

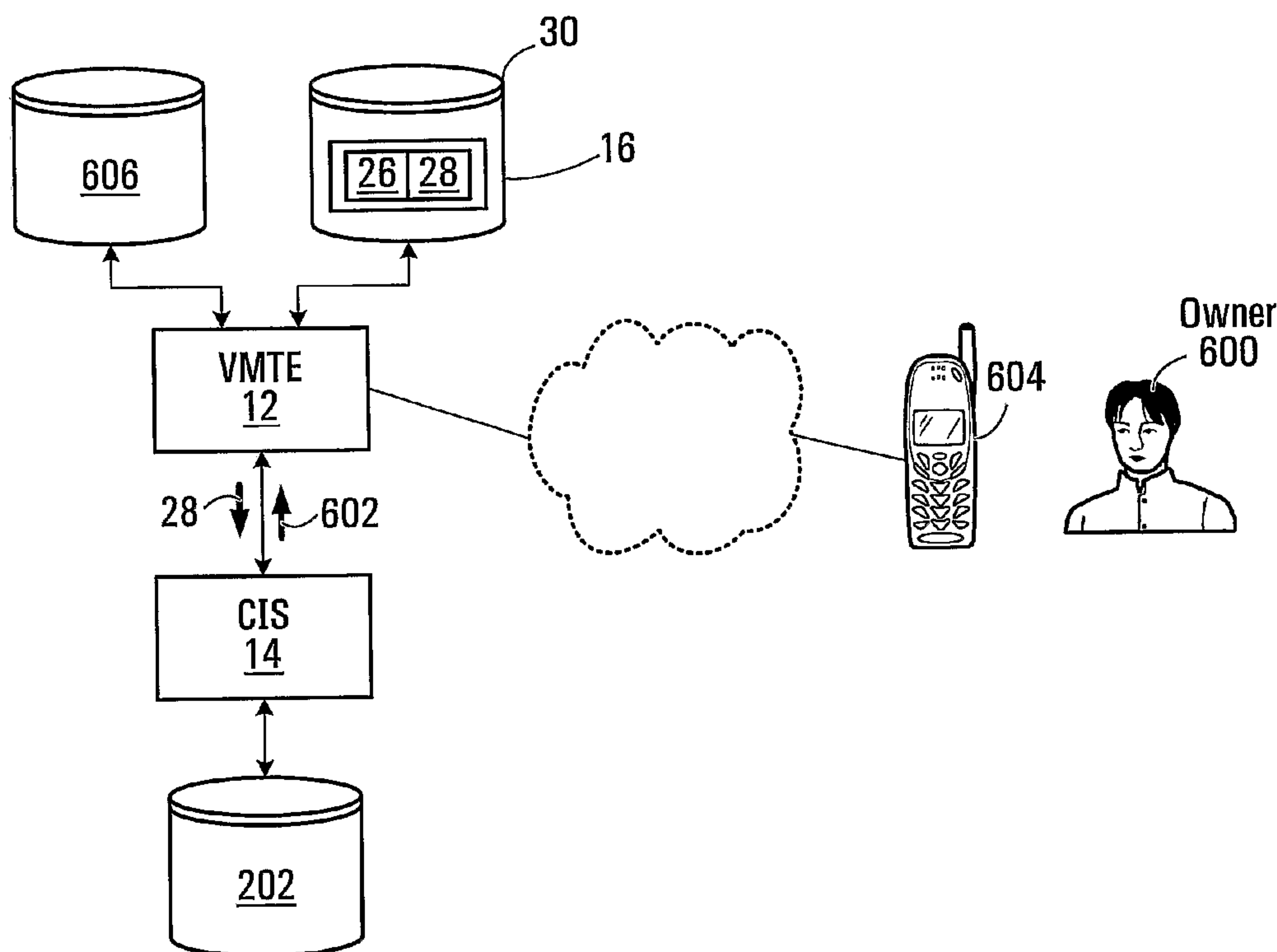


(86) Date de dépôt PCT/PCT Filing Date: 2005/09/30
(87) Date publication PCT/PCT Publication Date: 2006/07/06
(85) Entrée phase nationale/National Entry: 2006/12/21
(86) N° demande PCT/PCT Application No.: CA 2005/001514
(87) N° publication PCT/PCT Publication No.: 2006/069430
(30) Priorité/Priority: 2004/12/27 (US60/638,391)

(51) Cl.Int./Int.Cl. *H04M 3/533* (2006.01),
H04M 1/57 (2006.01)
(71) Demandeur/Applicant:
BCE INC., CA
(72) Inventeurs/Inventors:
CLARK, DAVID WILLIAM, CA;
MURRAY, SEAN M., CA
(74) Agent: SMART & BIGGAR

(54) Titre : SYSTEMES ET PROCEDES PERMETTANT DE RENDRE DES INFORMATIONS DE CONTACT DE
MESSAGERIE VOCALE DISPONIBLES POUR UN ABONNE APPELE

(54) Title: SYSTEMS AND METHODS FOR RENDERING VOICE MAIL CONTACT INFORMATION AVAILABLE TO A
CALLED PARTY



(57) **Abrégé/Abstract:**

Method, apparatus and computer-readable media which handles a call placed by a caller to a called party, the called party being associated with a mailbox in a message taking entity. The method comprises storing a voice mail message for the called party in the mailbox and obtaining contact information associated with the caller from a memory, the contact information associated with the caller having been stored in the memory prior to the call being placed. Ultimately, the method comprises rendering available to the called party the voice mail message in the mailbox and the contact information associated with the caller.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 July 2006 (06.07.2006)

PCT

(10) International Publication Number
WO 2006/069430 A1

(51) International Patent Classification:

H04M 3/533 (2006.01) **H04M 1/57** (2006.01)

(21) International Application Number:

PCT/CA2005/001514

(22) International Filing Date:

30 September 2005 (30.09.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/638,391 27 December 2004 (27.12.2004) US

(71) Applicant (for all designated States except US): **BCE INC.** [CA/CA]; 1000 De La Gauchetière Street West, Suite 3700, Montreal, Quebec H3B 4Y7 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CLARK, David, William** [CA/CA]; 125 Ladyslipper Way, Carp, Ontario K0A 1L0 (CA). **MURRAY, Sean, M.** [CA/CA]; 80 Heath Street West, Apt. 304, Toronto, Ontario M4V 1T4 (CA).

(74) Agent: **SMART & BIGGAR**; 1000 de la Gauchetière Street West, Suite 3300, Montréal, Quebec H3B 4W5 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

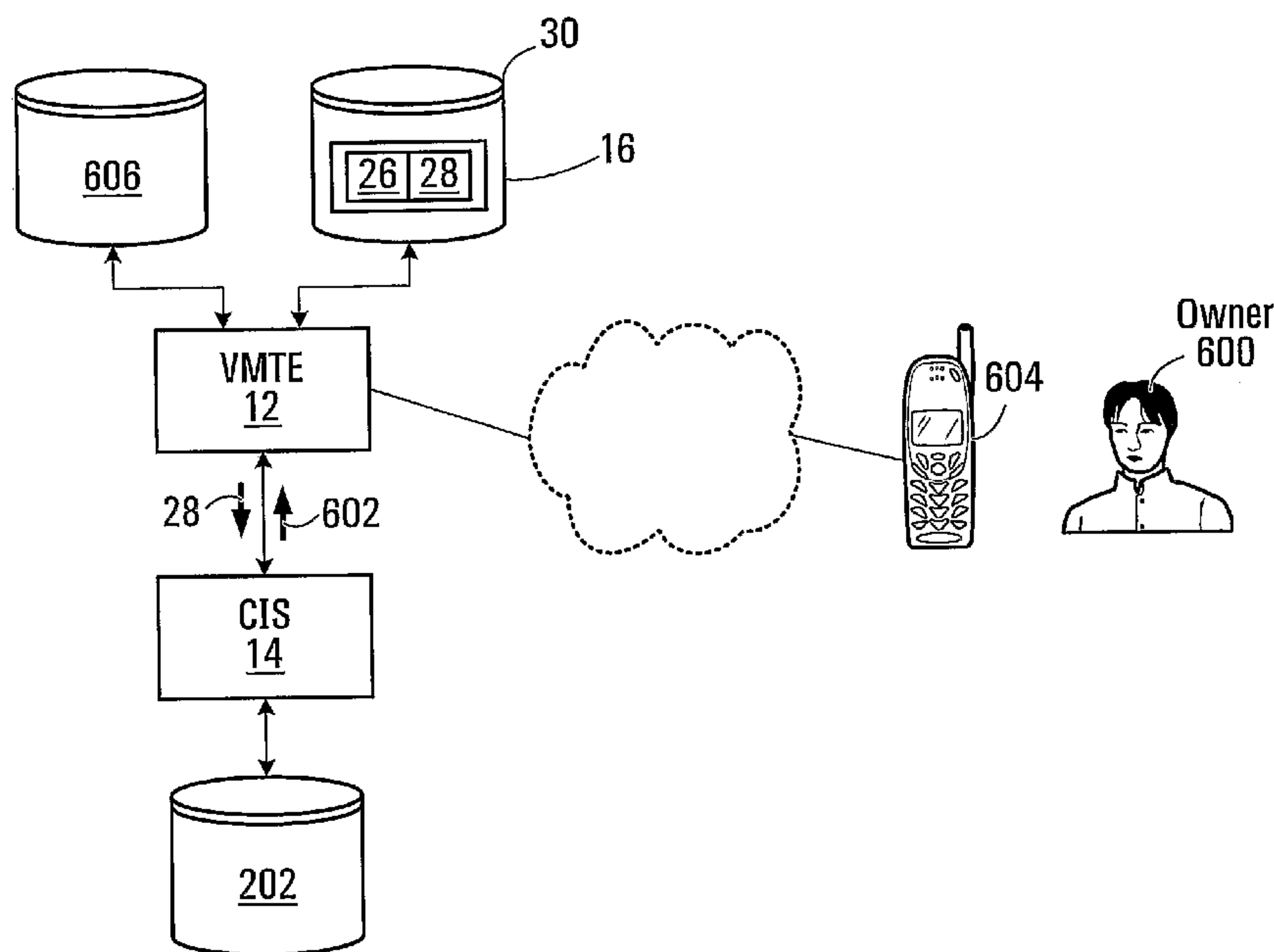
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEMS AND METHODS FOR RENDERING VOICE MAIL CONTACT INFORMATION AVAILABLE TO A CALLED PARTY



(57) Abstract: Method, apparatus and computer-readable media which handles a call placed by a caller to a called party, the called party being associated with a mailbox in a message taking entity. The method comprises storing a voice mail message for the called party in the mailbox and obtaining contact information associated with the caller from a memory, the contact information associated with the caller having been stored in the memory prior to the call being placed. Ultimately, the method comprises rendering available to the called party the voice mail message in the mailbox and the contact information associated with the caller.

WO 2006/069430 A1

**SYSTEMS AND METHODS FOR RENDERING VOICE
MAIL CONTACT INFORMATION AVAILABLE TO A
CALLED PARTY**

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit under 35 U.S.C. 119(e) of United States Provisional Patent Application Serial No. 60/638,391 to Dave Clark *et al.*, filed December 27, 2004 and hereby incorporated by reference herein.

The subject matter of the present application is related to the subject matter of United States Provisional Patent Application Serial No. 60/638,386 to Dave Clark *et al.*, filed December 27, 2004 and hereby incorporated by reference herein.

The subject matter of the present application is also related to the subject matter of a United States Patent Application Serial to Dave Clark *et al.*, entitled "SYSTEMS AND METHODS FOR REGISTRATION AND RETRIEVAL OF VOICE MAIL CONTACT INFORMATION", filed on the same day as the present application and hereby incorporated by reference herein.

FIELD OF THE INVENTION

The present invention relates generally to voice mail systems and, more particularly, to systems and methods for handling a call placed by a caller to a called party so as to ultimately render contact information for the caller available to the called party.

BACKGROUND

Voice mail systems provide a convenient way for a caller to leave a message for an intended recipient who is unavailable to answer an incoming call. Specifically, a conventional voice mail system detects when the intended recipient is busy or unresponsive to the call, and consequently answers the call by playing the intended recipient's audio greeting. Following this, the caller is prompted to record a voice

1 mail message, which is stored as an audio recording in a voice mailbox associated
2 with the intended recipient.

3
4 When the owner of the mailbox (i.e., the intended recipient) wishes to retrieve the
5 contents of the mailbox at a later time, he or she dials into the voice mail system. The
6 voice mail system authenticates the owner of the mailbox, and subsequently allows
7 the owner of the mailbox to navigate through his or her mailbox in order to perform
8 various functions, such as playback, deletion and forwarding of individual voice mail
9 messages.

10
11 In a conventional voice mail system, any contact information that the caller may wish
12 to leave for the owner of the mailbox forms part of the recorded voice mail message.
13 This has several disadvantages.

14
15 Firstly, the contact information may be non-existent or, if it is present, it may be
16 buried at an arbitrary point within the voice mail message. This makes it difficult for
17 the owner of the mailbox to retrieve the contact information in an efficient manner.

18
19 Secondly, conventional approaches limit the type of contact information that can be
20 left for the intended recipient to audio information in the form of recorded utterances
21 or tones.

22
23 Thirdly, the caller who leaves multiple voice mail messages in multiple mailboxes
24 must remember to replicate the contact information each time he or she leaves a voice
25 mail message, making the process of leaving contact information tedious and slow.

26
27 Thus, the industry would welcome an improvement that overcomes one or more of the
28 aforementioned deficiencies.

29
30 **SUMMARY OF THE INVENTION**

31
32 According to a first broad aspect, the present invention seeks to provide a method for
33 handling a call placed by a calling party to a called party, the called party being
34 associated with a mailbox in a message taking entity. The method comprises storing a

1 voice mail message for the called party in the mailbox; obtaining contact information
2 associated with the calling party from a memory, the contact information associated
3 with the calling party having been stored in the memory prior to the call being placed;
4 and rendering available to the called party the voice mail message in the mailbox and
5 the contact information associated with the calling party.

6
7 According to a second broad aspect, the present invention seeks to provide a message
8 taking entity that comprises means for storing a plurality of mailboxes associated with
9 respective owners, each one of the mailboxes being adapted to store voice mail
10 messages for the respectively associated owner, a particular one of the mailboxes
11 storing a particular voice mail message for the respective owner from a calling party.
12 The message taking entity also comprises means for obtaining contact information
13 associated with the calling party; and means for rendering available to the owner
14 respectively associated with the particular one of the mailboxes the voice mail
15 message in the mailbox and the contact information associated with the calling party.

16
17 According to a third broad aspect, the present invention seeks to provide computer-
18 readable media tangibly embodying a program of instructions executable by a
19 computer to perform a method of handling a call placed by a calling party to a called
20 party, the called party being associated with a mailbox in a message taking entity.
21 The method comprises storing a voice mail message for the called party in the
22 mailbox; obtaining contact information associated with the calling party from a
23 memory, the contact information associated with the calling party having been stored
24 in the memory prior to the call being placed; and rendering available to the called
25 party the voice mail message in the mailbox and the contact information associated
26 with the calling party.

27
28 These and other aspects and features of the present invention will now become
29 apparent to those of ordinary skill in the art upon review of the following description
30 of specific embodiments of the invention in conjunction with the accompanying
31 drawings.

32 33 **BRIEF DESCRIPTION OF THE DRAWINGS**

34

1 In the accompanying drawings:

2
3 Figs. 1A to 1E are conceptual block diagrams depicting interaction between a caller
4 and a voice mail system that comprises a voice message taking entity (VMTE) and a
5 contact information server (CIS);

6
7 Fig. 2 illustrates a possible structure of a contact information database in the CIS, in
8 accordance with an embodiment of the present invention;

9
10 Figs. 3A to 3C are conceptual block diagrams illustrating the manner in which the
11 VMTE passively obtains an originating address associated with the caller, in
12 accordance with various embodiments of the present invention;

13
14 Figs. 4A to 4C are conceptual block diagrams illustrating the manner in which the
15 VMTE actively obtains an originating address submitted by the caller, in accordance
16 with various embodiments of the present invention;

17
18 Fig. 5 illustrates a possible structure of the contact information database in the CIS, in
19 accordance with another embodiment of the present invention;

20
21 Fig. 6 is a conceptual block diagram illustrating retrieval of a voice mail message
22 from a mailbox by the owner of the mailbox, in accordance with an embodiment of
23 the present invention;

24
25 Fig. 7 illustrates a possible structure of the contact information database in the CIS, in
26 accordance with yet another embodiment of the present invention;

27
28 Fig. 8 illustrates a possible structure of a mailbox database in the VMTE, in
29 accordance with an embodiment of the present invention.

30
31 It is to be expressly understood that the description and drawings are only for the
32 purpose of illustration of certain embodiments of the invention and are an aid for
33 understanding. They are not intended to be a definition of the limits of the invention.

34

DETAILED DESCRIPTION OF EMBODIMENTS

Figs. 1A through 1E show a voice mail system in accordance with various non-limiting embodiments of the present invention. In each case, the voice mail system comprises a voice message taking entity (VMTE) 12 in communication with a contact information server (CIS) 14. The VMTE 12 comprises or is in communication with a mailbox database 30 that includes a mailbox 16. Each of the mailboxes in the mailbox database 30, including mailbox 16, has the capability of storing one or more voice mail messages and is associated with a called party that is hereinafter referred to as the "owner" of the respective mailbox.

In the embodiments of Figs. 1A, 1B and 1C, the VMTE 12 and the CIS 14 are both reachable over a telephony network 18. The telephony network 18 may include the public switched telephone network (PSTN), and/or it may include one or more wireless networks. In addition, the VMTE 12 and the CIS 14 may optionally be connected to each other by a direct link 20 that bypasses the telephony network 18. Furthermore, a private branch exchange (not shown) may act as a gateway between the telephony network 18 and either or both of the VMTE 12 and the CIS 14.

In the embodiment of Fig. 1D, the VMTE 12 is reachable over the telephony network 18, while the CIS 14 is reachable over a data network 22. The VMTE 12 is connected to the CIS 14 over a communications link 20. Alternatively, an interworking unit (not shown) disposed between the telephony network and the data network 22 may provide communication between the VMTE 12 and the CIS 14. The data network 22 may include the Internet and/or one or more wireless networks. Accordingly, the CIS 14 may be implemented as a Web server.

In the embodiment of Fig. 1E, the VMTE 12 and the CIS 14 are both reachable over the data network 22. Each of the VMTE 12 and the CIS 14 may have direct access to the data network 22 or may be connected thereto via an access gateway (not shown).

Generally speaking, the present invention contemplates a scenario whereby a calling party (hereinafter a caller 24) attempts to reach the owner of mailbox 16, but fails and is prompted by the VMTE 12 to leave a voice mail message in mailbox 16. This can

1 be termed the "calling phase". The calling phase is preceded by a "registration
2 phase", during which the caller 24 will register "contact information" (to be described
3 later on in greater detail) with the CIS 14. The registration phase and the calling
4 phase are now described in the context of the various embodiments depicted in Figs.
5 1A through 1E.

6
7 **I- Registration of Caller's Contact Information with the CIS 14**

8
9 Fig. 1A

10
11 In the embodiment of Fig. 1A, the caller 24 uses a telephone 110 connected to
12 the telephony network 18 when accessing the CIS 14 during the registration
13 phase. Then, during the calling phase, the caller 24 uses another telephone
14 112 connected to the telephony network 18 when placing a call to the owner of
15 mailbox 16. It is within the scope of the present invention for the telephone
16 110 and the telephone 112 to be one and the same device, as it is also possible
17 for the two telephones 110, 112 to be different devices and possibly located in
18 different geographic areas.

19
20 Upon being contacted by the caller 24 using the telephone 110, the CIS 14 and
21 the caller 24 undergo a registration phase. The registration phase involves the
22 CIS 14 receiving an *originating address* associated with the caller 24 and
23 *contact information* associated with the caller 24.

24
25 Specifically, the *originating address* associated with the caller 24 can take on
26 at least two different forms. In a first form, the originating address refers to
27 the directory number of the telephone 112 from which the caller 24 expects to
28 make future calls. In a second form, the originating address refers to a code
29 that the caller 24 intends to use to identify himself or herself when interacting
30 with the VMTE 12 during the later calling phase. The registration phase can
31 involve the CIS 14 implementing an interactive voice response system 32 in
32 order to prompt the caller 24 to enter the originating address using the
33 telephone 110.

1 The *contact information* refers to information that the caller 24 wishes to
2 render available to the owner of mailbox 16 when such owner retrieves the
3 caller's 24 voice mail message from mailbox 16 at a later time. Examples of
4 contact information include but are not limited to a name, telephone number,
5 alternate telephone number, fax number, email address, web page address
6 (URL), salutation, slogan, confidentiality notice (e.g., of the type "THE
7 INFORMATION CONTAINED IN THIS MESSAGE IS CONFIDENTIAL AND ONLY
8 FOR THE INTENDED RECIPIENT..."), etc. In addition, the contact information
9 may, as a matter of redundancy, also include the originating address associated
10 with the caller 24. The CIS 14 may implement the aforementioned interactive
11 voice response system 32 in order to prompt the caller 24 to enter the contact
12 information using the telephone 110. The CIS 14 may also implement a
13 speech-to-text conversion utility (not shown) to facilitate the entry of contact
14 information by the caller 24.

15
16 Fig. 1B

17
18 In the embodiment of Fig. 1B, the caller 24 accesses the CIS 14 during the
19 registration phase using a computer 120 that is equipped with a modem 122
20 connected to the telephony network 18. Then, during the calling phase, the
21 caller 24 uses a telephone 124 when placing a call to the owner of mailbox 16.

22
23 Upon being contacted by the caller 24 using the computer 120, the CIS 14 and
24 the caller 24 undergo a registration phase, which involves the CIS 14 receiving
25 an *originating address* associated with the caller 24 and *contact information*
26 associated with the caller 24.

27
28 Specifically, the *originating address* can take on at least two different forms.
29 In a first form, the originating address refers to the directory number of the
30 telephone 124 from which the caller 24 expects to make future calls. In a
31 second form, the originating address refers to a code that the caller 24 intends
32 to use to identify himself or herself when interacting with the VMTE 12
33 during the later calling phase. The CIS 14 may execute an interactive query-

1 response program 34 in order to prompt the caller 24 to enter the originating
2 address using the computer 120.

3
4 The *contact information* refers to information that the caller 24 wishes to
5 render available to the owner of mailbox 16 when such owner retrieves the
6 caller's 24 voice mail message from mailbox 16 at a later time. In addition to
7 the above examples of contact information, additional examples of contact
8 information that can be entered with the aid of the computer 120 include but
9 are not limited to a company logo, an image and a file attachment (e.g., text,
10 video, audio, multimedia). The CIS 14 may execute the aforementioned
11 interactive query-response program 34 in order to prompt the caller 24 to enter
12 the contact information using the computer 120.

13
14 Fig. 1C

15
16 In the embodiment of Fig. 1C, the caller 24 uses a telephone 130 when
17 accessing the CIS 14 during the registration phase. Then, during the calling
18 phase, the caller 24 places a call to the owner of mailbox 16 using an IP-
19 enabled telephony device 132. The IP-enabled telephony device 132 is
20 connected to a data network 134 (such as the Internet) via an access gateway
21 or server 136. The data network 134 is connected to the telephony network 18
22 via an interworking unit (IWU) 138. Non-limiting examples of the IP-enabled
23 telephony device 132 include an IP phone and a desktop or laptop computer
24 equipped with telephony software.

25
26 Upon being contacted by the caller 24 using the telephone 130, the CIS 14 and
27 the caller 24 undergo a registration phase, which involves the CIS 14 receiving
28 an *originating address* associated with the caller 24 and *contact information*
29 associated with the caller 24.

30
31 Specifically, the *originating address* can take on at least two different forms.
32 In a first form, the originating address refers to the directory number of the IP-
33 enabled telephony device 132 from which the caller 24 expects to make future
34 calls. In a second form, the originating address refers to a code that the caller

24 intends to use to identify himself or herself when interacting with the VMTE 12 during the later calling phase. The CIS 14 may implement an interactive voice response system 32 in order to prompt the caller 24 to enter the originating address using the telephone 130.

The *contact information* refers to information that the caller 24 wishes to render available to the owner of mailbox 16 when such owner retrieves the caller's 24 voice mail message from mailbox 16 at a later time. Examples of contact information include but are not limited to a name, telephone number, alternate telephone number, fax number, email address, web page address (URL), salutation, slogan, confidentiality notice, etc. In addition, the contact information may, as a matter of redundancy, also include the originating address associated with the caller 24. The CIS 14 may implement the aforementioned interactive voice response system 32 in order to prompt the caller 24 to enter the contact information using the telephone 130. The CIS 14 may also implement a speech-to-text conversion utility (not shown) to facilitate the entry of contact information by the caller 24.

Fig. 1D

In the embodiment of Fig. 1D, it is recalled that the CIS 14 is connected to the data network 22 such as the Internet. The caller 24 accesses the CIS 14 during the registration phase using an IP-enabled communication device 140 that is also connected to the data network 22, possibly via a gateway or server 142. Non-limiting examples of the IP-enabled communication device 140 include a desktop computer, laptop computer, personal digital assistant (PDA), smart phone, etc. During the calling phase, in this embodiment, the caller 24 uses a telephone 144 connected to the telephony network 18 when placing a call to the owner of mailbox 16.

Upon being contacted by the caller 24 using the IP-enabled communication device 140, the CIS 14 and the caller 24 undergo a registration phase, which involves the CIS 14 receiving an *originating address* associated with the caller 24 and *contact information* associated with the caller 24.

Specifically, the *originating address* can take on at least two different forms. In a first form, the originating address refers to the directory number of the telephone 144 from which the caller 24 expects to make future calls. In a second form, the originating address refers to a code that the caller 24 intends to use to identify himself or herself when interacting with the VMTE 12 during the later calling phase. The CIS 14 may execute a graphical user interface (GUI) program 36 to present to the caller 24 an interface that facilitates entry of the originating address using the IP-enabled communication device 140.

The *contact information* refers to information that the caller 24 wishes to render available to the owner of mailbox 16 when such owner retrieves the caller's 24 voice mail message from mailbox 16 at a later time. Examples of contact information include but are not limited to a name, telephone number, alternate telephone number, fax number, email address, web page address (URL), salutation, slogan, confidentiality notice, company logo, image and file attachment (e.g., text, video, audio, multimedia), etc. In addition, the contact information may, as a matter of redundancy, also include the originating address associated with the caller 24. The registration phase can involve executing the aforementioned GUI program 36 to present to the caller 24 an interface that facilitates entry of the contact information using the IP-enabled communication device 140.

Fig. 1E

In the embodiment of Fig. 1E, the caller 24 accesses the CIS 14 during the registration phase using an IP-enabled communication device 150 that is connected to the data network 22, possibly via a first gateway or server 152. Examples of the IP-enabled communication device 150 include a desktop computer, laptop computer, personal digital assistant (PDA), smart phone, etc. During the calling phase, the caller 24 uses an IP-enabled telephony device 154 when placing a call to the owner of mailbox 16. The IP-enabled telephony device 154 is also connected to the data network 22, possibly via the

1 first gateway or server 152, or via a second gateway or server 156. Examples
2 of the IP-enabled telephony device 154 include an IP phone and a desktop or
3 laptop computer equipped with telephony software. Clearly, IP-enabled
4 communication devices with telephony capabilities can serve as both the IP-
5 enabled communication device 150 and the IP-enabled telephony device 154.

6
7 Upon being contacted by the caller 24 using the IP-enabled communication
8 device 150, the CIS 14 and the caller 24 undergo a registration phase, which
9 involves the CIS 14 receiving an *originating address* associated with the caller
10 24 and *contact information* associated with the caller 24.

11
12 Specifically, the *originating address* can take on at least two different forms.
13 In a first form, the originating address refers to an IP address of the IP-enabled
14 telephony device 154 from which the caller 24 expects to make future calls. In
15 a second form, the originating address refers to a code that the caller 24
16 intends to use to identify himself or herself when interacting with the VMTE
17 12 during the later calling phase. The CIS 14 may execute a GUI program 36
18 to present to the caller 24 an interface that facilitates entry of the originating
19 address using the IP-enabled communication device 150.

20
21 The *contact information* refers to information that the caller 24 wishes to
22 render available to the owner of mailbox 16 when such owner retrieves the
23 caller's 24 voice mail message from mailbox 16 at a later time. Examples of
24 contact information that can be entered in this embodiment include but are not
25 limited to a name, telephone number, alternate telephone number, fax number,
26 email address, web page address (URL), salutation, slogan, confidentiality
27 notice, company logo, image and file attachment (e.g., text, video, audio,
28 multimedia), etc. In addition, the contact information may, as a matter of
29 redundancy, also include the originating address associated with the caller 24.
30 The CIS 14 may execute the aforementioned GUI program 36 to present to the
31 caller 24 an interface that facilitates entry of the contact information using the
32 IP-enabled communication device 150.

1 Of course, it should be understood that the above examples are not exhaustive of the
2 scenarios in which the present invention is applicable and that further scenarios will
3 be apparent to those of ordinary skill in the art.
4

5 With additional reference now to Fig. 2, the CIS 14 stores the aforementioned
6 *originating address* associated with the caller 24 and the aforementioned *contact*
7 *information* associated with the caller 24 in a database 202 (hereinafter referred to as a
8 “contact information database”). The database 202 may reside internally or externally
9 to the CIS 14. The contact information database 202 comprises a set of records
10 associated with respective callers, each record having an originating address (OA)
11 field as well as a contact information (CI) field. In the case of the caller 24, the
12 associated record is denoted by the reference number 204 in Fig. 2. The originating
13 address associated with the caller 24 is stored as an entry 206 in the OA field of the
14 record 204, while the contact information associated with the caller 24 is stored as an
15 entry 208 in the CI field of the record 204. Where the entry 206 in the OA field of the
16 record 204 is a caller-specified code (as opposed to a phone number or IP address),
17 such code is hereinafter denoted by the reference number 210.
18

19 II- Interaction Between the VMTE 12 and the Caller 24

20

21 At some instant in time subsequent to the registration phase, the caller 24 may decide
22 to place a call to the owner of mailbox 16. In the embodiments of Figs. 1A, 1B and
23 1D, the caller 24 is depicted as using a telephone (either 112, 124 or 144) in an
24 attempt to reach the owner of mailbox 16. Alternatively, in the embodiments of Figs.
25 1C and 1E, the caller 24 uses an IP-enabled telephony device (either 132 or 154, as
26 appropriate) in an attempt to reach the owner of mailbox 16.
27

28 In the event that the owner of mailbox 16 cannot be reached, the VMTE 12 begins an
29 interaction with the caller 24 and prompts the caller 24 to record a voice mail message
30 for the owner of mailbox 16. Upon termination of the recording, the VMTE 12 stores
31 the voice mail message in mailbox 16 for subsequent retrieval by the owner of
32 mailbox 16. Commonly, the voice mail message may be stored as an audio file,
33 which may be in a format such as “.wav” or “.au”, for example.
34

1 At some point after interaction between the VMTE 12 and the caller 24 has begun,
2 and either before, during or following the act of recording the voice mail message, the
3 VMTE 12 executes a “reconnaissance process” to determine the originating address
4 associated with the caller 24. Two different embodiments of the reconnaissance
5 process are now described in greater detail.

6
7 Firstly, in an example embodiment illustrated in Figs. 3A, 3B and 3C, the
8 reconnaissance process passively determines the originating address associated with
9 the caller 24 without interacting therewith. This embodiment is particularly
10 applicable where the entry 206 in the OA field of the record 204 specifies either (a)
11 the directory number of the telephone (112, 124, 144) from which the caller 24
12 expected to make future calls or (b) the IP address of the IP-enabled telephony device
13 (134, 154) from which the caller 24 expected to make future calls.

14
15 Specifically, as shown in Fig. 3A, when the caller 24 uses a telephone (112, 124, 144),
16 the VMTE 12 may rely on caller line identification (CLID) technology to learn the
17 point *A* in the telephony network 18 from which the call has originated. On the other
18 hand, as shown in Figs. 3B and 3C, when the caller 24 is using an IP-enabled
19 telephony device (132, 154), the VMTE 12 may use Internet Protocol (IP) technology
20 (e.g., IP address sniffing) to learn the IP address *B* of the device having originated the
21 call.

22
23 In a second example embodiment illustrated in Figs. 4A, 4B and 4C, the
24 reconnaissance process actively determines the originating address associated with the
25 caller 24, i.e., through actual interaction with the caller 24. This embodiment is
26 particularly useful where the entry 206 in the OA field of the record 204 contains a
27 code 210. It is recalled that the code 210 will have been specified by the caller 24
28 during the registration phase.

29
30 Specifically, as shown in Fig. 4A, when the caller 24 uses a telephone (112, 124, 144),
31 the VMTE 12 may execute an interactive voice response system 402 to prompt the
32 caller 24 to input a second code 404. In a similar fashion, when the caller 24 is using
33 an IP-enabled telephony device (132, 154), the VMTE 12 may also execute an
34 interactive voice response system 408 to elicit the second code 404 from the caller 24.

1 However, because of the relatively high level of sophistication inherent to the IP-
2 enabled telephony device being used by the caller 24, it may be possible to enhance
3 the interactive voice response system 408 to include text-based or graphical means for
4 eliciting the second code 404 from the caller 24 (e.g., by way of a graphical user
5 interface).

6
7 The second code 404 is presumed to correspond to the code 210 occupying the entry
8 206 in the OA field of the record 204 in the contact information database 202.
9 However, if there is reason to believe that the second code 404 may differ from the
10 first code 210, then an authentication process may be performed by the VMTE 12,
11 such as to require the caller 24 to enter additional information that will authenticate
12 him or her. To this end, and as shown in Fig. 5, the contact information database 202
13 in the CIS 14 may be augmented so as to contain an *additional information* field. For
14 the caller 24, an entry 406 in the additional information field of the record 204 could
15 be supplied during the registration phase, at the same time as the caller 24 provided
16 information for the entries 206 and 208 in the OA field and CI field, respectively, of
17 the record 204.

18
19 Once the VMTE 12 has determined the originating address associated with the caller
20 24 in accordance with the reconnaissance process described above, and once
21 recording of the voice mail message is complete, the VMTE 12 stores both items of
22 information in association with one another in mailbox 16. Referring to Fig. 8, the
23 voice mail message deposited by the caller 24 in mailbox 16 is denoted by the
24 reference number 26, and as mentioned above, the originating address associated with
25 the caller 24 is stored in association with the voice mail message 26 and represented
26 by reference number 28. Due to this double association, i.e., the originating address
27 associated with the caller 24 being associated with the voice mail message 26, the
28 item of information that is denoted by reference numeral 28 will hereinafter be
29 referred to as the “message-26-caller-originating-address”.

30 31 **III- Delivery of Contact Information to the Owner of Mailbox 16**

32
33 At some instant in time subsequent to the calling phase, and as now described with
34 reference to Fig. 6, the owner of mailbox 16 (hereinafter referred to simply as the

1 “owner” and designated by reference numeral 600) interacts with the VMTE 12, using
2 a telephony device 604 of the user’s choice, which may be a conventional wireline or
3 wireless telephone, an IP-enabled telephony device (including but not limited to an IP
4 phone or a desktop or laptop computer equipped with telephony software), etc.
5 During the owner’s 600 interaction with the VMTE 12, a “contact information
6 acquisition process” in the VMTE 12 will be triggered, followed by execution of a
7 “delivery process” that delivers the acquired contact information to the owner 600.

8
9 The contact information acquisition process can be triggered under various conditions,
10 e.g., in response to the owner 600 accessing mailbox 16, or in response to the owner
11 600 initiating playback of any one of the voice mail messages (such as the message
12 26) in mailbox 16, etc. The contact information acquisition process begins with the
13 VMTE 12 obtaining the contact information associated with one or more callers who
14 left voice mail messages in mailbox 16.

15
16 In the specific case of the voice mail message 26 that was deposited by the caller 24,
17 it is recalled (see Fig. 8) that the VMTE 12 stores the voice mail message 26 in
18 association with the “message-26-caller-originating-address” 28. Thus, as part of the
19 contact information acquisition process, the VMTE 12 uses the “message-26-caller-
20 originating-address” 28 to query the CIS 14. The CIS 14 then consults the contact
21 information database 202 in an attempt to find a record for which the entry in the OA
22 field corresponds to the “message-26-caller-originating-address” 28 supplied by the
23 VMTE 12.

24
25 In this particular example, it is assumed that there is a match, namely it is assumed
26 that the entry 206 in the OA field of the record 204 in the contact information
27 database 202 of the CIS 14 corresponds to the “message-26-caller-originating-
28 address” 28. In response, the CIS 14 returns the entry 208 in the CI field of the record
29 204 to the VMTE 12. The contact information obtained in this manner may be termed
30 “message-26-acquired-contact-information” and denoted by the reference number
31 602. (The aforementioned sequence may be repeated for other voice mail messages,
32 if any, in mailbox 16.)

33

1 Next, the delivery process involves the VMTE 12 delivering the acquired contact
2 information, including the “message-26-acquired-contact-information” 602, to the
3 owner 600. For example, where the device 604 being used by the owner 600 to
4 access the voice mail message 26 in mailbox 16 is a conventional telephone, the
5 “message-26-acquired-contact-information” 602 can be audibly played back (e.g.,
6 converted into speech) responsive to entry of a command by the owner 600 via a
7 touch-tone keypad or voice utterance, in which case it is apparent that delivery is
8 performed in response to an action by the owner 600. Alternatively, the “message-26-
9 acquired-contact-information” 602 can be audibly played back at the tail end or
10 beginning of the voice mail message 26 in an autonomous fashion, i.e., delivery
11 occurs without the entry of specific commands from the owner 600.

12
13 Alternatively, the VMTE 12 may send an electronic message (e.g., instant message,
14 email message, real-time text message such as SMS) to an address (e.g., an IP
15 address) associated with the owner 600. The electronic message may contain the
16 “message-26-acquired-contact-information” 602 in the form of, for example, a text
17 message, an attachment, a uniform resource locator (URL), etc. It is noted that in
18 order for the VMTE 12 to learn the address associated with the owner 600, the VMTE
19 12 may consult a database 606.

20
21 In one embodiment, the database 606 maintains an association between the address
22 associated with the owner 600 and the identity of mailbox 16, which is also associated
23 with the owner 600. Thus, the mere fact that the owner 600 has accessed mailbox 16,
24 is sufficient to determine the address associated with the owner 600.

25
26 In another embodiment, the database 606 maintains an association between the
27 address associated with the owner and one or more parameters that can be learned
28 during the time that the owner 600 is accessing mailbox 16. One example of such a
29 parameter is a directory number of the device 604 when implemented as a telephone.
30 For its part, the directory number of the device 604 can be obtained using
31 technologies such as caller line identification (CLID). Other examples of such a
32 parameter include a MAC address of the device 604 when implemented as a
33 computing device (such as a computing device implementing a soft client), an
34 electronic serial number (ESN) of the device 604 when implemented as a wireless

1 device (such as a cellular phone or networked personal digital assistant, to name a
2 few) and an IP address of the device 604 when implemented as an IP-enabled
3 telephony device such as an IP phone. The MAC address, IP address or ESN can be
4 learned from packets or signals received from the respective device 604 during
5 interaction with the VMTE 12.

6
7 It should be noted that the database 606 may be populated during an initial
8 registration phase involving the owner 600 (this registration phase being distinct from
9 the registration phase described earlier in this specification and involving the caller
10 24).

11
12 Alternatively, the VMTE 12 may send a plurality of electronic messages to respective
13 pre-determined addresses (e.g., IP addresses) associated with the owner 600. In the
14 case of two electronic messages, one can be in the form of a notification (such as an
15 instant message or real-time text message) sent to a first pre-determined address,
16 while the other can be in the form of a lengthier electronic message (e.g., an email
17 message) sent to a second pre-determined address.

18
19 Also, the pre-determined address(es) can be totally independent of the device 604 that
20 is being used by the owner 600 to access mailbox 16. For example, the owner 600
21 may be using a pay phone to access the voice mail message 26, while the electronic
22 message(s) can be sent to the owner's 600 Internet service provider.

23
24 It will thus be appreciated that because the "message-26-acquired-contact-
25 information" 602 is not embedded in the voice mail message 26, the contact
26 information 602 can be accessed by and delivered to the owner 600 independently of
27 the manner in which the voice mail message 26 is accessed by or delivered to the
28 owner 600. This contributes to a greater efficiency in the manner in which the owner
29 600 can retrieve the contact information for various messages in the mailbox 16.

30
31 Moreover, the contact information 602 may be more than a mere audio recording,
32 since the present invention provides for a wide variety of text, audio and video to be
33 delivered as contact information. This is made possible by advance registration of the
34 caller's 24 contact information at the CIS 14, which allows the caller 24 to leave non-

1 audio contact information that is beyond the capabilities of the device being used by
2 the caller 24 to leave the voice mail message 26. Furthermore, the contact
3 information 602 may contain actionable items such as hyperlinks.

4
5 In addition, because the contact information associated with the caller 24 is registered
6 centrally (at the CIS 14), the caller 24 who wishes to leave his or her contact
7 information for multiple intended recipients need not be concerned with replicating
8 the contact information for each intended recipient; rather the contact information to
9 be delivered to each intended recipient is retrieved by the VMTE 12 on the basis of
10 the originating address associated with the caller 24, which is determined either
11 autonomously or by having the caller 24 enter a code. The process by which the
12 caller 24 leaves contact information for the intended recipient is therefore accelerated.

13 14 **IV- Alternatives and Variants**

15
16 It is within the scope of the invention to deliver and present contact information in a
17 form that is convenient for the owner 600. For example, if the device 604 used by the
18 owner 604 executes a Microsoft OutlookTM-type software application, then it is within
19 the scope of the present invention for the VMTE 12 to provide contact information in
20 a format that is easily actionable by the owner through mouse clicks. Taking the
21 example of the voice mail message 26, if the “message-26-acquired-contact-
22 information” 602 contains an attachment or URL, then it is within the scope of the
23 present invention for the VMTE 12 to send this information to the device 604 in a
24 suitable format so as to allow the owner 604 to simply double-click on the attachment
25 in order to open it or click on the URL in order to visit it on the Internet.

26
27 In yet another alternative embodiment, it is not necessary to wait until the owner 600
28 had begun an interaction with the VMTE 12 before executing the contact information
29 acquisition process. Specifically, the VMTE 12 may query the CIS 14 at an earlier
30 stage, e.g., as soon as the “message-26-caller-originating-address” 28 has been
31 obtained. In response to obtaining the “message-26-acquired-contact-information”
32 602 from the CIS 14, the VMTE 12 stores this information in mailbox 16 in
33 association with the voice mail message 26. In this case, it is not necessary to store
34 the “message-26-caller-originating-address” 28. It is noted that this alternative

1 embodiment may require more memory in the VMTE 12 because contact information
2 tends to be more memory-rich than an originating address.

3
4 It should also be appreciated that in applications where voice mail messages are
5 forwarded to a conversion entity for conversion to other forms of messages (e.g.,
6 electronic messages), the acquired contact information associated with a given voice
7 mail message can accompany the given voice mail message when it is forwarded to
8 the conversion entity.

9
10 Various other modifications and enhancements are possible. Consider, for example,
11 the scenario where the caller 24 wishes to choose between leaving first contact
12 information (e.g., personal contact information with home telephone number) and
13 second contact information (e.g., business contact information with company logo and
14 URL). In this case, and with reference to Fig. 7, the contact information database 202
15 in the CIS 14 will store records that contain an OA field, as well as a first CI field and
16 a second CI field. Thus, during the registration phase for the caller 24, the first
17 contact information associated with the caller 24 will reside in the first CI field and
18 the second contact information associated with the caller 24 will reside in the second
19 CI field.

20
21 This alternative embodiment also calls for an additional level of interaction between
22 the VMTE 12 with the caller 24 in order to ensure that the appropriate CI field is
23 being delivered to the owner 600. Specifically, the VMTE 12 implements, as part of
24 the interactive voice response system 402 or 408, a function whereby the caller 24
25 inputs a "contact information selection" specifying which contact information applies
26 for the current voice mail message. For example, this could be achieved by way of an
27 interactive voice prompt such as "press 1 for personal contact information, 2 for
28 business contact information, or 9 for no contact information". The selection (e.g.,
29 personal or business) is stored alongside the originating address associated with the
30 caller and the voice mail message left by the caller 24.

31
32 It will thus be appreciated that in the above embodiment, the contact information
33 delivered to the owner 600 will reflect the nature of the contact information that the
34 caller 24 wanted to leave. This concept can be extended to provide for various

1 possibilities such as seasonally dependent electronic greeting cards, as well as
2 availability-dependent electronic greeting cards (such as when the caller 24 is
3 temporarily unavailable or out of the office or on vacation, etc.).

4
5 Still other embodiments are possible. For example, consider a registration phase
6 whereby the caller 24 uploads multiple attachments over the data network 22. Then,
7 during the calling phase, the caller 24 is permitted to navigate through the previously
8 uploaded attachments in order to select a specific attachment to deposit as contact
9 information for a given voice mail message in mailbox 16. In this way, selected
10 attachments can be left for selected owners and/or in associated with selected
11 messages.

12
13 Those skilled in the art will appreciate that in some embodiments, certain
14 functionality of the VMTE 12 and the CIS 14 may be implemented as pre-
15 programmed hardware or firmware elements (e.g., application specific integrated
16 circuits (ASICs), electrically erasable programmable read-only memories
17 (EEPROMs), etc.), or other related components. In other embodiments, the VMTE 12
18 and the CIS 14 may comprise an arithmetic and logic unit (ALU) having access to a
19 code memory (not shown) which stores program instructions for the operation of the
20 ALU in order to execute the various processes described above. The program
21 instructions could be stored on a medium which is fixed, tangible and readable
22 directly by the VMTE 12 and the CIS 14, (e.g., removable diskette, CD-ROM, ROM,
23 or fixed disk), or the program instructions could be stored remotely but transmittable
24 to the VMTE 12 and the CIS 14 via a modem or other interface device (e.g., a
25 communications adapter) connected to a network over a transmission medium. The
26 transmission medium may be either a tangible medium (e.g., optical or analog
27 communications lines) or a medium implemented using wireless techniques (e.g.,
28 microwave, infrared or other transmission schemes).

29
30 While specific embodiments of the present invention have been described and
31 illustrated, it will be apparent to those skilled in the art that numerous modifications
32 and variations can be made without departing from the scope of the invention as
33 defined in the appended claims.

WHAT IS CLAIMED IS:

1. A method for handling a call placed by a calling party to a called party, the called party being associated with a mailbox in a message taking entity, the method comprising:
 - storing a voice mail message for the called party in the mailbox;
 - obtaining contact information associated with the calling party from a memory, the contact information associated with the calling party having been stored in the memory prior to the call being placed;
 - rendering available to the called party the voice mail message in the mailbox and the contact information associated with the calling party.
2. The method defined in claim 1, further comprising:
 - obtaining an originating address associated with the calling party;
 - obtaining the contact information associated with the calling party on a basis of the originating address associated with the calling party.
3. The method defined in claim 2, wherein said obtaining an originating address associated with the calling party comprises passively determining the originating address associated with the calling party.
4. The method defined in claim 2, wherein said obtaining an originating address associated with the calling party comprises interacting with the calling party to elicit input from the calling party specifying the originating address associated with the calling party.
5. The method defined in claim 2, wherein said obtaining the contact information associated with the calling party on a basis of the originating address associated with the calling party comprises querying a network entity with the originating address associated with the calling party to obtain the contact information associated with the calling party.
6. The method defined in claim 5, wherein said querying is performed consequent to the called party accessing the mailbox associated therewith.

1
2 7. The method defined in claim 5, wherein said querying is performed consequent to
3 the call being placed.
4

5 8. The method defined in claim 7, further comprising storing the contact information
6 associated with the calling party in association with the voice mail message.
7

8 9. The method defined in claim 1, further comprising:
9 - creating an electronic message containing the contact information associated
10 with the calling party.
11

12 10. The method defined in claim 9, further comprising:
13 - sending the electronic message to a destination associated with the called
14 party.
15

16 11. The method defined in claim 10, wherein the electronic message is an instant
17 message.
18

19 12. The method defined in claim 10, wherein the electronic message is an email
20 message.
21

22 13. The method defined in claim 10, wherein the electronic message is a real-time text
23 message.
24

25 14. The method defined in claim 10, further comprising:
26 - consulting a database to obtain the destination associated with the called party.
27

28 15. The method defined in claim 14, wherein said database maintains an association
29 between the destination associated with the called party and a directory number of
30 a device used by the called party to interact with the message taking entity.
31

32 16. The method defined in claim 15, further comprising obtaining the directory
33 number of the device used by the called party to interact with the message taking
34 entity.

1
2 17. The method defined in claim 16, wherein the directory number of the device used
3 by the called party to interact with the message taking entity is obtained from
4 calling line identification (CLID) information generated as a result of interaction
5 of the called party with the message taking entity.

6
7 18. The method defined in claim 17, wherein the destination associated with the called
8 party comprises an IP address of a networked computing apparatus.

9
10 19. The method defined in claim 10, wherein the destination associated with the called
11 party comprises an address of a device used by the called party to interact with the
12 message taking entity.

13
14 20. The method defined in claim 19, further comprising observing packets sent by the
15 device used by the called party to interact with the message taking entity, thereby
16 to learn the address of the device used by the called party to interact with the
17 message taking entity.

18
19 21. The method defined in claim 20, wherein said address is a MAC address of a
20 computing apparatus implementing a soft client.

21
22 22. The method defined in claim 20, wherein said address is an IP address of an IP
23 phone.

24
25 23. The method defined in claim 20, wherein said address is a electronic serial
26 number of a wireless device.

27
28 24. The method defined in claim 23, wherein said wireless device is at least one of a
29 cellular phone and a networked personal digital assistant.

30
31 25. The method defined in claim 15, wherein the database maintains an association
32 between the destination associated with the called party and an address of an IP
33 phone used by the called party to interact with the message taking entity.

34

1 26. The method defined in claim 25, further comprising observing packets sent by the
2 IP phone used by the called party to interact with the message taking entity,
3 thereby to learn the address of the IP phone used by the called party to interact
4 with the message taking entity.

5
6 27. The method defined in claim 26, wherein the destination associated with the called
7 party comprises an IP address of a networked computing apparatus.

8
9 28. The method defined in claim 15, wherein the database maintains an association
10 between the mailbox associated with the called party and the destination of the
11 called party.

12
13 29. The method defined in claim 1, further comprising formatting the contact
14 information associated with the calling party to render the contact information
15 associated with the calling party actionable from within a software application.

16
17 30. The method defined in claim 9, further comprising:
18 - playing back the voice mail message.

19
20 31. The method defined in claim 30, wherein creating an electronic message
21 containing the contact information associated with the calling party is performed
22 in response to receipt of a command from the called party during playback of the
23 voice mail message.

24
25 32. The method defined in claim 30, wherein creating an electronic message
26 containing the contact information associated with the calling party is performed
27 independently of playback of the voice mail message.

28
29 33. The method defined in claim 9, the electronic message being a first electronic
30 message, the method further comprising:
31 - creating a second electronic message.

32
33 34. The method defined in claim 33, further comprising:

- 1 - sending the first electronic message to a first destination associated with the
2 called party; and
3 - sending the second electronic message to a second destination associated with
4 the called party.

5

6 35. The method defined in claim 34, wherein the second electronic message notifies
7 the called party of transmittal of the first electronic message.

8

9 36. The method defined in claim 34, wherein at least one of the first electronic
10 message and the second electronic message is an electronic mail message.

11

12 37. The method defined in claim 36, wherein the second electronic message is an
13 instant message.

14

15 38. The method defined in claim 36, wherein the second electronic message is a real-
16 time text message.

17

18 39. The method defined in claim 1, further comprising:

- 19 - playing back an audio message representative of the contact information
20 associated with the calling party.

21

22 40. The method defined in claim 39, further comprising:

- 23 - playing back the voice mail message.

24

25 41. The method defined in claim 40, wherein playing back the audio message
26 representative of the contact information associated with the calling party is
27 performed in response to receipt of a command from the called party during
28 playback of the voice mail message.

29

30 42. The method defined in claim 40, wherein playing back the audio message
31 representative of the contact information associated with the calling party is
32 performed independently of playback of the voice mail message.

33

1 43. The method defined in claim 1, wherein the contact information is in text format,
2 the method further comprising:

- 3 - converting the contact information associated with the calling party into an
4 audio message representative of the contact information; and
- 5 - playing back the audio message representative of the contact information.

6
7 44. A message taking entity, comprising:

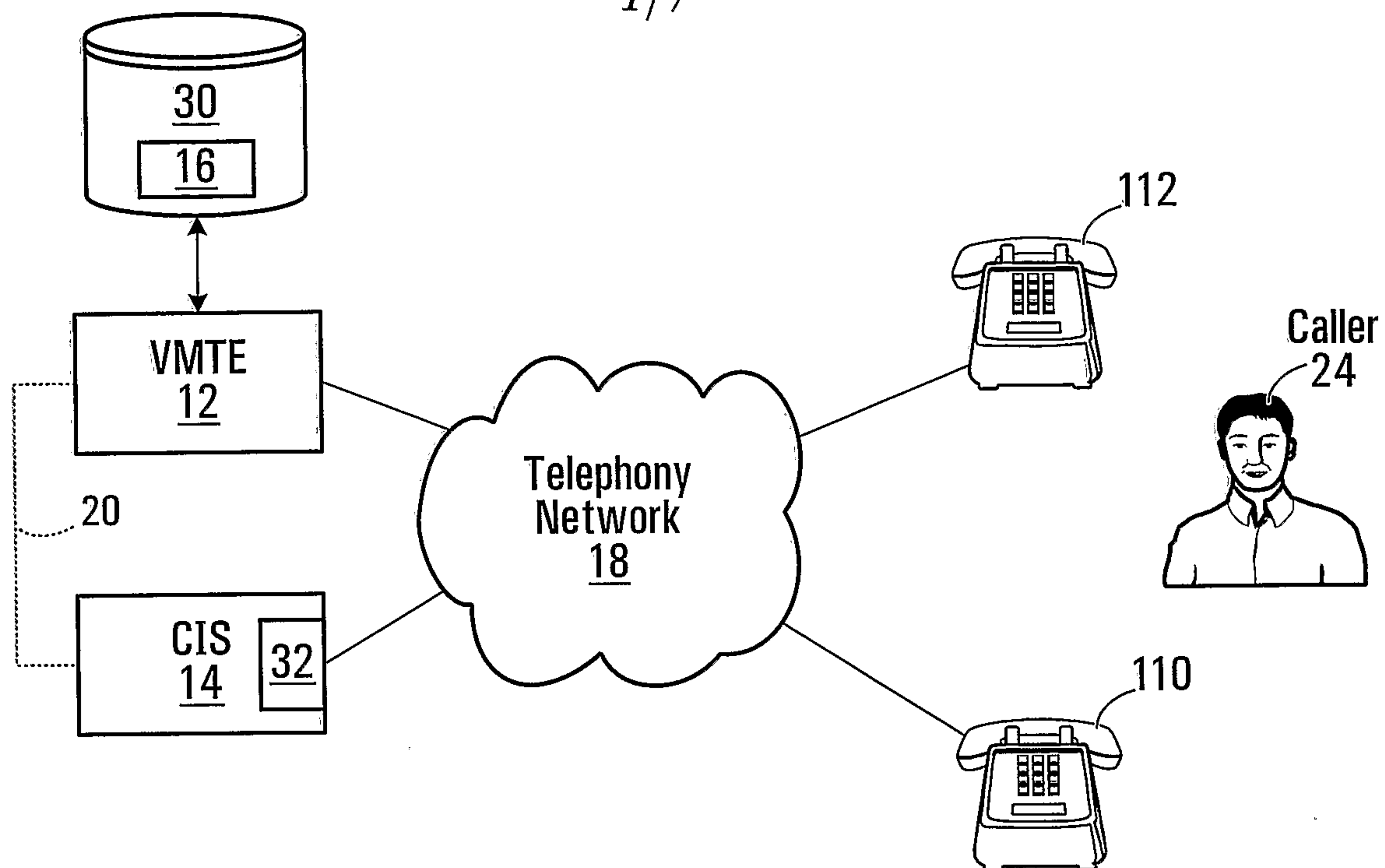
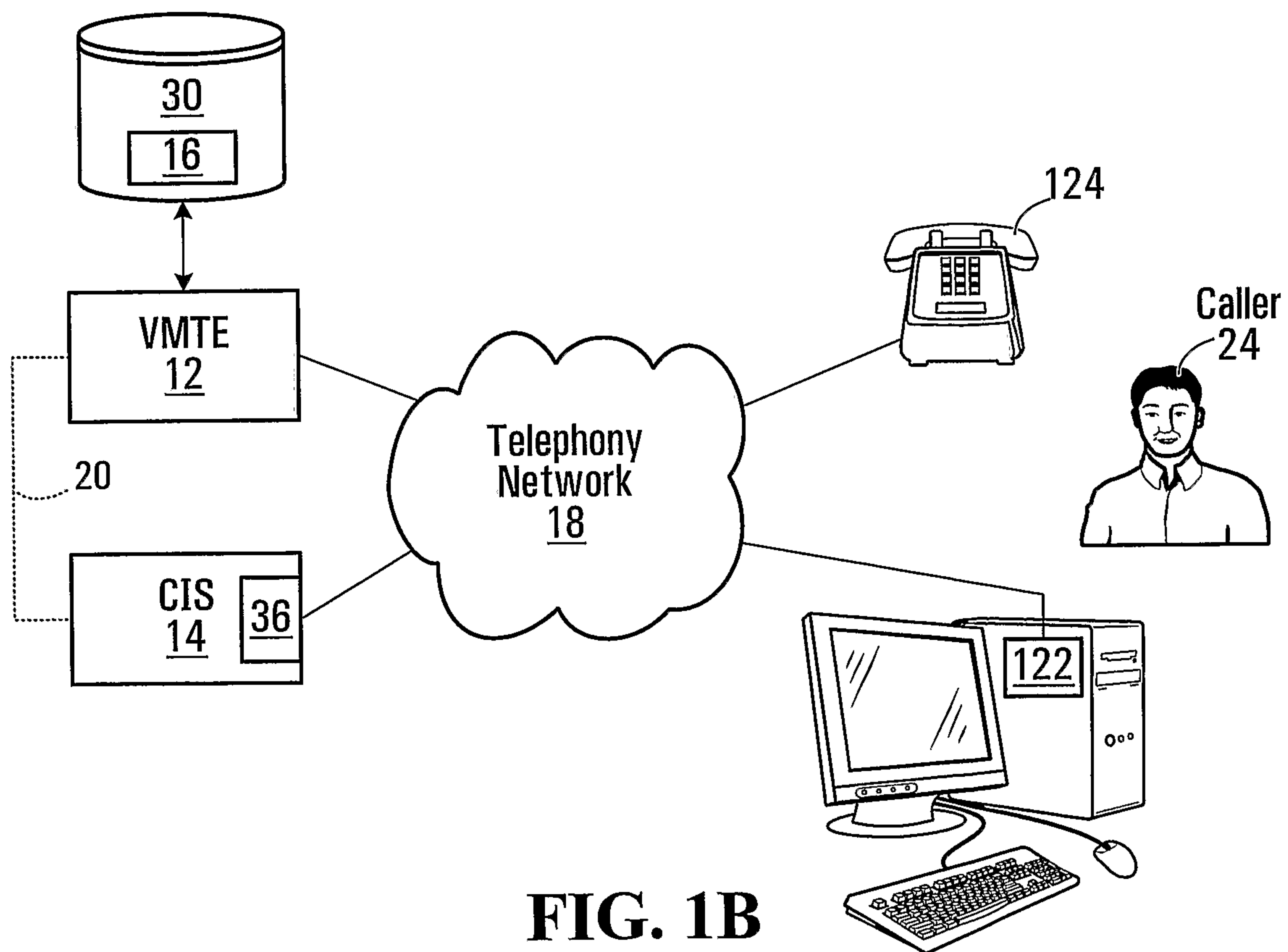
- 8 - means for storing a plurality of mailboxes associated with respective owners,
9 each one of the mailboxes being adapted to store voice mail messages for the
10 respectively associated owner, a particular one of the mailboxes storing a
11 particular voice mail message for the respective owner from a calling party;
- 12 - means for obtaining contact information associated with the calling party;
- 13 - means for rendering available to the owner respectively associated with the
14 particular one of the mailboxes the voice mail message in the mailbox and the
15 contact information associated with the calling party.

16
17 45. Computer-readable media tangibly embodying a program of instructions
18 executable by a computer to perform a method of handling a call placed by a
19 calling party to a called party, the called party being associated with a mailbox in
20 a message taking entity, the method comprising:

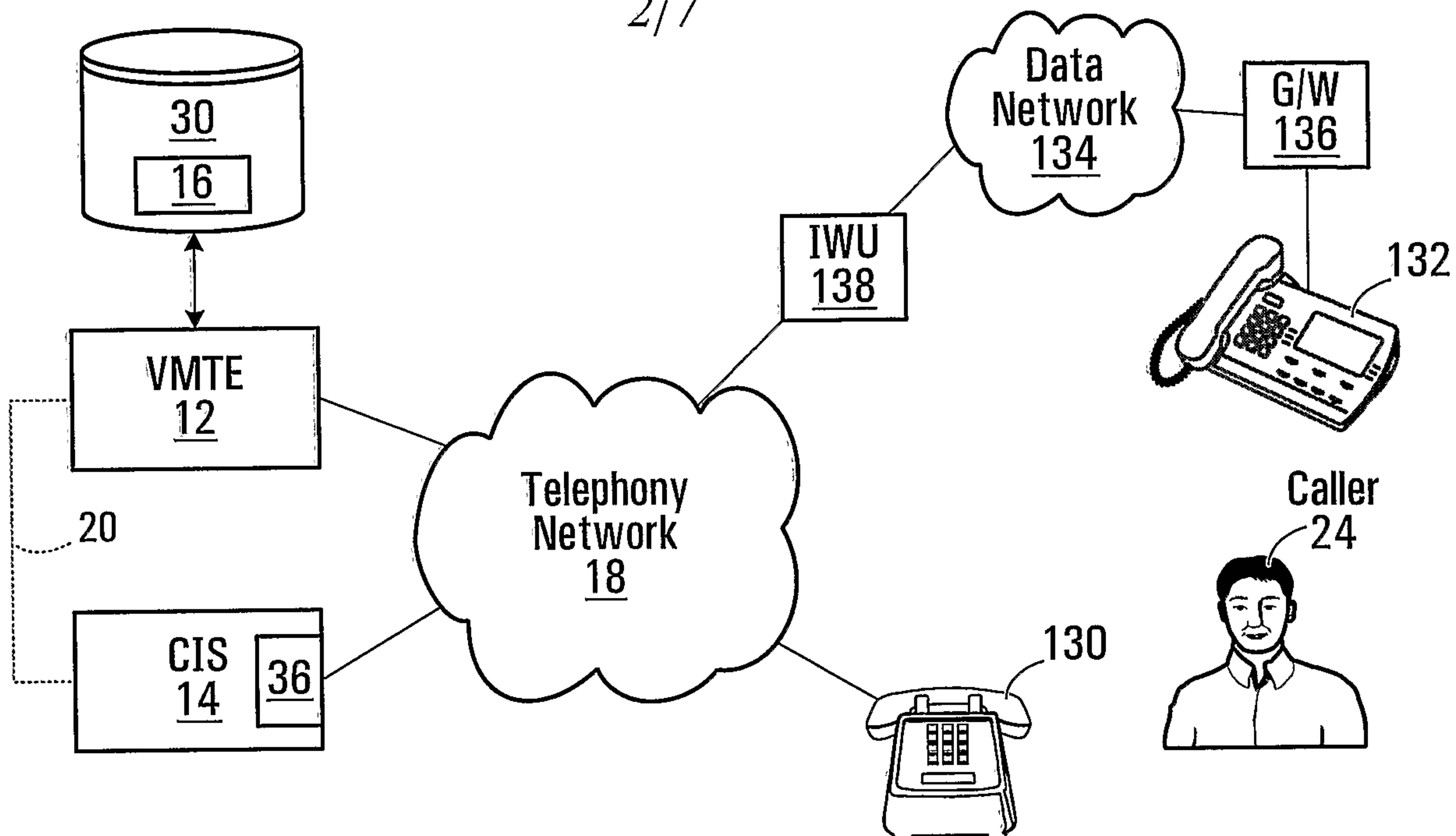
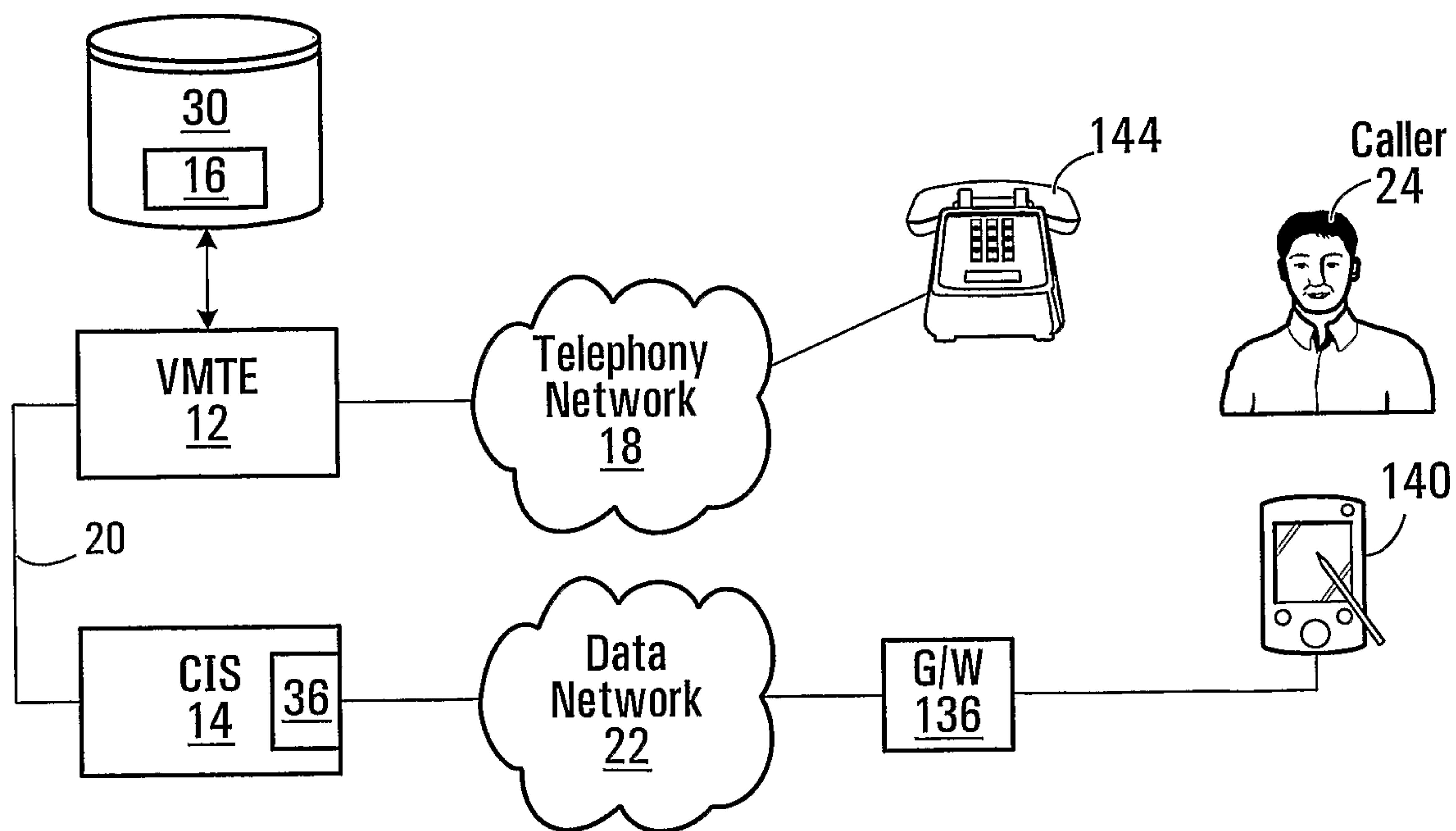
- 21 - storing a voice mail message for the called party in the mailbox;
- 22 - obtaining contact information associated with the calling party from a
23 memory, the contact information associated with the calling party having been
24 stored in the memory prior to the call being placed;
- 25 - rendering available to the called party the voice mail message in the mailbox
26 and the contact information associated with the calling party.

27

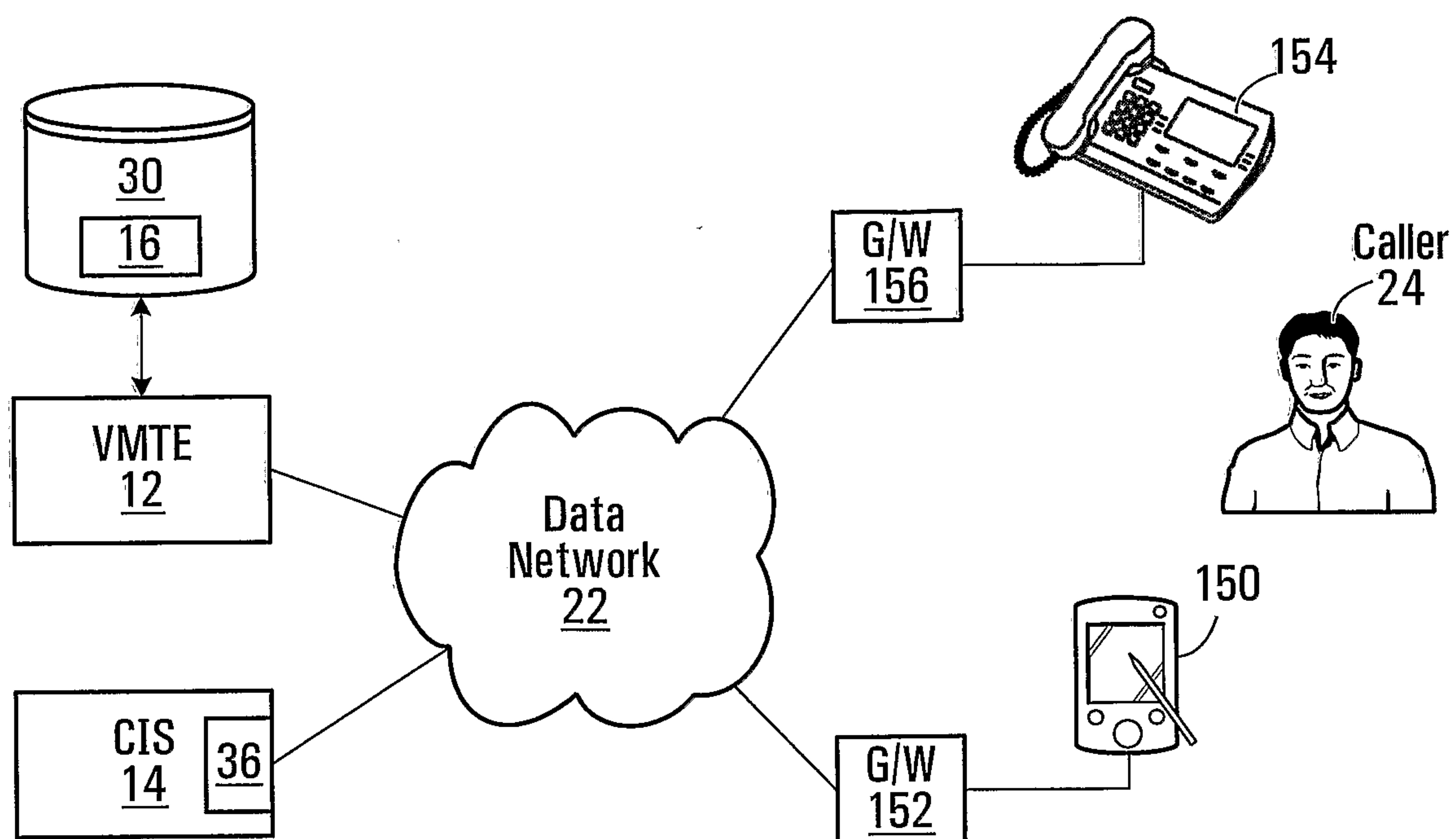
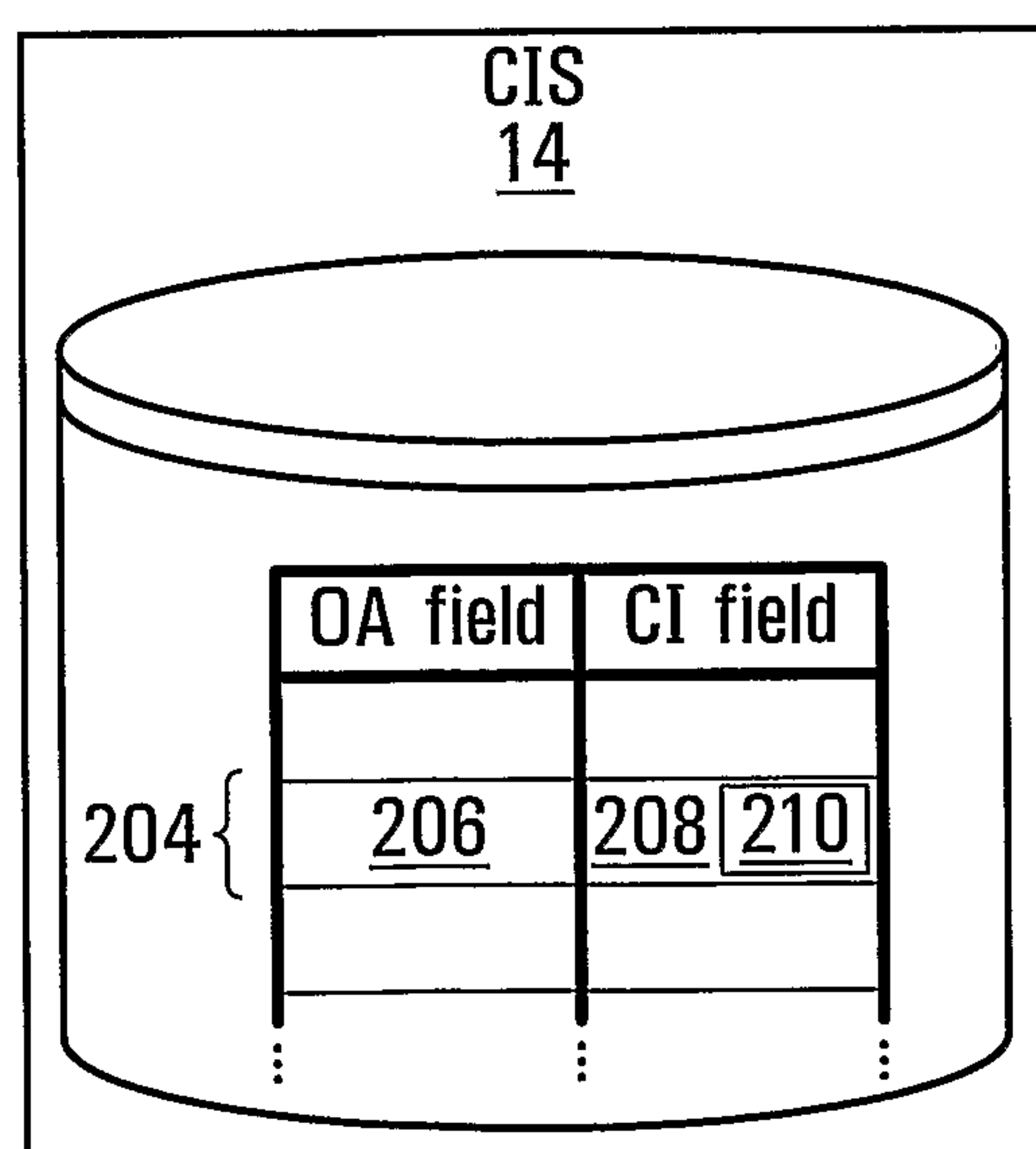
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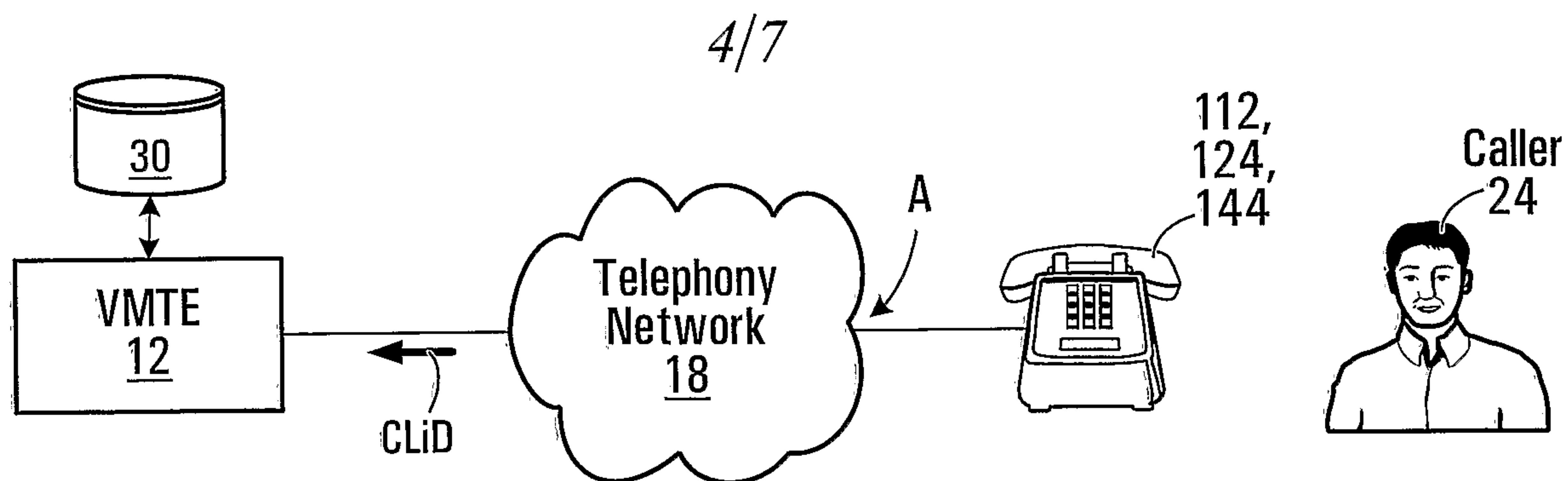
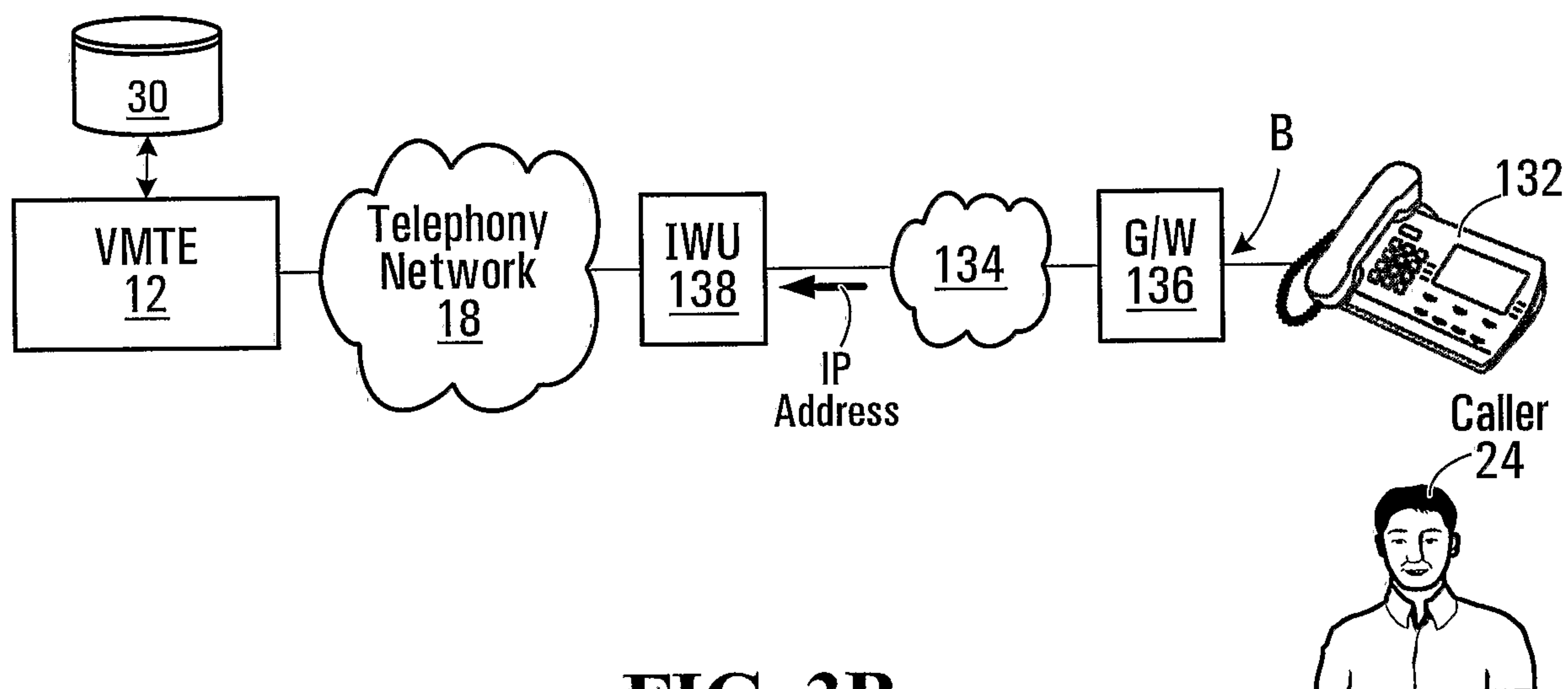
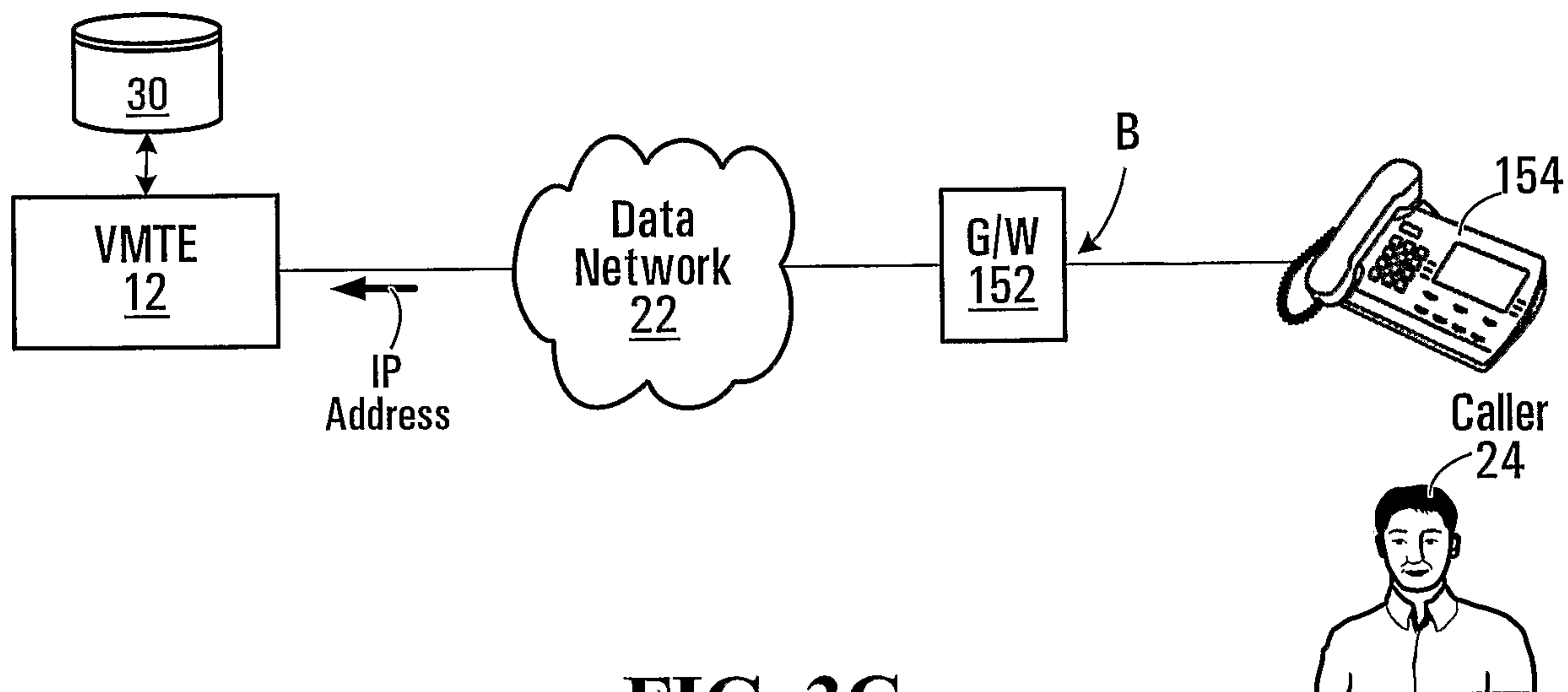
**FIG. 1A****FIG. 1B**

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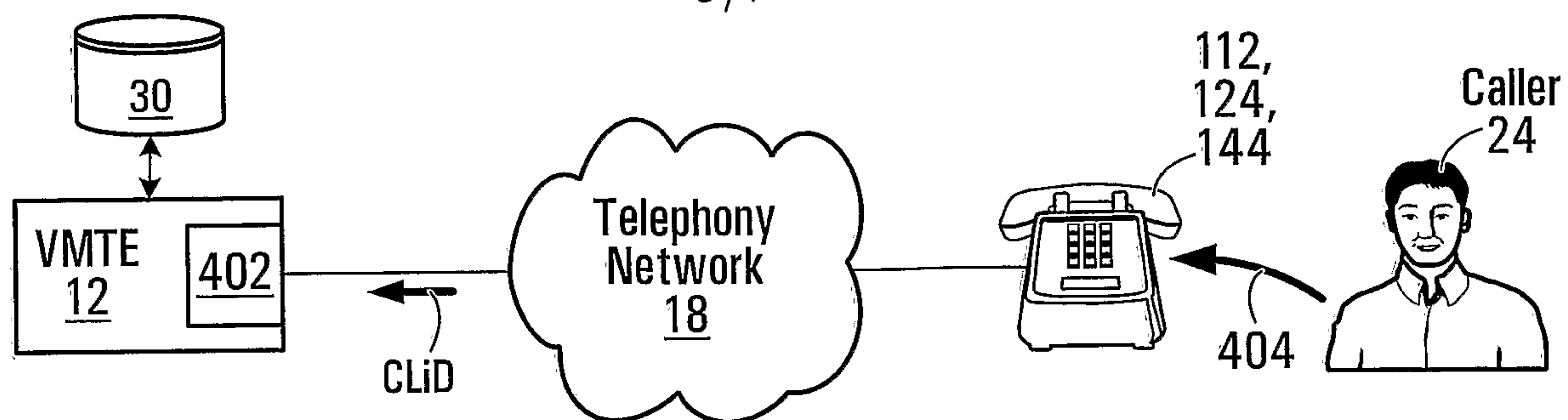
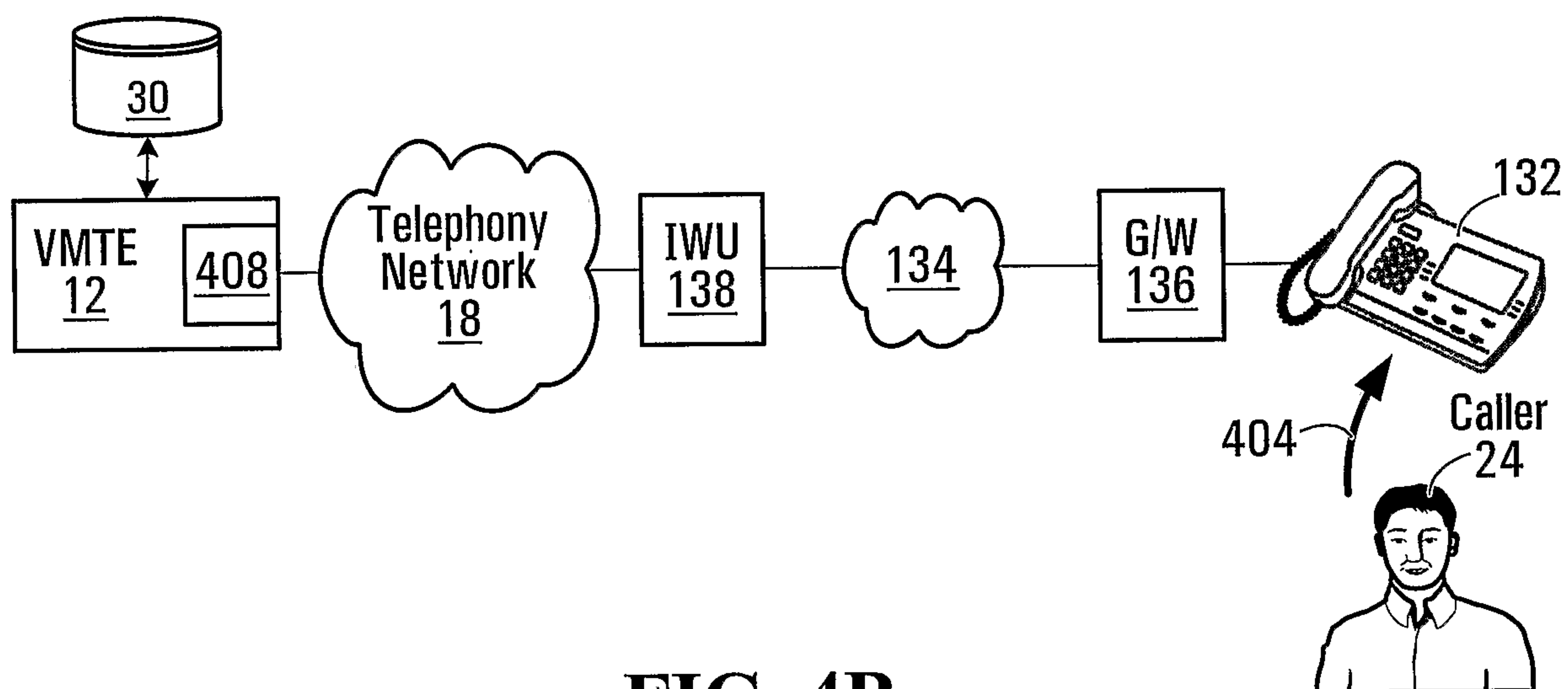
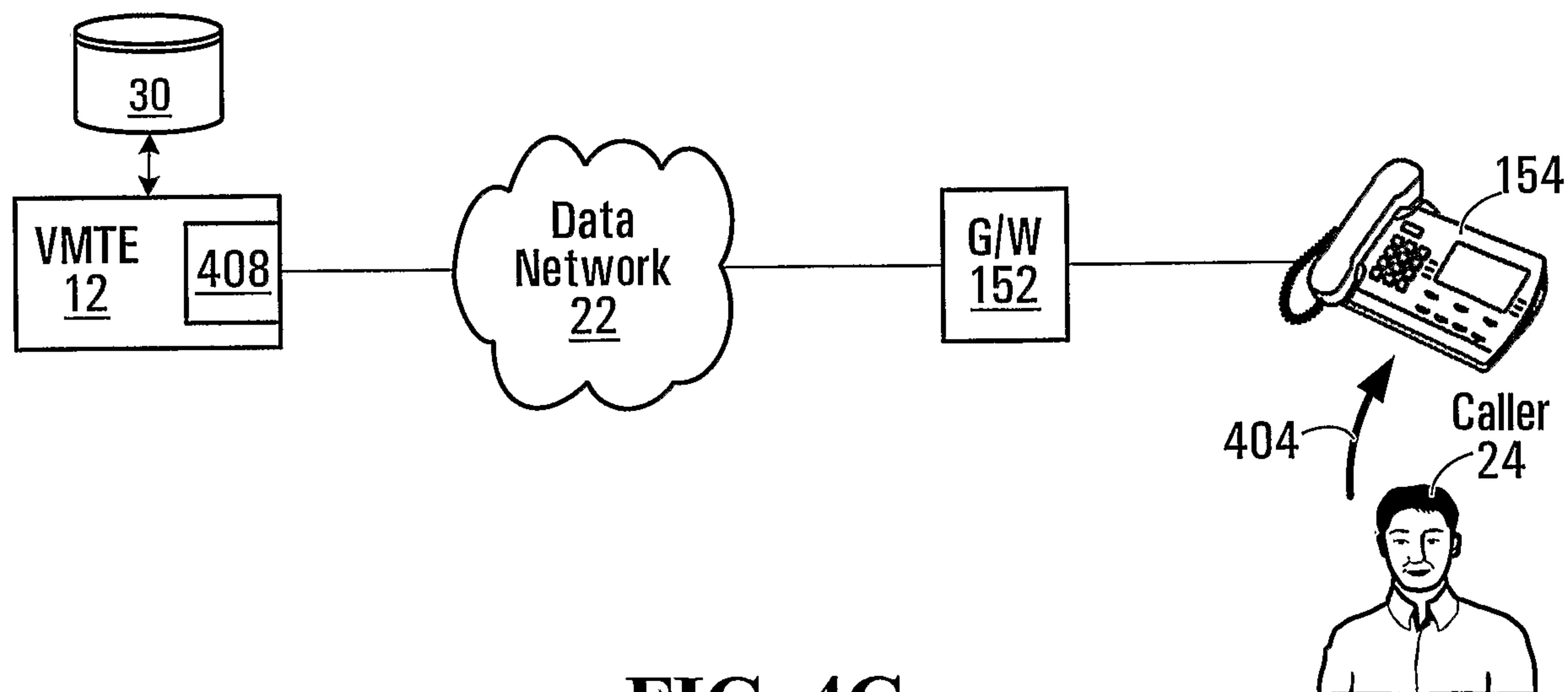
**FIG. 1C****FIG. 1D**

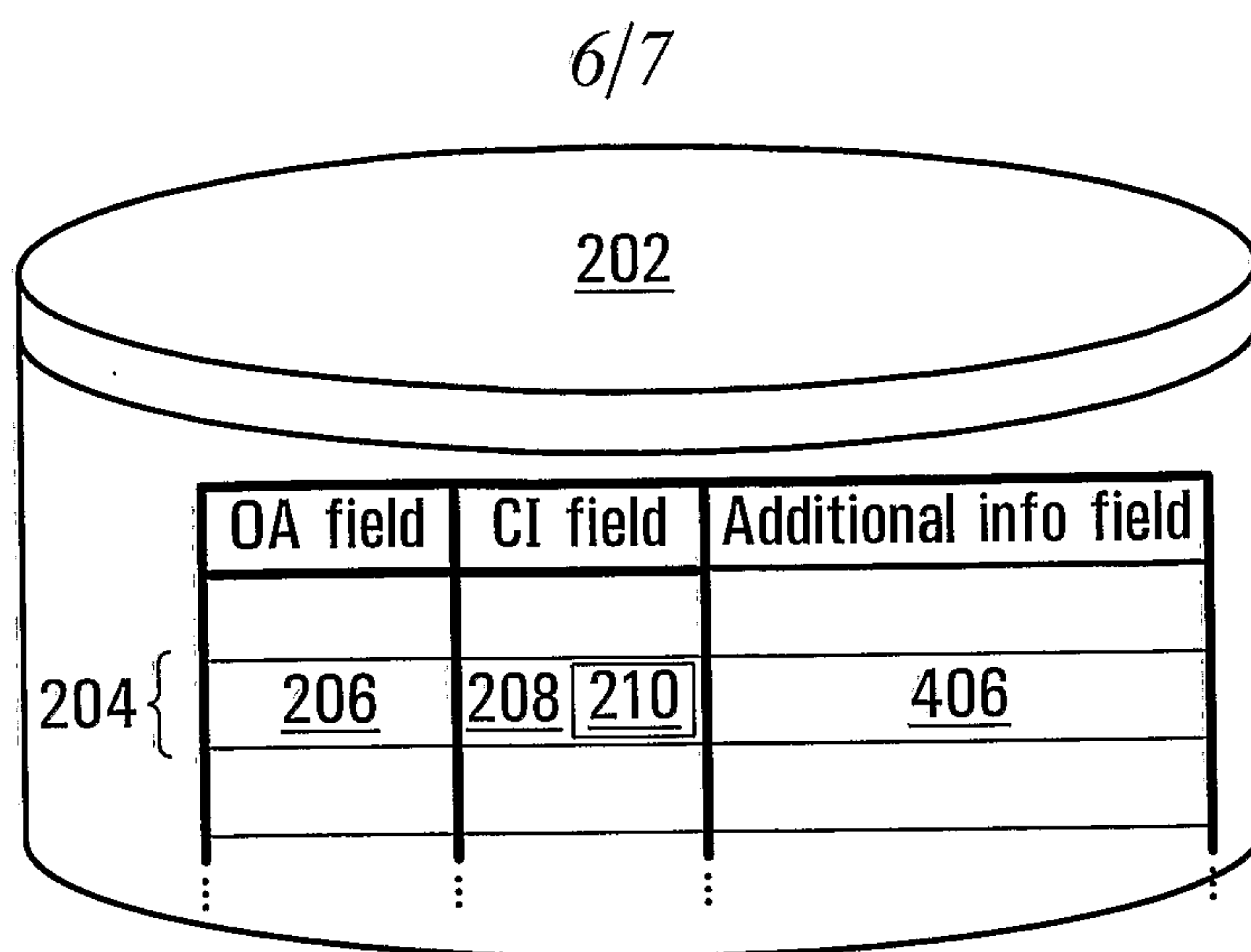
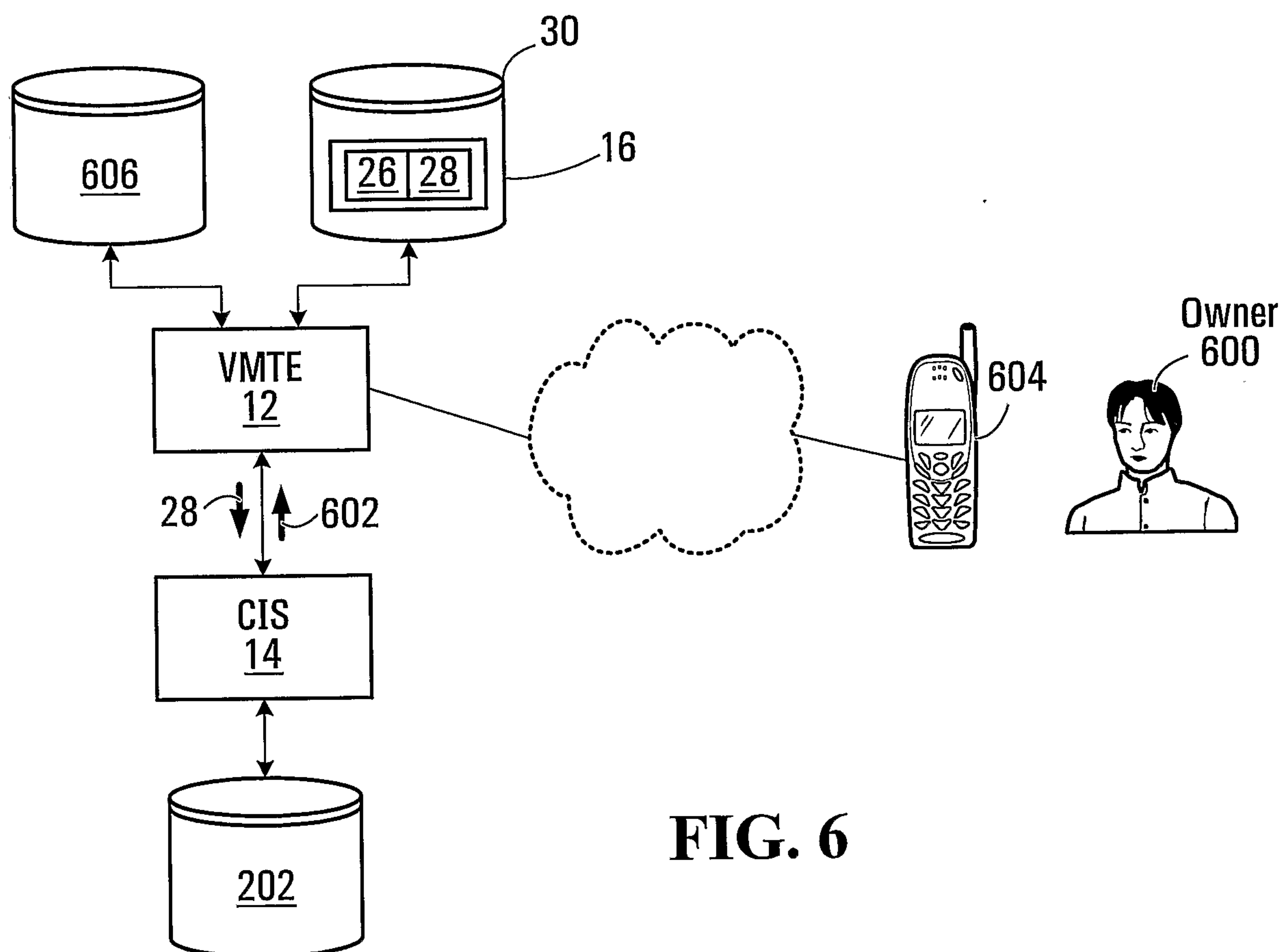
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**FIG. 1E****FIG. 2**

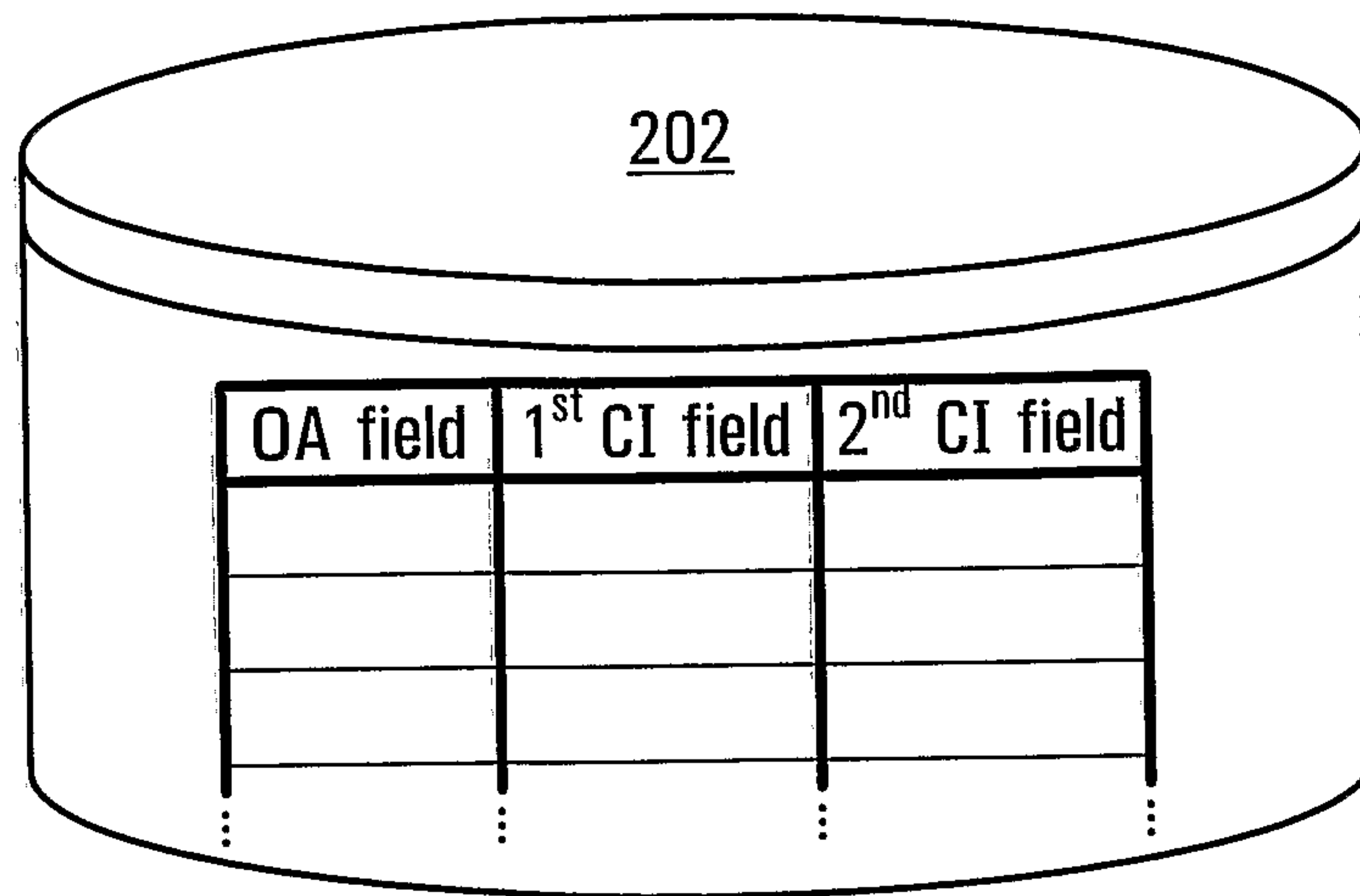
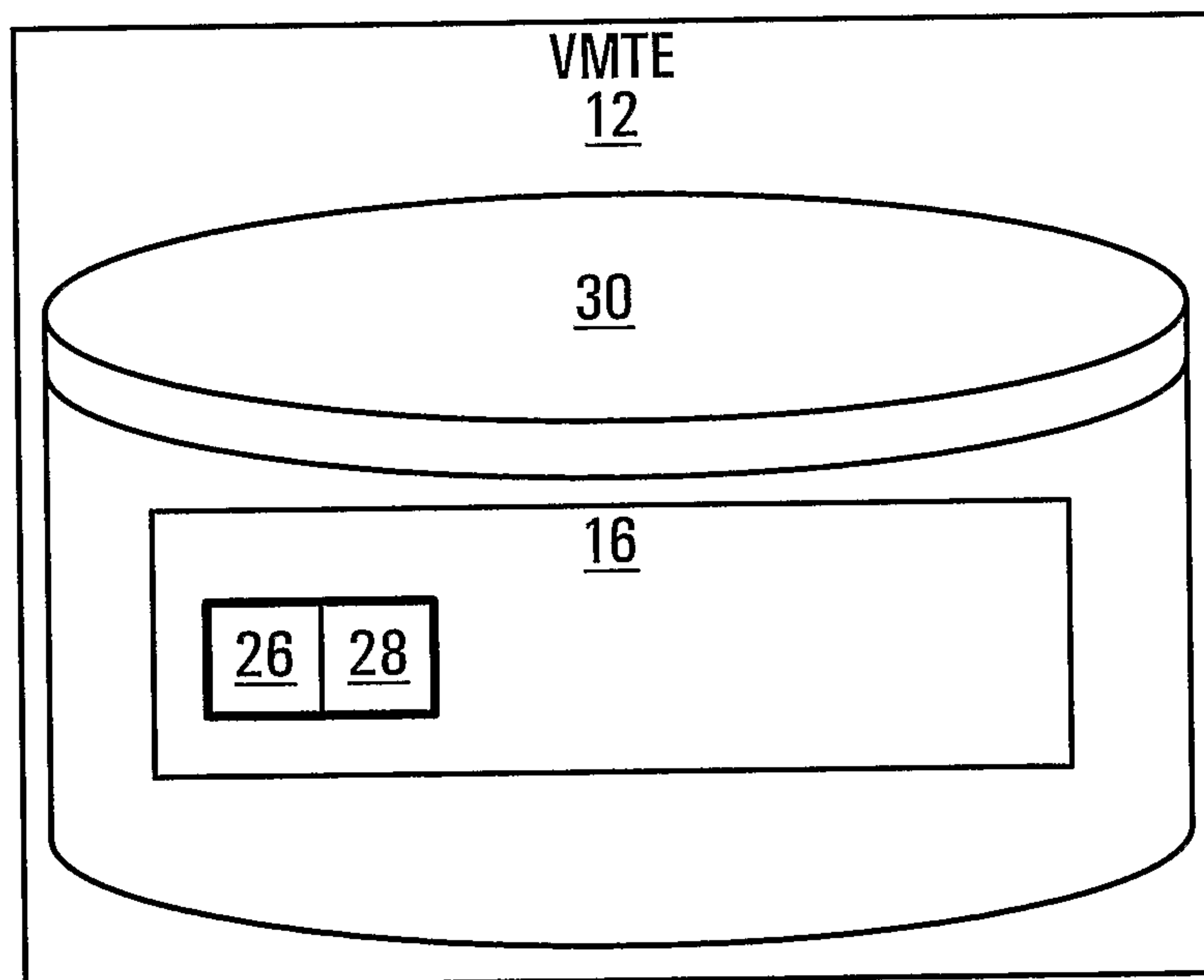
**FIG. 3A****FIG. 3B****FIG. 3C**

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**FIG. 4A****FIG. 4B****FIG. 4C**

**FIG. 5****FIG. 6**

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**FIG. 7****FIG. 8**

