office [telephone |phone] [number]
[to |to my] [mobile |cell |cellular) [telephone |phone] [number]
[to |to my] voice mail
[to |to my] home [telephone |phone] [number]
[to |to my] current [telephone |phone] number
cancel
CALL. TRANSFER. RECOG
"cancel"
Prompt: canceled
Canceled.
calls_trans_to Your calls will continue to be transferred to $trans location
to MAILBOX MENU
office
mobile
voicemail
home
TRANSFER TO
Prompt: v_your_avail Your incoming calls will be transferred to
v_home your home phone number
v_office your office phone number
v_mobile your mobile phone number
w_vmail your voice mail
to MAILBOX MENU
to TELEPHONE NUMBERS MENU
"current number"
No caller ID
Caller ID
confirm.phr
yes
no
Prompt: v_your_avail Your incoming calls will be transferred to $caller.id.number.
Prompt: vr_is_this_okay Is that okay?
Timeout: repeats prompt
NUMBER CONFIRM RECOG
"no"
"yes"
to TELEPHONE NUMBERS MENU
to MAILBOX MENU
Prompt: great Great.

FIG. 4K

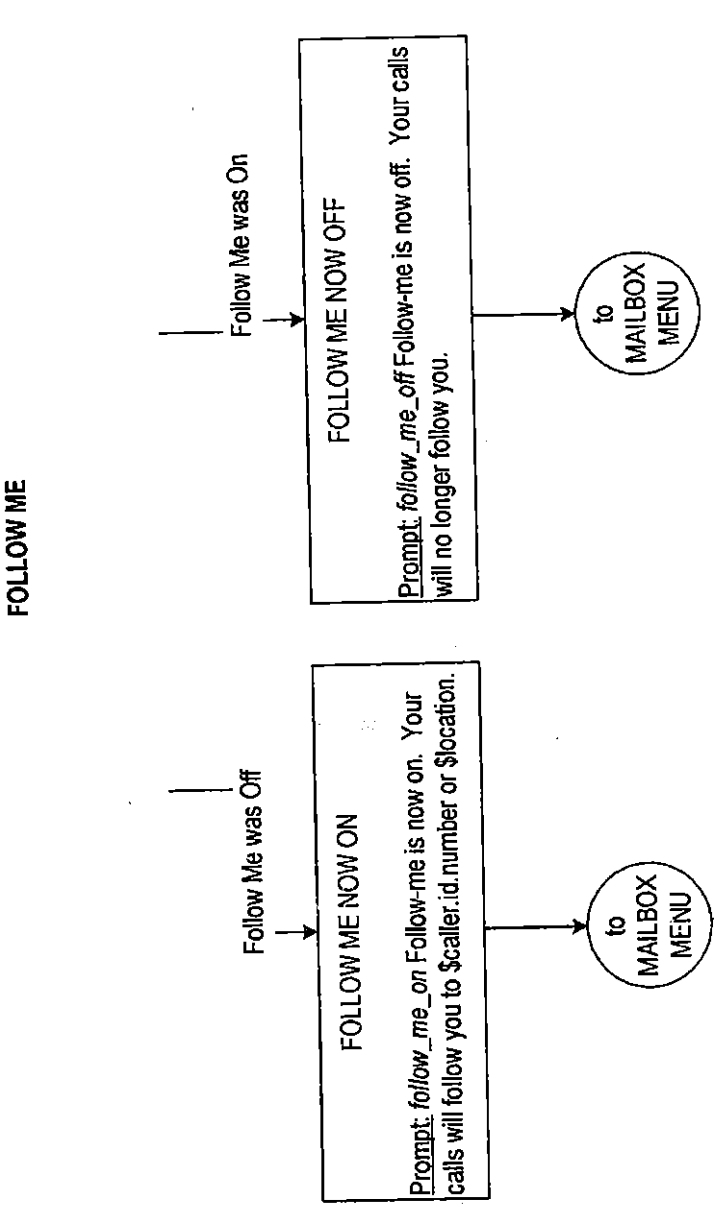

FOLLOW ME
Follow Me was On
FOLLOW ME NOW OFF
Prompt: follow_me_off Follow-me is now off. Your calls will no longer follow you.
to MAILBOX MENU
Follow Me was Off
FOLLOW ME NOW ON
Prompt: follow_me_on Follow-me is now on. Your calls will follow you to $caller.id.number or $location.
to MAILBOX MENU

FIG. 4L

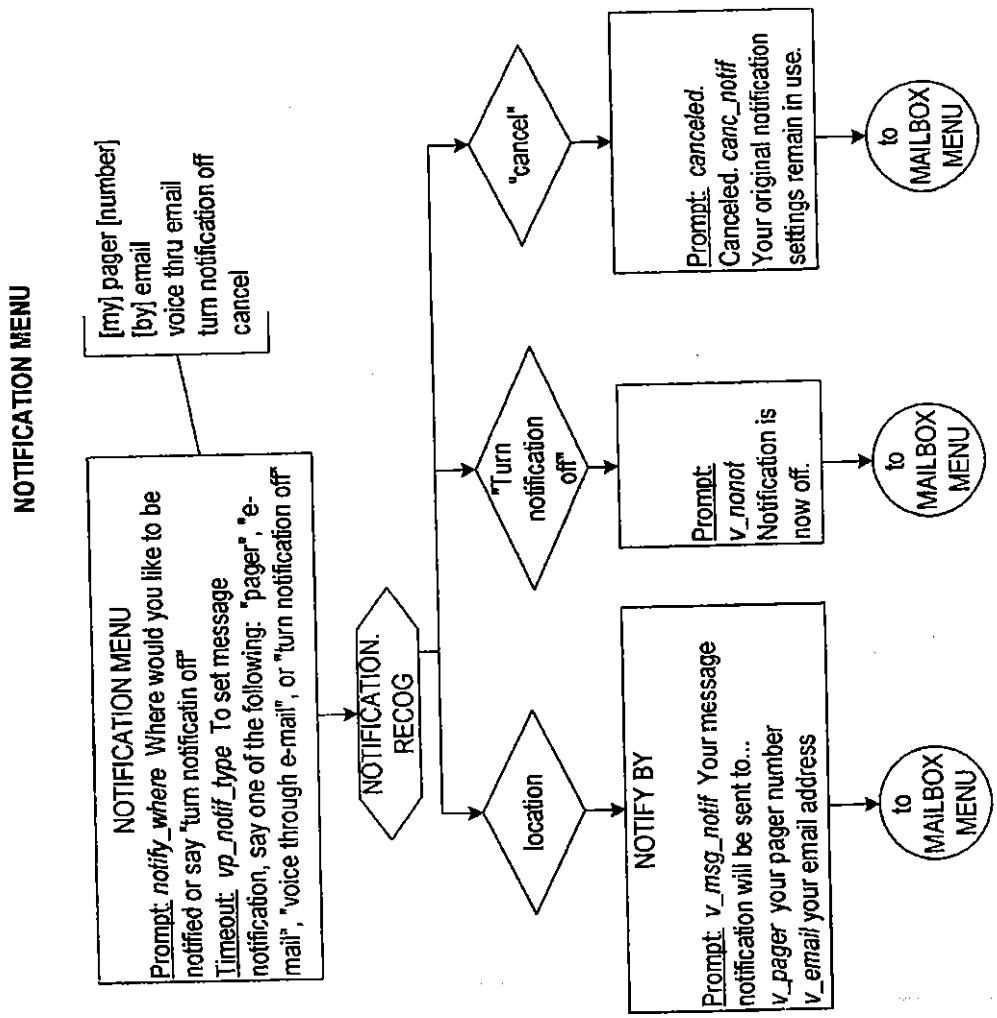

NOTIFICATION MENU
NOTIFICATION MENU
Prompt: notify_where Where would you like to be notified or say "turn notificatin off"
Timeout: vp_notif_type To set message notification, say one of the following: "pager", "e-mail", "voice through e-mail", or "turn notification off"
[my] pager [number]
[by] email
voice thru email
turn notification off
cancel
NOTIFICATION. RECOG
location
NOTIFY BY
Prompt: v_msg_notif Your message notification will be sent to... v_pager your pager number v_email your email address
to MAILBOX MENU
"Turn notification off"
Prompt: v_nonot Notification is now off.
to MAILBOX MENU
"cancel"
Prompt: canceled. Canceled. canc_notif Your original notification settings remain in use.
to MAILBOX MENU

FIG. 4M

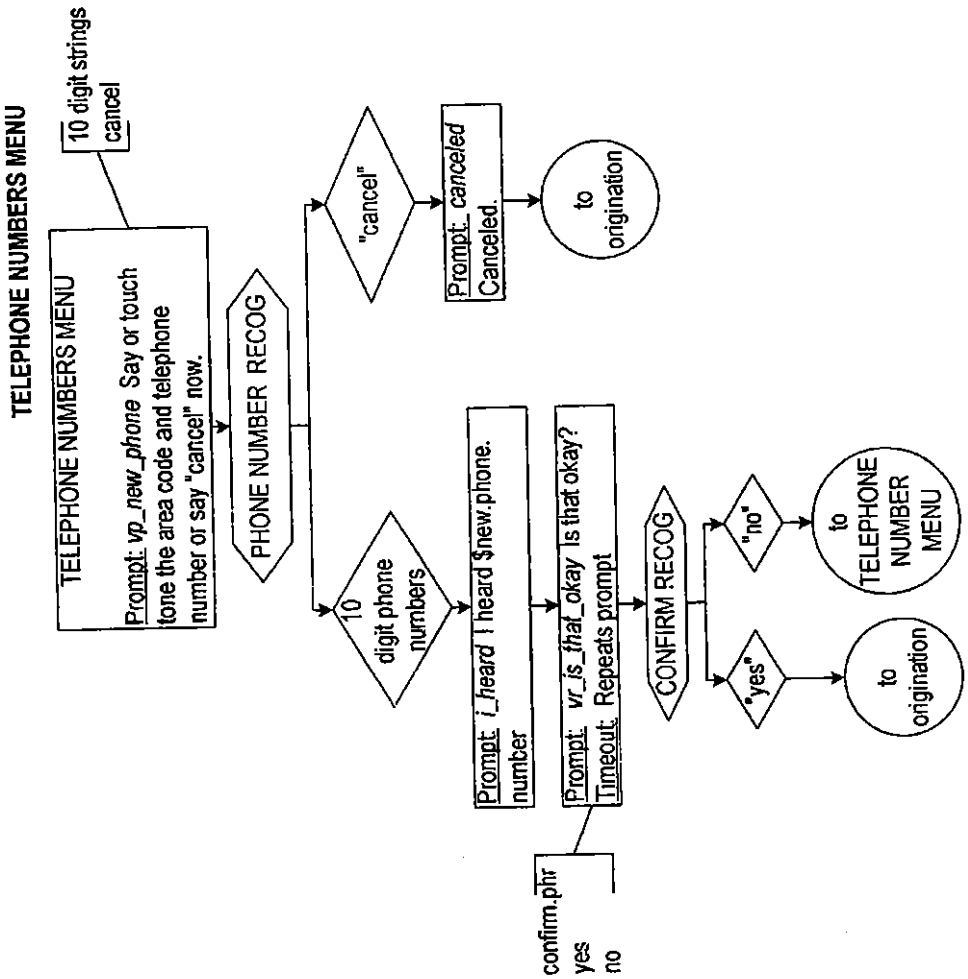

TELEPHONE NUMBERS MENU
TELEPHONE NUMBERS MENU
Prompt: vp_new_phone Say or touch tone the area code and telephone number or say "cancel" now.
10 digit strings
cancel
PHONE NUMBER RECOG
"cancel"
Prompt: canceled Canceled.
to origination
10 digit phone numbers
Prompt: i_heard I heard $new.phone. number
Prompt: vr_is_that_okay Is that okay? Timeout: Repeats prompt
confirm.phr
yes
no
CONFIRM RECOG
"no"
to TELEPHONE NUMBER MENU
"yes"
to origination

FIG. 4N

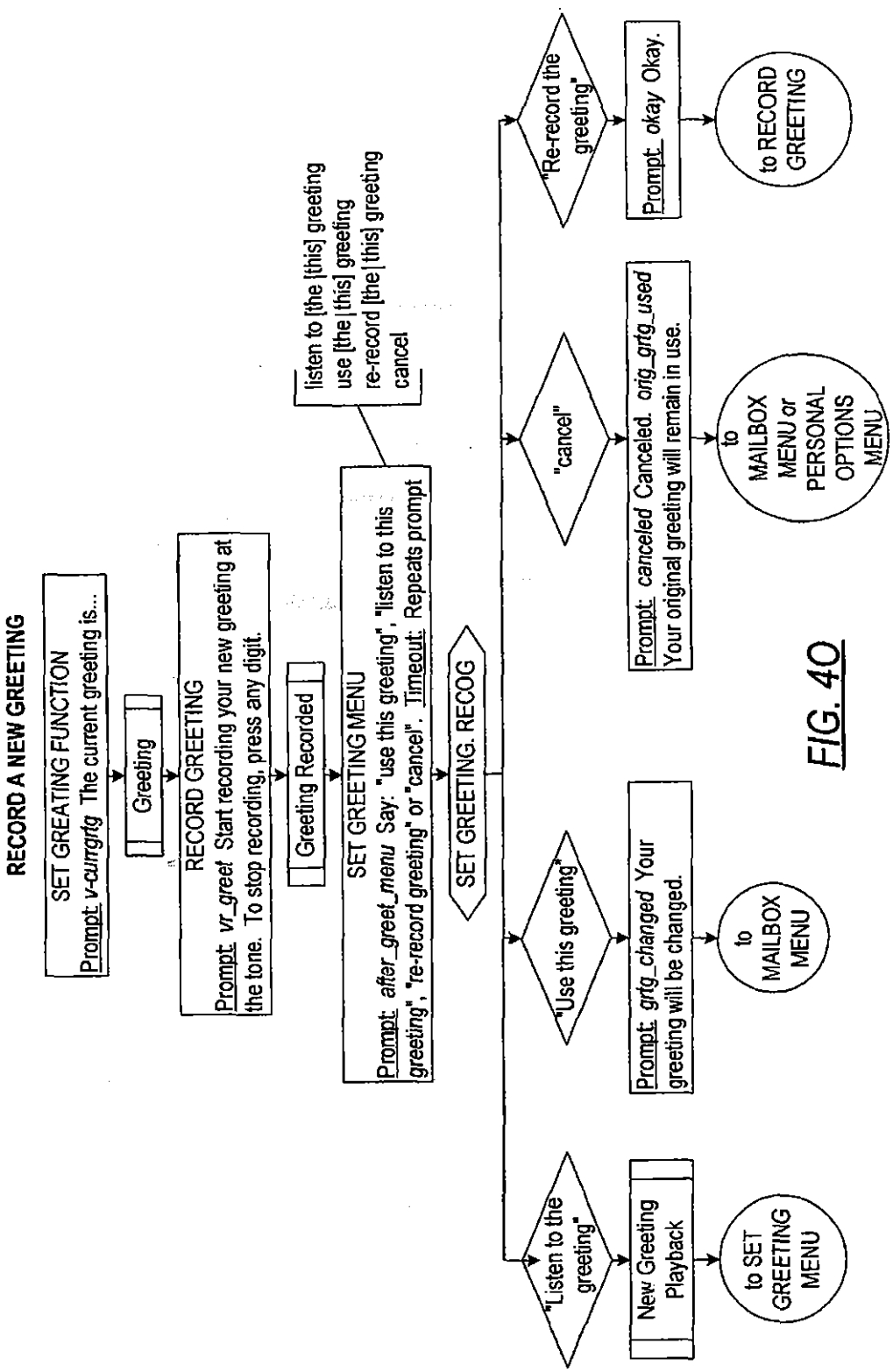

RECORD A NEW GREETING
SET GREATING FUNCTION
Prompt: v-currgrtg The current greeting is...
Greeting
RECORD GREETING
Prompt: vr_greet Start recording your new greeting at the tone. To stop recording, press any digit.
Greeting Recorded
SET GREETING MENU
Prompt: after_greet_menu Say: "use this greeting", "listen to this greeting", "re-record greeting" or "cancel". Timeout: Repeats prompt
listen to [the |this] greeting
use [the |this] greeting
re-record [the |this] greeting
cancel
SET GREETING. RECOG
"Listen to the greeting"
New Greeting Playback
to SET GREETING MENU
"Use this greeting"
Prompt: grtg_changed Your greeting will be changed.
to MAILBOX MENU
"cancel"
Prompt: canceled Canceled. orig_grtg_used Your original greeting will remain in use.
to MAILBOX MENU or PERSONAL OPTIONS MENU
"Re-record the greeting"
Prompt: okay Okay.
to RECORD GREETING

FIG. 40

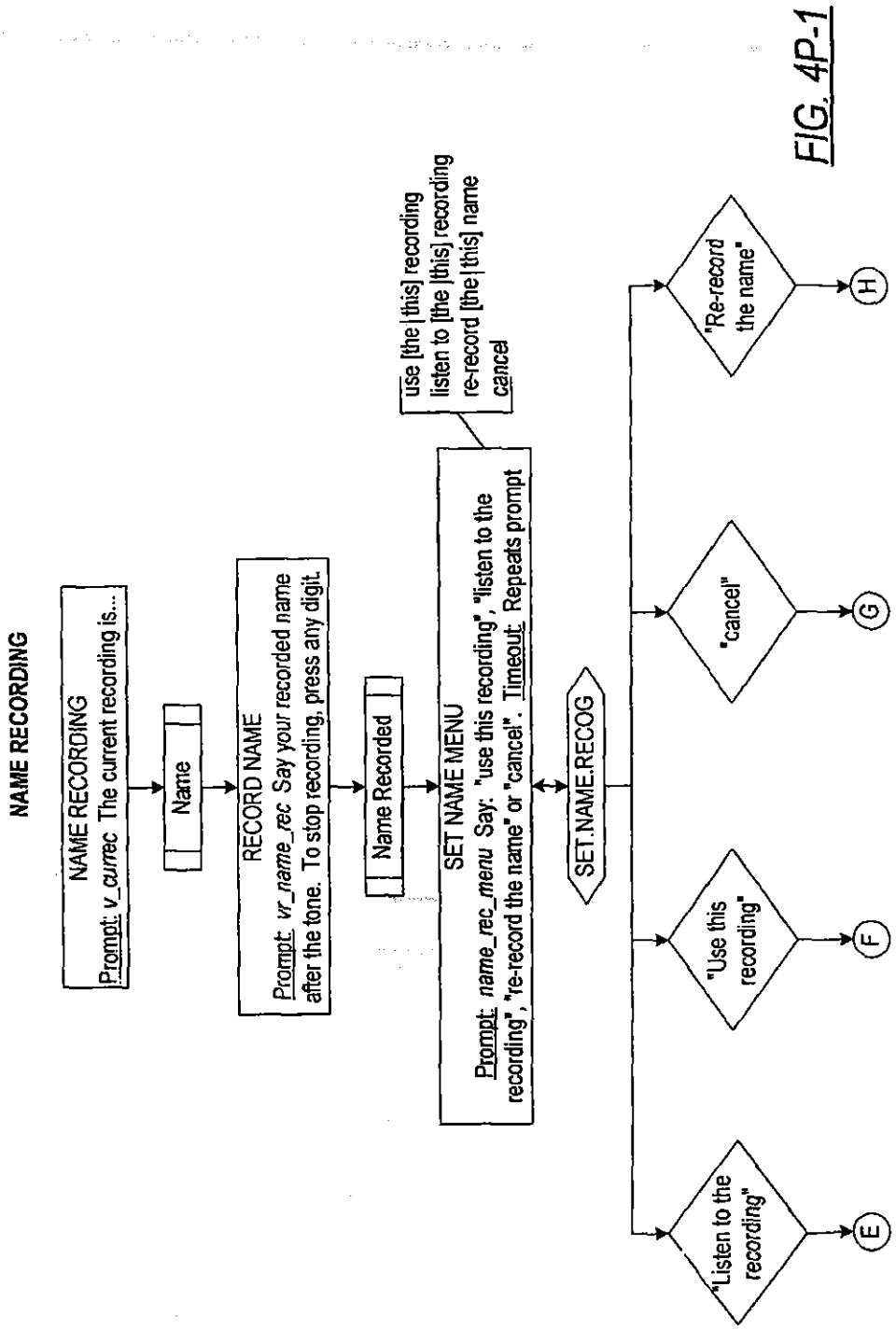

NAME RECORDING
NAME RECORDING
Prompt: v_currec The current recording is...
Name
RECORD NAME
Prompt: vr_name_rec Say your recorded name after the tone. To stop recording, press any digit.
Name Recorded
SET NAME MENU
Prompt: name_rec_menu Say: "use this recording", "listen to the recording", "re-record the name" or "cancel". Timeout: Repeats prompt
use [the | this] recording
listen to [the | this] recording
re-record [the | this] name
cancel
SET.NAME.RECOG
"Re-record the name"
"cancel"
"Use this recording"
"Listen to the recording"
H
G
F
E

FIG. 4P-1

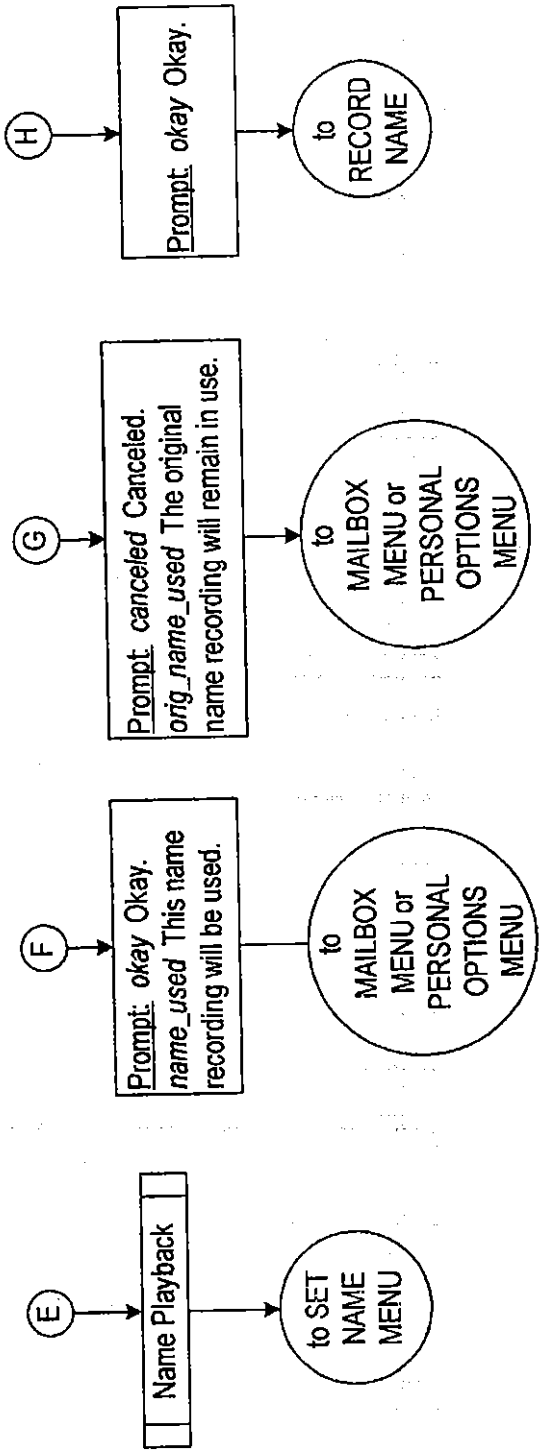

E
Name Playback
to SET NAME MENU
F
Prompt: okay Okay. name_used This name recording will be used.
to MAILBOX MENU or PERSONAL OPTIONS MENU
G
Prompt: canceled Canceled. orig_name_used The original name recording will remain in use.
to MAILBOX MENU or PERSONAL OPTIONS MENU
H
Prompt: okay Okay.
to RECORD NAME

FIG. 4P-2

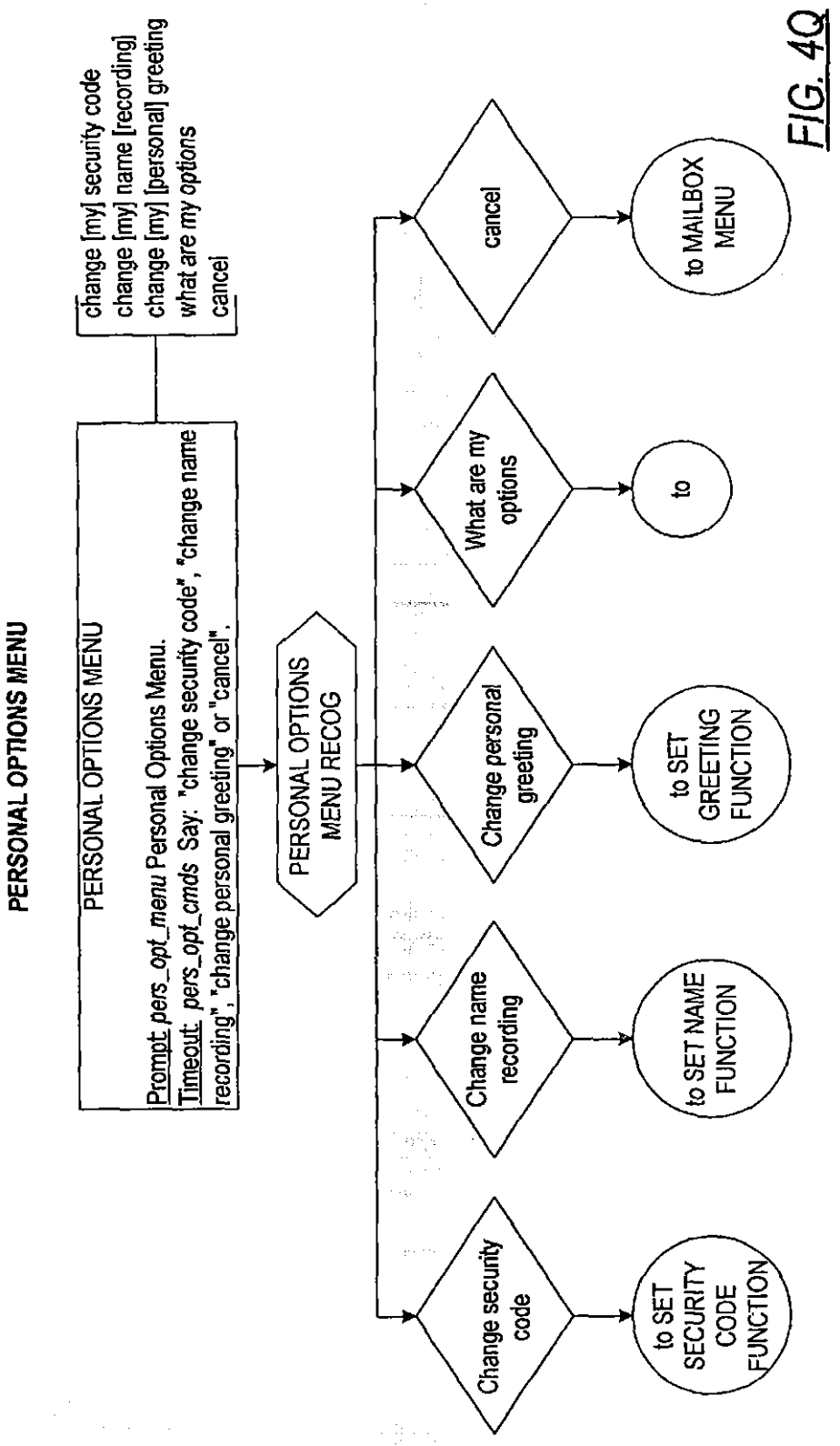

PERSONAL OPTIONS MENU
PERSONAL OPTIONS MENU
Prompt pers_opt_menu Personal Options Menu.
Timeout pers_opt_cmds Say: "change security code", "change name recording", "change personal greeting" or "cancel".
change [my] security code
change [my] name [recording]
change [my] [personal] greeting
what are my options
cancel
PERSONAL OPTIONS MENU RECOG
Change security code
to SET SECURITY CODE FUNCTION
Change name recording
to SET NAME FUNCTION
Change personal greeting
to SET GREETING FUNCTION
What are my options
to
cancel
to MAILBOX MENU

FIG. 4Q

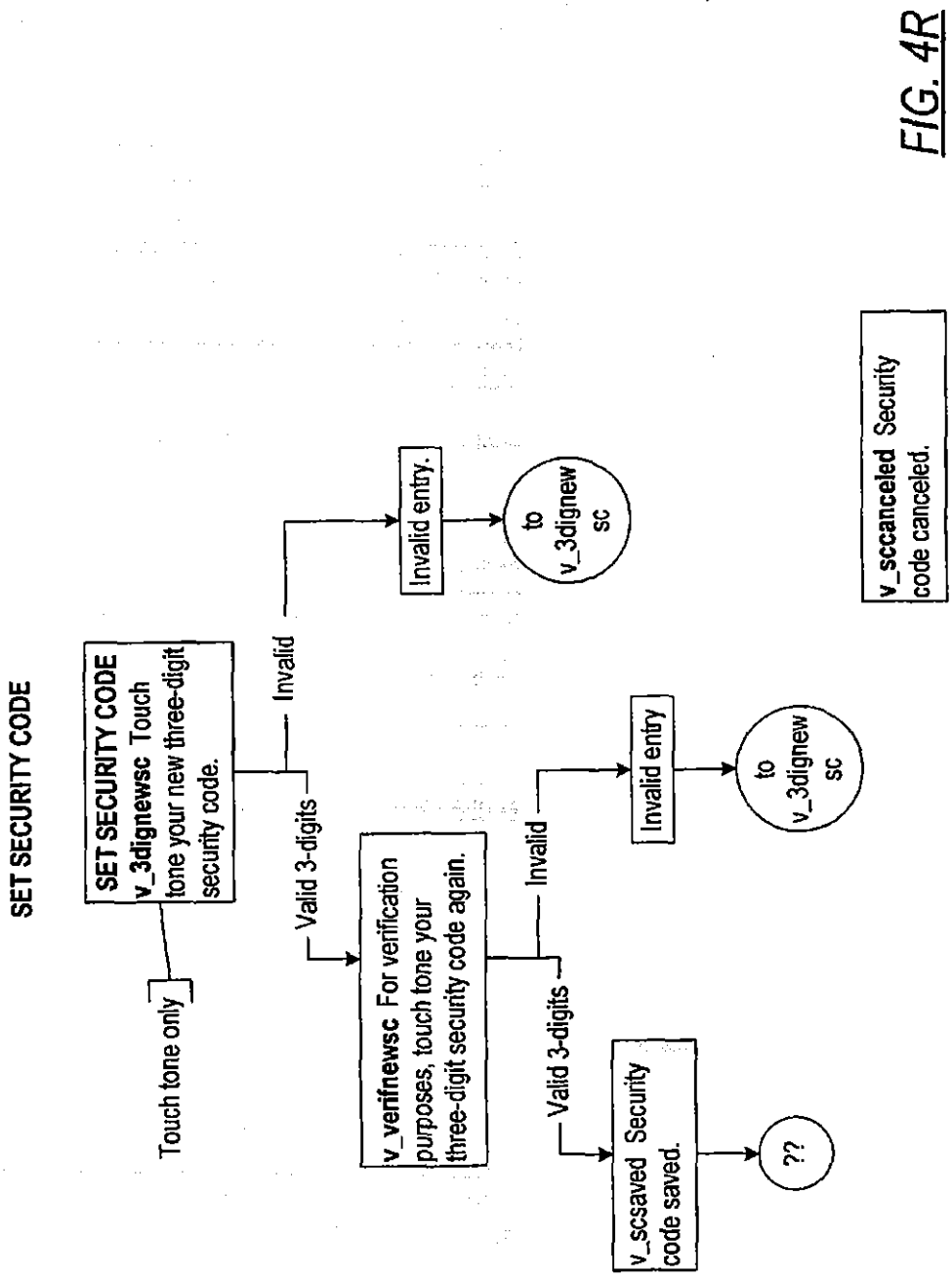

SET SECURITY CODE
SET SECURITY CODE v_3dignewsc Touch tone your new three-digit security code.
Touch tone only
Invalid
Invalid entry.
to v_3dignew sc
Valid 3-digits
v_verifnewsc For verification purposes, touch tone your three-digit security code again.
Invalid
Invalid entry
to v_3dignew sc
Valid 3-digits
v_scsaved Security code saved.
??
v_sccanceled Security code canceled.

FIG. 4R

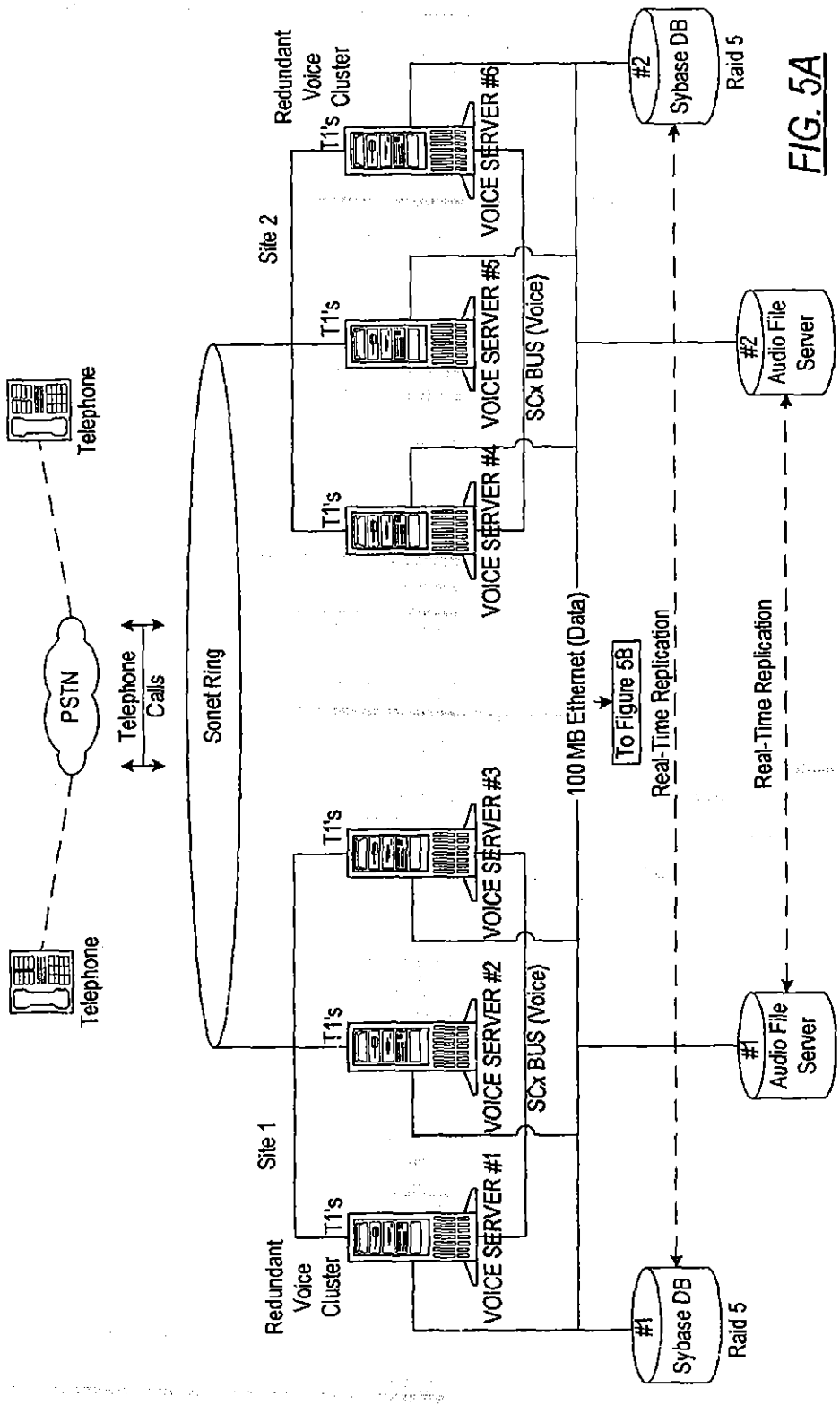

Telephone
Telephone
PSTN
Telephone Calls
Sonet Ring
Site 1
Site 2
Redundant Voice Cluster
T1's
VOICE SERVER #1
VOICE SERVER #2
VOICE SERVER #3
VOICE SERVER #4
VOICE SERVER #5
VOICE SERVER #6
SCx BUS (Voice)
100 MB Ethernet (Data)
To Figure 5B
Real-Time Replication
Real-Time Replication
#1 Sybase DB Raid 5
#2 Sybase DB Raid 5
#1 Audio File Server
#2 Audio File Server

FIG. 5A

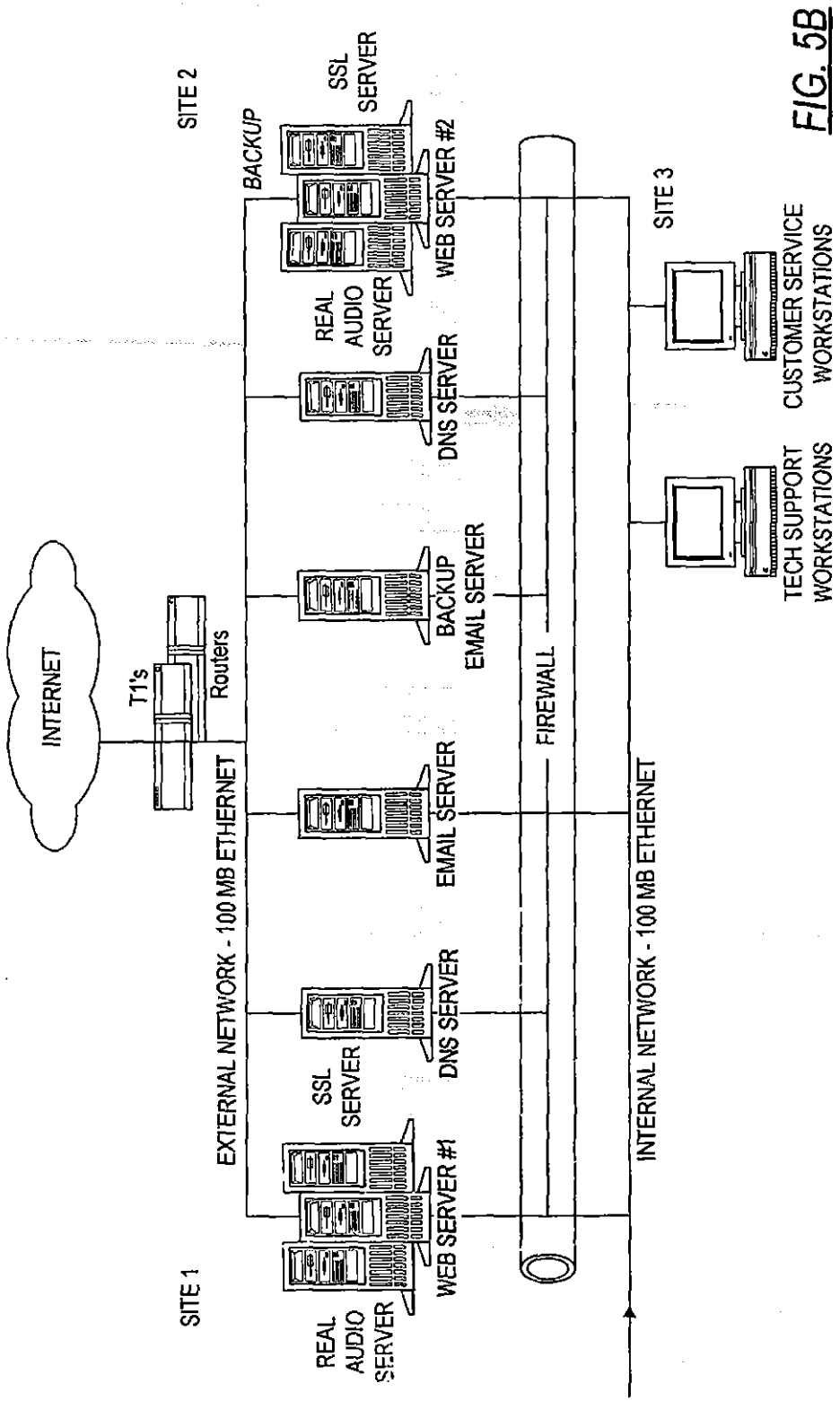

INTERNET
T1's
Routers
EXTERNAL NETWORK - 100 MB ETHERNET
SITE 1
SITE 2
SITE 3
BACKUP
REAL AUDIO SERVER
WEB SERVER #1
SSL SERVER
DNS SERVER
EMAIL SERVER
BACKUP EMAIL SERVER
FIREWALL
INTERNAL NETWORK - 100 MB ETHERNET
REAL AUDIO SERVER
WEB SERVER #2
SSL SERVER
DNS SERVER
CUSTOMER SERVICE WORKSTATIONS
TECH SUPPORT WORKSTATIONS

FIG. 5B

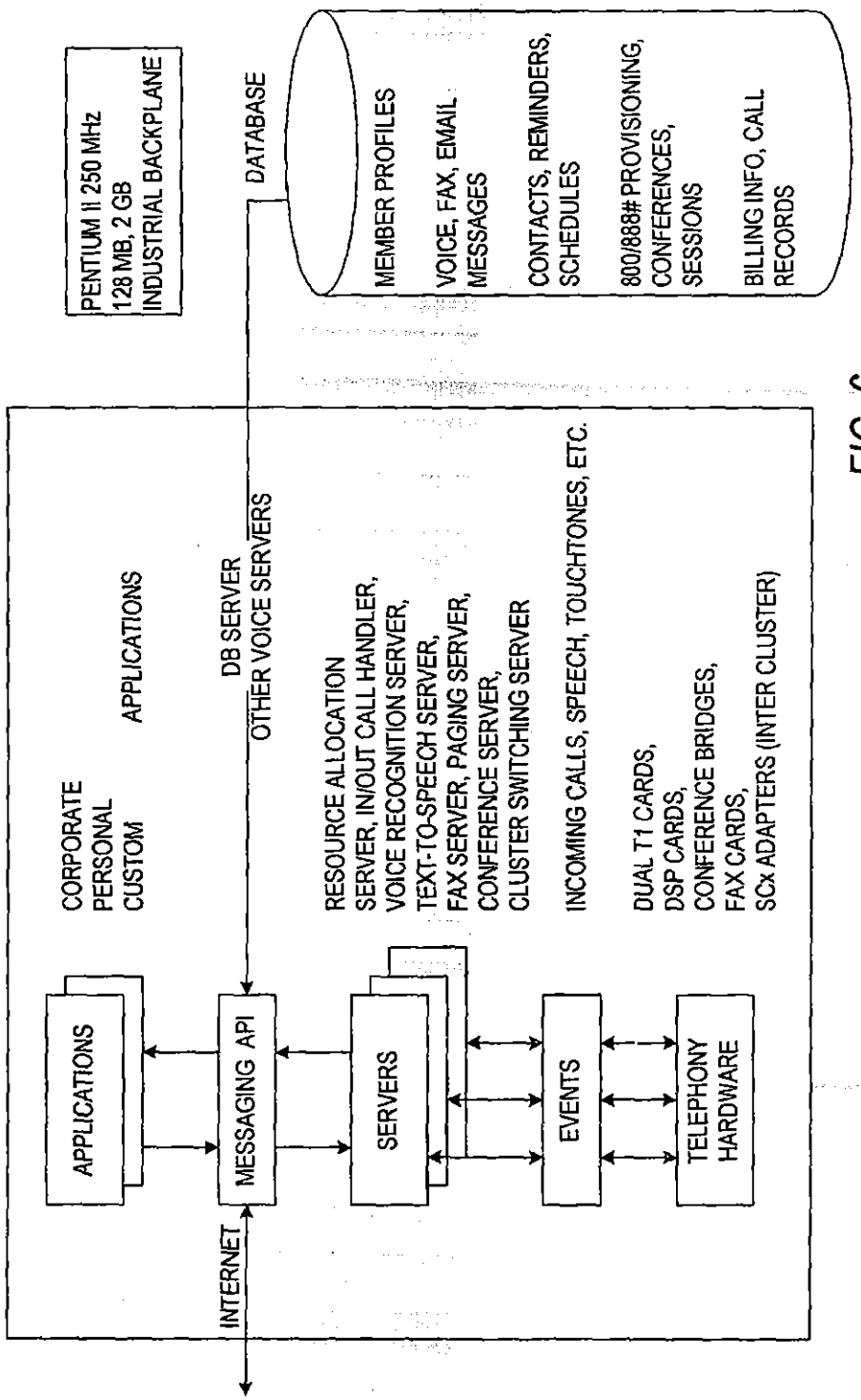

PENTIUM II 250 MHz
128 MB, 2 GB
INDUSTRIAL BACKPLANE
DATABASE
MEMBER PROFILES
VOICE, FAX, EMAIL MESSAGES
CONTACTS, REMINDERS, SCHEDULES
800/888# PROVISIONING, CONFERENCES, SESSIONS
BILLING INFO, CALL RECORDS
CORPORATE
PERSONAL
CUSTOM
APPLICATIONS
DB SERVER
OTHER VOICE SERVERS
RESOURCE ALLOCATION
SERVER, IN/OUT CALL HANDLER,
VOICE RECOGNITION SERVER,
TEXT-TO-SPEECH SERVER,
FAX SERVER, PAGING SERVER,
CONFERENCE SERVER,
CLUSTER SWITCHING SERVER
INCOMING CALLS, SPEECH, TOUCHTONES, ETC.
DUAL T1 CARDS,
DSP CARDS,
CONFERENCE BRIDGES,
FAX CARDS,
SCx ADAPTERS (INTER CLUSTER)
APPLICATIONS
MESSAGING API
SERVERS
EVENTS
TELEPHONY HARDWARE
INTERNET

FIG. 6

COMPUTER, INTERNET AND TELECOMMUNICATIONS BASED NETWORK

The present patent application is a continuation-in-part application of U.S. patent application Ser. No. 09/033,335 filed on Mar. 2, 1998, now U.S. Pat. No. 6,775,264 which, in turn, is a continued prosecution application based on the provisional patent application Serial. No. 60/040,056, filed Mar. 3, 1997. The present patent application incorporates by reference herein provisional patent application Ser. No. 60/040,056.

COMPUTER PROGRAM LISTING APPENDIX

Compact disks containing a computer program listing are attached to this specification. The computer program listing contained on these compact discs is hereby incorporated by reference into the specification. The appendix comprises one compact disk containing the file "program_listing.txt" which is 1.09 MB in size. This file was created on Nov. 6, 2002 and contains the source code which was part of the provisional application with serial no. 60/040,056 to which this application claims priority. One duplicate copy of this compact disk is also included.

1. Field of the Invention

The present invention relates to a telecommunication system, and more specifically, the present invention relates to a network system based on internet, computer and telecommunication standards, utilizing internet and computer technology, a graphical user interface, integrated telecommunication applications and interactive voice recognition technology, facilitating the computation and telecommunication of voice and electronic data.

2. Background of the Invention

Individuals and business people seek to communicate with each other, obtain useful information, interact commercially and entertain themselves in an increasingly mobile society. In order to fulfill these needs, one requires the ability to send and receive messages, access information and entertainment, conduct business transactions, organize daily schedules and stay in touch with homes and offices from almost anywhere, at any time, as easily as making a telephone call.

Continued demand for products and services that address these needs is evidenced by the increasing number of electronic devices, and the explosive growth of the internet and network services. Advances in wireless telecommunication technologies led to the development of such devices as personal digital assistants, and enabled the growth of paging and cellular telephone networks. Devices such as notebook and sub-notebook computers with modems (both wireline and wireless) have allowed mobile professionals to connect to their PCs from almost any location, as well as to access on-line information and electronic mail services while traveling worldwide.

In addition, communication and information needs have stimulated the growth of the internet, on-line networks and corporate intranets. These networks now host a variety of services such as e-mail, database searching, conferencing, electronic commerce, games, software libraries and electronic newspapers and magazines. However, despite the proliferation of communication devices and the development of the internet, on-line networks and corporate intranets, significant barriers remain to fulfilling user needs for access to and management of personal, professional and public information.

The hardware designs and software technologies which enable today's communication are complex. Information, though widely available, can be either inaccessible or accessible only by navigating through a host of phone systems, operating system platforms, databases and networks. As a result significant amounts of time and effort are required of those who use and depend on these devices, networks and services to communicate and obtain information.

The problem of accessing and processing all of the information available from communication devices, networks and services is particularly acute for mobile business professionals. Today's mobile professional, working out of the home or small office, may have a cellular phone, a pager, a computer, a fax machine, an electronic mailbox on the internet, and a voice-mail service. Whether on the road, in a plane or at the office, success for the mobile professional depends in large part on the ability to easily and quickly access, sort through and respond to the messages delivered to each of these communication devices, and to obtain information necessary to the conduct of business from proliferating networks and services.

SUMMARY OF THE INVENTION

The present invention is a network system, which is based on internet, computing and telecommunications standards, utilizing computer and internet technology, an innovative graphical user interface, integrated communication applications and interactive voice recognition technology. The present invention is a unified messaging service which will be accessible from any standard communication device (telephone, computer or internet), and will give the user intuitive voice command of personal, professional and public information.

This unified messaging service is a useful tool to those whose time and resources are limited and for whom communication is critical, such as mobile business professionals in the small office, home office market. The mobile business professional must maintain access to personal and professional information and developments, respond to customers and communicate with colleagues, family and friends at any time and from any location. The unified messaging service is designed to meet these objectives by offering a single point of access to all communications, integrated with personal information management tools and customized public content delivery.

Small office, home office professionals, most of whom do not have access to dedicated information management systems or the benefit of administrative support staff, may derive unique value from this shared network solution.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention are explained below with references to the accompanying drawings in which:

FIG. 1 is a functional block diagram of the hardware platform embodying the present invention;

FIG. 2 is a functional block diagram of the internet platform embodying the present invention;

FIG. 3 is a general application flow chart embodying the present invention; and

FIGS. 4A–4R are detailed application flow charts embodying the present invention.

FIGS. 5A–5B are the functional block diagrams for the computer telephony platform and network architecture embodying the present invention.

FIG. 6 is the software architecture embodying the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is a network system that works, among other things, as your voice-mail system, using an 800/888 number that receives all your calls, faxes, pages and e-mail. The system provides a contact database facilitating the placing of calls, screening of calls, and tracking you down wherever you are.

Regardless of how the message was transmitted, every message is delivered to you through a single source, whether telephone, internet or computer. You can also review your latest call records and billing information and change or add to your phone listings, contact numbers and service preferences through this source.

The present invention utilizes a fault resilient redundant system, residing in two separate sites. There are multiple T-3 (45 Mbps) facilities going into each of those sites. Both sites sit on a fiber-channel fiber optic loop, which is theoretically "self healing" in case of a disaster and can route a phone call to either site, depending on where the route is broken.

The configuration at each site is a cluster of servers. FIG. 1 is a block diagram of the hardware platform showing one of these clusters **10** which consists of some voice servers **12**, some mirrored Sybase database servers **14**, and some web servers **16** where the web access and services are located. The computers (not shown) are 200 MHz Intel-based 1911 rackmount servers running a combination of Solaris and SCO UNIX operating systems. The voice server **12** includes certain functions, such as telephony, automatic speech recognition, text-to-speech, conferencing, etc. Subscribers are connected to these clusters by either normal telephone connections or by internet connections.

Each cluster can serve about 10,000 customers. The system is open-ended allowing for the addition of subscribers as needed. Further the design facilitates the easy addition of hardware and software.

FIG. **2** shows a block diagram of the internet platform. The system may be accessed via the internet instead of a normal telephone connection (voice or touchtone). The subscriber can access the web server **16** through an internet firewall **20**. The subscriber merely enters the system's web site and then can access his account through a security program. Once in his account, the subscriber can access various features such as playing voice mail, reading e-mail and faxes, managing contacts and schedules, among other services. Further, the system can provide a private line **22** for corporate and other subscribers which can enter the web server **18** through an extranet firewall **24**.

FIG. **3** shows a general application flow chart for an incoming call **26** to the system. The incoming call **26** whether by telephone connection or internet connection is directed either to customer service **28** (through an automatic call distribution-ACD), fax **30**, call routing **32**, or conference **34** function. Call routing **32** is determined by the incoming call control **38**, previously set by the subscriber, and can include a message and notification to the subscriber, call screening, call waiting, and the transfer of the call. Further, if the incoming call **26** is a subscriber **36**, the system will provide additional functions to the subscriber, such as controlling incoming calls **38**, including call screening, call waiting and transferring calls. The subscriber may set priorities to certain callers allowing only certain callers to reach the subscriber while all others are sent to voice-mail to record a message for playback later.

Also, the subscriber will be able to manage **40** his account. Managing **40** includes setting the options for telephone calls **42**, setting the options for sending and receiving messages, faxes and e-mail **44**, managing the database containing the subscriber's contacts and other lists **46**, and setting the parameters for outgoing call and setting up conferences **48**.

FIGS. **4A** through **4R** show a more detailed flowchart of the present invention. FIG. **4A** shows the First Menu encountered by a subscriber or an individual calling the system's 800 telephone number. The caller is explained the different options and then the system, if requested, attempts to recognize the subscriber or party's name or extension that the caller is trying to reach.

FIG. **4B** shows the Party Menu which allows the caller to begin the transfer to the party he is trying to reach, leave a message, or, if the caller is a subscriber, open his mailbox. FIG. **4C** shows the Mailbox Menu which allows the subscriber to listen to his messages, leave a message, make a call (using the database), dial a telephone number, request the system to follow the subscriber, transfer calls, and set other personal options, including the greeting, security codes, etc.

FIG. **4D** shows the Listen to Messages Menu which allows the subscriber to listen to, forward, or return the message, along with other options such as adding a contact, etc. FIG. **4E** shows the Message Menu such as forwarding the message, providing caller identification information, and updating the contact database.

FIG. **4F** shows the Return a Call Menu which will attempt to use caller identification to return the call.

FIG. **4G** shows the Leave a Message Menu which allows the caller to leave a message to the intended party. FIG. **4H** shows the After Record Message Menu which allows the caller to listen to the message, re-record the message, send the message, or cancel the message. FIG. **4I** shows the Make Call Menu which allows the subscriber to dial a number, cancel, or attempt to obtain a contact and transfer to that contact.

FIG. **4J** shows the Dial a Number Menu which allows the subscriber to dial a telephone number. FIG. **4K** is the Call Transfers Menu which allows the subscriber to transfer incoming calls to either his caller identification, a telephone number, or some other number of choice. FIG. **4L** is the Follow Me Menu which allows the subscriber to receive calls wherever he may be located. FIG. **4M** shows the Notification Menu which allows the subscriber to be notified either by pager or e-mail in certain situations. FIG. **4N** shows the Telephone Numbers Menu which allows the subscriber to dial a telephone number either by depressing the telephone keypad or speaking the number.

FIG. **4O** shows the Record a New Greeting Menu which allows the subscriber to record, listen, or re-record a greeting which a caller will hear upon reaching the subscriber. FIG. **4P** shows the Name Recording Menu which allows the subscriber to set a particular name in the system. FIG. **4Q** shows the Personal Options Menu which allows the subscriber to change the security code, the name recording, and the personal greeting. FIG. **4R** shows the Set Security Code Menu which allows the subscriber to set a new security code.

FIG. **5A** shows the computer telephony platform in accordance with FIG. **1** in more detail. FIG. **5B** shows the network architecture in accordance with FIG. **2** in more detail. FIG. **6** shows the software architecture utilized in the present invention.

The system provides three ways for the subscriber to handle his communications. First and foremost is the voice recognition software using natural voice recognition (phonemes based), not pattern based as many of the current systems utilize. Therefore, the system does not have to be trained to identify your voice. Second, the subscriber may use the standard telephone touchtones. And third, the subscriber can utilize the internet to access a secure web site.

The system can act as a "follow me" service, capable of tracking you down whether you're at home, the office, airport, in a hotel room, in another office or in your car. The subscriber can configure the system to follow him, or the subscriber can disengage the follow me with a simple command. It also lets you know who is calling before you accept the call.

As for Web connections, you can boot up your computer, sign onto the internet, go through the system's secure web site and play your voice mails, read your email and faxes, manage your contacts and schedule conferences. The website thus becomes a unified messaging system. If you get a message from somebody who's not in your address book and you want to call him or her, you just go to the web site again and add a contact.

If you're on the secure website and you walk away, the system even times out after a few minutes so no one can sit at your computer and obtain your messages and contacts without your permission.

While on the system's web site, you'll be communicating over the internet via the Secure Socket Layer (SSL), a transport level technology (developed by Netscape) for authentication and data encryption between a Web server and a Web browser. SSL sends data over a "socket," a secure channel at the connection layer existing in most TCP/IP applications.

The system also utilizes text-to-speech so you can listen to your e-mail over the phone, or the subscriber can display his e-mail on his computer where he can reply to it and send e-mail to his contacts with audio (using audio attachments). Further, using Vosaic's internet audio program, the system can deliver voice mail via streaming audio over the internet using Java without a plug-in.

During a session on the web site, using text-to-speech, you could type in a name like "Harry Newton" and his phone number so that, when you eventually use the system the phone and you say, "call Harry Newton at the office," the system will recognize the name and dial the number you keyed in previously. Based on what you input now ("Harry Newton") is what the system utters later and compares the phonemes of what you input now to what you'll be speaking later.

The system also facilitates conference calls by allowing the subscriber two ways in which to set up a conference call. First, inbound conference calls can be set up for 32 people if you've registered a pre-scheduled meeting time. Subscribers call in to the system to get an assigned conference number. The conference participants then call in and asks to "join the conference". The system then asks for a conference number, which is entered via touchtones. All the parties are then connected and the conference begins.

Second, outbound conference calls can also be set up, even if you're "on the fly." Whether you're at your desk, at a hotel or even a phone booth, you can simply dial up and tell the system to "set up a conference call." Then you only have to dial up all the various parties to connect each of them to your conference.

The present invention is a compilation of hardware and software, including voice processing using Dialogic's SCSA extended bus and board-level resources, Purespeech speech recognition running on Dialogic Antares boards, and database management using Sybase System 10 and 11. Further, the system utilizes data networking, particularly TCP/IP and distributed systems, object oriented design and programming, multi-processing with Intel hardware, SCO UNIX and Solaris operation systems, Java and JavaScript languages, US and international long distance protocols, internet and web protocols, credit and payment processing, a help desk, customer service system, and network and service management.

For the voice and fax processing servers, the system relies on Dialogic hardware, including, voice boards, Antares cards (for speech recognition and fax) and digital switching cards. The system also uses the SCSA extended bus. The Purespeech ASR algorithms, which are used for speech recognition, run on the Antares cards plugged into the computers running the Solaris OS.

The system combines state-of-the-art speech recognition, computer and telephony technology. Along with the ability to recognize an extensive set of simple, intuitive, speaker-independent speech commands and respond by performing a wide variety of complex tasks. Each subscriber has their own secure Web page on which all the features can be accessed, allowing almost every aspect of the present invention to be maintained on-line.

Subscribers can use voice commands to (1) build, edit and manage their contact lists, (ii) review, play back, read, reply to and/or reroute voice mail and e-mail, (iii) schedule conference calls with 800 number access, and (iv) maintain an itemized calling log listing all calls with a running total of all charges.

The system also transfers calls as instructed or upon command will follow the subscriber according to predetermined contact numbers for office, home, cellular, pager or other designated locations. Every time a subscriber calls in, the system logs the originating number for the inbound call and then uses that number to re-contact the subscriber.

In accordance with the present invention, every subscriber or participant is given their own 800 number that is then used by all contacts calling in to the subscriber. The 800 number can also be used in scheduling conference calls for up to 32 participants on a given day and time. Each participant uses the 800 number and calls in to join the conference call, thereby effecting call conferencing for a fraction of the cost otherwise incurred.

Basically, the system provides a unified solution to the many varied communications and messaging devices used daily by mobile professionals and active consumers with simple voice commands, subscribers can easily access and respond to all of their communications and messaging media in the same session.

The system takes inbound calls and contacts the subscriber, using call transfer or follow me features, and advises the subscriber of the call, the number of the calling party and/or the callers identity from the subscribers contact list. If the subscriber is on the telephone, the system will whisper the pending call information, giving the subscriber the option of taking the call or sending the caller into voice mail. The subscriber can also set priorities for certain calls which the system will follow, permitting selected calls to be put on call waiting, transferred or directed through call forwarding, while other calls are direct to voice mail messaging. Subscribers can conveniently make calls from their contact list by voice commands giving the, contacts name and, if applicable, the location to be called (i.e. "home," "office," "cellular," etc.)

Subscribers can access and play back their voice mail from any telephone or from their personal web page.

Voice mail messages can be saved, retrieved, deleted or rerouted to other individuals, groups or broadcast and voice responses can be returned immediately to the caller. Also, e-mail messages can be viewed on the subscriber's personal home page or the system will read the e-mail to the subscriber from any telephone using text-to-speech technology. Subscribers can immediately respond to e-mail with voice messages, marking, saving or deleting messages during the same session. E-mail messages can also be sent to any fax machine. Further, subscribers can immediately respond to faxes rather than waiting to retrieve copies and delay responses. Incoming faxes are received, the subscriber is notified of the arrival of the new fax, the fax can then be stored for later viewing and/or redirected to any fax machine or email address from the subscribers contact list or any other number. Subscribers can also be notified of any incoming communications and messages by pager, whether an inbound call, voice mail, e-mail or fax.

The system will automate conference calling and eliminate the need for conference call operators or complex, confusing PBX systems. The subscriber remains in control and can add or drop callers, mute the call and otherwise control all aspects of the conference call. By pre-scheduling conference calls by date and time, subscribers can notify participants, giving them an 800 number to call and join the conference. Up to 32 participants can be included in the present conference call feature.

The system further acts as an efficient secretary retaining complete contact logs of all call statistics. The subscriber maintains the contact list using simple voice or keyboard commands and can establish contact groups for broadcast communications and setting up conference calls. The contact database is easily accessible to all features.

The system includes a feature which enables subscribers to retrieve on demand or at predetermined intervals selected information from the internet or online service providers, allowing subscribers to establish "filter and forward" criteria specifying the type of information desired. A search engine will then retrieve the requested information, transmit the information to the system platform and notify the subscriber by page, telephone or other desired means. The system will provide direct access to news, weather, sports, financial, travel and other custom content directly from a computer or any telephone. The subscriber will then access the information by all available options, including text-to-speech capabilities.

The system provides long distance and international calling over the internet through the subscriber's personal home page, thereby significantly reducing the costs of long distance and international calling. The system further provides video conferencing features.

It is to be understood that the form of this invention is merely a preferred embodiment various changes may be made in the fraction and arrangement of parts; equivalent means may be substituted for those illustrated and described; and certain features may be used independently from others without departing from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

1. A system for managing communications and contact information using speech commands indicating specific actions to be performed, said system comprising:

a database operatively connected with a computer said database containing stored digital-form commands for operating said system;

a speaker-independent speech recognition device for receiving from subscribers and nonsubscribers speech commands indicating specific actions to be performed, said speaker-independent speech recognition device configured to convert said speech commands to converted digital-form commands;

said speech commands comprising call routing commands selectable by said subscribers and nonsubscribers;

a computer operatively connected with said database and said speech recognition device and configured to match said converted digital-form commands with said stored digital-form commands and configured to carry out the specific actions indicated by said speech commands.

2. The system of claim 1 wherein said speaker-independent speech recognition device analyzes phonemes to recognize said speech commands.

3. The communication system of claim 1 wherein said speaker-independent speech recognition device recognizes naturally spoken speech commands.

4. A computer-based communication system connected to a telephone network, said system comprising:

a database for storing a message received from said telephone network;

a web server connected to the Internet through said telephone network;

a speaker-independent speech recognition device for receiving speech commands from subscribers and nonsubscribers indicating specific actions to be performed, said speech commands comprising call routing commands selectable by said subscribers and nonsubscribers;

said speaker-independent speech recognition device configured to recognize said speech commands without being trained by said subscribers and nonsubscribers; and

said web server being configured to allow said subscribers access to said database via said Internet to retrieve said message and to allow said subscribers to forward, edit or respond to said message based upon said speech commands received by said speaker-independent speech recognition device.

5. The communication system of claim 4 wherein said message stored on said database comprises a voice mail message, an e-mail message, or a facsimile message.

6. The communications system of claim 4 wherein said speech commands are utilized to place telephone calls, to create and send voice mail, e-mail or facsimile messages, or to create or modify conference calls.

7. The communications system of claim 4 wherein said speaker-independent speech recognition device analyzes phonemes to recognize said speech commands.

8. The communication system of claim 4 wherein said speaker-independent speech recognition device recognizes naturally spoken speech commands.

9. A communication system comprising:

a computer;

a telephone connection for carrying communications to and from a subscriber and a nonsubscriber and said computer;

a database connected with said computer;

an Internet connection allowing said computer to access the Internet;

a speaker-independent speech recognition device connected with said computer for receiving speech com-

mands from said subscriber and said nonsubscriber requesting information;

said speaker-independent speech recognition device configured to recognize said speech commands without being trained by said subscriber and said nonsubscriber, said speech commands comprising call routing commands selectable by said subscriber and nonsubscriber;

said computer configured to access said Internet connection to retrieve said information from the Internet based upon said speech commands received by said speaker-independent speech recognition device; and

a notification message transmitted from said computer to said subscriber or said nonsubscriber indicating that said information has been retrieved.

10. The communication system of claim **9** wherein said computer further comprises a search engine for retrieving said information.

11. The communication system of claim **9** wherein said information comprises news, weather, sports, financial, or travel information.

12. The communication system of claim **9** wherein said speech recognition device recognizes naturally spoken speech requests.

13. The communications system of claim **9** wherein said speech recognition device analyzes phonemes to recognize said speech requests.

14. The communication system of claim **9** wherein said notification message comprises a page.

15. The communication system of claim **9** wherein said notification message comprises a telephone call.

16. A system for handling subscriber communications comprising:

a first site for receiving telephone calls and messages for subscribers;

a second site for receiving said telephone calls and messages for said subscribers;

said second site being redundant to said first site thereby allowing said telephone calls and messages to be received by either of said sites;

a network facility interconnecting said first site and said second site;

a telecommunication facility configured to carry said telephone calls and messages to either said first site or said second site;

said first site comprising a first database and a first computer for routing said telephone calls and messages to said subscribers based upon call control instructions set by said subscribers said by said subscribers;

said second site comprising a second database which is a real-time replica of said first database and a second computer redundant to said first computer for routing said telephone calls and messages to said subscribers based upon said call control instructions; and,

wherein additional redundant sites may be added to said network facility thereby increasing the number subscribers supported by the system.

17. The system of claim **16** wherein said telecommunication facility comprises a fiber optic link.

18. The system of claim **16** wherein said telecommunication facility comprises a SONET ring.

19. The system of claim **16** wherein said first computer is further comprised of a speech recognition device.

20. The system of claim **19** wherein said speech recognition device analyzes phonemes to recognize speech commands.

21. The system of claim **19** wherein said speech recognition device recognizes naturally spoken speech commands.

22. The system of claim **16** wherein said second computer is further comprised of a speech recognition device.

23. The system of claim **22** wherein said speech recognition device analyzes phonemes to recognize speech commands.

24. The system of claim **22** wherein said speech recognition device recognizes naturally spoken speech commands.

25. A system for managing communications and contact information using speech commands indicating specific actions to be performed, said system comprising:

a database operatively connected with a computer said database containing stored digital-form commands for operating said system and containing stored contact information;

a speaker-independent speech recognition device for receiving from subscribers and nonsubscribers speech commands indicating specific actions to be performed, said speech commands comprising call routing commands selectable by said subscribers and nonsubscribers;

said speaker-independent speech recognition device configured to convert said speech commands to converted digital-form commands;

a computer operatively connected with said database and said speech recognition device and configured to match said converted digital-form commands with said stored digital-form commands and for carrying out the specific actions indicated by said speech commands,

said computer further configured to receive a first communication and to enable said subscriber to access said contact information and said first communication and to edit said contact information and said first communication using said speech commands, said computer further configured to enable said subscriber to create a second communication and to transmit said second communication to a destination selected from said contact information using said speech commands received by said speaker-independent speech recognition device.

26. The system of claim **25** wherein said first communication comprises telephone calls, facsimile messages, voice mail messages, or e-mail messages.

27. The system of claim **25** wherein said second communication comprises telephone calls, facsimile messages, voice mail messages, or e-mail messages.

28. The system of claim **25** wherein said speaker-independent speech recognition device analyzes phonemes to recognize said-speech commands.

29. The system of claim **25** wherein said speaker-independent speech recognition device recognizes naturally spoken speech commands.

* * * * *

Cap 1

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS 04C 6895

Civil Cover Sheet

JUDGE MANNING

This automated JS-44 conforms generally to the manual JS-44 approved by the Judicial Conference of the United States in September 1974. The data is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. The information contained herein neither replaces nor supplements the filing and service of pleadings or other papers as required by law. This form is authorized for use only in the Northern District of Illinois.

MAGISTRATE JUDGE MASON

Plaintiff(s): **PARUS HOLDINGS, INC.**

County of Residence: Lake County

Plaintiff's Atty: Steven Z. Szczepanski
Kelley Drye & Warren LLP
333 West Wacker Drive
312-857-7070

Defendant(s): **GOSOLUTIONS, INC.**

County of Residence: Pinellas County

Defendant's Atty:

II. Basis of Jurisdiction: **3. Federal Question (U.S. not a party)**

III. Citizenship of Principal Parties **(Diversity Cases Only)**
Plaintiff:- **N/A**
Defendant:- **N/A**

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U.S. DISTRICT COURT

IV. Origin : **1. Original Proceeding**

V. Nature of Suit: **830 Patent**

VI. Cause of Action: **28 USC Section 1338(a)- Patent Infringement**

VII. Requested in Complaint
Class Action: **No**
Dollar Demand:
Jury Demand: **Yes**

VIII. This case **IS NOT** a refiling of a previously dismissed case.

DOCKETED
OCT 27 2004

Signature: R. Z. Szczepanski

Date: 10/27/04

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Revised: 06/28/00

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS

EASTERN DIVISION

In the Matter of

PARUS HOLDINGS, INC., a Delaware Corporation,
V.
GOSOLUTIONS, INC., a Florida Corporation

Case Number: 04C 6895

APPEARANCES ARE HEREBY FILED BY THE UNDERSIGNED AS ATTORNEY(S) FOR:

Plaintiff - Parus Holdings, Inc.

JUDGE MANNING

MAGISTRATE JUDGE MASON

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TRIAL ATTORNEY?	YES ☑ NO ☐	TRIAL ATTORNEY?	YES ☐ NO ☑
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TRIAL ATTORNEY?	YES ☐ NO ☑	TRIAL ATTORNEY?	YES ☐ NO ☐
DESIGNATED AS LOCAL COUNSEL?	YES ☐ NO ☑	DESIGNATED AS LOCAL COUNSEL?	YES ☐ NO ☐

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