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FILE HISTORY

US 5,894,506

PATENT:	5,894,506
INVENTORS:	Pinter, Gregory J.
TITLE:	Method and apparatus for generating and communicating messages between subscribers to an electronic messaging network
APPLICATION NO:	US1996708696A
FILED:	05 SEP 1996
ISSUED:	13 APR 1999
COMPILED:	12 FEB 2016

08/708696

Class	Subclass
379	88.2

ISSUE CLASSIFICATION

[redacted]

5894506

5894506

UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
08/708696	APR 13 1999	

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER
[illegible]	[illegible]	379	89	~~2601~~ 2742	Tsang

APPLICANTS

[illegible], PINTER, BRANDON, MS.

CONTINUING DATA********
VERIFIED
none FT

FOREIGN/PCT APPLICATIONS********
VERIFIED
none FT

CERTIFICATE
SEP 14 1999
OF CORRECTION

[illegible] LICENSE GRANTED 11/01/96

Foreign priority claimed 35 USC 119 conditions met	☐ yes ☑ no ☐ yes ☑ no	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
Verified and Acknowledged	Examiner's initials FT		[illegible]	7	21	4	[illegible]	[illegible]

ADDRESS

[illegible] HENDERSON FARABOW GARRETT AND
[illegible]
[illegible] STREET N W
WASHINGTON [illegible]

TITLE

[illegible] AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES
[illegible] SUBSCRIBERS [illegible] NETWORK

ISSUE FEE IN FILE

U.S. DEPT. OF COMM./ PAT. & TM—PTO-436L (Rev.12-94)

PARTS OF APPLICATION FILED SEPARATELY		R. Logan Applications Examiner
NOTICE OF ALLOWANCE MAILED: 9-29-98	Assistant Examiner	CLAIMS ALLOWED: Total Claims 21; Print Claim 1
ISSUE FEE: Amount Due 1320.00; Date Paid 12-23-98	FAN S. TSANG PRIMARY EXAMINER [signature] Group 2742 Primary Examiner	DRAWING: Sheets Drwg. 7; Figs. Drwg. 8; Print Fig. 2
Label Area	PREPARED FOR ISSUE	ISSUE BATCH NUMBER J-63

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Form PTO-436A
(Rev. 8/92)

(FACE)

5,894,506

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Transaction History

Date	Transaction Description
09-16-1996	Initial Exam Team nn
11-07-1996	Application Captured on Microfilm
04-29-1997	Case Docketed to Examiner in GAU
01-12-1998	Case Docketed to Examiner in GAU
02-19-1998	Non-Final Rejection
02-26-1998	Mail Non-Final Rejection
07-24-1998	Response after Non-Final Action
07-24-1998	Information Disclosure Statement (IDS) Filed
07-24-1998	Information Disclosure Statement (IDS) Filed
07-24-1998	Request for Extension of Time - Granted
07-30-1998	Date Forwarded to Examiner
09-18-1998	Examiner Interview Summary Record (PTOL - 413)
09-29-1998	Mail Notice of Allowance
09-29-1998	Notice of Allowance Data Verification Completed
09-29-1998	Mail Examiner's Amendment
09-29-1998	Examiner's Amendment Communication
12-23-1998	Issue Fee Payment Verified
12-23-1998	Mailroom Date of Drawing(s)
12-29-1998	Drawing(s) Received at Publications
01-14-1999	Drawing(s) Processing Completed
01-14-1999	Drawing(s) Matched to Application
02-18-1999	Workflow - File Sent to Contractor
04-07-1999	Issue Notification Mailed
04-15-1999	Recordation of Patent Grant Mailed
08-16-1999	Post Issue Communication - Certificate of Correction
11-15-2013	Correspondence Address Change
11-18-2013	Email Notification
11-18-2013	Change in Power of Attorney (May Include Associate POA)
06-27-2014	Petition Requesting Trial
06-27-2014	Petition Requesting Trial
08-15-2014	Correspondence Address Change
08-15-2014	Correspondence Address Change
08-18-2014	Email Notification
08-18-2014	Change in Power of Attorney (May Include Associate POA)
04-27-2015	Termination or Final Written Decision
06-06-2015	Case Docketed to Examiner in GAU
02-08-2016	File Marked Found

08/708696

PATENT APPLICATION

08708696

APPROVED FOR LICENSE

INITIALS OCT 02 9645

CONTENTS

Date Entered or Counted			Date Received or Mailed
	1.	Application 7 pts papers.	
2-19	2.	Rej (Bmos)	2-26-98
7-20	3.	Req. Ext. time (2) & Amdt C	7-24-98
	4.	Pris- Art	7-24-98
	5.	Interview Summary	9-18-98
9-28-	6.	EXR Amdt/B	9-29-98
1-14-99	7.	Formal Drawings (7 shts) not N/A	12-23-98
	8.	PTO GRANT APR 13 1999	
	9.	Req. for CfC	5-14-99
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STAPLE AREA

☆U.S. GOVERNMENT PRINTING OFFICE:1997-430-220

PATENT NUMBER

APPLICATION SERIAL NUMBER
08/708,696

APPLICANT'S NAME (PLEASE PRINT)
Pinter

IF REISSUE, ORIGINAL PATENT NUMBER

ORIGINAL CLASSIFICATION

CLASS	SUBCLASS
379	88.23

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
379	88.15	93.24			
340	825.44				
455	412				

INTERNATIONAL CLASSIFICATION

H	0	4	M	1/64

GROUP ART UNIT: 2742

ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME)

PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME): Fan Tsang

PTO 270 (REV. 5-91)

ISSUE CLASSIFICATION SLIP

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

708696

Staple Issue Slip Here

POSITION		ID NO.	DATE
CLASSIFIER		10	10/2/96
EXAMINER		414	10-29-96
TYPIST	MH		11-1-96
VERIFIER			
CORPS CORR.			
SPEC. HAND			
FILE MAINT.			
DRAFTING			

INDEX OF CLAIMS

Claim Final	Claim Original	Date 7/8/98	Date 9/16/98
1	(1)	✓	=
2	2	|	|
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19	(19)	|	|
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SYMBOLS

- ✓ ..... Rejected
- = ... Allowed
- - (Through numberal) Canceled
- + ... Restricted
- N ..... Non-elected
- I ..... Interference
- A ..... Appeal
- O ..... Objected

Claim Final	Claim Original	Date
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(LEFT INSIDE)

SEARCHED

Class	Sub.	Date	Exmr.
379	67 88 89	3/15/98	T.T.
455	31.3 31.2		
395	200.3 200.31 200.34 200.37 200.41		
379	93.24 93.25 93.26		
update	searched	9/17/98	T.T.

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
379	88.23 88.15 93.24 93.25 93.26	9/17/98	T.T.

SEARCH NOTES

	Date	Exmr.
W. Cumming (for paging) D. Hunter	9/15/98	T.T.

(RIGHT OUTSIDE)

US005894506A

United States Patent [19]

Pinter

[11] Patent Number: 5,894,506

[45] Date of Patent: Apr. 13, 1999

[54] **METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK**

[75] Inventor: **Gregory J. Pinter**, Brandon, Miss.

[73] Assignee: **SkyTel Communications, Inc.**, Jackson, Miss.

[21] Appl. No.: **08/708,696**

[22] Filed: **Sep. 5, 1996**

[51] **Int. Cl.**[6] **H04M 1/64**

[52] **U.S. Cl.** **379/88.23**; 379/88.15; 379/93.24; 340/825.44; 455/412

[58] **Field of Search** 379/67, 88, 89, 379/93.24, 93.25, 93.26; 455/31.3, 31.2; 395/200.3, 200.31, 200.34, 200.37, 200.41

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,978,676	4/1961	Spencer	340/154
3,513,443	5/1970	Andersen	340/164
3,714,375	1/1973	Stover	179/2
3,818,145	6/1974	Hanway	179/41
3,846,783	11/1974	Apsell et al.	340/311
3,851,251	11/1974	Wigner et al.	325/55
3,944,724	3/1976	Kilby et al.	178/4.1
3,976,995	8/1976	Sebestyen	340/337
3,984,775	10/1976	Cariel et al.	325/55
4,010,460	3/1977	DeRosa	340/311
4,010,461	3/1977	Stodolski	340/311
4,160,240	7/1979	Partipilo	340/311
4,178,475	12/1979	Taylor et al.	179/2
4,197,526	4/1980	Levine	340/311
4,249,165	2/1981	Mori	340/311
4,263,480	4/1981	Levine	179/2
4,330,780	5/1982	Masaki	340/825.44
4,336,524	6/1982	Levine	340/311
4,382,256	5/1983	Nagata	340/825.44
5,327,486	7/1994	Wolff et al.	379/210
5,381,466	1/1995	Shibayama et al.	379/88
5,539,808	7/1996	Inniss et al.	379/67

OTHER PUBLICATIONS

"New Radio Paging System," by Mitsuru Komura et al. Japan Telecommunications Review, Jul. 1977, vol. 19, No. 3, pp. 217 and 220–225.

"Paging System Broadcasts Nationwide on FM Radio Channel," Electronics International, Jan. 4, 1979, vol. 52, No. 1, pp. 67–68.

"A Development Project of a Pocketsize Receiver for a Nationwide Paging System," by Kari Kiishinen et al. IEEE, 1979, pp. 383–387.

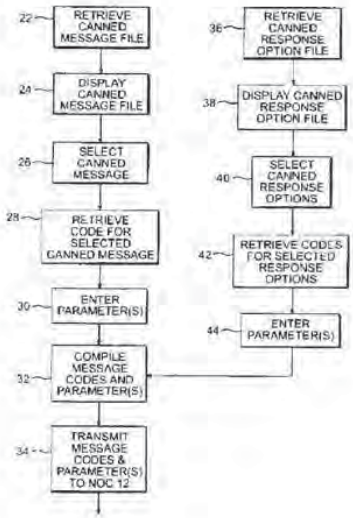
Primary Examiner—Fan S. Tsang

Attorney, Agent, or Firm—Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

[57] **ABSTRACT**

An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center. The receiving terminal retrieves the selected canned message from its memory using the received message code for display to the receiving party. Files of canned responses and associated response codes may also be stored in the memories at the terminals and network operation center to allow the exchange of selected canned response options in conjunction with canned messages to be in response code form.

21 Claims, 7 Drawing Sheets



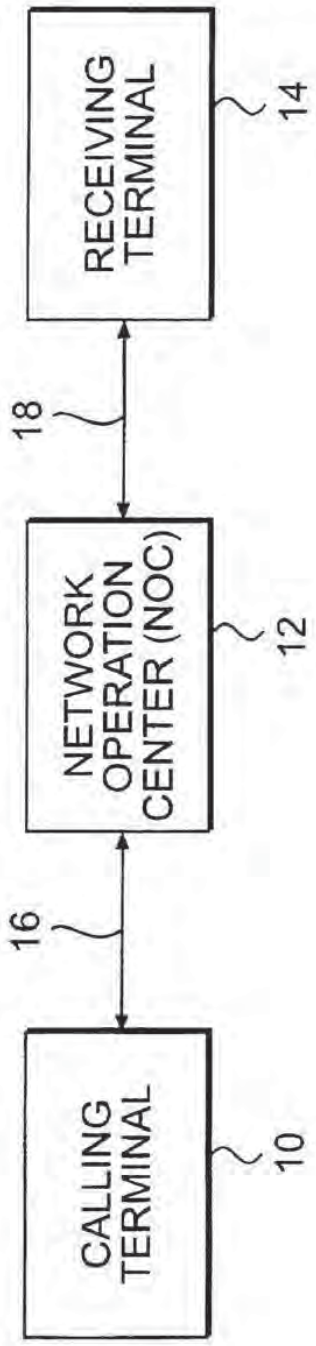

RECEIVING TERMINAL
14
18
NETWORK OPERATION CENTER (NOC)
12
16
CALLING TERMINAL
10

FIG. 1

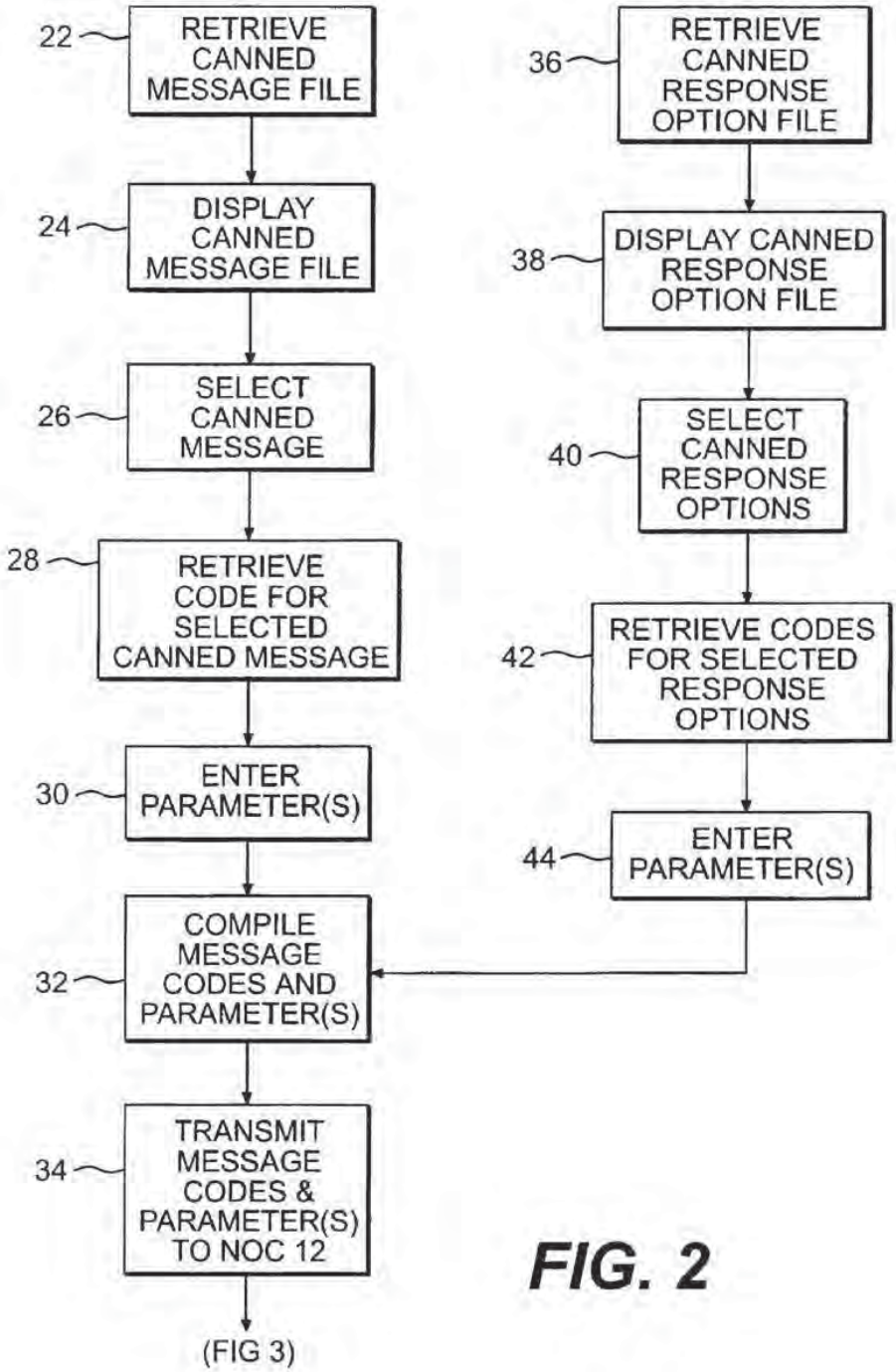

22
RETRIEVE CANNED MESSAGE FILE
24
DISPLAY CANNED MESSAGE FILE
26
SELECT CANNED MESSAGE
28
RETRIEVE CODE FOR SELECTED CANNED MESSAGE
30
ENTER PARAMETER(S)
32
COMPILE MESSAGE CODES AND PARAMETER(S)
34
TRANSMIT MESSAGE CODES & PARAMETER(S) TO NOC 12
(FIG 3)
36
RETRIEVE CANNED RESPONSE OPTION FILE
38
DISPLAY CANNED RESPONSE OPTION FILE
40
SELECT CANNED RESPONSE OPTIONS
42
RETRIEVE CODES FOR SELECTED RESPONSE OPTIONS
44
ENTER PARAMETER(S)

FIG. 2

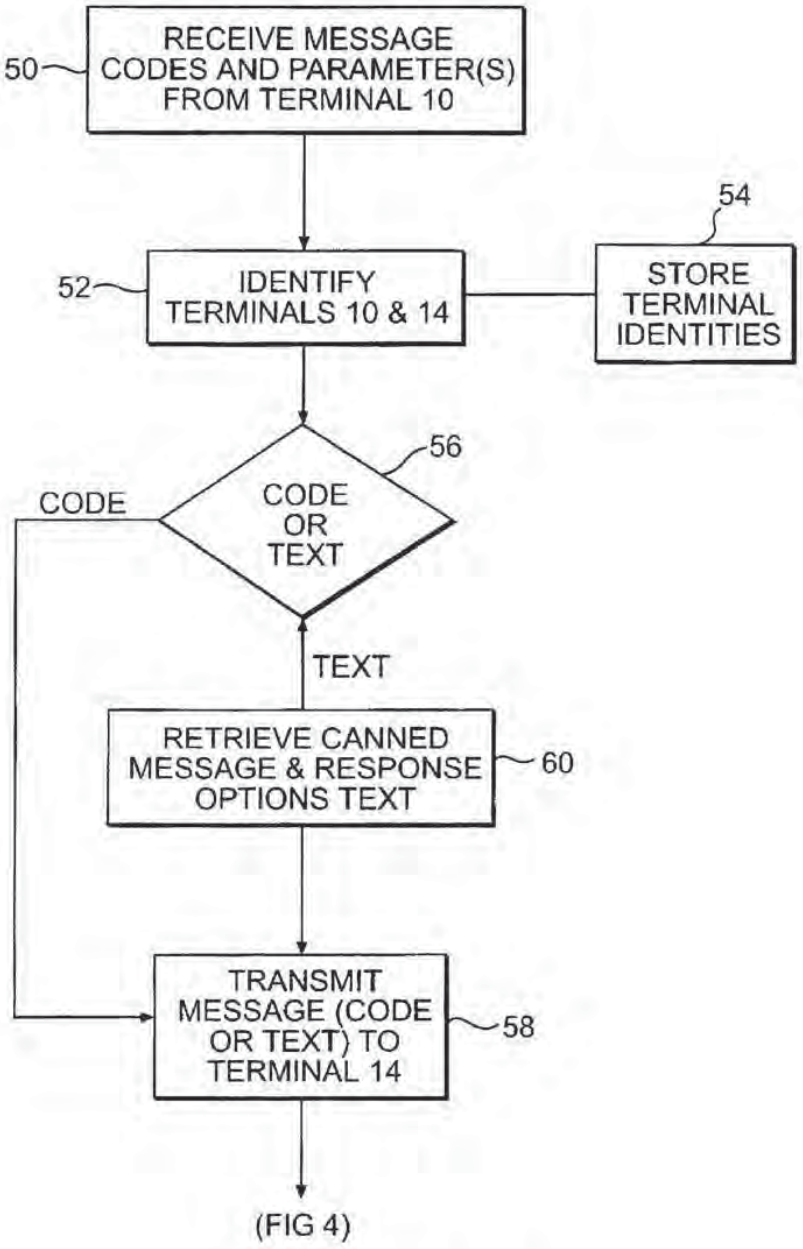

RECEIVE MESSAGE CODES AND PARAMETER(S) FROM TERMINAL 10
50
IDENTIFY TERMINALS 10 & 14
52
STORE TERMINAL IDENTITIES
54
CODE OR TEXT
56
CODE
TEXT
RETRIEVE CANNED MESSAGE & RESPONSE OPTIONS TEXT
60
TRANSMIT MESSAGE (CODE OR TEXT) TO TERMINAL 14
58
(FIG 4)

FIG. 3

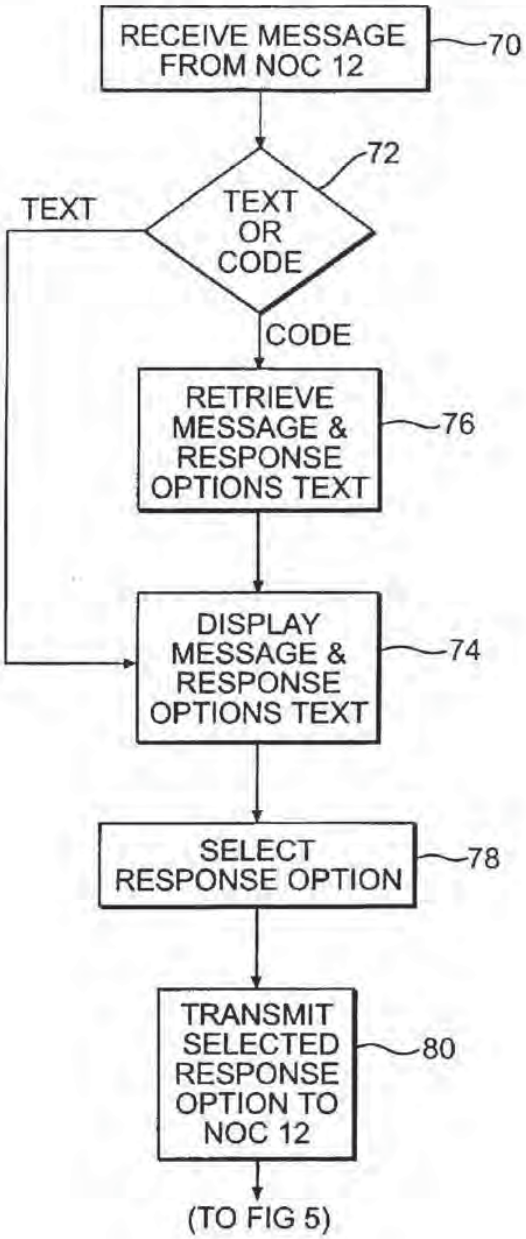

RECEIVE MESSAGE FROM NOC 12
70
72
TEXT OR CODE
TEXT
CODE
RETRIEVE MESSAGE & RESPONSE OPTIONS TEXT
76
DISPLAY MESSAGE & RESPONSE OPTIONS TEXT
74
SELECT RESPONSE OPTION
78
TRANSMIT SELECTED RESPONSE OPTION TO NOC 12
80
(TO FIG 5)

FIG. 4

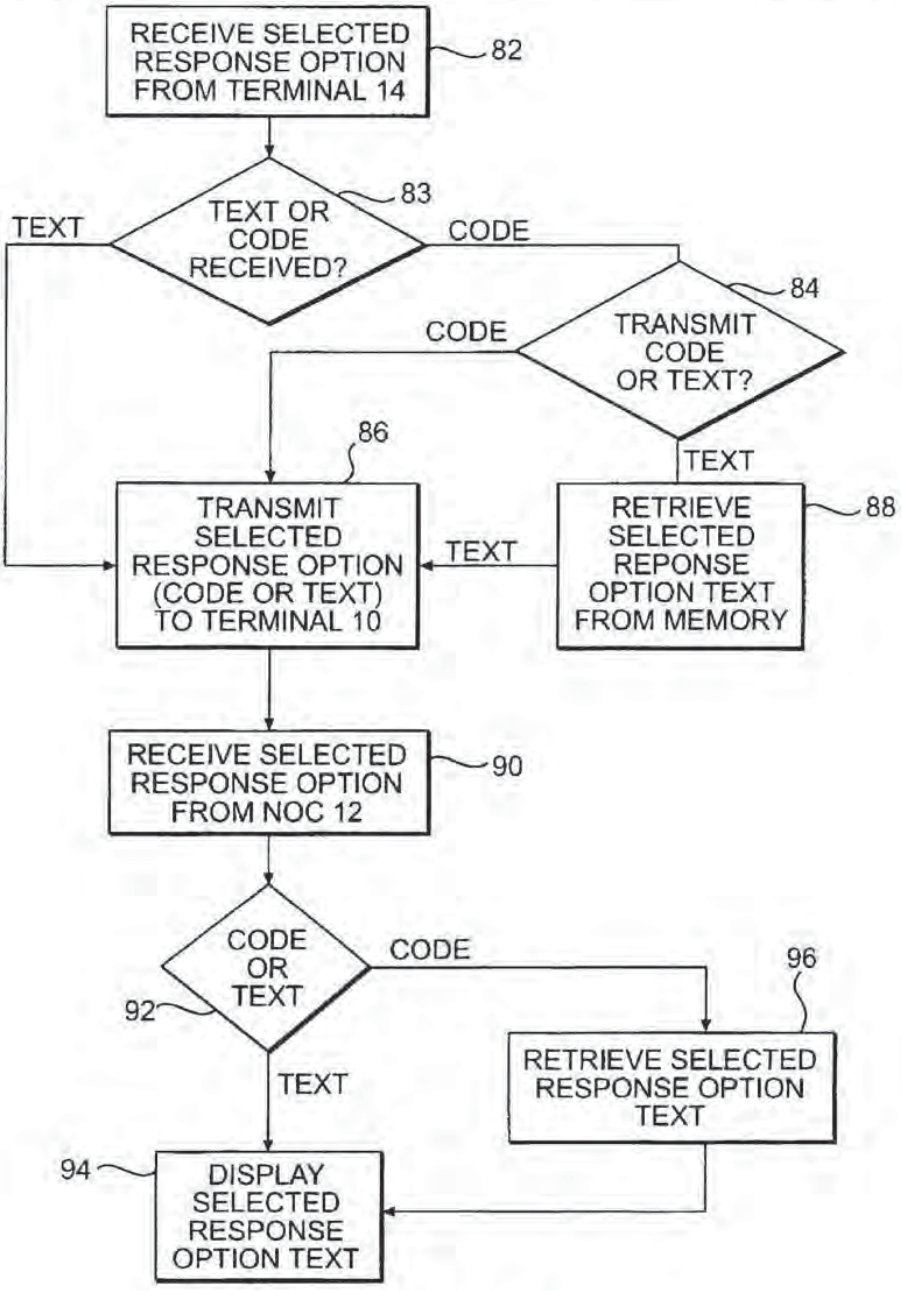

RECEIVE SELECTED RESPONSE OPTION FROM TERMINAL 14
82
TEXT OR CODE RECEIVED?
83
TEXT
CODE
TRANSMIT CODE OR TEXT?
84
CODE
TEXT
TRANSMIT SELECTED RESPONSE OPTION (CODE OR TEXT) TO TERMINAL 10
86
TEXT
RETRIEVE SELECTED REPONSE OPTION TEXT FROM MEMORY
88
RECEIVE SELECTED RESPONSE OPTION FROM NOC 12
90
CODE OR TEXT
92
CODE
96
TEXT
RETRIEVE SELECTED RESPONSE OPTION TEXT
94
DISPLAY SELECTED RESPONSE OPTION TEXT

FIG. 5

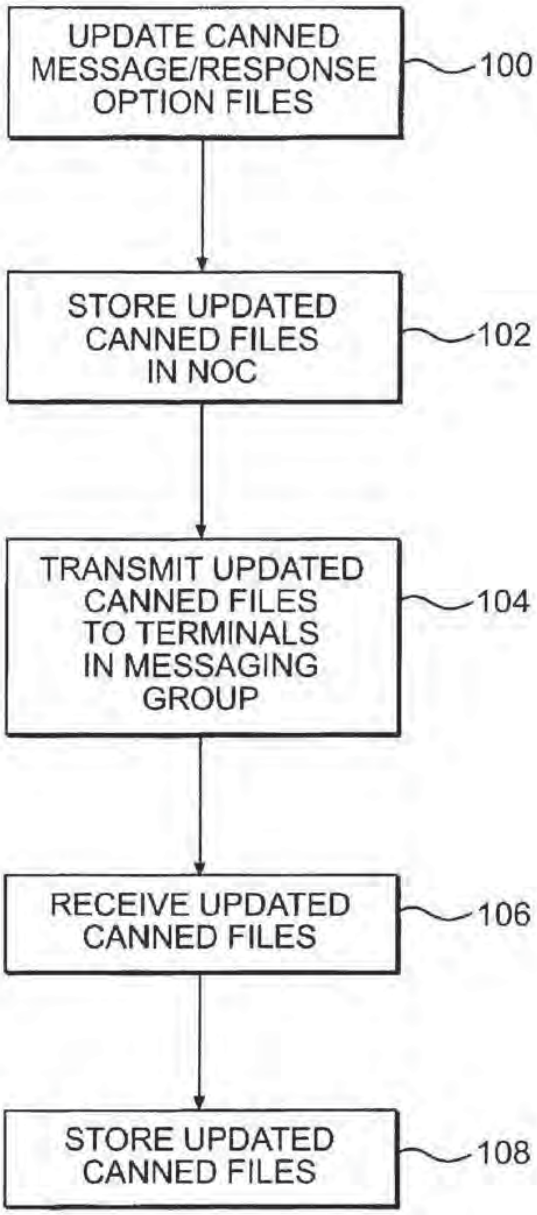

UPDATE CANNED MESSAGE/RESPONSE OPTION FILES
100
STORE UPDATED CANNED FILES IN NOC
102
TRANSMIT UPDATED CANNED FILES TO TERMINALS IN MESSAGING GROUP
104
RECEIVE UPDATED CANNED FILES
106
STORE UPDATED CANNED FILES
108

FIG. 6

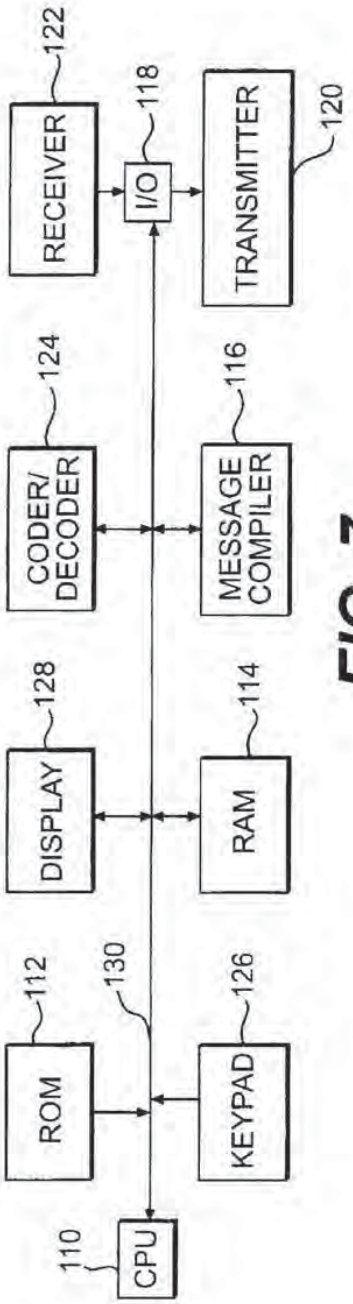

RECEIVER
122
I/O
118
TRANSMITTER
120
CODER/
DECODER
124
MESSAGE
COMPILER
116
DISPLAY
128
RAM
114
ROM
112
130
KEYPAD
126
110
CPU

FIG. 7

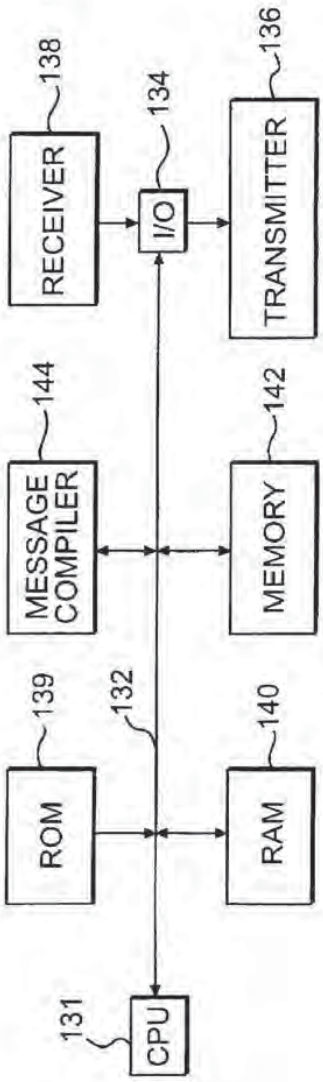

RECEIVER
138
I/O
134
TRANSMITTER
136
MESSAGE
COMPILER
144
MEMORY
142
ROM
139
132
RAM
140
131
CPU

FIG. 8

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

FIELD OF THE INVENTION

The present invention relates to electronic information services and more particularly to the exchange of electronic messages among subscribers to an electronic messaging network.

BACKGROUND OF THE INVENTION

As more and more people sign on to information networks, congestion of the communications links comprising these networks, both wireline and wireless, and the consequential transmission delays become increasingly significant problems. Faster transmission rates, data compression techniques, and more efficient spectrum utilization are among the approaches that have been considered, and to some extent implemented, to increase the capacities of communications links.

One area of particularly rapid growth is the electronic messaging field. More and more people are moving about with portable devices, such as laptop computers and portable digital devices, which can be economically equipped to function as message sending/receiving terminals. Moreover, wireless paging hardware, software, and support services are being upgraded to accommodate two-way messaging. That is, portable pagers are being developed not only to receiving paging messages, but also to send back a signal acknowledging receipt of a paging message or even a message answering the received paging message. While such upgraded paging services are highly desirable, they can severely strain the capacity of wireless paging channels.

SUMMARY OF THE INVENTION

It is accordingly a principle object of the present invention to provide an improved electronic messaging network and method, wherein communications link capacity is conserved by transmitting certain messages with an improved degree of message compression.

Particularly in the case of radio paging, many paging messages consists of a relatively small number of common phrases, such as "I am on the way home", "I am working late", "Can we meet for lunch", etc. This being the case, such commonly used phrases can be treated as "canned" messages that can be replaced by short message codes as simple as, for example, one or several ASCII characters.

The present invention takes advantage of this fact by providing, in accordance with one preferred embodiment, a method of communicating messages between subscribers of an electronic messaging network, comprising the steps of maintaining, at a network operation center, a first file of canned messages individually retrievable using unique, abbreviated message codes respectively assigned to the canned messages; maintaining, at a terminal of a calling subscriber, a second file of canned messages corresponding to the first file; selecting an appropriate canned message from the second file for transmission to a terminal of a designated receiving subscriber; sending the message code assigned to the selected canned message to the network operation center; retrieving the selected canned message from the first file using the message code received from the calling subscriber terminal; and communicating the selected canned message to the designated receiving party terminal where it is displayed.

In accordance with a feature of the present invention, the first and second canned message files may be updated, either by the network operation center or from a subscriber terminal in order to customize the canned messages according to the needs of a particular group or organization of subscribers. In addition, the canned messages may be phrased to accept the addition of one or more parameters, which are entered at the calling subscriber terminal and then included with the message codes sent to the network operation center. The selected canned messages are retrieved from the first file using the message codes and communicated to terminals of designated receiving subscribers with the added parameters incorporated in the bodies of the canned messages.

The present invention also accommodates the addition of multiple response options to the canned messages selected by calling subscribers. The multiple response options are then included with the canned message codes sent to the network operation center. The selected canned messages are then retrieved from the first file and communicated to the designated receiving subscribers, together with the added multiple response options. The receiving parties then select the appropriate one of the multiple options for transmission back to the appropriate calling subscribers via the network operation center. The multiple response options may also be canned responses maintained in files at the network operation center and the subscriber terminals and, like the canned messages, have assigned response codes that are handled in the same manner as the message codes.

In accordance with another feature of the present invention, corresponding canned message files are also maintained at receiving subscriber terminals, such that the canned messages may be communicated to the receiving subscribers in message code form. The received message codes are then used to retrieve the appropriate canned messages and multiple response options from stored files, and displayed by the receiving party terminals.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention may be realized and attained by the method and apparatus particularly pointed out in the written description and the appended claims, as well as the accompanying drawings.

It will be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

The accompanying drawings are intended to provide a further understanding of the invention and are incorporated in and constitute a part of the specification, illustrate a preferred embodiment of the invention, and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating an electronic messaging network utilized in the practice of a preferred embodiment of the present invention;

FIG. 2 is a flow diagram illustrating the operation of a calling terminal in the network of FIG. 1 when sending a message in accordance with one embodiment of the invention;

FIG. 3 is a flow diagram illustrating the operation of the network operation center (NOC) in the network of FIG. 1 when relaying a message from the calling terminal to the receiving terminal in accordance with one embodiment of the invention;

FIG. 4 is a flow diagram illustrating the operation of the receiving terminal in the network of FIG. 1 when receiving a message in accordance with one embodiment of the invention;

FIG. 5 is a flow diagram illustrating the operations of the NOC and the calling terminal regarding a message response from the receiving terminal in accordance with one embodiment of the invention;

FIG. 6 is a flow diagram illustrating the network operation to update message files in the NOC and the calling/receiving terminals in accordance with one embodiment of the invention;

FIG. 7 is a schematic block diagram of the calling terminal of FIG. 1 in accordance with one embodiment of the invention; and

FIG. 8 is a schematic block diagram of the NOC of FIG. 1 in accordance with one embodiment of the invention.

Corresponding reference numerals refer to like parts throughout the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in FIG. 1, an electronic messaging network in accordance with a preferred embodiment of the present invention includes, a calling party terminal **10**, a network operation center (NOC) **12**, and a receiving party terminal **14**. It will be appreciated that, in practice, the network will include pluralities of calling and receiving party terminals. The calling party terminal **10** is connected to NOC **12** by a communications link **16**, which may take the form of land line (e.g., phonelines), a direct computer link, a wireless link, or a satellite link. NOC **12** is preferably connected to receiving party terminal **14** by a wireless communications link **18**. An example of a preferable network operation center that can be implemented in the practice of the present invention is the network operation center being developed by Destineer Corporation of Jackson, Miss. to handle their Nationwide Wireless Network (NWN) paging services. That NOC and a preferred two-way wireless network for implementing the present invention are described in U.S. patent application Ser. Number 08/124,216, the contents of which are hereby incorporated by reference.

In accordance with the present invention, calling terminal **10** includes a stored file of canned messages and associated canned message codes. Referring to the flow chart of FIG. **2**, when a calling party wishes to send a message to a receiving party at terminal **14** (FIG. **1**), the terminal retrieves the file of the canned messages from storage (step **22**) and displays the file to the calling party (step **24**). The calling party browses through the file to determine if the text of any of the canned messages is appropriate to convey the particular message that the calling party wishes to send to the receiving party. If an appropriate canned message is noted, the calling party selects this canned message (step **26**) using suitable pointing means, such as a mouse, cursor, etc. Based on the canned message selection, terminal **10** retrieves the associated canned message code from the file (step **28**).

If the selected canned message calls for the inclusion of a parameter(s), such as, for example, time, date, phone number, etc., the calling party enters a desired parameter(s), using an appropriate entry device, such as a keypad (step **30**). The calling terminal **10** compiles the retrieved message code associated with the selected canned message with an appropriate indicator code, calling and receiving terminal addresses, and added parameters, if any (step **32**). Terminal **10** then transmits the compiled canned message codes and parameters, if any, together with calling and receiving terminal addresses to NOC **12** over communications link **16** (FIG. **1**) (step **34**).

Assume, for example, that the canned message selected by the calling party in step **26** is "I am on my way home". This canned message does not call for the addition of parameters. The associated code for this canned message, may be, for example, the number **36** in ASCII code. To indicate that number **36** is a canned message code, the calling terminal **10** adds a suitable indicator code, such as ASCII control character **26**. Thus, the compiled canned message codes representing the canned message "I am on my way home" is transmitted in step **34** to NOC **12** simply as **<26>36**.

An example of a canned message calling for the inclusion of parameters may be "Call me at at phone number . This canned message calls for the calling party to fill in a desired time parameter and a phone number (step **30**). Suppose the calling party wishes the receiving party to call him at 4 PM at phone number 555-1212, the following canned message codes are then compiled by the calling terminal **10** and transmitted to NOC **12** as:

<26>18<29>4PM<29>5551212

where:

<26> is an ASCII control character serving as a canned message indicator,

18 is the code associated with canned message "Call me at at phone number ",

<29> is an ASCII control character serving as a parameter separator, and

4PM and 5551212 are the keyed-in parameters.

In addition to parameters, the present invention also provides for the addition of response options to certain canned messages typically posed as questions. To this end, terminal **10** maintains a file of canned response options. Then, if the calling party wishes to add response options to a selected canned message, the calling party accesses the canned response options file (step **36**), which is then displayed by terminal **10** (step **38**). The calling party browses through this file to determine which of the multiple response options are appropriate for addition to the selected canned message to be sent to the designated receiving party. The calling party selects the appropriate canned response options (step **40**) in the same manner as in the selection of the canned message, and the calling terminal **10** retrieves the particular codes associated with the selected canned response options (step **42**). If the selected canned response options call for the addition of parameters, such as time, the calling party enters the desired parameter(s) (step **44**). The selected canned response codes and parameters are then compiled with the canned message code and any canned message parameters (step **32**). The calling terminal then transmits the compiled canned message and response codes, together with any parameters to NOC **12** (step **34**).

By way of example, if the selected canned message is "Can we sign the document first thing tomorrow?" followed by selected canned response options "yes", "no", and "change to 1 PM", the canned message codes and parameters transmitted to NOC **12** would preferably be as follows:

<26>62<31><26>1<31><26>2<31><26>7<29>1PM

where:

<26> is an ASCII control character serving as the canned message and multiple response options indicator,

<29> is an ASCII control character serving as the parameter separator,

<31> is an ASCII control character unit separator used as a delineator separating multiple response options from the canned message and from each other.

62 is the code associated with canned message "Can we sign the document first thing tomorrow?",

1 is the code associated with canned response option "yes",

2 is the code associated with canned response option ¢no",

7 is the code associated with canned response option "change to", and

1PM is the keyed-in parameter.

The following example illustrates that, in some cases, parameters added to canned messages may be canned parameters also stored at the calling terminal **10**. Such canned parameters may be included in the canned message file, the canned multiple response options file, or in a separate canned parameter file stored at the calling terminal. If canned parameters are stored in separate file from the canned message file and the canned multiple response option file, parameter selection by the calling party is achieved using a separate subroutine corresponding to the subroutine used to select canned multiple response options.

To illustrate this case, consider the canned message "Can we meet for lunch at or ?", and the selected multiple response options are "noon", "12:30" or "call me". The compilation of codes and parameters transmitted to NOC **12** would then be:

<26>10<26>15<29>12:30<31><26>15<31>12:30<31><26>8

where:

<26> is the ASCII control character serving as the canned message and multiple response options indicator.

<31> is the ASCII control character serving as a delineator for separating the canned message and multiple response options from each other.

<29> is the parameter separator.

10 is the code associated with canned message "Can we meet for lunch at or ?",

8 is the code associated with the canned parameter and response option "call me".

15 is the code associated with canned parameter and response option "noon", and

12:30 is the keyed-in parameter.

FIG. **3** illustrates the operation of NOC **12** in accordance with one embodiment of the invention. The canned message/response option codes and any parameters transmitted by calling terminal **10** over communications link **16** are received by a NOC receiver (step **50**). From the calling and receiving terminal addresses included with the canned message/response option codes, the identities of the calling and receiving terminals **10** and **14** (FIG. **1**) are determined (step **52**). These determinations are stored in memory (step **54**). From the identity of the receiving terminal **14**, NOC **12** determines if receiving terminal **14** is capable of accepting this particular canned message/response option. NOC **12** is programmed to make this determination for several reasons. For example, NOC **12** needs to know whether the designated receiving party is a member of a messaging group or organization that has established a file of customized canned messages and response options and thus has access to a terminal in which files of the customized canned messages/response options and associated codes are stored in memory. Also, the files of canned messages may include both standard, network-wide canned messages and canned messages customized for a particular group. Thus, NOC **12** must determine whether the designated receiving party terminal can accept only standard canned messages/response options, only customized canned messages/response options or both. In any case, NOC **12** maintains multiple files of canned messages and canned response options, including files identical to those stored at calling terminal **10** and possibly also at receiving terminal **14**.

Based on this determination, NOC **12** determines whether the designated receiving party terminal can accept the canned message in code form, i.e., as received from the sending party terminal, or whether the canned message must be transmitted in full text to the receiving party terminal (step **56**). If the designated receiving terminal can accept canned message/response option codes, they are transmitted to the designated receiving party terminal in the same form as received from the sending party terminal (step **58**). If the designated receiving party terminal is not equipped to process canned message/response option codes, NOC **12** uses the canned message/response option codes received from the calling party terminal **10** to retrieve from the appropriate file(s) the text of the associated canned message and multiple response options, if any, from a memory (step **60**). The text of the canned message and response options, together with parameters, is then transmitted in standard message code format by NOC **12** to the receiving terminal (step **58**).

FIG. **4** illustrates the operation of receiving terminal **14** upon receiving a message transmission, according to an embodiment of the invention. Initially, terminal **14** receives the canned message/response option transmission from NOC **12** (step **70**). The receiving terminal then determines whether the canned message/response option reception is in message text or canned message code (step **72**). If in text, the canned message and any response options are displayed to the receiving party (step **74**). Alternatively, if the reception is in canned message/response option codes, the receiving party terminal **14**, using these codes, retrieves the associated canned messages, canned response options, and canned parameters from the various stored files identical to those stored at calling terminal **10** and NOC **12** (step **76**). The retrieved canned message, response options, and parameters, if any, are displayed in text form for viewing by the receiving party terminal (step **74**).

If any response options are included with the canned message, the receiving party selects the appropriate response option (step **78**), which is then transmitted by the receiving terminal back to NOC **12** (step **80**). Since a typical response option is very short, it can be efficiently transmitted back to NOC **12** in ASCII text code format. However, it will be appreciated that the receiving terminal may be so equipped that the code associated with the selected response, as received from NOC **12**, may simply be transmitted back to the NOC **12** in response option code. Alternatively, the receiving terminal may be equipped with keys positioned in associated relation with the display of the multiple response options. Depression of any one of the keys selects the associated one of the response options, and a unique, simple code assigned to the depressed key is transmitted back to the NOC **12**.

FIG. **5** illustrates the operation of the NOC and the calling terminal in relaying a selected response option from the receiving terminal to the calling terminal in accordance with an embodiment of the invention. Initially, NOC **12** receives the selected response option transmitted by the receiving party terminal **14** (step **82**). NOC then determines whether the received response option is in ASCII text code format or in canned response option code (step **83**). If in text code, NOC simply relays the selected response option to the calling party terminal **10** (step **86**). If the selected response

option is received from the receiving party terminal in canned response option code, a decision is made whether to transmit the selected response option to the calling party terminal in canned response code or in ASCII text code (step **84**). If the former, the canned response code is simply transmitted to the calling party terminal **10** as received from the receiving terminal (step **86**). If in ASCII text code, NOC **12** is programmed to access its stored canned multiple response option file and, using the received response option code, retrieve the selected canned response option text (step **88**), which is then transmitted in ASCII text code to the calling party terminal **10** (step **86**).

The selected response option relayed by NOC **12** is received by calling terminal **10** (step **90**), which then determines whether the response option is in text code format or canned response code (step **92**). If in text code, the response option is decoded and displayed to the calling party (step **94**). If the selected response option is in code form, the calling terminal simply accesses its stored response options file and, using the received response option code, retrieves the associated response option text (step **96**), which is then displayed to the calling party (step **94**).

NOC **12**, as part of its system responsibilities, is capable of updating the canned message, canned response option, and canned parameter files. FIG. **6** illustrates the procedure for updating these files in accordance with one embodiment of the invention. NOC **12** updates the files (step **100**) and stores the canned file updates in the NOC memory (step **102**). NOC **12** then transmits the updated canned files to all of the terminals in a particular two-way messaging group, including calling terminal **10** and receiving terminal **14** (step **104**). The canned file updates are received by the messaging group terminals (step **106**) and stored in the terminal memories (step **108**). It will be appreciated that updated canned files may be created at one of the terminals and transmitted to NOC **12**, which then operates to disseminate the file updates to other terminals of the messaging group.

As indicated above, the calling terminal **10** and NOC **12** are disclosed more fully in the cited application Ser. No. 08/124,216 and preferably comprise the structure disclosed in this application. For illustrative purposes, applicants include FIGS. **7** and **8** to illustrate preferred structure in block diagram form.

A preferred structure of calling terminal **10** appropriate for practicing the present invention is illustrated in FIG. **7**. As shown, the calling terminal **10** includes a CPU **110**, a ROM **112** to store an application program for controlling terminal operation in accordance with the present invention, a RAM **114** to store the canned message/response options/parameter files and associated codes, and a compiler **116** for assembling the message/response options/parameter codes, indicator and separator codes, and address codes into a message under the control of the application program and CPU **110**. Calling terminal **10** also includes an input/output (I/O) device **118** selectively connecting a transmitter **120** and a receiver **122** into the terminal circuitry. A coder/decoder **124** encodes text messages transmitted by the terminal to NOC **12** and decodes text messages received from NOC, including selected response options in text code received from a receiving terminal **14**. A terminal keypad **126** is used by the calling party to designate a receiving party (typically by phone number), to retrieve canned message/response options/parameter files from RAM **114**, to scroll through the displayed files, and to select the canned message/response options/parameter(s) appropriate for sending to the receiving party. Display **128** also displays selected response options from receiving parties relayed by NOC **12**. These terminal components are interconnected in operative relation by a system bus **130**. While FIG. **7** illustrates the operative structural configuration of calling terminal **10**, it will be appreciated that, preferably, receiving terminal **14** is structurally configured in the same manner.

FIG. **8** illustrates the structure of NOC **12** in accordance with one embodiment of the invention. As shown, NOC **12** includes a CPU **131** connected by a system bus **132** to an input/output (I/O) device **134**, to which a transmitter **136** and a receiver **138** are connected. A ROM **139** stores an application program appropriate for controlling NOC **12** in accordance with the present invention. A RAM **140** stores sets of canned messages/response options/parameters files for various messaging groups, including the group to which terminals **10** and **14** belong. Thus, RAM **140** stores a set of canned files identical to the set stored in the RAMs of terminals **10** and **14**. NOC **12** also includes a memory **142** for storing the identities of the calling and receiving terminals involved in a message that is being relayed, as well as the messages. Message storage is preferred in case receiving terminals do not receive an original message transmission and, thus, retransmission is required. Retention of terminal identities is required so that selected response options received from receiving terminals are correctly relayed to the appropriate calling terminals.

Finally, NOC **12** also includes a message compiler **144** that may be required for message formatting and for adding appropriate codes, such as terminal address codes not included in the messages being relayed by the NOC. This is particularly so in the case of a selected response option which typically does not include the calling terminal address. NOC then refers to the calling terminal identify stored in memory **142** pursuant to determining the calling terminal address that must be included in the transmission of the selected response option, if it is to be relayed to the correct calling terminal.

It will be apparent to those skilled in the art that various modifications and variations can be made in the method of the present invention without departing from the spirit of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal;

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

2. The method defined in claim **1**, further including the step of updating the first and second canned message files.

3. The method defined in claim 1, further including the step of displaying the selected canned message at the second terminal.

4. The method defined in claim 3, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the communicating step including the step of communicating the added parameter with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

5. The method defined in claim 3, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the communicating step including the step of communicating the added multiple response options with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

6. The method defined in claim 5, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message code and the multiple response options;

the communicating step further including the step of communicating the selected canned message, multiple response options, and added parameter to the second terminal; and

the displaying step at the second terminal further including the step of displaying the selected canned message, added parameter, and multiple response options.

7. The method defined in claim 6, further including the step of correspondingly updating the first and second canned message files.

8. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber, a second file of canned messages and message codes corresponding to the first file;

maintaining, at a second terminal of a second subscriber, a third file of canned messages and message codes corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to the second terminal;

sending the message code assigned to the selected canned message to the network operation center;

relaying the message code assigned to the selected canned message from the network operation center to the second terminal;

retrieving the selected canned message from the third file using the assigned message code received from the network operation center; and

displaying the selected canned message retrieved from the third file.

9. The method defined in claim 8, further including the step of updating the first, second, and third canned message files.

10. The method defined in claim 8, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the relaying step including the step of relaying the added parameter with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

11. The method defined in claim 8, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the relaying step including the step of relaying the added multiple response options with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

12. The method defined in claim 11, further including the steps of:

maintaining at the network operation center, a fourth file of canned multiple response options and response codes respectively assigned to the canned multiple response options;

maintaining at the first terminal, a fifth file of canned multiple response options and response codes corresponding to the fourth file; and

maintaining, at the second terminal, a sixth file of canned multiple response options and response codes corresponding to the fourth file;

wherein the selecting step further includes

the step of selecting appropriate canned multiple response options from the fifth file;

the sending step further includes the step of sending the response codes assigned to the selected multiple

response options together with the message code to the network operation center;

the relaying step further includes the step of relaying the message and response codes from the network operation center to the second terminal; and

the retrieving step further includes the step of retrieving the selected canned multiple response options from the sixth file using the assigned response codes received from the network operation center.

13. The method defined in claim **12**, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message and response codes; the relaying step further including the step of relaying the added parameter with the assigned message and response codes to the second terminal, and

the displaying step at the second terminal further including the step of displaying the selected canned message and multiple response options with the added parameter incorporated therein.

14. The method defined in claim **13**, further including the step of correspondingly updating the first through sixth files.

15. A network operation center for use in an electronic messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

means responsive to the received message code for retrieving from the memory the canned message assigned thereto;

means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form; and

a transmitter for transmitting the retrieved canned message in text form or message code form in response to the determining means.

16. The network operation center defined in claim **15**, the determining means routing the received message code directly to the transmitter upon determination that the receiving terminal can receive the canned message in message code form.

17. The network operation center defined in claim **15**, further including means for updating the canned message file stored in the memory and a corresponding canned message file stored in a memory in at least the calling terminal.

18. The network operation center defined in claim **15**, wherein the memory stores a separate file of canned multiple response options having response codes respectively assigned thereto;

said responsive means further including means for retrieving from the memory those canned multiple response options assigned to response codes received from the calling terminal by the receiver, the retrieved canned message and multiple response options being transmitted to the receiving terminal by the transmitter; and

the network operation center further including means for routing a selected canned multiple response option received from the receiving terminal to the calling terminal in either text or response code form.

19. A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and the file of canned multiple response options from the memory;

a display for displaying the canned messages and the multiple response options in the retrieved file;

means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message and the response code assigned to the at least one multiple response option over a communications link of the network.

20. The message terminal defined in claim **19**, further including means for adding parameters to the selected canned message for inclusion with the assigned message code transmitted over the communications link.

21. A message terminal for use in an electronic messaging network, comprising::

a memory storing a file of canned messages, and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and message codes from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal and for selecting multiple response options appropriate for the selected canned message;

a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.: 5,894,506

DATED: April 13, 1999

INVENTOR: Gregory J. Pinter

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

Claim 5, column 9, line 34, after "work" insert --operation center;-- then start a new indented line beginning with "routing".

Signed and Sealed this

Fourteenth Day of September, 1999

Attest:

Q. TODD DICKINSON

Attesting Officer

Acting Commissioner of Patents and Trademarks

PATENT APPLICATION SERIAL NO. 08/708696

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U.S. PATENT APPLICATION

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TITLE

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES
BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

This is to certify that annexed hereto is a true copy from the records of the United States Patent and Trademark Office of the application which is identified above.

By authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

Date Certifying Officer

08/708696

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September 5, 1996

ATTORNEY DOCKET NO. 03680.0132

Box Patent Application
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Re: New U.S. Patent Application
Title: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK
Inventor: Gregory J. Pinter

Sir:

We enclose the following papers for filing in the United States Patent and Trademark Office in connection with the above patent application:

1. Application - 28 pages, including 4 independent claims and 21 claims total;
2. Drawings - 7 sheets of informal drawings;
3. Declaration and Power of Attorney;
4. Recordation Form Cover Sheet and Assignment to Mobile Telecommunication Technologies; and
5. A check for $890.00, representing a $750.00 filing fee, an additional claims fee of $100.00, and $40.00 for recordation of the Assignment.

Please accord this application a serial number and filing date and record and return the Assignment to the undersigned.

The Commissioner is hereby authorized to charge any additional filing fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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RAC/loh
Enclosures

Attorney Docket No.: 3680.0132

APPLICATION FOR

UNITED STATES LETTERS PATENT

OF

GREGORY J. PINTER

FOR

METHOD AND APPARATUS

FOR GENERATING AND COMMUNICATING

MESSAGES BETWEEN SUBSCRIBERS

TO AN ELECTRONIC MESSAGING NETWORK

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850-101 08/708646

FIELD OF THE INVENTION

The present invention relates to electronic information services and more particularly to the exchange of electronic messages among subscribers to an electronic messaging network.

BACKGROUND OF THE INVENTION

As more and more people sign on to information networks, congestion of the communications links comprising these networks, both wireline and wireless, and the consequential transmission delays become increasingly significant problems. Faster transmission rates, data compression techniques, and more efficient spectrum utilization are among the approaches that have been considered, and to some extent implemented, to increase the capacities of communications links.

One area of particularly rapid growth is the electronic messaging field. More and more people are moving about with portable devices, such as laptop computers and portable digital devices, which can be economically equipped to function as message sending/receiving terminals. Moreover, wireless paging hardware, software, and support services are being upgraded to accommodate two-way messaging. That is, portable pagers are being developed not only to receiving paging messages, but also to send back a signal acknowledging receipt of a paging message or even a message answering the received paging message. While such upgraded paging services are highly desirable, they can severely strain the capacity of wireless paging channels.

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SUMMARY OF THE INVENTION

It is accordingly a principle object of the present invention to provide an improved electronic messaging network and method, wherein communications link capacity is conserved by transmitting certain messages with an improved degree of message compression.

Particularly in the case of radio paging, many paging messages consists of a relatively small number of common phrases, such as "I am on the way home", "I am working late", "Can we meet for lunch", etc. This being the case, such commonly used phrases can be treated as "canned" messages that can be replaced by short message codes as simple as, for example, one or several ASCII characters.

The present invention takes advantage of this fact by providing, in accordance with one preferred embodiment, a method of communicating messages between subscribers of an electronic messaging network, comprising the steps of maintaining, at a network operation center, a first file of canned messages individually retrievable using unique, abbreviated message codes respectively assigned to the canned messages; maintaining, at a terminal of a calling subscriber, a second file of canned messages corresponding to the first file; selecting an appropriate canned message from the second file for transmission to a terminal of a designated receiving subscriber; sending the message code assigned to the selected canned message to the network operation center; retrieving the selected canned message from the first file using the message code received from the

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calling subscriber terminal; and communicating the selected canned message to the designated receiving party terminal where it is displayed.

In accordance with a feature of the present invention, the first and second canned message files may be updated, either by the network operation center or from a subscriber terminal in order to customize the canned messages according to the needs of a particular group or organization of subscribers. In addition, the canned messages may be phrased to accept the addition of one or more parameters, which are entered at the calling subscriber terminal and then included with the message codes sent to the network operation center. The selected canned messages are retrieved from the first file using the message codes and communicated to terminals of designated receiving subscribers with the added parameters incorporated in the bodies of the canned messages.

The present invention also accommodates the addition of multiple response options to the canned messages selected by calling subscribers. The multiple response options are then included with the canned message codes sent to the network operation center. The selected canned messages are then retrieved from the first file and communicated to the designated receiving subscribers, together with the added multiple response options. The receiving parties then select the appropriate one of the multiple options for transmission back to the appropriate calling subscribers via the network operation center. The multiple response options may also be canned responses

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maintained in files at the network operation center and the subscriber terminals and, like the canned messages, have assigned response codes that are handled in the same manner as the message codes.

In accordance with another feature of the present invention, corresponding canned message files are also maintained at receiving subscriber terminals, such that the canned messages may be communicated to the receiving subscribers in message code form. The received message codes are then used to retrieve the appropriate canned messages and multiple response options from stored files, and displayed by the receiving party terminals.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention may be realized and attained by the method and apparatus particularly pointed out in the written description and the appended claims, as well as the accompanying drawings.

It will be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

The accompanying drawings are intended to provide a further understanding of the invention and are incorporated in and constitute a part of the specification, illustrate a

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preferred embodiment of the invention, and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram illustrating an electronic messaging network utilized in the practice of a preferred embodiment of the present invention;

Fig. 2 is a flow diagram illustrating the operation of a calling terminal in the network of Fig. 1 when sending a message in accordance with one embodiment of the invention;

Fig. 3 is a flow diagram illustrating the operation of the network operation center (NOC) in the network of Fig. 1 when relaying a message from the calling terminal to the receiving terminal in accordance with one embodiment of the invention;

Fig. 4 is a flow diagram illustrating the operation of the receiving terminal in the network of Fig. 1 when receiving a message in accordance with one embodiment of the invention;

Fig. 5 is a flow diagram illustrating the operations of the NOC and the calling terminal regarding a message response from the receiving terminal in accordance with one embodiment of the invention;

Fig. 6 is a flow diagram illustrating the network operation to update message files in the NOC and the calling/receiving terminals in accordance with one embodiment of the invention;

Fig. 7 is a schematic block diagram of the calling terminal of Fig. 1 in accordance with one embodiment of the invention; and

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Fig. 8 is a schematic block diagram of the NOC of Fig. 1 in accordance with one embodiment of the invention.

Corresponding reference numerals refer to like parts throughout the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in Fig. 1, an electronic messaging network in accordance with a preferred embodiment of the present invention includes, a calling party terminal 10, a network operation center (NOC) 12, and a receiving party terminal 14. It will be appreciated that, in practice, the network will include pluralities of calling and receiving party terminals. The calling party terminal 10 is connected to NOC 12 by a communications link 16, which may take the form of land line (e.g., phonelines), a direct computer link, a wireless link, or a satellite link. NOC 12 is preferably connected to receiving party terminal 14 by a wireless communications link 18. An example of a preferable network operation center that can be implemented in the practice of the present invention is the network operation center being developed by Destineer Corporation of Jackson, MS to handle their Nationwide Wireless Network (NWN) paging services. That NOC and a preferred two-way wireless network for implementing the present invention are described in U.S. Patent Application Serial Number 08/124,216, the contents of which are hereby incorporated by reference.

In accordance with the present invention, calling terminal 10 includes a stored file of canned messages and associated canned message codes. Referring to the flow chart of Fig. 2,

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when a calling party wishes to send a message to a receiving party at terminal 14 (Fig. 1), the terminal retrieves the file of the canned messages from storage (step 22) and displays the file to the calling party (step 24). The calling party browses through the file to determine if the text of any of the canned messages is appropriate to convey the particular message that the calling party wishes to send to the receiving party. If an appropriate canned message is noted, the calling party selects this canned message (step 26) using suitable pointing means, such as a mouse, cursor, etc. Based on the canned message selection, terminal 10 retrieves the associated canned message code from the file (step 28).

If the selected canned message calls for the inclusion of a parameter(s), such as, for example, time, date, phone number, etc., the calling party enters a desired parameter(s), using an appropriate entry device, such as a keypad (step 30). The calling terminal 10 compiles the retrieved message code associated with the selected canned message with an appropriate indicator code, calling and receiving terminal addresses, and added parameters, if any (step 32). Terminal 10 then transmits the compiled canned message codes and parameters, if any, together with calling and receiving terminal addresses to NOC 12 over communications link 16 (Fig. 1) (step 34).

Assume, for example, that the canned message selected by the calling party in step 26 is "I am on my way home". This canned message does not call for the addition of parameters. The associated code for this canned message, may be, for

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example, the number 36 in ASCII code. To indicate that number 36 is a canned message code, the calling terminal 10 adds a suitable indicator code, such as ASCII control character 26. Thus, the compiled canned message codes representing the canned message "I am on my way home" is transmitted in step 34 to NOC 12 simply as <26>36.

An example of a canned message calling for the inclusion of parameters may be "Call me at _____ at phone number _____." This canned message calls for the calling party to fill in a desired time parameter and a phone number (step 30). Suppose the calling party wishes the receiving party to call him at 4 PM at phone number 555-1212, the following canned message codes are then compiled by the calling terminal 10 and transmitted to NOC 12 as:

<26>18<29>4PM<29>5551212

where:

<26> is an ASCII control character serving as a canned message indicator,

18 is the code associated with canned message "Call me at _____ at phone number _____",

<29> is an ASCII control character serving as a parameter separator, and

4PM and 5551212 are the keyed-in parameters.

In addition to parameters, the present invention also provides for the addition of response options to certain canned messages typically posed as questions. To this end, terminal 10 maintains a file of canned response options. Then, if the

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calling party wishes to add response options to a selected canned message, the calling party accesses the canned response options file (step 36), which is then displayed by terminal 10 (step 38). The calling party browses through this file to determine which of the multiple response options are appropriate for addition to the selected canned message to be sent to the designated receiving party. The calling party selects the appropriate canned response options (step 40) in the same manner as in the selection of the canned message, and the calling terminal 10 retrieves the particular codes associated with the selected canned response options (step 42). If the selected canned response options call for the addition of parameters, such as time, the calling party enters the desired parameter(s) (step 44). The selected canned response codes and parameters are then compiled with the canned message code and any canned message parameters (step 32). The calling terminal then transmits the compiled canned message and response codes, together with any parameters to NOC 12 (step 34).

By way of example, if the selected canned message is "Can we sign the document first thing tomorrow?" followed by selected canned response options "yes", "no", and "change to 1PM", the canned message codes and parameters transmitted to NOC 12 would preferably be as follows:

<26>62<31><26>1<31><26>2<31><26>7<29>1PM

where:

<26> is an ASCII control character serving as the canned message and multiple response options indicator,

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<29> is an ASCII control character serving as the parameter separator,

<31> is an ASCII control character unit separator used as a delineator separating multiple response options from the canned message and from each other,

62 is the code associated with canned message "Can we sign the document first thing tomorrow?",

1 is the code associated with canned response option "yes",

2 is the code associated with canned response option "no",

7 is the code associated with canned response option "change to", and

1PM is the keyed-in parameter.

The following example illustrates that, in some cases, parameters added to canned messages may be canned parameters also stored at the calling terminal 10. Such canned parameters may be included in the canned message file, the canned multiple response options file, or in a separate canned parameter file stored at the calling terminal. If canned parameters are stored in a separate file from the canned message file and the canned multiple response option file, parameter selection by the calling party is achieved using a separate subroutine corresponding to the subroutine used to select canned multiple response options.

To illustrate this case, consider the canned message "Can we meet for lunch at ____ or _____?", and the selected multiple

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response options are "noon", "12:30" or "call me". The compilation of codes and parameters transmitted to NOC 12 would then be:

<26>10<26>15<29>12:30<31><26>15<31>12:30<31><26>8

where:

<26> is the ASCII control character serving as the canned message and multiple response options indicator,

<31> is the ASCII control character serving as a delineator for separating the canned message and multiple response options from each other,

<29> is the parameter separator,

10 is the code associated with canned message "Can we meet for lunch at _____ or _____?",

8 is the code associated with the canned parameter and response option "call me",

15 is the code associated with canned parameter and response option "noon", and

12:30 is the keyed-in parameter.

Fig. 3 illustrates the operation of NOC 12 in accordance with one embodiment of the invention. The canned message/response option codes and any parameters transmitted by calling terminal 10 over communications link 16 are received by a NOC receiver (step 50). From the calling and receiving terminal addresses included with the canned message/response option codes, the identities of the calling and receiving terminals 10 and 14 (Fig. 1) are determined (step 52). These determinations are stored in memory (step 54). From the identity of the

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receiving terminal 14, NOC 12 determines if receiving terminal 14 is capable of accepting this particular canned message/ response option. NOC 12 is programmed to make this determination for several reasons. For example, NOC 12 needs to know whether the designated receiving party is a member of a messaging group or organization that has established a file of customized canned messages and response options and thus has access to a terminal in which files of the customized canned messages/response options and associated codes are stored in memory. Also, the files of canned messages may include both standard, network-wide canned messages and canned messages customized for a particular group. Thus, NOC 12 must determine whether the designated receiving party terminal can accept only standard canned messages/response options, only customized canned messages/response options or both. In any case, NOC 12 maintains multiple files of canned messages and canned response options, including files identical to those stored at calling terminal 10 and possibly also at receiving terminal 14.

Based on this determination, NOC 12 determines whether the designated receiving party terminal can accept the canned message in code form, i.e., as received from the sending party terminal, or whether the canned message must be transmitted in full text to the receiving party terminal (step 56). If the designated receiving terminal can accept canned message/response option codes, they are transmitted to the designated receiving party terminal in the same form as received from the sending party terminal (step 58). If the designated receiving party

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terminal is not equipped to process canned message/response option codes, NOC 12 uses the canned message/response option codes received from the calling party terminal 10 to retrieve from the appropriate file(s) the text of the associated canned message and multiple response options, if any, from a memory (step 60). The text of the canned message and response options, together with parameters, is then transmitted in standard message code format by NOC 12 to the receiving terminal (step 58).

Fig. 4 illustrates the operation of receiving terminal 14 upon receiving a message transmission, according to an embodiment of the invention. Initially, terminal 14 receives the canned message/response option transmission from NOC 12 (step 70). The receiving terminal then determines whether the canned message/response option reception is in message text or canned message code (step 72). If in text, the canned message and any response options are displayed to the receiving party (step 74). Alternatively, if the reception is in canned message/response option codes, the receiving party terminal 14, using these codes, retrieves the associated canned messages, canned response options, and canned parameters from the various stored files identical to those stored at calling terminal 10 and NOC 12 (step 76). The retrieved canned message, response options, and parameters, if any, are displayed in text form for viewing by the receiving party terminal (step 74).

If any response options are included with the canned message, the receiving party selects the appropriate response

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option (step 78), which is then transmitted by the receiving terminal back to NOC 12 (step 80). Since a typical response option is very short, it can be efficiently transmitted back to NOC 12 in ASCII text code format. However, it will be appreciated that the receiving terminal may be so equipped that the code associated with the selected response, as received from NOC 12, may simply be transmitted back to the NOC 12 in response option code. Alternatively, the receiving terminal may be equipped with keys positioned in associated relation with the display of the multiple response options. Depression of any one of the keys selects the associated one of the response options, and a unique, simple code assigned to the depressed key is transmitted back to the NOC 12.

Fig. 5 illustrates the operation of the NOC and the calling terminal in relaying a selected response option from the receiving terminal to the calling terminal in accordance with an embodiment of the invention. Initially, NOC 12 receives the selected response option transmitted by the receiving party terminal 14 (step 82). NOC then determines whether the received response option is in ASCII text code format or in canned response option code (step 83). If in text code, NOC simply relays the selected response option to the calling party terminal 10 (step 86). If the selected response option is received from the receiving party terminal in canned response option code, a decision is made whether to transmit the selected response option to the calling party terminal in canned response code or in ASCII text code (step 84). If the former, the canned

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response code is simply transmitted to the calling party terminal 10 as received from the receiving terminal (step 86). If in ASCII text code, NOC 12 is programmed to access its stored canned multiple response option file and, using the received response option code, retrieve the selected canned response option text (step 88), which is then transmitted in ASCII text code to the calling party terminal 10 (step 86).

The selected response option relayed by NOC 12 is received by calling terminal 10 (step 90), which then determines whether the response option is in text code format or canned response code (step 92). If in text code, the response option is decoded and displayed to the calling party (step 94). If the selected response option is in code form, the calling terminal simply accesses its stored response options file and, using the received response option code, retrieves the associated response option text (step 96), which is then displayed to the calling party (step 94).

NOC 12, as part of its system responsibilities, is capable of updating the canned message, canned response option, and canned parameter files. Fig. 6 illustrates the procedure for updating these files in accordance with one embodiment of the invention. NOC 12 updates the files (step 100) and stores the canned file updates in the NOC memory (step 102). NOC 12 then transmits the updated canned files to all of the terminals in a particular two-way messaging group, including calling terminal 10 and receiving terminal 14 (step 104). The canned file updates are received by the messaging group terminals (step 106)

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and stored in the terminal memories (step 108). It will be appreciated that updated canned files may be created at one of the terminals and transmitted to NOC 12, which then operates to disseminate the file updates to other terminals of the messaging group.

As indicated above, the calling terminal 10 and NOC 12 are disclosed more fully in the cited application Serial No. 08/124,216 and preferably comprise the structure disclosed in this application. For illustrative purposes, applicants include Figs. 7 and 8 to illustrate preferred structure in block diagram form.

A preferred structure of calling terminal 10 appropriate for practicing the present invention is illustrated in Fig. 7. As shown, the calling terminal 10 includes a CPU 110, a ROM 112 to store an application program for controlling terminal operation in accordance with the present invention, a RAM 114 to store the canned message/response options/parameter files and associated codes, and a compiler 116 for assembling the message/response options/parameter codes, indicator and separator codes, and address codes into a message under the control of the application program and CPU 110. Calling terminal 10 also includes an input/output (I/O) device 118 selectively connecting a transmitter 120 and a receiver 122 into the terminal circuitry. A coder/decoder 124 encodes text messages transmitted by the terminal to NOC 12 and decodes text messages received from NOC, including selected response options in text code received from a receiving terminal 14. A terminal keypad

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126 is used by the calling party to designate a receiving party (typically by phone number), to retrieve canned message/response options/ parameter files from RAM 114, to scroll through the displayed files, and to select the canned message/response options/ parameter(s) appropriate for sending to the receiving party. Display 128 also displays selected response options from receiving parties relayed by NOC 12. These terminal components are interconnected in operative relation by a system bus 130. While Fig. 7 illustrates the operative structural configuration of calling terminal 10, it will be appreciated that, preferably, receiving terminal 14 is structurally configured in the same manner.

Fig. 8 illustrates the structure of NOC 12 in accordance with one embodiment of the invention. As shown, NOC 12 includes a CPU 131 connected by a system bus 132 to an input/output (I/O) device 134, to which a transmitter 136 and a receiver 138 are connected. A ROM 139 stores an application program appropriate for controlling NOC 12 in accordance with the present invention. A RAM 140 stores sets of canned messages/response options/ parameters files for various messaging groups, including the group to which terminals 10 and 14 belong. Thus, RAM 140 stores a set of canned files identical to the set stored in the RAMs of terminals 10 and 14. NOC 12 also includes a memory 142 for storing the identities of the calling and receiving terminals involved in a message that is being relayed, as well as the messages. Message storage is preferred in case receiving terminals do not receive an original message transmission and,

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thus, retransmission is required. Retention of terminal identities is required so that selected response options received from receiving terminals are correctly relayed to the appropriate calling terminals.

Finally, NOC 12 also includes a message compiler 144 that may be required for message formatting and for adding appropriate codes, such as terminal address codes not included in the messages being relayed by the NOC. This is particularly so in the case of a selected response option which typically does not include the calling terminal address. NOC then refers to the calling terminal identify stored in memory 142 pursuant to determining the calling terminal address that must be included in the transmission of the selected response option, if it is to be relayed to the correct calling terminal.

It will be apparent to those skilled in the art that various modifications and variations can be made in the method of the present invention without departing from the spirit of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

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WHAT IS CLAIMED IS:

1. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal; and

communicating the selected canned message to the second terminal.

2. The method defined in claim 1, further including the step of updating the first and second canned message files.

3. The method defined in claim 1, further including the step of displaying the selected canned message at the second terminal.

4. The method defined in claim 3, further including the step of adding a parameter to the canned message selected from the second file;

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the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the communicating step including the step of communicating the added parameter with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

5. The method defined in claim 3, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the communicating step including the step of communicating the added multiple response options with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

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routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

6. The method defined in claim 5, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message code and the multiple response options;

the communicating step further including the step of communicating the selected canned message, multiple response options, and added parameter to the second terminal; and

the displaying step at the second terminal further including the step of displaying the selected canned message, added parameter, and multiple response options.

7. The method defined in claim 6, further including the step of correspondingly updating the first and second canned message files.

8. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber, a second file of canned messages and message codes corresponding to the first file;

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maintaining, at a second terminal of a second subscriber, a third file of canned messages and message codes corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to the second terminal;

sending the message code assigned to the selected canned message to the network operation center;

relaying the message code assigned to the selected canned message from the network operation center to the second terminal;

retrieving the selected canned message from the third file using the assigned message code received from the network operation center; and

displaying the selected canned message retrieved from the third file.

9. The method defined in claim 8, further including the step of updating the first, second, and third canned message files.

10. The method defined in claim 8, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the relaying step including the step of relaying the added parameter with the assigned message code to the second terminal; and

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the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

11. The method defined in claim 8, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the relaying step including the step of relaying the added multiple response options with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

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12. The method defined in claim 11, further including the steps of:

maintaining at the network operation center, a fourth file of canned multiple response options and response codes respectively assigned to the canned multiple response options;

maintaining at the first terminal, a fifth file of canned multiple response options and response codes corresponding to the fourth file; and

maintaining, at the second terminal, a sixth file of canned multiple response options and response codes corresponding to the fourth file;

wherein the selecting step further includes

the step of selecting appropriate canned multiple response options from the fifth file;

the sending step further includes the step of sending the response codes assigned to the selected multiple response options together with the message code to the network operation center;

the relaying step further includes the step of relaying the message and response codes from the network operation center to the second terminal; and

the retrieving step further includes the step of retrieving the selected canned multiple response options from the sixth file using the assigned response codes received from the network operation center.

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13. The method defined in claim 12, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message and response codes; the relaying step further including the step of relaying the added parameter with the assigned message and response codes to the second terminal, and

the displaying step at the second terminal further including the step of displaying the selected canned message and multiple response options with the added parameter incorporated therein.

14. The method defined in claim 13, further including the step of correspondingly updating the first through sixth files.

~~15. A network operation center for use in an electronic~~ messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

means responsive to the received message code for retrieving from the memory the canned message assigned thereto; and

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a transmitter for transmitting the retrieved canned message in text form to a receiving terminal included in the network.

16. The network operation center defined in claim 15, further including means for determining whether to transmit the canned message to the receiving terminal in text or message code form, said determining means routing the received message code directly to the transmitter upon determination to transit the canned message in code form to the receiving terminal.

17. The network operation center defined in claim 15, further including means for updating the canned message file stored in the memory and a corresponding canned message file stored in a memory in at least the calling terminal.

18. The network operation center defined in claim 15, wherein the memory stores a separate file of canned multiple response options having response codes respectively assigned thereto;

said responsive means further including means for retrieving from the memory those canned multiple response options assigned to response codes received from the calling terminal by the receiver, the retrieved canned message and multiple response options being transmitted to the receiving terminal by the transmitter; and

the network operation center further including means for routing a selected canned multiple response option received from the receiving terminal to the calling terminal in either text or response code form.

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19. A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto;

means for retrieving the file from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

20. The message terminal defined in claim 19, further including means for adding parameters to the selected canned message for inclusion with the assigned message code transmitted over the communications link.

21. The message terminal defined in claim 20, wherein the memory further stores a file of canned multiple response options and response codes respectively assigned thereto for retrieval by the retrieving means and display by the display;

the selecting means further including means for selecting multiple response options appropriate for the selected canned message; and

the message terminal further comprising a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter.

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ABSTRACT OF THE DISCLOSURE 08/708696

An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center. The receiving terminal retrieves the selected canned message from its memory using the received message code for display to the receiving party. Files of canned responses and associated response codes may also be stored in the memories at the terminals and network operation center to allow the exchange of selected canned response options in conjunction with canned messages to be in response code form.

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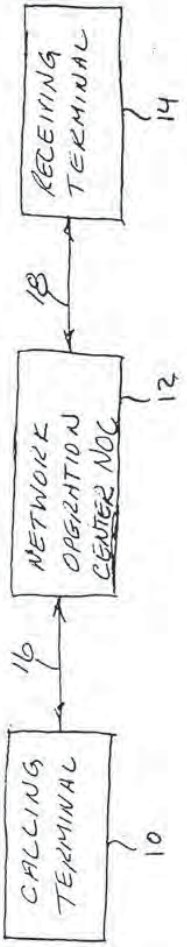


Fig 1

8 Figures

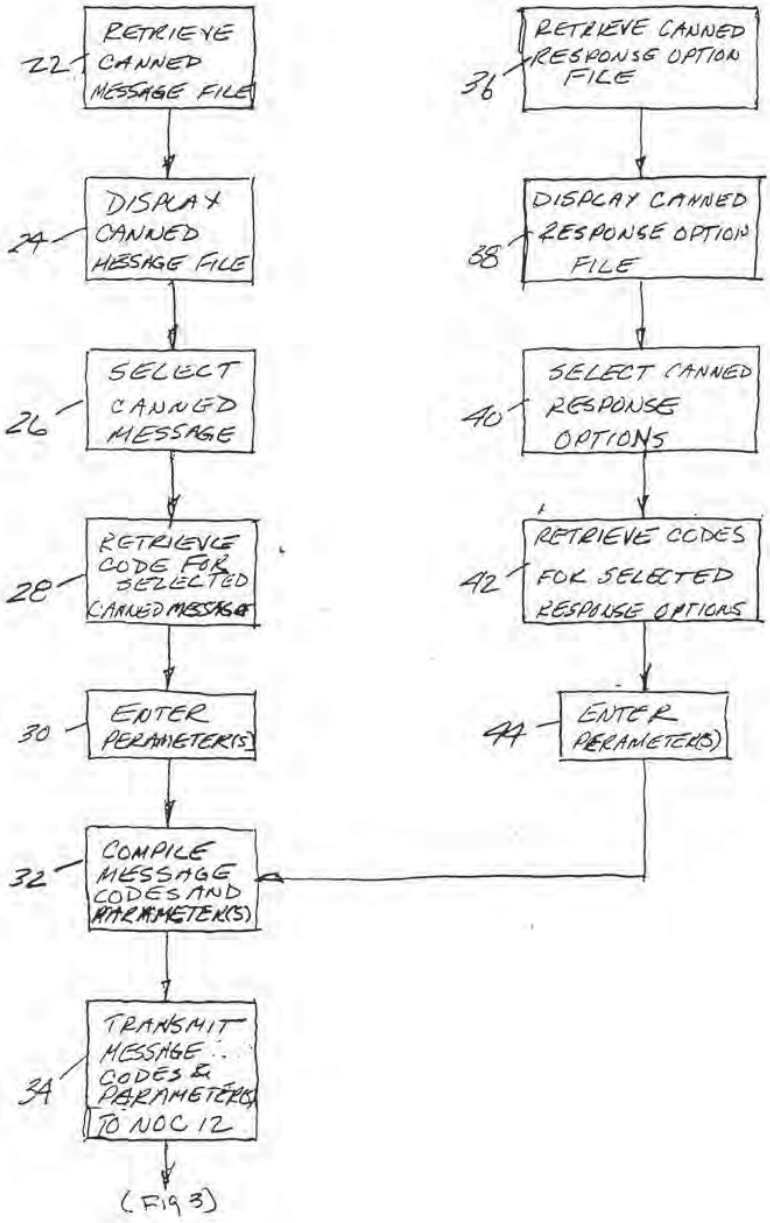

22
RETRIEVE CANNED MESSAGE FILE
24
DISPLAY CANNED MESSAGE FILE
26
SELECT CANNED MESSAGE
28
RETRIEVE CODE FOR SELECTED CANNED MESSAGE
30
ENTER PARAMETER(S)
32
COMPILE MESSAGE CODES AND PARAMETER(S)
34
TRANSMIT MESSAGE CODES & PARAMETERS TO NOC 12
(FIG 3)
36
RETRIEVE CANNED RESPONSE OPTION FILE
38
DISPLAY CANNED RESPONSE OPTION FILE
40
SELECT CANNED RESPONSE OPTIONS
42
RETRIEVE CODES FOR SELECTED RESPONSE OPTIONS
44
ENTER PARAMETER(S)

FIG. 2

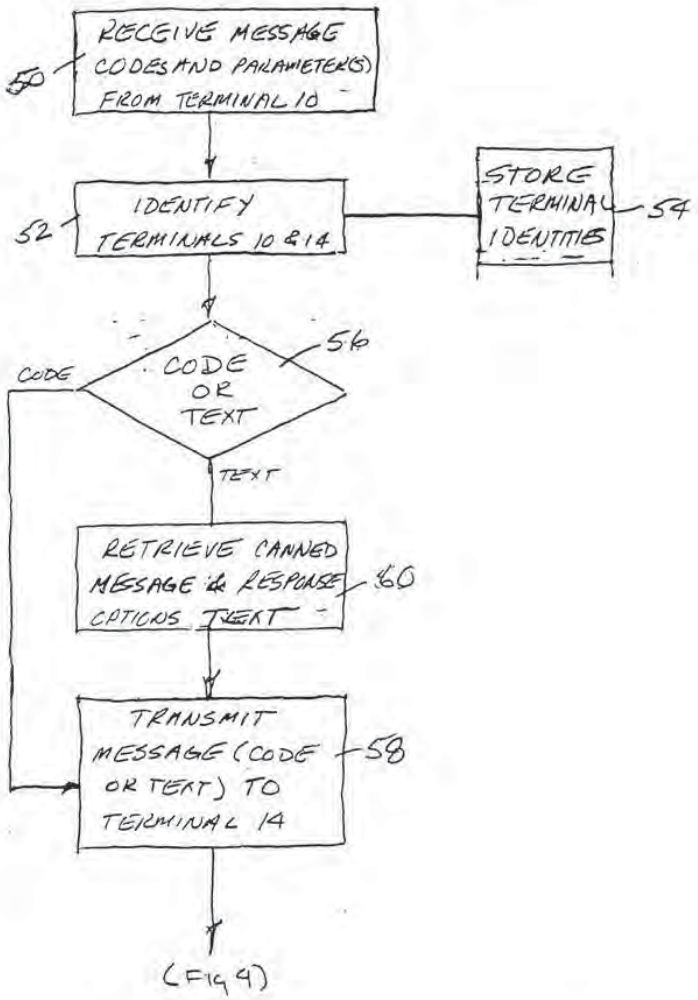

RECEIVE MESSAGE CODES AND PARAMETER(S) FROM TERMINAL 10
50
IDENTIFY TERMINALS 10 & 14
52
STORE TERMINAL IDENTITIES
54
CODE OR TEXT
56
CODE
TEXT
RETRIEVE CANNED MESSAGE & RESPONSE CAPTIONS TEXT
60
TRANSMIT MESSAGE (CODE OR TEXT) TO TERMINAL 14
58
(FIG 4)

FIG 3

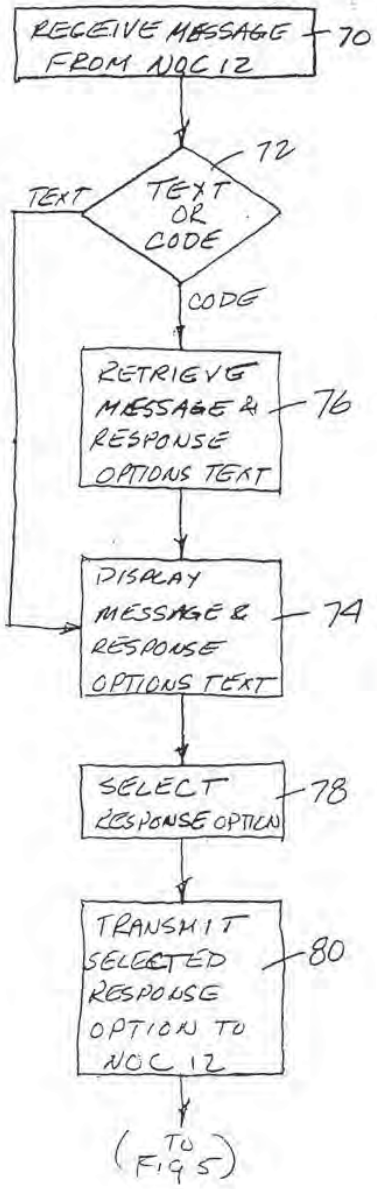

RECEIVE MESSAGE FROM NOC 12
70
72
TEXT OR CODE
TEXT
CODE
RETRIEVE MESSAGE & RESPONSE OPTIONS TEXT
76
DISPLAY MESSAGE & RESPONSE OPTIONS TEXT
74
SELECT RESPONSE OPTION
78
TRANSMIT SELECTED RESPONSE OPTION TO NOC 12
80
(TO FIG 5)

FIG. 4.

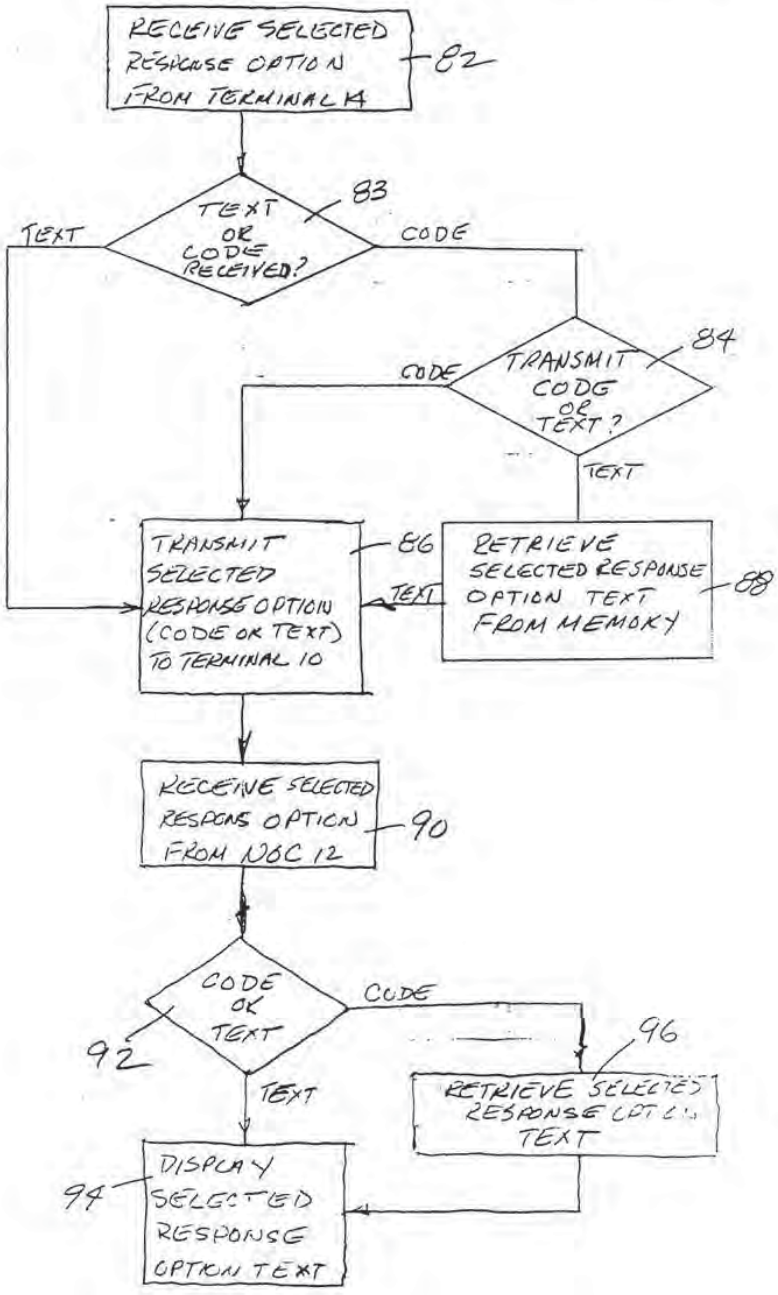

RECEIVE SELECTED RESPONSE OPTION FROM TERMINAL 14
82
TEXT OR CODE RECEIVED?
83
TEXT
CODE
TRANSMIT CODE OR TEXT?
84
CODE
TEXT
TRANSMIT SELECTED RESPONSE OPTION (CODE OR TEXT) TO TERMINAL 10
86
RETRIEVE SELECTED RESPONSE OPTION TEXT FROM MEMORY
88
TEXT
RECEIVE SELECTED RESPONS OPTION FROM NOC 12
90
CODE OR TEXT
92
CODE
TEXT
96
RETRIEVE SELECTED RESPONSE OPTION TEXT
DISPLAY SELECTED RESPONSE OPTION TEXT
94

Fig 5

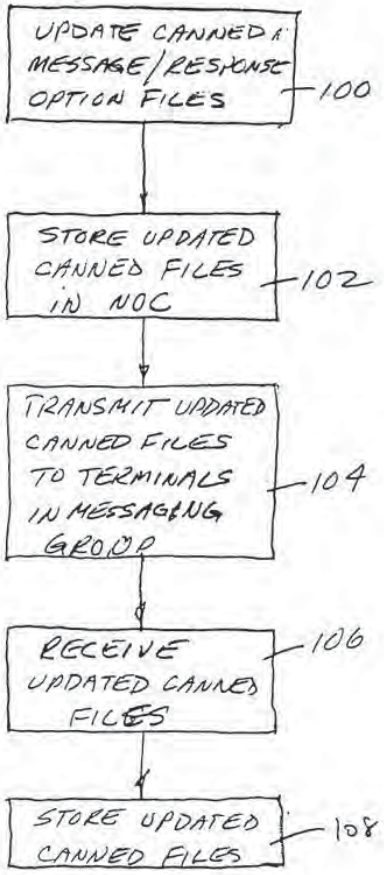
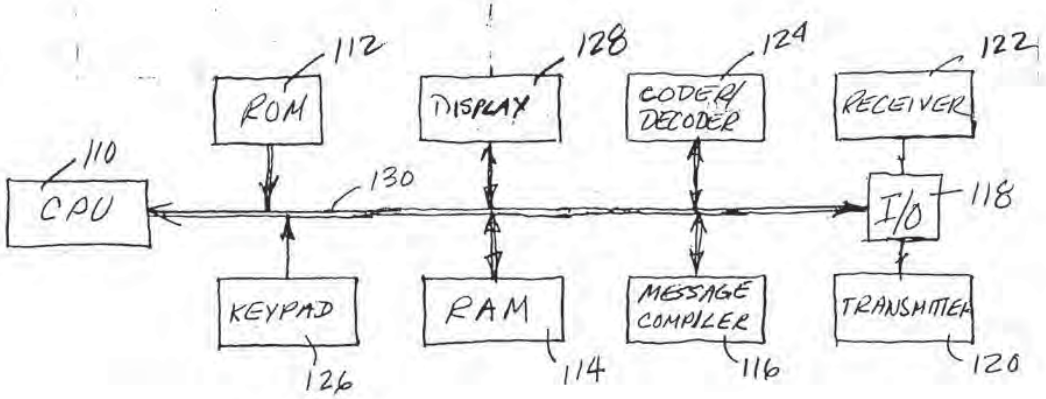
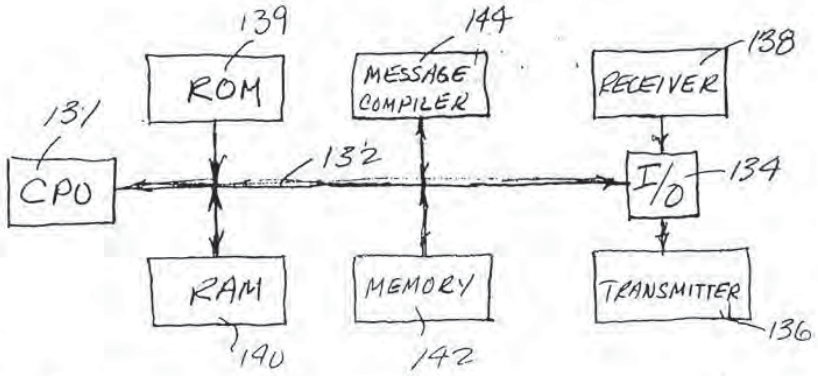

UPDATE CANNED MESSAGE/RESPONSE OPTION FILES
100
STORE UPDATED CANNED FILES IN NOC
102
TRANSMIT UPDATED CANNED FILES TO TERMINALS IN MESSAGING GROUP
104
RECEIVE UPDATED CANNED FILES
106
STORE UPDATED CANNED FILES
108

Fig 6

Fig 7.



112
ROM
128
DISPLAY
124
CODER/
DECODER
122
RECEIVER
110
CPU
130
I/O
118
KEYPAD
126
RAM
114
MESSAGE
COMPILER
116
TRANSMITTER
120



139
ROM
144
MESSAGE
COMPILER
138
RECEIVER
131
CPU
132
I/O
134
RAM
140
MEMORY
142
TRANSMITTER
136

Fig 8

PRINT OF DRAWINGS
AS ORIGINALLY FILED

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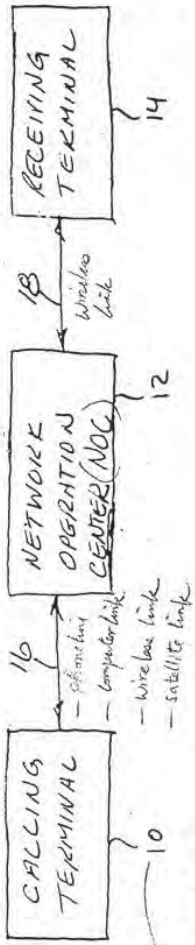

FIG 1

PRINT OF D WINGS
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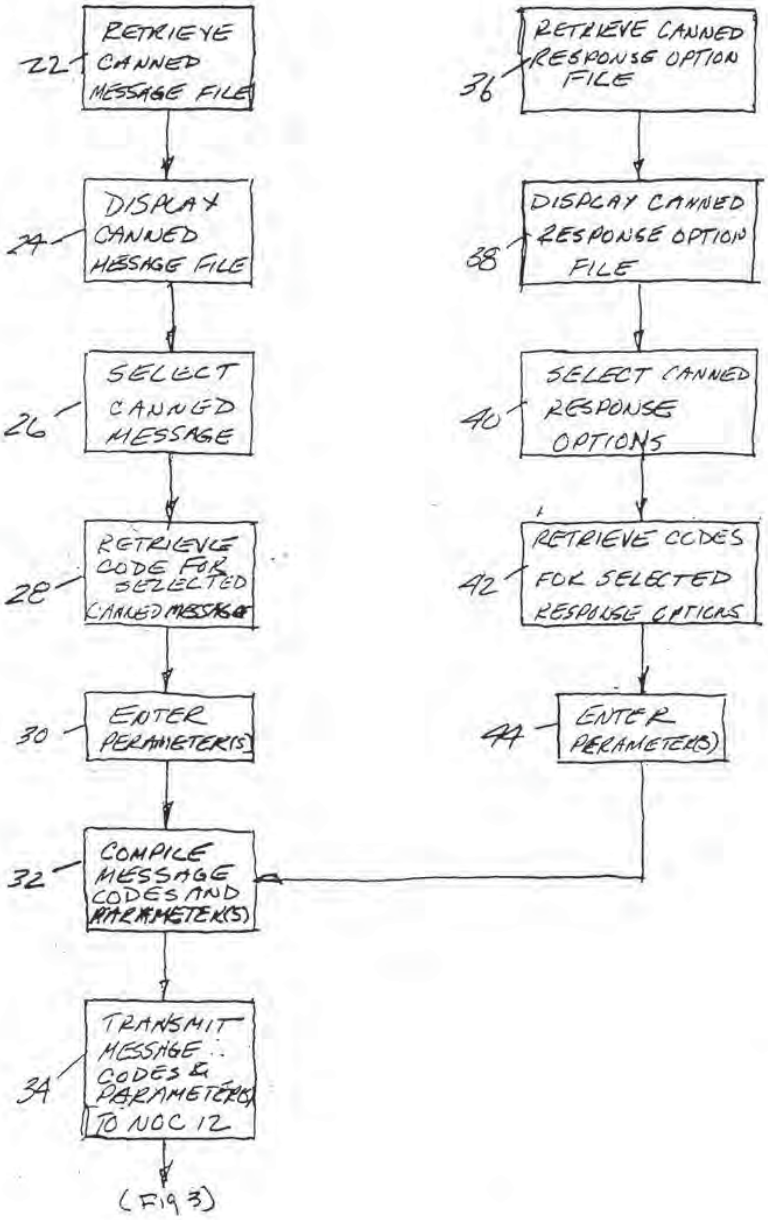

Fig 2

PRINT OF D WINGS
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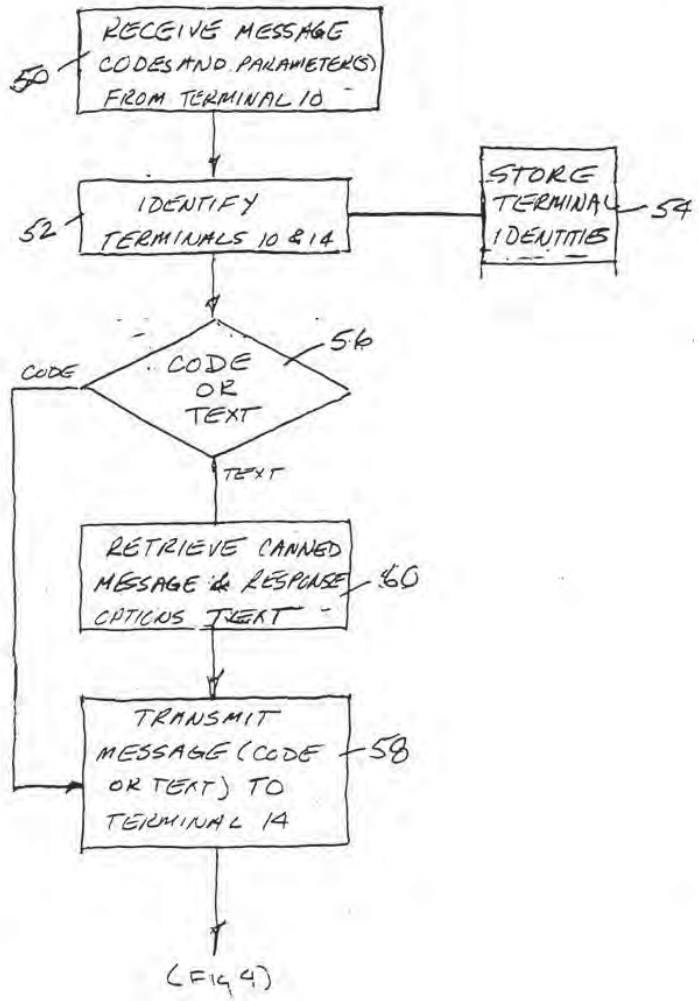

Fig 3

PRINT OF D WINGS
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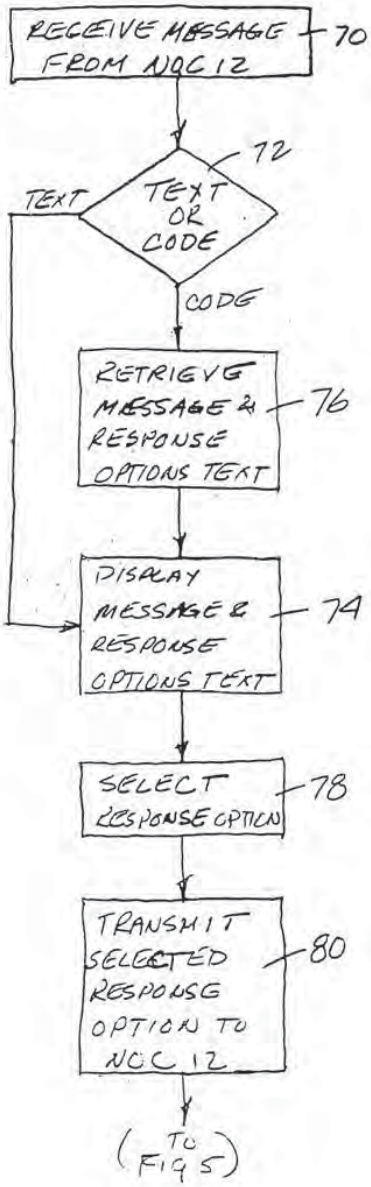

Fig. 4.

PRINT OF DRAWINGS
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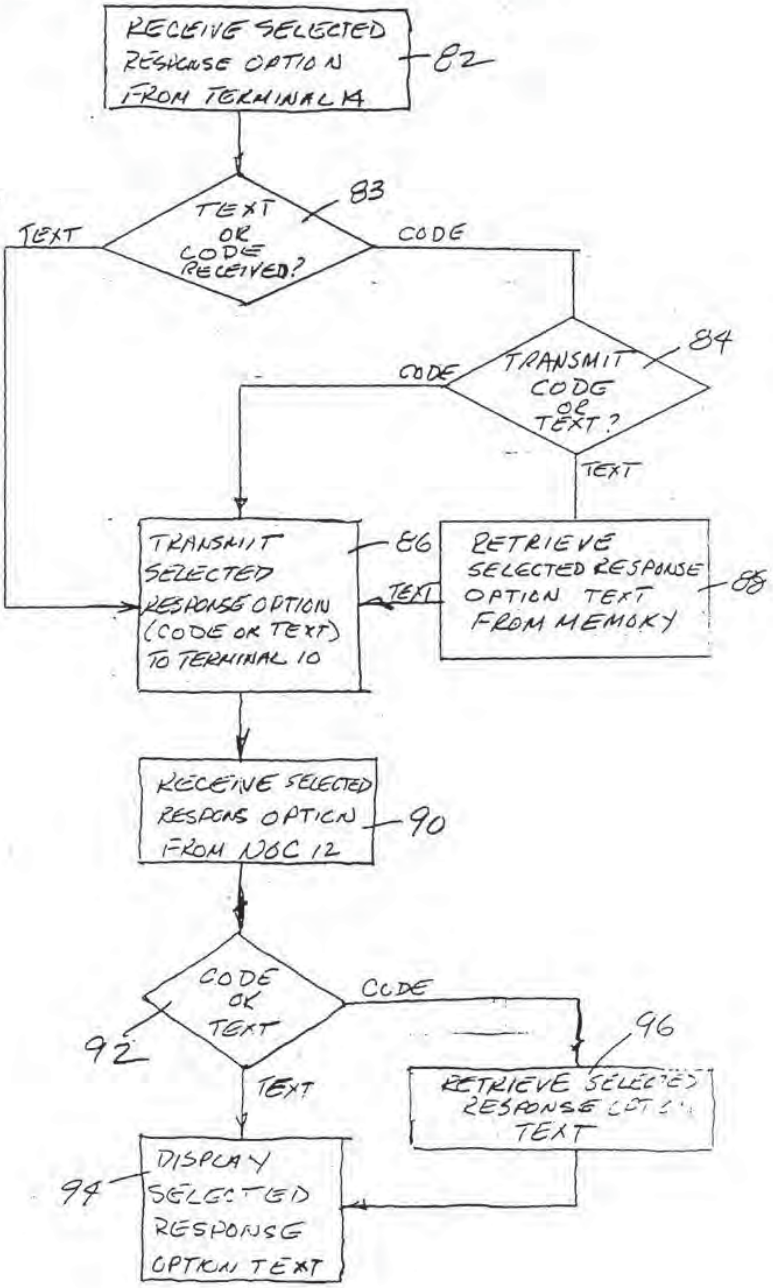

Fig 5

PRINT OF DRAWINGS
AS ORIGINALLY FILED

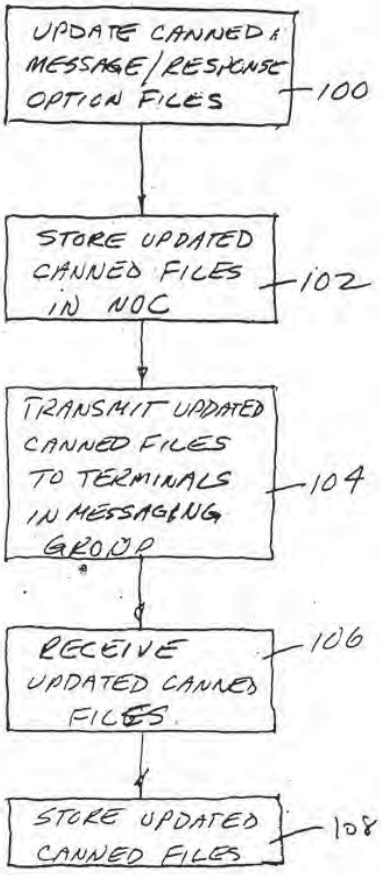

Fig 6

PRINT OF DRAWINGS
AS ORIGINALLY FILED

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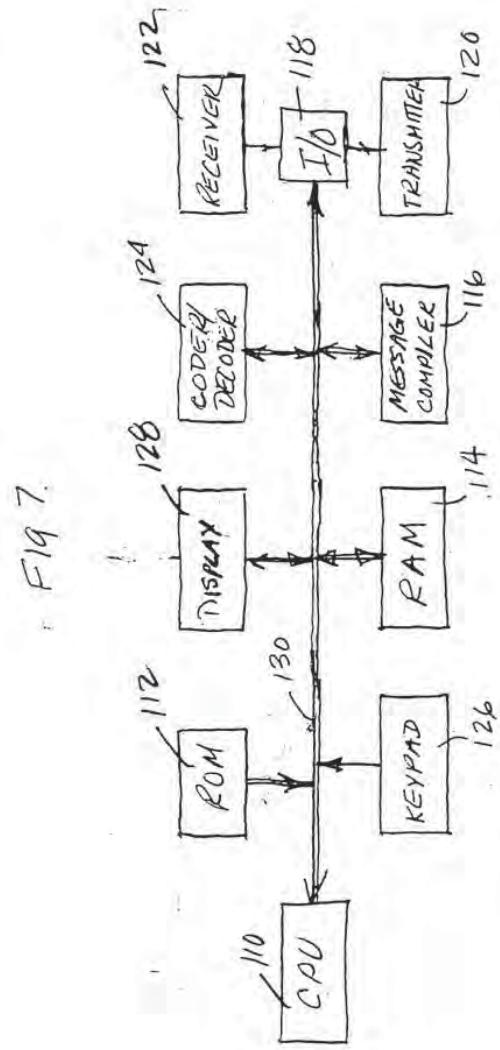

FIG 7.

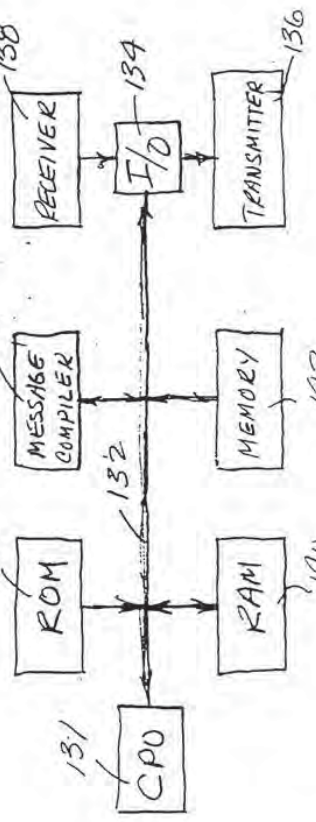

FIG 8

Attorney Docket No. 03680.0132-00000

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK the specification of which [X] is attached and/or [ ] was filed as United States Application Serial No. _____ on _____ and was amended on _____ (if applicable); or was filed as PCT International Application Number _____ on _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

COUNTRY (if PCT indicate PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56 which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

U.S. APPLICATIONS		STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBER ASSIGNED (if any)		

I hereby appoint the following attorney and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. **FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P., Reg. No. 22,540**; Douglas B. Henderson, Reg. No. 20,291; Ford F. Farabow, Jr., Reg. No. 20,630; Arthur S. Garrett, Reg. No. 20,338; Donald R. Dunner, Reg. No. 19,073; Brian G. Brunsvold, Reg. No. 22,593; Tipton D. Jennings, IV, Reg. No. 20,645; Jerry D. Voight, Reg. No. 23,020; Laurence R. Hefter, Reg. No. 20,827; Kenneth E. Payne, Reg. No. 23,098; Herbert H. Mintz, Reg. No. 26,691; C. Larry O'Rourke, Reg. No. 26,014; Albert J. Santorelli, Reg. No. 22,610; Michael C. Elmer, Reg. No. 25,857; Richard H. Smith, Reg. No. 20,609; Stephen L. Peterson, Reg. No. 26,325; John M. Romary, Reg. No. 26,331; Bruce C. Zotter, Reg. No. 27,680; Dennis P. O'Reilley, Reg. No. 27,932; Allen M. Sokal, Reg. No. 26,695; Robert D. Bajefsky, Reg. No. 25,387; Richard L. Stroup, Reg. No. 28,478; David W. Hill, Reg. No. 28,220; Thomas L. Irving, Reg. No. 28,619; Charles E. Lipsey, Reg. No. 28,165; Thomas W. Winland, Reg. No. 27,605; Basil J. Lewris, Reg. No. 28,818; Martin I. Fuchs, Reg. No. 28,508; E. Robert Yoches, Reg. No. 30,120; Barry W. Graham, Reg. No. 29,924; Susan Haberman Griffen, Reg. No. 30,907; Richard B. Racine, Reg. No. 30,415; Thomas H. Jenkins, Reg. No. 30,857; Robert E. Converse, Jr., Reg. No. 27,432; Clair X. Mullen, Jr., Reg. No. 20,348; Christopher P. Foley, Reg. No. 31,354; John C. Paul, Reg. No. 30,413; Roger D. Taylor, Reg. No. 28,992; David M. Kelly, Reg. No. 30,953; Kenneth J. Meyers, Reg. No. 25,146; Carol P. Einaudi, Reg. No. 32,220; Walter Y. Boyd, Jr., Reg. No. 31,738; Steven M. Anzalone, Reg. No. 32,095; Jean B. Fordis, Reg. No. 32,984; Barbara C. McCurdy, Reg. No. 32,120; James K. Hammond, Reg. No. 31,964; Richard V. Burgujian, Reg. No. 31,744; J. Michael Jakes, Reg. No. 32,824; and Robert A. Cahill, Reg. No. 20,557. Please address all correspondence to **FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.**, 1300 I Street, N.W., Washington, D.C. 20005, Telephone No. (202) 408-4000.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

FULL NAME OF FIRST INVENTOR	INVENTOR'S SIGNATURE	DATE
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203 Haddon Circle, Brandon, MS 39042		
FULL NAME OF SECOND INVENTOR	INVENTOR'S SIGNATURE	DATE
RESIDENCE		COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS		

Application Assignment Record

According to the application transmittal letter, an assignment recording ownership was filed with this application; however, a copy of this record was not located in the original file history record obtained from the United States Patent and Trademark Office. Upon your request, we will attempt to obtain the assignment documents from the Assignment Recordation Branch of of the United States Patent and Trademark Office or from a related application case (if applicable). Please note that additional charges will apply for this service.

This page is not part of the official USPTO record. It has been determined that content identified on this document is missing from the original file history record.

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Patent and Trademark Office
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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/708,696	09/05/96	PINTER	~~0~~ 03680.0132

EXAMINER

LM61/0226

FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

ART UNIT	PAPER NUMBER
~~TSANG, F~~ 2742	2

DATE MAILED: 02/26/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire ~~—~~ 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
☒ Claim(s) 8-14 is/are allowed.
☒ Claim(s) 1-7, 15-21 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____.
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
☐ Interview Summary, PTO-413
☐ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

PTOL-326 (Rev. 9/96) ★ U.S. GPO: 1996-421-632/40206

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means recited on claims 15-21 (e.g. memory, receiver, retrieving means and transmitter recited on claim 15, and memory, retrieving means, display, selecting means and transmitter recited on claim 19, and message compiler recited on claim 21) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

3. Claim 16 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites that the retrieved canned message in text form is transmitted to the receiving terminal. However, the dependent claim 16 recites that it is the code of the message being transmitted to the receiving terminal. This leads to

confusion because it is not clear if the message itself, or the code of the message, or both are transmitted to the receiving terminal.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

5. Claims 1, 2, 19 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wolff et al, U.S.Patent No.5327486 (hereinafter Wolff).

Regarding claim 1 and 19, Wolff discloses a method of communication messages between subscribers to an electronic messaging network, comprising:

maintaining, at a network operation center (PTM 12, Fig.1), a first file of canned messages (pre-recorded messages stored in PTM12, column 5, lines 57-61) and message codes (Wolff inherently has the claimed message codes because the called party of Wolff can select a message on the PTM by activating a key stroke

(column 6, line 18) from a remote computer) respectively assigned to the canned messages;

maintaining at a first terminal (21, Fig.1) of a first subscriber a second file (Fig.8) of canned messages corresponding to the first file;

selecting (step 58, Fig.3) an appropriate canned message from the second file for transmission to a second terminal (the terminal of the caller) of a designated second subscriber (caller);

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code receiving from the first terminal; and

communicating the selected canned message to the second terminal (columns 5-6).

Regarding claim 2, see the modification feature on Fig.8.

Regarding claim 20, see column 6, line 42 (variable parameters).

6. Claims 15-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Inniss et al, U.S.Patent No.5539808 (hereinafter Inniss).

Inniss discloses a network operation center (12 and 18 in Fig.1) comprising a memory, a receiver, means responsive to the

received message code for retrieving from the memory the canned message assigned thereto; and a transmitter (Figs 2-5 and columns 5-9).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff in view of Shibayama et al, U.S.Patent NO.5381466 (hereinafter Shibayama).

Wolff as applied to claim 2 above differs from claim 3 in that Wolff does not disclose that the second terminal (caller's terminal) has a display. However, Shibayama discloses a terminal with a display for receiving a voice message and then converting the received voice message to a text message (Fig.3D and Fig.9). Since voice-to-text message conversation is old and well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolff by including a display in the second terminal such that the received

message can be displayed as a text message to the second user. The modification allows the message receiver to read the message.

Regarding claim 4, see Wolff, column 6, line 42.

Allowable Subject Matter

9. Claims 5-7, 18 and 21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 8-14 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 5-7, 18 and 21, prior art fail to disclose the feature of selecting one of the multiple response options at the second terminal, communicating the selected response option to the network center, routing the option from the network center to the first terminal, and displaying the selected response option at the first terminal.

Regarding claims 8-14, prior art fail to teach a network center with a first file, a first terminal with a second file and a second terminal with a third file.

Conclusion

12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-5403 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fan Tsang whose telephone number is (703)305-4895. The examiner can normally be reached on Monday to Friday from 8.30 AM to 6.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista Zele, can be reached on (703) 305-4701. The fax phone number for this Group

is (703) 308-5403.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**krista.zele@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Fan Tsang
Primary Examiner
Group 2742
February 18, 1998

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP–APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
NOTICE OF REFERENCES CITED	08/708,696	2742	2
	APPLICANT(S) Pinter		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	5539808	Jul 1996	Inniss et al.	379	67	
	B	5327486	Jul 1994	Wolff et al.	379	210	
	C	5381466	Jan 1995	Shibayama et al.	379	88	
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
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EXAMINER	DATE
Fan Tsang	2/18/98

* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05 (a).)

GBU 2742
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Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OIPE
JUL 24 1998
PATENT & TRADEMARK OFFICE

In re Application of:	)	
	)	
Gregory J. PINTER	)	
	)	
Serial No.: 08/708,696	)	Group Art Unit: 2742
	)	
Filed: September 5, 1996	)	Examiner: F. Tsang
	)	

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

RECEIVED
98 JUL 28 AM 9:56
GROUP 2700

Assistant Commissioner for Patents
Washington, D.C. 20231

TRANSMITTAL LETTER

Sir:

Enclosed is a response to the Office Action of February 26, 1998. The items checked below are appropriate:

[X] Applicant hereby petitions for a two-month extension of time to respond to the above Office Action. The fee of $400.00 for the Extension is enclosed.

The claims are calculated below:

	Claims Remaining After Amendment		Highest Number Previously Paid	Present Extra	Rate	Additional Fee
Total	21	-	21		x $ 22	$
Indep.	5	-	4	1	x $ 80	$ 80
[ ] First Presentation of Multiple Dep. Claim(s)					+ $260	
					Subtotal	$
					Reduction by ½ if small entity	-
					TOTAL	$ 80

[X] A fee of $ 80.00 to cover the cost of the additional claims added by this response is enclosed.

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[X] A fee of $ 240.00 to cover the cost filing an Information Disclosure Statement under 37 C.F.R. 1.97(c).

[X] A check for $ 720.00 to cover the above fees are enclosed.

To the extent any further extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

Date: July 24, 1998

By: _____

John M. Romary
Reg. No. 26,331
FINNEGAN, HENDERSON, FARABOW,
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98 JUL 28 PM 2:56
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202-408-4000

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#3 Req Ext (2) + Amdt A

In re Application of:	)	
Gregory J. PINTER	)	
Serial No.: 08/708,696	)	Group Art Unit: 2742
Filed: September 5, 1996	)	Examiner: F. Tsang
For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK	)	

Rec'd 7-30-98 Fee ok

RECEIVED 98 JUL 28 PM 2:56 GROUP 2700

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

AMENDMENT

In response to the Office Action of February 26, 1998, the period of response to which extends through July 27, 1998 (July 26 being a Sunday) by filing a petition for a two-month extension of time included herewith, please amend the application as follows:

07/27/1998 SSANDARA 00000102 060916 08708696
02 FC:116 400.00 OP
03 FC:102 2.00 CH 80.00 OP

IN THE CLAIMS

Please cancel claim 21 without prejudice or disclaiming the subject matter thereof and amend claims 1, 15, 16, and 19 as follows:

1. (Amended) A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

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Cont'd

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal;

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

15. (Amended) A network operation center for use in an electronic messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

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means responsive to the received message code for retrieving from the memory the canned message assigned thereto;

means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form; and

a transmitter for transmitting the retrieved canned message in text form or message code form in response to the determining means [to a receiving terminal included in the network].

16. (Amended) The network operation center defined in claim 15, [further including means for determining whether to transmit the canned message to the receiving terminal in text or message code form, said] the determining means routing the received message code directly to the transmitter upon determination [to transit the canned message in code form to] that the receiving terminal can receive the canned message in message code form.

19. (Amended) A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and the file of canned multiple response options from the memory;

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a display for displaying the canned messages and the multiple response options in the retrieved file;

means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message and the ~~message~~ response code assigned to the at least one multiple response option over a communications link of the network.

Please add claim 22 as follows:

~~22.~~ 21. A message terminal for use in an electronic messaging network, comprising:;

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and message codes from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal and for selecting multiple response options appropriate for the selected canned message;

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a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

A4 Concl

REMARKS

In the Office Action, the Examiner (1) allowed claims 8-14; (2) rejected claims 1, 2, 19, and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,327,486, issued to Wolff et al.; (3) rejected claims 15-17 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,539,808, issued to Inniss et al.; (4) rejected claim 16 under 35 U.S.C. § 112, second paragraph; (5) rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Wolff et al. in view of U.S. Patent No. 5,381,466, issued to Shibayama; (6) objected to claims 5-7, 18, and 21 as being dependent upon a rejected base claim, but otherwise allowable; and (7) objected to the drawings under 37 C.F.R. 1.83(a).

Applicant has amended claims 1 and 19 to clarify the invention further, and amended claims 15 and 16, overcome the rejection of claim 16 under 35 U.S.C. § 112, second paragraph. In addition, applicants have canceled claim 21 and added claim 22 to recite the allowable subject matter of claim 21.

Applicant respectfully traverses the Examiner's objections to the drawings under 37 C.F.R. 1.83(a) for the following reasons. The Examiner contends that several of the

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elements recited in claims 15-21 are not shown in the drawings. Fig. 8 shows a structural embodiment of the network operation center (NOC) in accordance with the invention, as recited in claim 15. In this embodiment, the NOC includes a memory (RAM 140) for storing canned messages, a receiver 138, a transmitter 136, and a message compiler 144. Also included in this embodiment are a CPU 131 and a ROM 149. As described in the specification and recognized by those skilled in the art, CPU 131 and ROM 149 inherently provide the means for selecting and the means for retrieving, recited in claims 15 and 18, respectively.

Fig. 7 shows a structural embodiment of a calling terminal in accordance with the invention. In this embodiment, the calling terminal includes a memory (RAM 114) for storing a file of canned messages, a message compiler 116, a display 128, a transmitter 120 as recited in claim 18. Further, the means for selecting, for purposes of this embodiment, may be equated with keypad 126 alone or in combination with CPU 110 and ROM 112. Finally, contrary to the Examiner's objection, the message compiler of claim 21 is clearly depicted by element 116. For at least these reasons, Applicant asserts that the drawings comply with 37 C.F.R. 1.83(a).

Applicant respectfully traverses the rejection of claims 1, 2, 19 and 20 under § 102(b) in view of Wolff et al for the following reasons. Claim 1 recites a method of communicating between subscribers. The method comprises a combination of steps, including:

> maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

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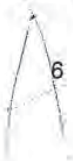

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

. . .

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

In contrast, Wolff et al. does not disclose the combination of steps recited in claim 1 including, at least, "determining whether the second terminal can receive the canned message in a text form or message code form; and communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination."

The Examiner contends that Wolff et al. inherently includes codes assigned to its messages. Wolff et al., however, merely stores a series of prerecorded messages that a user can select and send to another. Wolff et al. discloses that a message selected by a user is placed in a packet and the entire message packet is transmitted and converted to speech so that the receiving party can appreciate its contents. [See Col. 5, lines 7-27]. This disclosure is distinguishable from assigning a message code to a canned message, determining whether a receiving terminal can receive a code associated with the message, and communicating the message in code or text format in accordance with the determination, as described in claim 1. For at least this reason, Wolff et al. does not recite each and every element in claim 1, and therefore can not anticipate this claim.

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Applicant also traverses the rejection of claims 19 and 20 under 102(b) for the following reasons. Wolff et al. does not disclose the combination of elements including, at least, "a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;" and "means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal." As the Examiner has stated, none of the cited references discloses "selecting one of the multiple response options" and "communicating the selected response option to another terminal" through the network center. [See Office Action, page 6, lines 12-15].

Because Wolff et al. does not recite each and every element of claims 1 and 19, this reference cannot anticipate these claims, and therefore the rejection under § 102(b) should be withdrawn. Claims 2 and 20, at least by virtue of their dependence on claims 1 and 19, respectively, are also allowable over the reference.

Applicant respectfully traverses the rejections of claims 3 and 4, because Shibayama, in any reasonable combination with Wolff et al., does not make up for the deficiencies of Wolff et al. alone. Shibayama does not disclose or suggest, at least, the step of determining recited in claims 3 and 4 by virtue of their dependence on claim 1. For at least this reason, the rejection under § 103(a) should be withdrawn.

Applicant also respectfully traverses the rejections of claims 15-17 under § 102(e) for following reason. Claim 15 recites a combination of elements including "a receiver for receiving a message code from a calling terminal included in the network;"

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"means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form, and a transmitter for transmitting the retrieved canned message in text form or code form in response to the determining means."

Inniss et al., in contrast, does not disclose the combination of elements including, among other things, the determining means recited in claim 15. Instead, Inniss et al. merely discloses allowing the user to create an audio message and forwarding the message to the receiving user. After creation of the message, the system disclosed in Inniss et al. attempts to deliver the message to the receiving user. If the message is valid the delivery is successful. If, on the other hand, the message is invalid (*i.e.*, the receiving unit cannot process the message) an error message is returned and the sending user has the option of either (1) recreating the message; (2) rerouting the message; or (3) terminating the delivery attempt. [Col. 5, line 54 - Col. 6, line 6].

The present invention, as recited in claim 15, prevents this type of trial and error by determining, prior to transmission, whether a receiving terminal can actually receive a shortened message code or whether the entire text message must be delivered. Inniss et al., therefore, does not disclose, at least, determining whether the receiving party can receive a message code or text and then transmit the message in text or code form based upon the determination, as recited in claim 15. Moreover, there is no disclosure of suggestion in the reference for modifying its disclosure to recite the combination of elements recited in amended claim 15.

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Applicant respectfully requests the withdrawal of the rejection under §102 (e), because Inniss et al. fails to disclose each and every element recited in claim 15. Further, claims 16 and 17, at least by virtue of their dependence on claim 15, are also allowable over the cited reference.

In view of the foregoing amendments and remarks, applicant requests that the Examiner withdraw the rejections under §102(b), §102(e), and §103 and allow the pending claims.

Applicant also requests that all the documents listed in the accompanying Information Disclosure Statement be considered and made of record. The Examiner's attention is particularly directed toward U.S. Patent Nos. 4,263,480 and 4,336,524 issued to Levine, each of which discloses "prestored limited content messages," but which, applicant respectfully submits, do not disclose the invention of the present application.

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To the extent any extension of time under 37 C.F.R. 1.136 is required to obtain entry of this response, such extension is hereby requested. If there are any fees due under 37 C.F.R. 1.16 or 1.17 which are not enclosed, including any fees required for an extension of time under 37 C.F.R. 1.136, please charge those fees to our Deposit Account No. 06-916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

Dated: July 24, 1998

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02-408-4000

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#4

In re Application of:

Gregory J. PINTER

Serial No.: 08/708,696 — Group Art Unit: 2742

Filed: September 5, 1996 — Examiner: F. Tsang

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(c)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(c), applicant brings to the attention of the Examiner the documents listed on the attached PTO 1449. This Information Disclosure Statement is being filed after the events recited in Section 1.97(b) but, to the undersigned's knowledge, before the mailing date of either a Final Action or a Notice of Allowance. Under the provisions of 37 C.F.R. § 1.97(c), this Information Disclosure Statement is accompanied by a fee of $240.00 as specified by Section 1.17(p).

07/27/1998 SSANDARA 00000102 060916 08708696
01 FC:126 240.00 OP

Copies of the listed documents are attached.

Applicant respectfully requests that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are

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material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claims in the application and applicant determines that the cited documents do not constitute "prior art" under United States law, applicant reserves the right to present to the office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

Date: July 24, 1998

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OMB No. 0651-0011

INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

PAGE 1 of 2

4

Atty. Docket No.	03680.0132-0	Serial No.	08/708,696
Applicant	Gregory J. PINTER		
Filing Date	September 5, 1996	Group	2742

U.S. PATENT DOCUMENTS

Examiner Initial*		Document Number	Date	Name	Class	Sub Class	Filing Date If Appropriate
T-T		2,978,676	04/04/61	J. A. Spencer	340	154	
T-T		3,513,443	02/27/67	V. Andersen	340	164	
T-T		3,714,375	01/30/73	H. A. Stover	179	2	
T-T		3,818,145	06/18/74	J. R. Hanway	179	41	
T.T		3,846,783	11/05/74	S. P. Apsell et al	340	311	
T-T		3,851,251	11/26/74	W. K. Wigner et al	325	55	
T-T		3,944,724	03/16/76	J. S. Kilby et al	178	4.1	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Sub Class	Translation Yes or No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

T-T	"New Radio Paging System," by Mitsuru Komura et al, Japan Telecommunications Review, July 1977, Vol. 19, No. 3, pps. 217 and 220-225
T-T	"Paging System Broadcasts Nationwide on FM Radio Channel," Electronics International, January 4, 1979, Vol. 52, No. 1, pps. 67-68
T-T	"A Development Project of a Pocketsize Receiver for a Nationwide Paging System," by Kari Kiiskinen et al, IEEE, 1979, pps. 383-387

Examiner	Date Considered 9/18/98

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 — Patent and Trademark Office - U.S. Department of Commerce

JUL 24 1998
PATENT & TRADEMARK

OMB No. 0651-0011

INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

PAGE 2 of 2

Atty. Docket No.	03680.0132-0	Serial No.	08/708,696
Applicant	Gregory J. PINTER		
Filing Date	September 5, 1996	Group	2742

U.S. PATENT DOCUMENTS

Examiner Initial*		Document Number	Date	Name	Class	Sub Class	Filing Date If Appropriate
FT		3,976,995	08/24/76	G. Sebestyen	340	337	
FT		3,984,775	10/05/76	L. Cariel et al	325	55	
FT		4,010,460	03/01/77	J. DeRosa	340	311	
FT		4,010,461	03/01/77	T. Stodolski	340	311	
FT		4,160,240	07/03/79	P. Partipilo	340	311	
FT		4,178,475	12/11/79	F. D. Taylor et al	179	2	
FT		4,197,526	04/08/80	A. B. Levine	340	311	
FT		4,249,165	02/03/81	T. Mori	340	311	
FT		4,263,480	04/21/81	A. B. Levine	179	2	
FT		4,330,780	05/18/82	M. Masaki	340	825.44	
FT		4,336,524	06/22/82	A. B. Levine	340	311	
FT		4,382,256	05/03/83	K. Nagata	340	825.44	

		Document Number	Date	Country	Class	Sub Class	Translation Yes or No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

RECEIVED
98 JUL 20 PM 2:51
GROUP 2700

Examiner	Date Considered 9/18/98

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 — Patent and Trademark Office - U.S. Department of Commerce

Interview must Be Made at :

UNITED ST ES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/708,696	09/05/96	PINTER G	03680.0132

EXAMINER
TSANG, F

ART UNIT	PAPER NUMBER
2742	

DATE MAILED: 09/29/98

LM61/0929
FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

INTERVIEW SUMMARY

All participants (applicant, applicant's representative, PTO personnel):

(1) J. Romary (3) _____

(2) F. Tsang (4) _____

Date of Interview 9/18/98

Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No If yes, brief description: _____

Agreement ☒ was reached. ☐ was not reached.

Claim(s) discussed: 19

Identification of prior art discussed: _____

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: Claim 19, Line 14, "the message code" should be changed to "the response code". Applicant agreed the above change to put the application into condition for allowance

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

1. ☒ It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph above has been checked to indicate to the contrary. A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a response to the last Office action has are ready been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW.

2. ☐ Since the Examiner's Interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the interview unless box 1 above is also checked.

Examiner Note: You must sign this form unless it is an attachment to another form.

FORM PTOL-413 (REV.1-96)

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/708,696	09/05/96	PINTER	03680.0132

EXAMINER: G

LM61/0929
FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

ART UNIT: 1742 | PAPER NUMBER: 6/B

DATE MAILED: 09/29/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

R. Lovger 9-23-98

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to amendment A filed 7/24/98.

☒ The allowed claim(s) is/are 1-20 & 22.

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☒ because the originally filed drawings were declared by applicant to be informal.

☐ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. _____.

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Interview Summary, PTO-413

☒ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☐ Examiner's Statement of Reasons for Allowance

FAN S. TSANG
PRIMARY EXAMINER

PTOL-37 (Rev. 10/95)

* U.S. GPO: 1998-404-496/40507

1. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

Claim 19, line 14, "message" (second occurrence) was changed to --response--.

2. Authorization for this Examiner's Amendment was given in a telephone interview with Mr. J. Romary on Sept. 18, 1998.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fan Tsang whose telephone number is (703)305-4895. The examiner can normally be reached on Monday to Friday from 8.30 AM to 6.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista Zele, can be reached on (703) 305-4701. The fax phone number for this Group is (703) 308-5403.

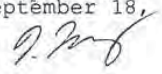
Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**krista.zele@uspto.gov**].

All Internet e-mail communications will be made of record

in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Fan Tsang
Primary Examiner
Group 2742
September 18, 1998



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

LM61/0929
FINNEGAN HENDERSON FARABOW GARRETT AND
DUNNER
1300 I STRET N W
WASHINGTON DC 20005

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/700,696	09/05/96	021	TSANG, F	2742 09/23/98

First Named Applicant: PINTER, GREGORY J.

TITLE OF INVENTION: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 03680.0132	379-088.230	J63	UTILITY	NO	$1320.00	12/29/98

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

PTOL-85 (REV. 10-96) Approved for use through 06/30/99. (0651-0033)

*U.S. GPO: 1998-437-639/80023

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	Group Art Unit: 2742
Gregory J. PINTER	)	
	)	Examiner: F. Tsang
Serial No.: 08/708,696	)	
	)	**Allowed: 09/29/98**
Filed: September 5, 1996	)	
	)	**Batch No. J63**

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Assistant Commissioner for Patents
Washington, D.C. 20231

RECEIVED
Publishing Division
DEC 28 1998

Sir:

SUBMISSION OF FORMAL DRAWINGS

Subject to the approval of the Examiner, please replace the informal drawings with the formal drawings (seven sheets, Figs. 1-8) filed herewith. If the formal drawings for any reason are not in full compliance with the pertinent statutes and regulations, please so advise the undersigned.

If any fees are necessary for the submission of these formal drawings, please charge our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

December 22, 1998

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

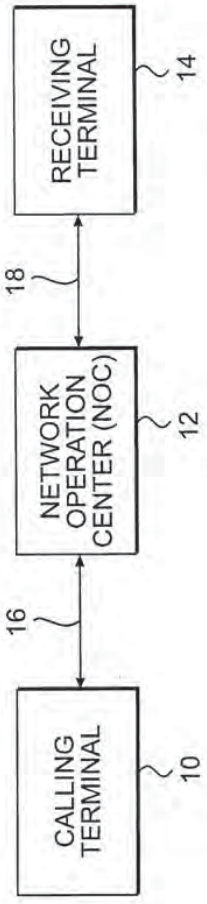


FIG. 1

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

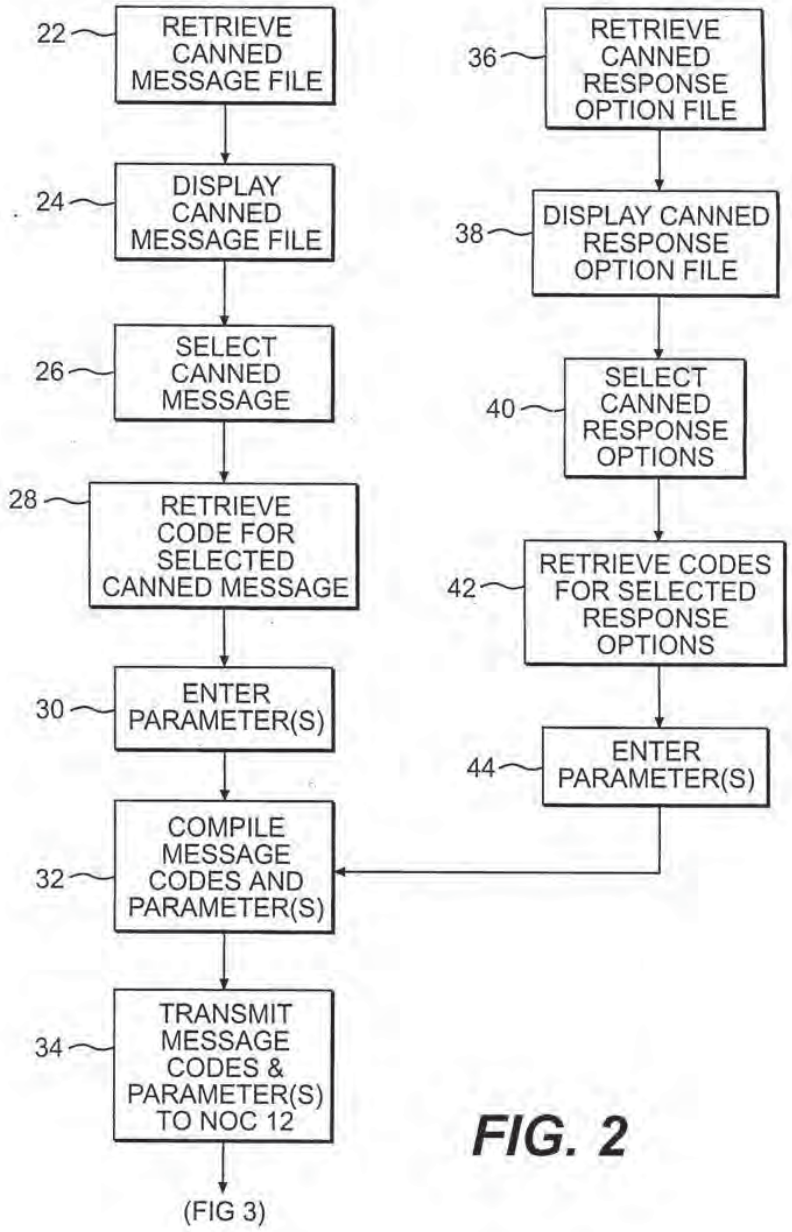


FIG. 2

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

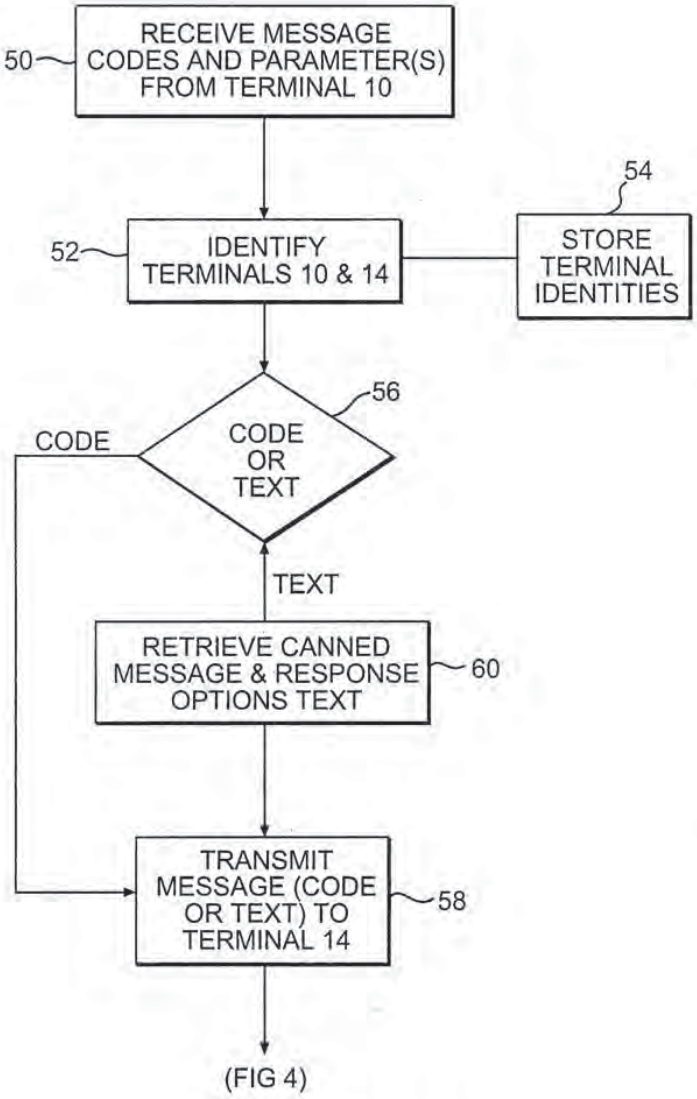


FIG. 3

APPROVED BY DRAFTSMAN | O.G. FIG. CLASS | SUBCLASS

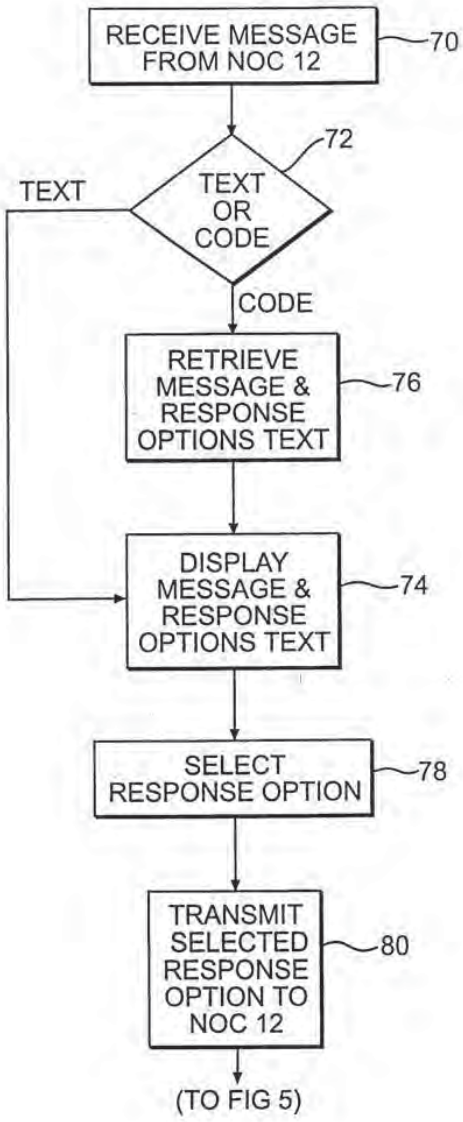


FIG. 4

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

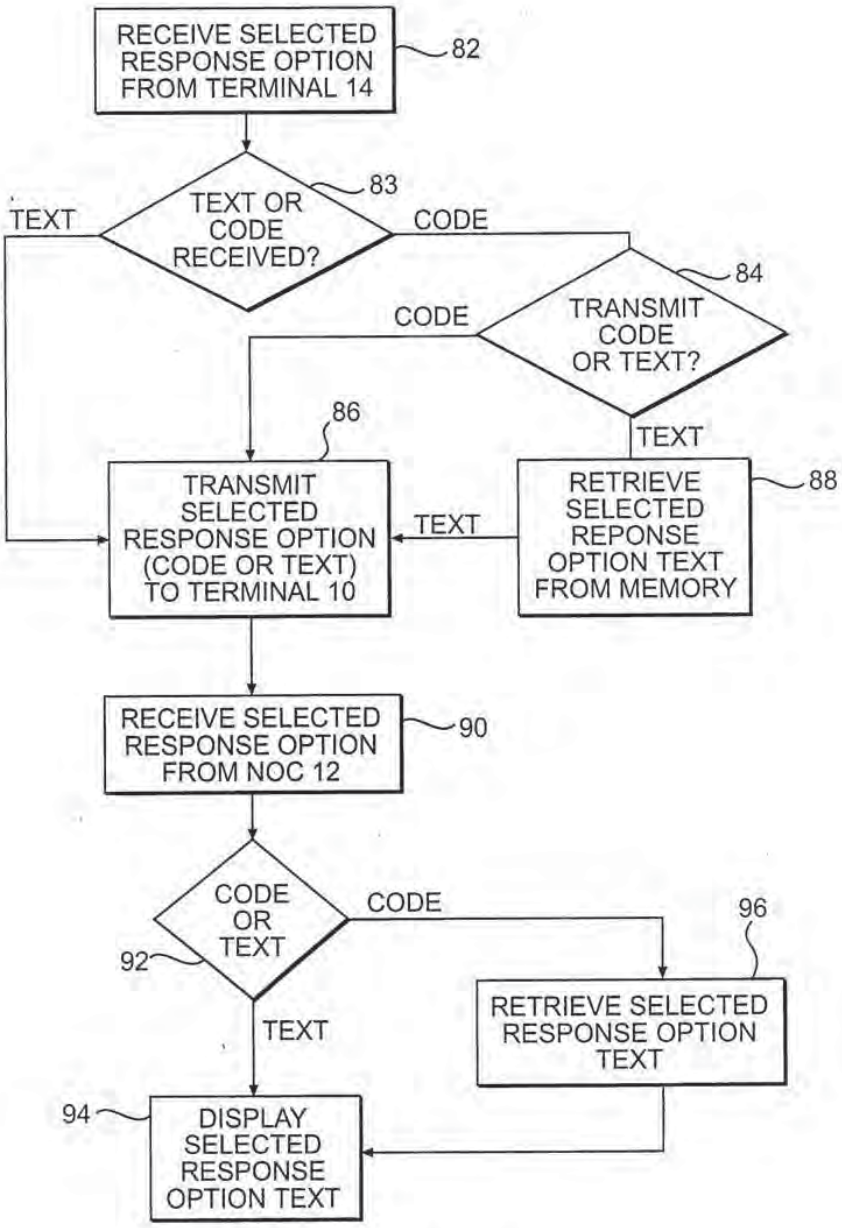


FIG. 5

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

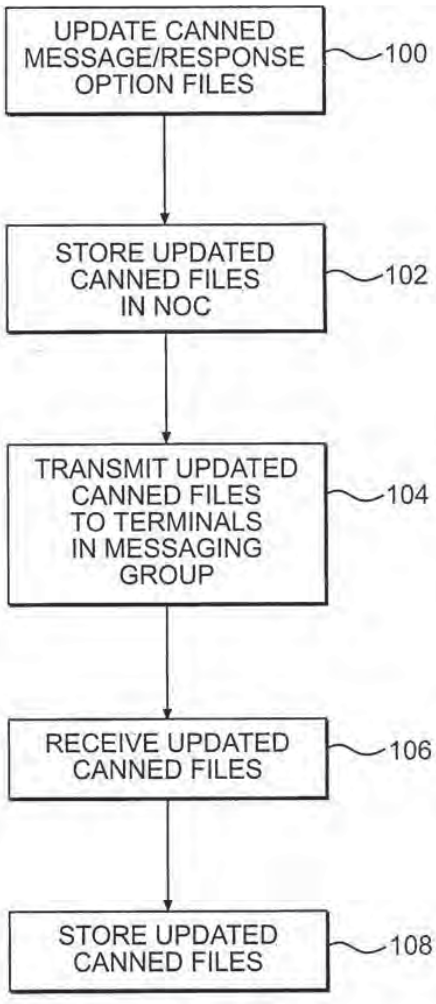


FIG. 6

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

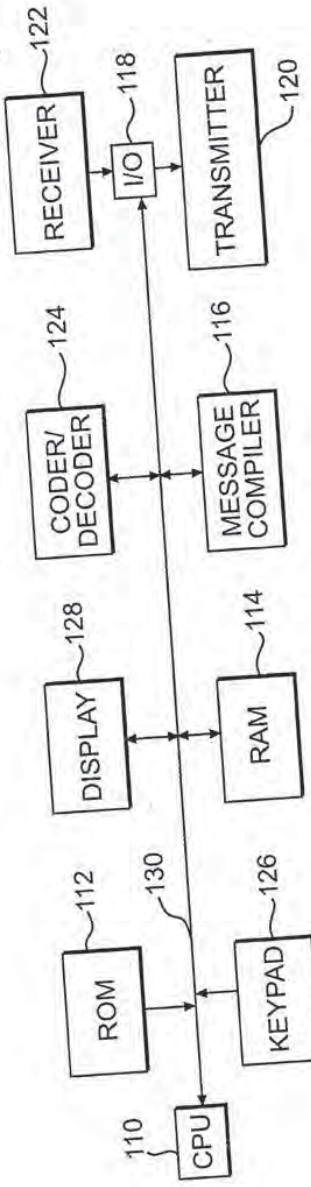


FIG. 7

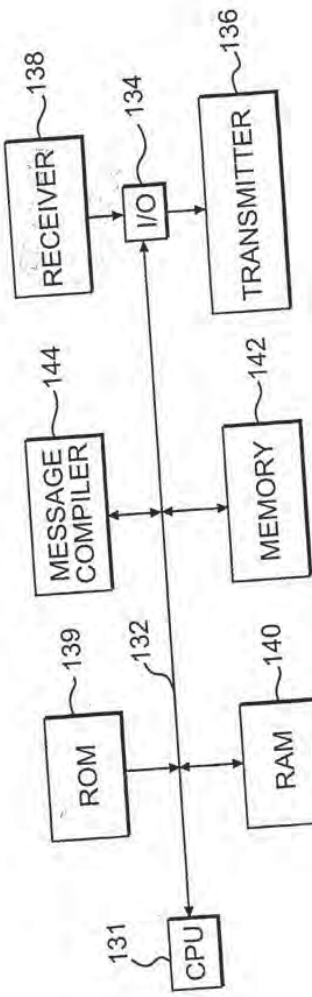


FIG. 8

ma

142-1210

PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with appropriate fees, to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

LM61/0929

FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

OIPE JC60 DEC 23 1998 PATENT & TRADEMARK OFFICE

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/708,696	09/05/96	021	TSANG, F	2742 09/29/98

First Named Applicant

TITLE OF INVENTION: PINTER, GREGORY J.

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$1320.00	12/29/98

1. Change of correspondence address or indication of " Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Finnegan, Henderson,
2 Farabow, Garrett & Dunner, L.L.P.
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE SkyTel Communications, Inc.

(B) RESIDENCE: (CITY & STATE OR COUNTRY) Jackson, Mississippi

Please check the appropriate assignee category indicated below (will not be printed on the patent)

☐ Individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):

☒ Issue Fee

☐ Advance Order - # of Copies _____

4b. The following fees or deficiency in these fees should be charged to:

DEPOSIT ACCOUNT NUMBER 06-0916
(ENCLOSE AN EXTRA COPY OF THIS FORM)

☐ Issue Fee

☐ Advance Order - # of Copies _____

The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) John M. Romary, Reg. No. 26,331

(Date) 22 Dec 98

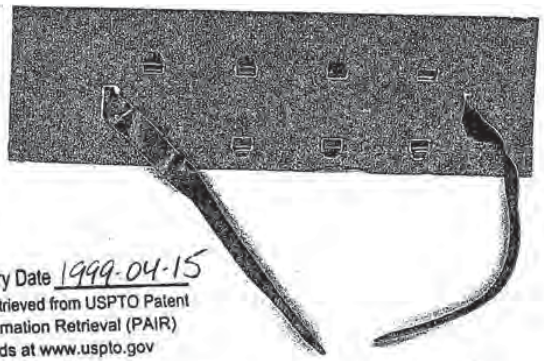
NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

01/08/1999 ZABDALLA 00000020 08708696
01 FC:142 1210.00 OP

TRANSMIT THIS FORM WITH FEE



Transaction History Date 1999-04-15
Date information retrieved from USPTO Patent Application Information Retrieval (PAIR) system records at www.uspto.gov

PTO UTILITY GRANT
Paper Number 8

The United States of America

The Commissioner of Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to an statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

Bruce Lehman
Commissioner of Patents and Trademarks

Attest Mary L. Lee

Form PTO-1584 (Rev. 2/97)

FPHLDM

(RIGHT INSIDE)

OIPE
MAY 14 1999
JC35
PATENT & TRADEMARK OFFICE

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No.: 5,894,506)
Inventor: Gregory J. Pinter)
Issue Date: April 13, 1999)

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

APPROVED
AUG 13 1999
FOR THE COMMISSIONER OF PATENTS & TRADEMARKS
CERTIFICATE
MAY 24 1999
OF CORRECTION

Certificate of Correction Branch

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

REQUEST FOR CERTIFICATE OF CORRECTION

Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, this is a request for the issuance of a Certificate of Correction in the above-identified patent. Two (2) copies of PTO Form 1050 are appended. The complete Certificate of Correction involves one page.

The mistake identified in the appended Form occurred through the fault of the Office, as clearly disclosed by the records of the application which matured into this patent.

Issuance of the Certificate of Correction containing the correction is earnestly requested.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

Dated: May 14, 1999

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.: 5,894,506

DATED: April 13, 1999

INVENTOR: Gregory J. Pinter

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

Claim 5, column 9, line 34, after "work" insert --operation center;-- then start a new indented line beginning with "routing".

Mailing Address of Sender:

Finnegan, Henderson, Farabow
Garrett & Dunner, L.L.P.
1300 I Street, N.W.
Washington, DC 20005-3315

FORM PTO 1050 (Rev.2-93)

PATENT NO. 5,894,506

No. of add'l copies
@ 50¢ per page

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

CHANGE OF ADDRESS/POWER OF ATTORNEY

FILE LOCATION 9200 SERIAL NUMBER 08708696 PATENT NUMBER 5894506

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 25537

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 25537

THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 25537

ON 11/21/00 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 25537 IS:

WORLDCOM, INC
TECHNOLOGY LAW DEPARTMENT
1133 19TH ST, NW
WASHINGTON DC 20036

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 25537 ARE:

34958 40289 41467 42408 42761 43792

PTO INSTRUCTIONS: PLEASE TAKE THE FOLLOWING ACTION WHEN THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER NUMBER: RECORD, ON THE NEXT AVAILABLE CONTENTS LINE OF THE FILE JACKET, 'ADDRESS CHANGE TO CUSTOMER NUMBER'. LINE THROUGH THE OLD ADDRESS ON THE FILE JACKET LABEL AND ENTER ONLY THE 'CUSTOMER NUMBER' AS THE NEW ADDRESS. FILE THIS LETTER IN THE FILE JACKET. WHEN ABOVE CHANGES ARE ONLY TO FEE ADDRESS AND/OR PRACTITIONERS OF RECORD, FILE LETTER IN THE FILE JACKET.
THIS FILE IS ASSIGNED TO GAU 2742.

PTO-FMD
TALBOT-1/97

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Gregory J. Pinter	
U.S. Patent No.:	5,894,506	Attorney Docket No.: 39521-0003IP
Issue Date:	April 13, 1999	
Appl. Serial No.:	08/708,696	
Filing Date:	September 5, 1996	
Title:	METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC NETWORK	

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PETITIONER'S POWER OF ATTORNEY IN POST GRANT PROCEEDINGS BEFORE THE PATENT TRIAL AND APPEAL BOARD

Petitioner, Apple Inc., hereby appoints the following practitioners as its attorneys to transact all business in the United States Patent & Trademark Office associated with any *inter partes* review, covered business method review, post grant review, or other review proceedings before the Patent Trial and Appeal Board of the above-captioned patent:

W. Karl Renner, Reg. No. 41,265
Thomas A. Rozylowicz, Reg. No. 50,620

and all practitioners associated with PTO Customer Number 26171.

I have the authority to execute this document on behalf of Apple Inc.

APPLE INC.

By: _____

Name: Jacqueline Harlow

Title: Litigation Counsel

Date: 25 June 2014

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Gregory J. Pinter
U.S. Patent No.: 5,894,506 Attorney Docket No.: 39521-0003IP1
Issue Date: April 13, 1999
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Alexandria, VA 22313-1450

PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 5,894,506 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

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EXHIBITS

APL-1001	U.S. Patent No. 5,894,506 to Gregory J. Pinter ("'506 Patent")
APL-1002	Prosecution History of the '506 Patent
APL-1003	Declaration of Dr. Rajeev Surati ("Surati")
APL-1004	U.S. Patent No. 5,850,594 to Cannon et al. ("Cannon")
APL-1005	U.S. Patent No. 5,970,122 to LaPorta et al. ("LaPorta")
APL-1006	U.S. Patent No. 5,588,009 to Craig A. Will ("Will")
APL-1007	Claim Construction Order from *Mobile Telecommunications Technologies, LLC v. Apple Inc.*, Civil Action No. 2:13-cv-258-JRG-RSP (E.D. Tex.) ("Markman Order")
APL-1008	Plaintiff's Opening Brief on Issues of Claim Construction from *Mobile Telecommunications Technologies, LLC v. Apple Inc.*, Civil Action No. 2:13-cv-258-JRG-RSP (E.D. Tex.)
APL-1009	Docket for *Mobile Telecommunications Technologies, LLC v. Apple Inc.*, Case No. 2:13-CV-258 (E.D. Tex.)
APL-1010	Claim Construction Order from *Mobile Telecommunications Technologies, LLC v. Clearwire Corp.*, Civil Action No. 2:12-cv-308-JRG-RSP (E.D. Tex.) ("Clearwire Order")
APL-1011	U.S. Patent No. 5,784,001 to Deluca et al. ("Deluca")

Apple Inc. ("Petitioner" or "Apple") petitions for *Inter Partes* Review ("IPR") under 35 U.S.C. §§ 311–319 and 37 C.F.R. § 42 of claims 8-14, 19 and 21 ("the IPR Claims") of U.S. Patent No. 5,894,506 ("'506 Patent") of assignee Mobile Telecommunications Technologies, LLC ("Patentee" or "MTel"). As explained in this petition, there exists a reasonable likelihood that Apple will prevail with respect to at least one claim challenged in this petition.

I. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Petitioner, Apple Inc., is the real party-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Apple is not aware of any disclaimers or reexamination certificates for the '506 Patent. The '506 Patent does not have any related continuation application. Apple has been named as a defendant in a recently-filed litigation concerning the '506 Patent, *Mobile Telecommunications Technologies, LLC v. Apple Inc.*, Civil Action No. 2:13-cv-258-JRG-RSP (E.D. Tex.) ("MTEL Litigation").[1] Apple has also petitioned—on this same day—for another *Inter Partes* Review of the '506 Patent on different grounds of rejection, and for *Inter Partes* Review of several other patents at issue in the MTEL litigation, namely, U.S. Patent Nos. 5,659,891, 5,915,210 and 5,590,403.

[1] This action has been consolidated with other district court cases concerning the same patent. The consolidated lead case is captioned *Mobile Telecommunications Technologies, LLC v. Sprint Nextel Corporation*, Civ. Action No. 2:12-cv-832-JRG-RSP (E.D. Tex.).

C. Counsel Under 37 C.F.R. § 42.8(b)(3), and Service

Apple designates W. Karl Renner, Reg. No. 41,265, as Lead Counsel and Thomas A. Rozylowicz, Reg. No. 50,620, as Backup Counsel, both available at 3200 RBC Plaza, 60 South Sixth Street, Minneapolis, MN 55402 (T: 202-783-5070; F: 202-783-2331. Please address all correspondence and service to counsel at the address provided in Section I(C). Apple also consents to electronic service by email at IPR39521-0003IP1@fr.com.

II. PAYMENT OF FEES – 37 C.F.R. § 42.103

Apple authorizes the Patent and Trademark Office to charge Deposit Account No. 06-1050 for the fee set in 37 C.F.R. § 42.15(a) for this Petition, and further authorizes payment for any additional fees to be charged to this Deposit Account.

III. REQUIREMENTS FOR IPR UNDER 37 C.F.R. §§ 42.104

A. Grounds for Standing Under 37 C.F.R. § 42.104(a)

Apple certifies that the '403 Patent is eligible for IPR and that Apple is not barred or estopped from requesting IPR. The present petition is being filed within one year of when Apple's waiver of service was filed in the co-pending district court litigation, Case No. 2:13-CV-258, which took place on June 27, 2013. *See* APL-1009, p. 9; *see also Macauto U.S.A. v. BOS GMBH & KG* (IPR2012-00004), Paper No. 18 at 16.

B. Challenge Under 37 C.F.R. § 42.104(b) and Relief Requested

Apple requests IPR of the Challenged Claims of the '506 Patent on the grounds set forth in the table below, and requests that each of the claims be found unpatentable.

Ground	'506 Patent Claims	Basis for Rejection of the IPR Claims
Ground 1	**8 and 9**	§ 102 by Cannon
Ground 2	**10, 19 and 21**	§ 103 by Cannon in view of LaPorta
Ground 3	**11 and 12**	§ 103 by Cannon in view of Will
Ground 4	**13 and 14**	§ 103 by Cannon in view of Will and LaPorta

The '506 Patent issued from US Application No. 08/708,696, filed on Sept. 5, 1996, without a claim of priority, yielding an earliest effective filing date potential of Sept. 5, 1996. Cannon, Will, LaPorta, and Deluca each qualify as prior art under 35 U.S.C § 102(e) because each was filed prior to the earliest potential effective filing date of the '506 Patent.

C. Claim Construction under 37 C.F.R. §§ 42.104(b)(3)

The subject patent has not expired, such that its claims and claim terms are subject to amendment. Accordingly, the claims and the claim terms are properly given their "broadest reasonable construction in light of the specification of the patent in which it appears."[2] 37 C.F.R. § 42.100(b). For purposes of this proceeding only, Apple submits constructions

[2] Because the standards of claim interpretation applied in litigation differ from PTO proceedings, any interpretation of claim terms in this IPR is not binding upon Apple in any litigation related to the subject patent. *See In re Zletz*, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

for the following terms. All remaining terms should be given their plain meaning.[3]

i. "Canned message" and "canned multiple response options"

For purposes of this Petition, the term "canned message" is to be construed at least broadly enough to read on "predefined sequence of characters." *See* Surati at ¶¶31-33. This construction also mimics the construction resolved through Markman proceedings conducted in co-pending litigation. *See, e.g.*, Markman Order at pp. 70-71 ("The Court accordingly hereby construes the disputed terms as set forth in the following chart:[]'canned message'[:] 'predefined sequence of characters'[.]").

Furthermore, for purposes of this Petition, the term "canned multiple response options" is to be construed at least broadly enough to read on "predefined responses to a canned message." *See* Surati at ¶¶31-33. This construction also mimics the construction resolved through Markman proceedings conducted in the co-pending litigation, see, *e.g.*, Markman Order at pp. 70-71 ("The Court accordingly hereby construes the disputed terms as set forth in the following chart:[] 'canned multiple response options'[:] 'predefined responses to a canned message[.]'"), and is consistent with the construction agreed by MTel, *see, e.g.*, *id.* at p. 65 ("[T]he Court provided the parties with the following preliminary con-

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[3] In as much as 37 C.F.R. § 42.104(b)(2) defines a narrow scope of inquiry in this Petition, Apple does not acknowledge claim compliance with 35 U.S.C. § 112, through its assessment of a broadest reasonable interpretation for terms that follow, or otherwise.

structions for these disputed terms…'canned multiple response options' means 'predefined responses to a canned message.' At the March 7, 2014 hearing, all parties agreed to the Court adopting its preliminary construction of 'canned multiple response options.'").

ii. "Message code" and "Response code"

For purposes of this Petition, each of the terms "message code" and "response code" are construed by its plain and ordinary meaning, with the understanding that a "message code" corresponds to a "canned message." *See* Surati at ¶¶31-33. This construction also mimics constructions resolved through Markman proceedings conducted in co-pending litigation, and is harmonious with constructions offered by Patentee during those proceedings. *See, e.g.*, Markman Order at p. 71 ("[A]ll parties nonetheless agreed that a "message code" is something that corresponds to a "canned message."), and at p. 73 ("The Court therefore hereby construes the disputed terms as set forth in the following chart: [] 'message code'[:] Plain meaning [and] 'response code'[:] Plain meaning[.]"); *see also* APL-1008, p. 16.

iii. "Means for retrieving the file of canned messages and the file of canned multiple response options from the memory" and "means for retrieving the file of canned messages and message codes from the memory"

For purposes of this Petition, the terms "means for retrieving the file of canned messages and the file of canned multiple response options from the memory" and "means for retrieving the file of canned messages and message codes from the memory" are to be construed at least broadly enough to read on "retrieving the file of canned messages and the file of canned multiple response options from the memory" and "retrieving the file of

canned messages and message codes from the memory" respectively, when construed as a function. Both of the terms are to be construed at least broadly enough to read on "CPU 110, ROM 112 (including stored application program for controlling terminal operation), and system bus 130 (which interconnects system components such as CPU 110, ROM 112, and RAM 114); and equivalents thereof," when construed as a structure. These constructions are consistent with the constructions agreed to by Patentee in the co-pending litigation. *See, e.g.*, Markman Order at pp. 6-7 ("The parties have reached agreement on constructions for certain terms.... The parties' agreements are set forth in Appendix A to this Claim Construction Memorandum and Order. and at p. 78.") and at pp. 78-79.

iv. "Means for selecting one of the canned messages and the file of canned multiple response options from the memory" and "means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal"

For purposes of this Petition, the terms "means for selecting one of the canned messages and the file of canned multiple response options from the memory" and "means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal" are to be construed at least broadly enough to read on "selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal" and "selecting one of the canned messages for communication to a designated other message

terminal and for selecting multiple response options appropriate for the selected canned message" respectively, when construed as a function. Both the terms are to be construed at least broadly enough to read on "terminal keypad 126; or a mouse; or a cursor; and equivalents thereof," when construed as a structure. These constructions are consistent with the constructions agreed to by Patentee in the co-pending litigation. See, e.g., Markman Order at pp. 6-7 ("The parties have reached agreement on constructions for certain terms.... The parties' agreements are set forth in Appendix A to this Claim Construction Memorandum and Order. and at p. 78.") and at pp. 78-79.

IV. SUMMARY OF THE '506 PATENT

A. Brief Description

Generally, the '506 patent is directed towards communicating messages in a messaging network. The Abstract of the '506 Patent states:

> An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center.

B. Summary of the Prosecution History of the '506 Patent

Prosecution resulted in an improvident grant of the '506 Patent. In the first Office Action dated February 26, 1998, the Office immediately allowed claims 8-14, rejected claim 19 based on U.S. Patent No. 5,327,486, and indicated that claim 21 "would be allowable if re-

written in independent form including all of the limitations of the base claim and any intervening claims." APL-1002, p. 78. In particular, the Office stated that:

> Regarding claims 5-7, 18 and 21, prior art fail to disclose the feature of selecting one of the multiple response options at the second terminal, communicating the selected response option to the network center, routing the option from the network center to the first terminal, and displaying the selected response option at the first terminal. Regarding claims 8-14, prior art fail to teach a network center with a first file, a first terminal with a second file and a second terminal with a third file.

Id. In the July 24, 1998 response, Applicant amended claim 19 and added new claim 22 that included the allowable features of claim 21, while cancelling claim 21. *Id.* at pp. 84-91. No reason was given for allowance of claims amended claims 19 and 22.

V. MANNER OF APPLYING CITED PRIOR ART TO EVERY CLAIM FOR WHICH IPR IS REQUESTED, THUS ESTABLISHING A REASONABLE LIKELIHOOD THAT AT LEAST ONE IPR CLAIM OF THE '506 PATENT IS UNPATENTABLE

The Office found the prior art lacking a network center with a first file, a first terminal with a second file, and a second terminal with a third file. As described below, Cannon, LaPorta and Will disclose this feature, together with the other features of claims 8-14.

With respect to claim 19, while the Office did not indicate which features were novel over the prior art, a combination of Cannon and LaPorta discloses all features of claim 19. With respect to claim 21, the Office found the prior art lacking with regard to the feature of selecting one of the multiple response options at the second terminal, communicating the selected response option to the network center, routing the option from the network center

to the first terminal, and displaying the selected response option at the first terminal. As described below, the combination of Cannon and LaPorta disclose this feature, together with the other features of claim 21.

While not made available to the Office during original prosecution, these references therefore disclose each of the features of claims 8-14, 19 and 21. In addition, they demonstrate that the Office was incorrect in concluding that the prior art failed to show "selecting one of the multiple response options at the second terminal, communicating the selected response option to the network center, routing the option from the network center to the first terminal, and displaying the selected response option at the first terminal," or "a network center with a first file, a first terminal with a second file and a second terminal with a third file." APL-1002 at p. 78. Indeed, these references yield multiple grounds that render the IPR Claims unpatentable. Because the Office was not made aware of these references, nor of the well-known nature of these features, the Office improvidently granted the '506 patent.

A. [GROUND 1] – Cannon anticipates claims 8 and 9.

Cannon teaches each and every limitation of claims 8 and 9 of the '506 Patent, rendering those claims unpatentable under 35 U.S.C. § 102(e) as being anticipated by Cannon.

In particular, Cannon describes a communication system that provides two-way communication between portable messaging units (PMUs) for exchanging messages over a wireless communication channel. Cannon, abstract, 1:14-23. Cannon teaches that "relatively short aliases" can be used to communicate "frequently transmitted information" from

the PMUs to a system controller, such that "frequently used messages can be represented by message aliases[.]" *Id.* at 2:19-32. Each of the PMUs and the system controller can store databases of the "frequently transmitted information and the associated aliases" "so that each device can recognize an alias and conveniently interpret the more lengthy message or friend address associated therewith." *Id.* Cannon further discloses that a PMU seeking to transmit a message to a friend may send "the message code, the friend alias, and the message alias" to the system controller. *Id.* at 6:46-57. The system controller, in turn, transmits the message alias to the recipient device, *id.* at 9:38-53, which retrieves the associated message for presentation to the user, *id.* at 5:3-9.

Dr. Rajeev Surati, an authority in the field of communication networks and network messaging, explains that the "frequently transmitted information" and the associated "message aliases" in Cannon would qualify as canned messages and message codes, respectively. *See, e.g.*, Surati at ¶45-47. In disclosing these features, Cannon addresses each feature believed by the handling examiner to be missing from the prior art with regard to claims 8-9, namely "a network center with a first file, a first terminal with a second file and a second terminal with a third file." APL-1002 at p. 78. These and other disclosures of Cannon also fully address the other features of claims 8-9, as shown in the claim chart below.

8(pre). A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

Cannon discloses a communication system that provides two-way communication between a portable messaging unit ("subscribers") that sends a signal ("messages") to a recipient ("subscribers") over a wireless communication channel ("electronic messaging network"). *See* Abstract. Cannon discloses methods associated with wireless communications systems ("electronic messaging network") in which portable messaging units or PMUs ("subscribers") send and receive messages. *See* 1:14-23.

8(a) maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

Cannon discloses a communications system that includes PMUs and a system controller ("network operation center"). The system controller stores a database ("first file") of frequently transmitted information ("canned messages") and associated aliases ("message codes"): "FIG. 1 is an illustration of a communication system including portable messaging units (PMUs) and a system controller according to the present invention," 1:41-43; *see also* Cannon Fig. 1; "FIG. 12 is an electrical block diagram of the system controller included in the communication system[.]" 1:59-60; *see also* Fig. 12 (annotated below).

"[T]he communication system 100 according to the present invention employs relatively short aliases to communicate frequently transmitted information from the PMUs 105 to the system controller 110. Specifically, frequently used messages can be represented by message aliases," 2:19-26. "Databases of the frequently transmitted information and the associated aliases are preferably stored at the PMUs 105 and at the system controller 110 so

that each device can recognize an alias and conveniently interpret the more lengthy message or friend address associated therewith…. [T]he databases of both the system controller 110 and the PMUs 105 are updated, when necessary, by the controller 110 to avoid situations in which information stored in a PMU database is not equivalent to that stored in the controller database," 2:28-38; 9:38-42.

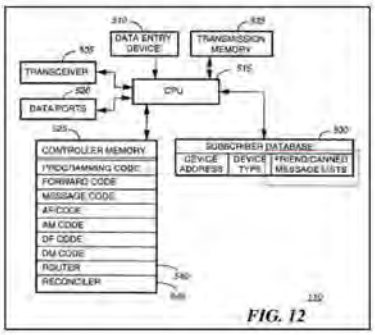


FIG. 12

8(b) maintaining at a first terminal of a first subscriber, a second file of canned messages and message codes corresponding to the first file;

Cannon discloses a communications system that includes PMUs, as described in 8(a) above. Cannon discloses that a PMU 105 ("a first terminal of a first subscriber") stores a database ("second file") of frequently transmitted information ("canned messages") and associated aliases ("message codes") where the database stored in the PMU 105 is equivalent to that stored in the system controller ("corresponding to the first file"): "FIG. 1 is an illustration of a communication system including portable messaging units (PMUs) and a system controller," 1:41-43; *see also* Fig. 1 and Fig. 2 (annotated herein), 2:28-38.

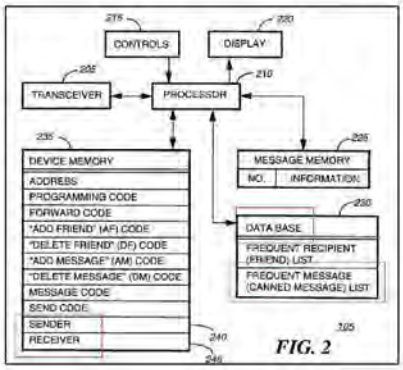
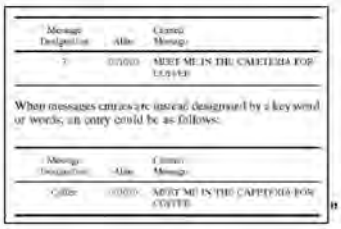


FIG. 2

"FIG. 2 is an electrical block diagram of a PMU 105…a database 230 is coupled to the processor 210 for storing the frequent recipient, i.e., friend, list and the frequent message list. Preferably, the lists in the database 230 are maintained in accordance with instructions by the user of the PMU 105 by over-the-air programming," 2:39-52; "each message included in the message list is associated with a message alias. These "canned messages" are also preferably associated with a message designation, which could be set by the user, so that the user can easily remember the message and select it for transmission by providing information to the processor 210 via the controls 215. An entry in the message list could, for example, include a number as a designator and be as follows:


When messages entries are instead designated by a key word or words, an entry could be as follows:

" 3:11-34; "the system controller 110 modifies the database 230 of the PMU 105 so that the lists stored in the controller 110 and the lists stored

in the PMU 105 remain equivalent. [O]ther methods for ensuring agreement between the PMU lists and the controller lists can…be employed," 6:4-10; "the portable unit maintains lists of frequently used…messages. Each entry in the lists is aliased with a code that is usually shorter than the referenced message…. For instance, a very long message that is often transmitted could be aliased with a message alias comprising six bits," 9:21-26.

8(c) maintaining, at a second terminal of a second subscriber, a third file of canned messages and message codes corresponding to the first file;

Cannon discloses that a communications system includes at least two PMUs, as described in 8(a) and 8(b) above. *See also* Fig. 1. Similar to that described in 8(b), Cannon discloses that a PMU 105 that is a receiver ("a second terminal of a second subscriber") stores a database ("third file") of frequently transmitted information ("canned messages") and associated aliases ("message codes") where the databases stored in the PMUs 105 and the system controller are equivalent ("corresponding to the first file"): "receiver 245 then compares, at step 345, the received message information with aliases stored in the message list. When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the list and stored, at step 355, in the message memory 225," 5:1-6. *See also* 8(b) above.

8(d) selecting an appropriate canned message from the second file for transmission to the second terminal;

Cannon discloses that a PMU 105 ("a first terminal of a first subscriber") stores a database ("second file") of frequently transmitted information ("canned messages") and associated aliases ("message codes"), as described above. *See* 8(a). Cannon discloses that a sender 240 in the PMU 105 prepares the information ("selecting an appropriate canned message from the second file") for transmission to a receiver 245: "A sender 240 included in the PMU 105 prepares information for transmission from the PMU 105, and a receiver 245 processes received information. Preferably, the sender 240 and the receiver 245 comprise firmware stored in the device memory 235 and executed by the processor 210. Alternatively, the sender 240 and receiver 245 could be implemented using hardware capable of performing equivalent operations," 4:1-8; "When, at step 465, the signal includes a message code, indicating that a message is to be transmitted to another device, the sender 240 references...the database 230 to determine...whether the entered message is a canned message. Thereafter, at step 475, the message code, the friend alias or recipient address, and the message information or message alias are provided to the transceiver 205," 5:56-63; *see also* Fig. 5. "[T]he user is provided with a convenient way of entering message and address information. Specifically, the user does not have to remember relatively long addresses for entry into the portable messaging unit. Instead, the user only has to remember and enter a relatively short recipient alias or message designation rather than a lengthy address or message." 10:7-13.

8(e) sending the message code assigned to the selected canned message to the network operation center;

Cannon discloses that a sender 240 in the PMU 105 prepares information for transmission to a receiver 245, as described in 8(d). Cannon discloses that the sender provides the message code to the transceiver 205, which sends the message code to the system controller 110 ("network operation center"). *See* 5:56-63. *See also* Fig. 5.

"FIGS. 10 and 11 show examples of message transmissions from the PMU 105. In FIG. 10, the PMU 105 transmits a frequently transmitted message to a friend by sending the message code, the friend alias, and the message alias. The controller 110 receives the signal," 6:46-57; *see also* Fig. 10 (annotated herein).

8(f) relaying the message code assigned to the selected canned message from the network operation center to the second terminal;

Cannon discloses that a router is included as part of the system controller ("network operation center"). When the system controller receives a message alias from a source terminal and determines that the message alias is present in its database, the router is activated to relay the message alias ("message code") to the recipient device ("second terminal"): "FIG. 14 is a flowchart depicting an operation of a router included in the system controller," 1:65-66; "When a message alias is included in the signal from the PMU 105, the

CPU 515 references, at step 584, the subscriber database 530 to determine whether the received message alias is included in the canned message list associated with the PMU 105. When it is, the message associated with the canned message alias is recovered, at step 586, and the router 540 is activated, at step 578....Referring next to FIG. 14, a flowchart depicts an operation of the router 540…When, at step 635, the message to be sent to the device comprises a canned message stored in the device's list, the message alias representative of the message is recovered. The recipient address, the message code, the message number, and the message alias are then provided, at step 640, to the transceiver 505 for transmission to the recipient device, which can, for instance, comprise another PMU." 8:30-58. *See also* Fig. 14 (partly reproduced and annotated below). and 9:38-53.

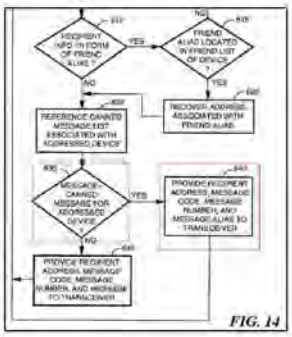


FIG. 14

8(g) retrieving the selected canned message from the third file using the assigned message code received from the network operation center; and

Cannon discloses that a PMU 105 that is a receiver receives a message from the system controller ("network operation center"), and compares the received message information to aliases ("message code") stored in the message list ("third file") and retrieves the

message associated with the matching alias ("retrieving the selected canned message"): "FIG. 4 is a flowchart of an operation of a receiver included in the PMU of FIG. 2," 1:50-51; *see also* Fig. 4 (partly reproduced and annotated herein).

"When, at step 335, the information received by the receiver 245 includes a message code, indicating that the system controller 110 is routing a message to the PMU 105 over the wireless communication channel, a message number associated with the message and included in the signal is stored, at step 340, in the message memory 225. The receiver 245 then compares, at step 345, the received message information with aliases stored in the message list. When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the list and stored, at step 355, in the message memory 225," 4:62-5:6.

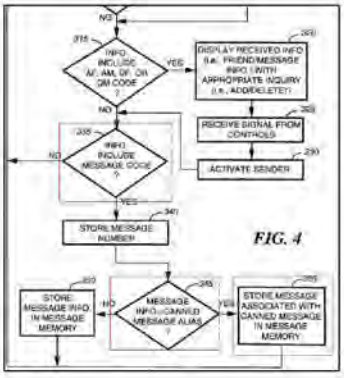


FIG. 4

8(h) displaying the selected canned message retrieved from the third file.

Cannon discloses that a PMU 105 includes a display for presenting information to the user. When the received message information is equivalent to a canned message alias,

the message associated with the matching alias is retrieved from the message list ("third file") and presented to the user: "a PMU 105…includes...a display 220 [that] presents information to a user in response to activation by the processor 210. A message memory 225 is coupled to the processor 210 for storing received messages and message numbers associated with the received messages. Also, a database 230 is coupled to the processor 210 for storing the frequent recipient, i.e., friend, list and the frequent message list," 2:39-51; *see also* Fig. 2 and 2:28. "When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the list and stored, at step 355, in the message memory 225....Thereafter, the message can be presented to the user in a conventional manner." 5:3-9.

9. The method defined in claim 8, further including the step of updating the first, second, and third canned message files.

Cannon discloses that the system controller updates the databases at the system controller ("first" "canned message file") and at the PMUs 105 ("second, and third canned message files"). *See* 2:28-38; 6:4-10. "According to the present invention, the system controller maintains the recipient and message lists stored by portable units by programming the units over the air. Therefore, the probability of disagreement between the lists of the portable units and the lists maintained by the controller is minimized, which reduces the likelihood of missed or delayed messages resulting from unrecognized aliases." 9:54-60.

B. [GROUND 2] – Cannon in view of LaPorta renders obvious Claims 10, 19 and 21.

As explained below, the features of claims 10, 19 and 21 of the '506 Patent are rendered obvious over Cannon in view of LaPorta, rendering claims 10, 19 and 21 unpatentable under 35 U.S.C. § 103(a).

As explained in Surati at ¶92-94, it would be obvious for a person of ordinary skill in the art, at the time of the effective filing date of the '506 Patent, to combine the teachings of Cannon and LaPorta, to send frequently transmitted messages with customizations, as taught by LaPorta, where the messages are communicated using message aliases end-to-end from a source PMU to a recipient through the system controller, as taught by Cannon. As discussed in §VA, Cannon teaches that PMUs communicate frequently transmitted messages using message aliases that are communicated through an intermediate system controller. *See, e.g.*, Cannon at 2:19-32, 9:38-53 and 5:3-9. According to Cannon, the source and recipient PMUs and the system controller each stores databases of the frequently transmitted messages and the associated aliases. *See, e.g.*, *id.* at 6:46-57.

However, Cannon is silent about sending messages that are customized with added options, e.g., reply choices or other parameters, such that the options are sent along with the message aliases. LaPorta reveals precisely this feature, by contemplating customization of messages with reply options and variables. Specifically, in LaPorta, an originating messaging device communicates messages to a destination by sending, to a user agent, a predetermined message number corresponding to a message that is stored both at the orig-

inating device and the user agent. *See, e.g.*, LaPorta at 1:62-2:4. The user agent expands the coded message received from the originator back into the full message, and forwards the full message to the recipient. *See, e.g.*, *id.* at 2:8-12. LaPorta further discloses that the originator can customize the message by adding "dynamic components such as embedded replies, choices, pre-defined variables, etc." to the "fixed pre-canned components." *Id.* at 2:13-21. The originator sends "particular values of the dynamic components [] encoded in [a] message modifier," *id.* at 2:25-27, that "represents the customization to be applied to the [coded] message," *id.* at 2:3-4. The user agent recovers the dynamic components based on the message modifier, and applies to the pre-canned components to customize the message that is delivered to the recipient. *See, e.g.*, *id.* at 2:26-27.

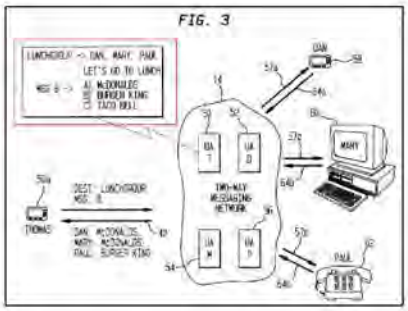
As explained by Dr. Surati, one of skill would enhance Cannon's communication system with LaPorta's dynamic components in order to achieve the flexibility contemplated by LaPorta. *See, e.g.*, *id.* at 2:13 ("The message that can be transmitted is highly flexible."); *id.* at 2:22-24 ("The dynamic components allow customization of messages by message senders and recipients, thus greatly increasing the practical applicability of the system."). *See also* Surati at ¶¶92-94. One of skill would readily appreciate that such an integration could be accomplished by embedding, at originating PMU, a selected frequently used message with a dynamic component, as contemplated by LaPorta, *see, e.g.*, LaPorta at 2:25-27, and sending the message alias corresponding to the selected message to the destination PMU, as taught by Cannon, *see, e.g.*, Cannon at 9:46-53, where the embedded dynamic compo-

nent is sent to the destination along with the message alias. The originating PMU may customize the frequently transmitted information sent that is sent by adding a value for the selected dynamic component to the message alias that is sent to the system controller, which forwards the message alias to the recipient, as taught by Cannon, *see, e.g.*, *id.*, along with the dynamic component value, as taught by LaPorta, *see, e.g.*, LaPorta at 2:25-27. The use of dynamic components would also allow Cannon's PMUs and the system controller to store smaller lists of the frequently transmitted messages, since the various permutations and combinations of a smaller set of frequently used messages and dynamic components would be less than having to store all possible variations of the messages that are exchanged. *See* Surati at ¶¶92-94.

10(a) The method defined in claim 8, further including the step of adding a parameter to the canned message selected from the second file;

While Cannon discloses that a PMU 105 selects a canned message from the database ("second file") as discussed in 8(d), LaPorta discloses adding a parameter to the canned message, as shown below. **Example I:** LaPorta discloses adding a dynamic component ("parameter") to the canned message: "The message that can be transmitted is highly flexible. In addition to fixed pre-canned components, it can include dynamic components such as embedded replies, choices, predefined variables, etc.…The dynamic components allow customization of messages by message senders and recipients, thus greatly increasing the practical applicability of the system. The particular values of the dynamic

components are encoded in the message modifier, and are recovered and applied by the user agent," 2:13-27; "Fixed pre-canned messages suffer from a major limitation, namely, they cannot be dynamically customized. To overcome this, the present invention introduces three types of dynamic components: 1) optional components, 2) selections and 3) pre-defined variables. … a selection labeled "location" may expand into the list of choices: a) home, b) office, or c) lab. The set of available selections are defined by the individual sub-scribers. Pre-defined variables represent … can be customized by a user," 12:24-37.



Example II: LaPorta also discloses that a sender can add a parameter to a canned message as an embedded response: "Thomas can send the message as a pre-canned message with an embedded response. Thus, the message would include not only the text of the request, but would also include a list of responses," 5:57-61; *see also* Fig. 3 (annotated herein).

10(b) the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

Cannon discloses that a sender 240 in the PMU 105 prepares information for transmission to a receiver 245, and that the sender provides the message code to the transceiver 205, which sends the message code to the system controller 110 ("network operation center"), as discussed in 8(e) above. While Cannon discloses sending the message code assigned to the selected canned message to the network operation center, LaPorta discloses sending the coded message with the dynamic component ("added parameter") to the user agent ("network operation center"): "[A] wireless messaging device can originate new messages[]...a modifier representing the customization to be applied to the message....The message that can be transmitted is highly flexible. In addition to fixed pre-canned components, it can include dynamic components such as embedded replies, choices, predefined variables, etc." 1:62-2:17. "FIG. 7 shows a highly schematic depiction of message delivery procedures. … This PG2BS-NEW contains the address of S, an array of recipient addresses, an array of reply-to-addresses, and the coded message....The message is coded by indicating a message number and any dynamic component values." 14:3-13; *see also* Fig. 7.

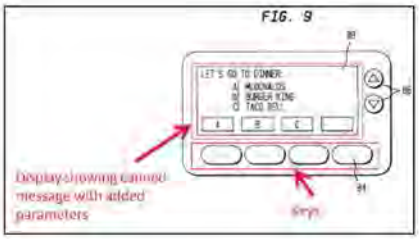
10(c) the relaying step including the step of relaying the added parameter with the assigned message code to the second terminal; and

Cannon discloses that when the system controller ("network operation center") receives a message alias ("message code") from a source terminal and determines that the message alias is present in its database, the router, which is included as part of the system controller, is activated to relay the message alias to the recipient device ("second terminal"),

as described above in 8(f). While Cannon discloses relaying the message code assigned to the selected canned message from the network operation center to the second terminal, LaPorta discloses that the message includes dynamic component values ("added parameters"), as described above in 10(b). The message relayed by the system controller of Cannon in view of LaPorta includes the message alias ("message code") along with the dynamic component values ("added parameters").

10(d) the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

Cannon discloses that a PMU 105 includes a display for presenting information to the user. When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the message list ("selected canned message") and presented to the user, as described in 8(h) above. LaPorta discloses that the messaging device displays messages to the user: "Referring now to FIG. 9 there is illustrated one example of a messaging device that can be used with the present invention. It is illustrated as a dedicated, stand alone two-way pager 11. In this example, the messaging device 11 generates, receives and displays messages to the subscriber user." 8:34-39; *see also* Fig. 9 (annotated below).



While Cannon discloses displaying the selected canned message retrieved from the third file, LaPorta discloses that the displayed message includes the added parameter in describing that the canned message includes dynamic components, such as embedded reply with choices ("added parameter incorporated therein"), which are shown to the user. *See* 2:13-27. "Thomas can originate through his pager 50a a message to his lunch group members, Dan, Mary and Paul, and inquire about lunch choices. The message is delivered via the two-way wireless messaging network 14 along message delivery channels[.]" 5:16-21. "For message reply, the uplink message contains only a reply code. This is expanded back to the full reply inside the network....Dan, Mary and Paul each receive the message in a different format[.]...Thomas can send the message as a pre-canned message with an embedded response. Thus, the message would include not only the text of the request, but would also include a list of responses to be selected and returned by the recipient," 5:42-61; *see also* Fig. 3.

"To facilitate a reply, a message can include reply components. A reply component embeds the desired replies, typically making use of dynamic components. This is useful in applications where the possible replies are agreed upon a priori." 13:39-43.

19(pre) and 21(pre) A message terminal for use in an electronic messaging network, comprising:

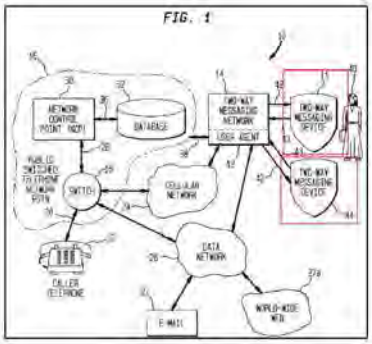
Cannon describes a PMU ("message terminal") for sending a signal over a wireless communication channel in a communication system ("electronic messaging network"): "A communication system (100) for providing two-way communication including a portable messaging unit (105) for sending a signal including a recipient alias over a wireless communication channel," abstract; "[t]his invention relates in general to systems including portable messaging units, and more specifically to portable messaging units for sending and receiving messages over wireless communication channels," 1:8-11; *see also* 8(b) and Fig. 1

19(a) and 21(a) memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

Cannon discloses that a PMU includes a message memory for storing messages ("file of canned messages" and "file of canned multiple response options") and associated message aliases ("message codes" and "response codes"). The PMU also includes a database ("file") for storing the frequent message list ("canned messages and message codes" and "canned multiple response options and response codes"): 2:39-51; Fig. 2; 3:11-17; 3:39-47; "the PMU 105 further includes a device memory 235... a message code used for sending … messages…," 3:54-66. Additionally, LaPorta discloses a two-way pager for sending predetermined codes associated with messages along with list of responses to be

selected. The pager includes memory for storing the messages and associated data. LaPorta discloses that the messages include encoded list of responses, where the possible responses are agreed upon apriori ("file of canned messages" and "file of canned multiple response options") and ("message codes" and "response codes"): *see* 1:62-2:17; "[t]he dynamic components allow customization of messages by message senders and recipients, thus greatly increasing the practical applicability of the system. The particular values of the dynamic components are encoded in the message modifier[]. The coded message is much shorter than the corresponding full-text message," 2:22-30; 5:12-18; 5:57-61; "[t]he reply code encodes the desired response," 10:27; "[f]ixed pre-canned messages suffer from a major limitation, namely, they cannot be dynamically customized. To overcome this, the present invention introduces three types of dynamic components: 1) optional components, 2) selections and 3) pre-defined variables," *see* 13:24-28; 13:39-43, 8:34-39; "The pager contains computing hardware, e.g., a processor and memory for user interface code and pager protocol....Memory should be adequate enough to contain these various messages and associated data," 8:52-57; *see also* LaPorta Fig. 9. "A predetermined message is forwarded to a desired destination such as a data network 26, public switched telephone network 16 or a cellular network 24 in response to an originating message code that is received from a two-way messaging device 11 of the subscriber 40 along the second communication return channel 43....[T]he selected destination could be a second two-way messaging device 44 (FIG. 1);" 4:48-58; "a response includes dynamic components that can be custom-

ized by the recipient for forwarding back to the first subscriber," 18:49-51; *see also* LaPorta Fig. 1 (annotated herein).



19(b) means for retrieving the file of canned messages and the file of canned multiple response options from the memory;

21(b) means for retrieving the file of canned messages and message codes from the memory;

Cannon discloses a PMU that includes a memory for storing received messages and associated message numbers, and a database for storing frequent message list ("file of canned messages"). The PMU includes a processor controlling the operations of the PMU ("means for retrieving"). The PMU also includes receiver firmware executed by the processor that retrieves canned messages associated with matching aliases from the database: *see* 2:39-51 and Fig. 2; "the sender 240 and the receiver 245 comprise firmware stored in the device memory 235 and executed by the processor 210. Alternatively, the sender 240 and receiver 245 could be implemented using hardware capable of performing equivalent operations," 4:3-8; "[w]hen, at step 335, the information received by the receiver 245 in-

cludes a message code,...a message number associated with the message and included in the signal is stored, at step 340, in the message memory 225. The receiver 245 then compares, at step 345, the received message information with aliases stored in the message list. When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the list and stored, at step 355, in the message memory 225," 4:62-5:6; *see also* Fig. 4 and Surati at ¶38.

Cannon also discloses that the PMU includes a sender that retrieves message information and associated alias from the database: "FIG. 5 is a flowchart illustrating an operation of the sender 240 according to the present invention. At step 405, a signal is received from the controls 215. When, at step 410, the signal includes a DF or DM code, indicating that the user wants to delete a friend or message entry identified by the received user-initiated signal, the database 230 is referenced, at step 415, to recover the selected friend or message information and the alias associated therewith. The sender 240 then provides, at step 420, the appropriate DF or DM code to the transceiver 205 along with enough information to identify the entry that is to be deleted. For example, the alias and the entry information, such as friend name, friend address, message designation, and/or actual message, can be provided to the transceiver 205 with the DF or DM code to assist the controller 110 in locating the correct entry...When, at step 425, the user-initiated signal includes an AM or AF code, indicating that the user desires to add an additional message or friend to the database 230, the sender 240 further determines, at step 430, whether the signal references a

previously received message. When the user-initiated signal does not reference a previously received message, the AF or AM code and the friend or message information which is to be entered into the database 230 is provided, at step 440, to the transceiver 205. When the signal references a previously received message, indicating that the message or the message originator is to be added to the database 230, sufficient identifying information, e.g., message number, friend information, actual message, or address information, is recovered from the message memory 225, at step 435, and provided to the transceiver 205 along with the AF or AM code, at step 440," 5:10-44; *see* Figs. 2, 5.

While Cannon discloses that the PMU 105 includes a processor, memory and firmware for retrieving canned messages and codes, LaPorta discloses that the messaging device includes a microprocessor and memory for storing and generating messages and associated data ("means for retrieving the file of canned messages"). *See* 19(a).

19(c) a display for displaying the canned messages and the multiple response options in the retrieved file;

21(c) a display for displaying the canned messages in the retrieved file;

Cannon discloses that a PMU includes a display for presenting information to the user, including messages associated with matching aliases ("canned messages") retrieved from the message list ("in the retrieved file"): *see* 2:39-48; Fig. 2; 3:54-66; 4:34-45; "[o]nce the inquiry is displayed, at step 320, the receiver 245 awaits the reception, at step 325, of a user-initiated signal indicating a response," 4:56-59; "[w]hen the received message infor-

mation is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the list...Thereafter, the message can be presented to the user in a conventional manner," 5:3-9; *see also* Fig. 4.

While Cannon discloses displaying the selected canned messages in the retrieved file, LaPorta discloses displaying messages that include dynamic components, such as embedded reply with choices ("multiple response options"), which are shown to the user. *See* LaPorta 8:34-39, 2:13-21, 5:16-21, 5:42-61, 13:39-43 and Fig. 8. *See also* 19(a).

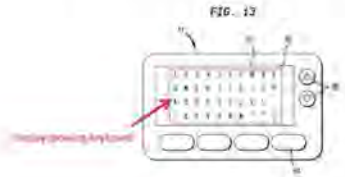
19(d) means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal; and

21(d) means for selecting one of the canned messages for communication to a designated other message terminal and for selecting multiple response options appropriate for the selected canned message;

Cannon discloses a PMU 105 that prepares information for transmission to a receiver 245. The PMU 105 includes a sender 240 that provides the selected message information or message alias ("selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message") to a transceiver 205 ("for communication to a designated other message terminal"): *see* 3:54-66; 4:1-8; Fig. 2; 5:10-44; Fig. 5; 10:7-13.

While Cannon discloses that a user can select and send messages using a PMU 105, LaPorta discloses that a subscriber can use a messaging device, which includes keys ("means for selecting"), to send a canned message along with embedded reply choices ("canned messages and at least one of the multiple response options appropriate for the selected canned message"). The messaging device can also include a simulated keyboard for selection ("means for selecting"): "as illustrated in FIG. 13, the messaging device 11, e.g., a two-way pager, can include a simulated keyboard 69 displayed on the LCD screen 88. A subscriber uses the pager buttons 84 to navigate around the simulated keyboard and select characters to compose a message," 6:8-12; LaPorta Fig. 13 (annotated below); "said first pager includes means for displaying a simulated keyboard such that messages can be input through the simulated keyboard," 18:16-18. *See also* Surati at ¶39.

"[t]he subscriber may like that particular message and through an appropriate selection of buttons on the messaging device 11, add that message to his or her own message list. In still another method, many existing messaging devices such as pagers, have an input/output (i/o) port. This port could be used to connect to a laptop or a Personal Digital Assistant. A subscriber uses the laptop or PDA to edit messages and download them to the messaging device 11 via the input/output port," 6:19-29. *See also* 19(a).



"Referring now to FIG. 9 there is illustrated one example of a messaging device that can be used with the present invention. It is illustrated as a dedicated, stand alone two-way pager 11. In this example, the messaging device 11 generates, receives and displays messages to the subscriber user....FIG. 9 shows a representative schematic of a pager 11 having four function buttons 84 at the bottom serving as soft keys, i.e. keys whose functions vary with the contexts, and two buttons 86 on the side, used mainly for scrolling purposes. The two-way pager includes a 5-line LCD screen 88 in which the top four lines are used for text while the bottom line shows current bindings for soft keys," 8:34-52; LaPorta Fig. 9 (annotated above).

21(e) a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter; and

Cannon teaches a PMU 105 that includes a processor 210 ("message compiler") for controlling the operations of the PMU. The processor 210 receives user information for transmitting a message ("message for transmission by the transmitter") and executes firmware ("message compiler" in the alternative) corresponding to a sender 240 that prepares message information and associated alias ("compiling the assigned message code") for transmission: *see* 2:39-51; Fig. 2; "each message included in the message list is associated with a message alias. These "canned messages" are also preferably associated with a message designation, which could be set by the user, so that the user can easily remember

the message and select it for transmission by providing information to the processor 210 via the controls 215," 3:11-17; "[a] sender 240 included in the PMU 105 prepares information for transmission from the PMU 105[]. Preferably, the sender 240 and the receiver 245 comprise firmware stored in the device memory 235 and executed by the processor 210," 4:15. *See also* 19(c) and 19(d) and Surati at ¶¶34, 37

While Cannon discloses that the PMU 105 includes a processor 210 for executing firmware that prepares message information and associated alias for transmission, LaPorta discloses that a microprocessor ("message compiler") controls the messaging device that is used for generating and sending code messages with encoded list of responses ("compiling the assigned message code and the response codes assigned to the selected multiple response options"). The device includes processing logic ("message compiler" in the alternative) that enables various flexible message types. LaPorta further discloses that a subscriber can use a laptop or a personal digital assistant to edit messages: "[t]he two-way wireless messaging system 10 with the present invention allows various types of messages. [T]he present invention supports flexible message types. [A]s many of the advanced features are processed locally by the messaging device, the device must be sophisticated enough to handle the processing logic," 13:6-17. *See* also disclosure of LaPorta as reproduced in 19(a), 19(d) and 19(e).

19(e) a transmitter for transmitting the message code assigned to the selected canned message and the response code assigned to the at least one multiple response option over a communications link of the network.

21(f) a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

Cannon discloses that a PMU 105 includes a transceiver 205 ("transmitter") for sending information ("transmitting the message") over a radio frequency channel ("communications link of the network"). The transceiver sends message codes ("message code assigned to the selected canned message"): "FIG. 2 is an electrical block diagram of a PMU 105, which includes a transceiver 205 for sending and receiving information over a radio frequency communication channel," *see* 2:39-41; Fig. 2; 5:17-44; "When the intended recipient is not included in the friend list of the PMU 105, the forward code, the message number, and an address entered by the user are provided, at step 460, to the transceiver 205," 5:52-55; 5:56-63. *See also* Fig. 5.

While Cannon discloses that a PMU 105 can user a transceiver for sending message codes, LaPorta discloses sending coded messages that include embedded list of responses ("response code assigned to the at least one multiple response option"): "FIG. 7 shows a highly schematic depiction of message delivery procedures. The originator of the message, S 200, transmits its message into the network through its serving batch server, BS-S 208, via a PG2BS-NEW message. This PG2BS-NEW contains the address of S, an array of re-

cipient addresses, an array of reply-to-addresses, and the coded message....The message is coded by indicating a message number and any dynamic component values," 14:3-13; "[t]he reply is again a coded message, with an identifier to associate it with the original message," 15:36-37; *see also* 19(a) and LaPorta Figs. 7-8.

C. [GROUND 3] – Cannon in view of Will renders obvious Claims 11-12.

As explained below, the features of claims 11-12 of the '506 Patent are rendered obvious over Cannon in view of Will, rendering claims 11-12 unpatentable under 35 U.S.C. § 103(a).

As explained by Dr. Surati, see Surati at ¶¶71-73, it would be obvious for a person of ordinary skill in the art, at the time of the effective filing date of the '506 Patent, to combine the teachings of Cannon and Will to establish a message exchange between PMUs in which an originating PMU sends frequently transmitted message to a recipient PMU that is customized with multiple response options and in return receive an answer from the recipient, as taught by Will, where the frequently transmitted message with the response options are communicated end-to-end through a system controller using message aliases, as taught by Cannon. Cannon teaches that PMUs communicate frequently transmitted messages using message aliases that are communicated through an intermediate system controller, *see, e.g.*, Cannon at 2:19-32, 9:38-53 and 5:3-9, where the source and recipient PMUs and the system controller each stores databases of the frequently transmitted messages and the associated aliases, *see, e.g.*, *id.* at 6:46-57.

However, as earlier noted, Cannon does not disclose sending messages that are customized with added options, e.g., reply choices, such that the options are sent along with the message aliases. Like LaPorta, Will complements Cannon through its disclosure of messages that are customized with reply choices that are sent along with the message alias. Specifically, in Will, an originator sends a message to a paging receiver, and that message is forwarded to the receiver by a central communications unit. *See, e.g.*, Will at 3:61-4:15. Will discloses that the originator may add response options to the message. *See, e.g., id.* at 13:66-14:13. Will discloses that the paging receiver may respond to the message by selecting from the response options that are included with the message. *See, e.g., id.* at 26:38-41. Will further teaches that the paging receiver may send response codes corresponding to the preprogrammed responses. *See, e.g., id.* at 12:47-13:1. In doing so, Will overtly details the operation of the recipient operating the paging receiver and selecting from a response, as recited by claim 11. *See, e.g., id.* at 25:61-27:64. As explained by Dr. Surati, one of skill would enhance Cannon's communication system by integrating Will's response options or preprogrammed responses to Cannon's frequently transmitted messages so as to provide two-way communication, or automatically track the location of individuals, or both. *See* Surati at ¶¶72-73; *see also* Will at 2:51-3:16. One of skill would readily appreciate that such an integration could be accomplished by storing, at each of the originating and recipient PMUs and the system controller, lists of frequently used messages and associated aliases, as taught by Cannon, and preprogrammed responses with associated re-

sponse codes, as taught by Will. The originating PMU may add preprogrammed response options to the frequently transmitted information by appending the corresponding response codes to the message alias that is sent to the system controller, which forwards the message alias and the response codes to the recipient. While Will teaches that the response codes are sent from the receiving device to the central communications unit, one of skill in the art would readily appreciate that Will's concept of using response codes can be equally well implemented by Cannon's originating PMU, which already stores and sends message aliases corresponding to the selected messages, such that storing codes corresponding to response options that are added to the selected messages would be a natural and logical extension. The use of preprogrammed responses would allow Cannon's PMUs to establish a dialogue involving messages and corresponding responses that are exchanged using the shorter message aliases and response codes. *See* Surati at ¶¶72-73.

11(a) The method defined in claim 8, further including the steps of:adding multiple response options to the canned message selected from the second file;

Cannon discloses the method defined in claim 8, as described above. *See* 8(pre)-8(h).

While Cannon discloses that a PMU 105 selects a canned message from the database ("second file") as discussed in 8(d) above, Will discloses adding multiple response options to the canned message selected from the second file, as shown below.

Will discloses that preprogrammed responses are included as part of the message that is sent to the receiver: "While users can compose any response to a message or an original message, the miniaturization of the communications unit tends to make character entry laborious, and the system is designed on the assumption that responses usually involve the selection of preprogrammed responses included in the message, preprogrammed responses that can be selected from the memory of the unit. Responses are preferably selected or composed by means of a thumbwheel and single key, which takes up little space." 4:41-53.

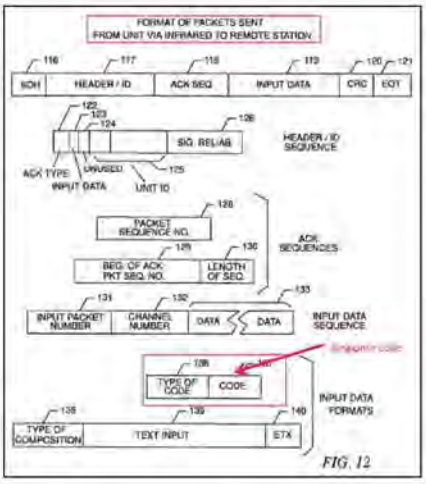
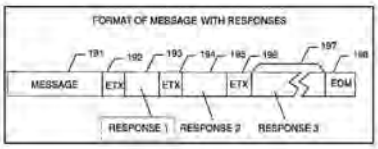


FIG. 12

"FIG. 12 shows the format of packets sent from the communications unit to one or more remote stations via infrared light." 11:63-65. "The ASCII characters used for indicating code type are ENQ, BEL, BS, HT, and VT. If the type character 136 is an ENQ, this is a Response Code. If the 7-bit code that follows 137 is from 0 to 19, the response indicates one of the responses (with 0 referring to the first response, 1 to the second, etc.) included with

the message sent to the unit. If the code 137 is from 21 to 127, the response indicates one of the preprogrammed responses in the Preprogrammed Response List…If the type character 136 is a BEL, this is a response but using one of the preprogrammed messages in the Preprogrammed Message List," 12:47-13:1; *see also* Fig. 12 (annotated herein).

"FIG. 15 shows the format of message text sent from the Central Station to a Communications Unit, including particularly the responses that can be selected to that message," 13:66-14:5; *see also* Fig. 15 (reproduced and annotated herein).



"FIG. 16 shows the format of a message defining preprogrammed responses, messages, and email addresses. This data is sent from the central station to the communications unit to define the preprogrammed responses, messages, and email addresses that can be selected by the user," 14:13-23; *see also* Fig. 16.

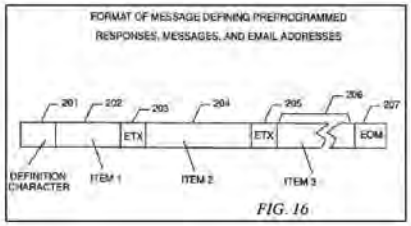


FIG. 16

"[C]anned responses [] have been added to the message by the sender (either by the person originating the message or by a software message-sending tool that automatically appends appropriate responses)[.]" 17:58-62.

11(b) the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

Cannon discloses that a sender 240 in the PMU 105 prepares information for transmission to a receiver 245, and that the sender provides the message code to the transceiver 205, which sends the message code to the system controller 110 ("network operation center"), as discussed in 8(e) above.

While Cannon discloses sending the message code assigned to the selected canned message to the network operation center, Will discloses that the sender adds response options to the message code that is sent to the network operation center. *See also* 17:58-62, 12:47-13:1 and Fig. 12 (annotated above).

11(c) the relaying step including the step of relaying the added multiple response options with the assigned message code to the second terminal; and

Cannon discloses that when the system controller ("network operation center") receives a message alias ("message code") from a source terminal and determines that the message alias is present in its database, the router, which is included as part of the system controller, is activated to relay the message alias to the recipient device ("second terminal"), as described above in 8(f).

While Cannon discloses relaying the message code assigned to the selected canned message from the network operation center to the second terminal, Will discloses that the message code that is relayed by the central station to the second terminal includes the add-

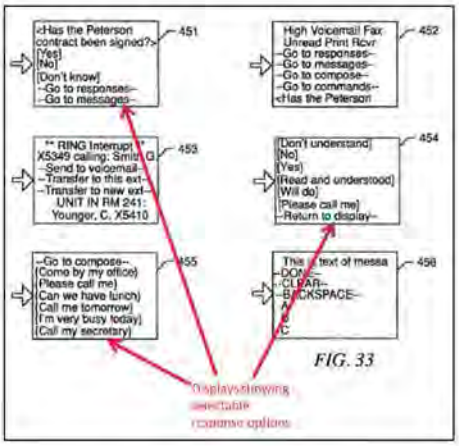
ed multiple response options. *See* 13:66-14:5 and Fig. 15 (annotated above). *See also* 14:13-23 and Fig. 16.

11(d) the displaying step including the step of displaying the selected canned message together with the added multiple response options;

Cannon discloses that a PMU 105 includes a display for presenting information to the user. When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the message list ("selected canned message") and presented to the user, as described in 8(h) above.

While Cannon discloses displaying the selected canned message retrieved from the third file, Will discloses that preprogrammed original messages and preprogrammed responses are displayed to the user: "FIG. 33 shows a variety of displays illustrating different situations and the interface presented in each situation. Display 451 indicates a typical message...responses that have been sent along with the message are displayed on each line surrounded by square brackets. The responses are chosen by the sender or software associated with origination of the message and are optional. If no responses are provided or none are appropriate, the user can choose from a set of preprogrammed responses," 26:30-58. "Display 454 shows examples of preprogrammed responses that can be selected by the user and sent. The user orients the desired response so it is to the right of the cursor and presses the key…Display 455 shows examples of preprogrammed original messages that can be selected by the user, with each message enclosed in curly brackets. If this display is

entered by selecting the "Go to messages" selection from a displayed message, the message will be sent as a response to that message. Otherwise, selection of the message (by pressing the key) will result in the display of a menu of electronic mail addresses." 27:49-63; *see also* Fig. 33 (partially reproduced and annotated herein).



11(e) selecting one of the multiple response options at the second terminal;

Cannon discloses that the PMU 105 ("second terminal") asks the user about deleting a friend and receives an answer from the user ("selecting one of the response options"). *See* 4:34-59; *see also* Fig. 4 (annotated above).

While Cannon discloses receiving an answer from the user, Will discloses that the recipient selects one of the response options from the set provided with the original message: "[T]he invention disclosed here...allows responses to be sent which are chosen from a set provided with the original message, from a preprogrammed set, or composed by the us-

er. Selection or composition of responses is made easy by use of a thumbwheel that allows display of messages and responses and their choice by pressing a single key[.]" 2:51-60.

"Individuals communicate with a central communications station by means of a miniature communications unit []. The communications unit displays messages visually and can provide a visual and/or auditory alarm indicating the receipt of a message. Users can view messages and select or compose responses by means of a thumbwheel rotating cylinder and key." 3:66-4:7.

"[R]esponses usually involve the selection of preprogrammed responses included in the message, preprogrammed responses that can be selected from the memory of the unit, or very brief responses composed letter by letter. Examples of possible responses include "Message read and understood", "Will do", "Will call you back in 5 minutes", "Will call you tomorrow", etc. Responses are preferably selected or composed by means of a thumbwheel and single key, which takes up little space." 4:44-52.

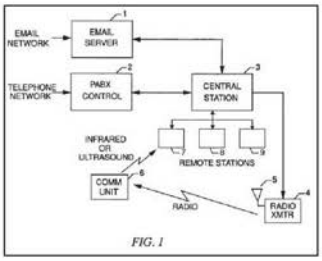


FIG. 1

"An incoming call to the user's extension... transmitted by radio 4 to the communications unit 6. The user may select a response, which is passed by infrared light to a remote station 7 (with a code added to identify the remote station)," 8:15-23; *see also* Will Fig. 1.

"FIG. 4 shows a front view of the physical layout of the remote communications unit." 9:45-46. "At the bottom center is a key 48 used for deleting messages, for sending a response that has been selected, for executing preprogrammed commands, and for making other selections depending upon the context. At the bottom right is a thumbwheel--a small cylinder 49 that can be rotated either up or down by the user's thumb that is used to control the display of messages, responses, and other information," 10:3-10; *see also* 27:49-55, Will Figs. 4 (annotated herein) and Fig. 33 (annotated above).

"[A]ll data in the message has been transmitted from the central station to the communications unit; displaying said message to the individual; accepting a response message by the individual at the communications unit in response to the received message," 41:33-39. "[T]he step of transmitting a response message comprises the steps of: selecting said response message from a set of preprogrammed responses," 41:64-67.

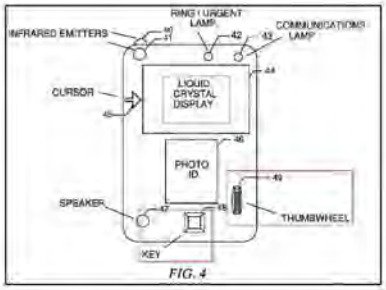


FIG. 4

11(f) communicating the selected response option to the network operation center;

Cannon discloses that when a PMU 105 receives a response from a user, the PMU transmits the response to the system controller ("network operation center"): "Once the in-

quiry is displayed, at step 320, the receiver 245 awaits the reception, at step 325, of a user-initiated signal indicating a response. Thereafter, at step 330, the sender 240 is activated, at step 330, to transmit the response to the system controller 110." 4:56-61; *see also* Fig. 4 (annotated above).

While Cannon discloses that the PMU transmits the response received from the user, Will discloses that the communications unit sends the selected response to the central station via the remote station ("network operation center"): "Each communications unit 6 transmits an identification code in the form of digitally encoded infrared light, which is received and stored by one or more remote stations 7, 8, and 9 receiving it. Other data, such as acknowledgements of received messages, responses, or original messages are also included with the identification signal when available." 7:60-65. "The user may select a response, which is passed by infrared light to a remote station 7 (with a code added to identify the remote station), with the response sent to the central communications station 3," 8:21-24 (emphasis added); *see also* Fig. 1, 12:47-13:1 and Fig. 12 (annotated above).

"[A]ccepting a response message by the individual at the communications unit in response to the received message; transmitting said response message from the communications unit [] to one or more of a plurality of remote stations; receiving the response message at a remote station and temporarily storing the response message; transmitting the response message from said remote station [] to the central station; receiving the response message at the central station[.]" 41:37-51.

11(g) routing the selected response option from the network operation center to the first terminal; and

Cannon discloses that when the system controller ("network operation center") receives a message alias ("message code") from a terminal and determines that the message alias is present in its database, the router, which is included as part of the system controller, is activated to relay the message alias to the recipient device ("first terminal"), as described above in 8(f). While Cannon describes that the router relays the message alias to the recipient device, Will discloses that the central station ("network operation center") routes the response option selected by the user of the communications units to the originator of the message ("first terminal"). *See*, e.g., 8:7-14.

"FIG. 20 shows a flowchart of part of the communications software for the central station that processes the part of packets from the remote station that contain input data." 20:6-8. "If the input data is a response (either a response selected from those provided with the message, a preprogrammed response, or an original message sent as a response)...If the message or response is in compressed form, it is expanded 292. FIG. 12 describes the format of different forms of compressed and uncompressed messages and responses. In the case of compressed responses the text is obtained by using a code to look up the expanded form of the response in an appropriate table, which replaces the codes before transmission of the message or response to its destination." 20:64-21:14; Will Fig. 20.

"[T]ransmitting the response message from the central station to the originator of the message; receiving the response message by the originator of the message." 41:52-55.

11(h) displaying the selected response option at the first terminal.

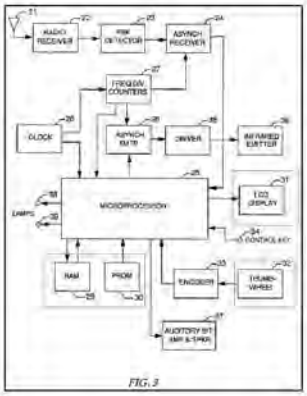


FIG. 3

While Cannon discloses displaying the selected canned message, Will discloses that a response option is received by the originator ("first terminal") and displayed: "[R]eceiving the response message by the originator of the message." 41:54-55. "A message is received by communications unit 6, which decodes it, enters the messages into its internal memory, and displays the message visually and turns on visual indicators and/or auditory alarms, as appropriate." 7:53-57; *see also* Will Fig.1 (annotated above).

"Software in the microprocessor extracts information to be displayed, which is placed into a memory and causes characters to be displayed on the liquid crystal display 31. The display also includes indicators indicating that a message is available and its priority.... A thumbwheel 32 allows the user to display messages and responses[.]" 9:16-26; *see also* Fig. 3 (annotated herein).

12(a) The method defined in claim 11, further including the steps of: maintaining at the network operation center, a fourth file of canned multiple response options and response codes respectively assigned to the canned multiple response options;

Cannon discloses a communications system in which a system controller ("network operation center") stores database ("fourth file") of frequently transmitted information ("canned multiple response options") and associated aliases ("response codes respectively assigned to the canned multiple response options"), as described with reference to 8(a). *See* 8(a). *See also* 7:41-45 and Fig. 12 (annotated above).

While Cannon describes that the system controller stores frequently transmitted information and associated message aliases in a database, Will discloses that the central station ("network operation center") stores data structures ("fourth file") that holds preprogrammed responses and associated 7-bit codes ("canned multiple response options and response codes"): "FIG. 30 shows the data structures that hold the preprogrammed responses, messages, and email addresses. These include the Preprogrammed Response List (consisting, for each entry, of a 7-bit code 421 and the text for the response 422), the Preprogrammed Message List (consisting, for each entry, of a 7-bit code 423 and the text of the message 424), the Preprogrammed Email Address List (consisting, for each entry, of a 7-bit code 425 and an email address 426)." 25:45-52; *see also* Fig. 30 (annotated herein).

12(b) maintaining at the first terminal, a fifth file of canned multiple response options and response codes corresponding to the fourth file; and

Cannon discloses that a portable messaging unit (PMU), 105 ("first terminal") stores database ("fifth file") of frequently transmitted information ("canned multiple response options") and associated aliases ("response codes") where the database stored in the PMU 105 is equivalent to that stored in the system controller ("corresponding to the fourth file"), as described with reference to 8(b). *See* 8(b).

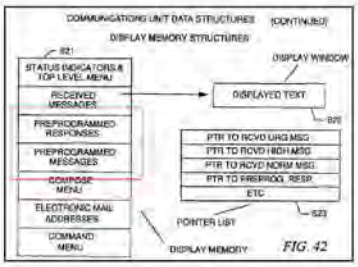


FIG. 42

While Cannon discloses that a PMU 105 stores a database of frequently transmitted information and associated message aliases, Will discloses that a communications unit ("first terminal") includes data structures ("fifth file") that store preprogrammed responses and associated codes: "FIGS. 39-43 show the data structures used in the software for the communications unit." 35:40-41. "FIG. 42 shows the data structure for the Display Memory and the associated Display Window. The Display Memory 621 contains all of the information that can be displayed by the unit[]. The information contained in the Display Memory includes...all text of the received messages, text of preprogrammed responses, text of preprogrammed messages[]." 36:35-48; *see also* Fig. 42 (annotated herein).

"The Preprogrammed Response List, Preprogrammed Message List, and Preprogrammed Email Address List are contained in data structures in both the Central Station

and Communications Unit." 12:62-65. *See also* 25:45-48 and Fig. 30 (annotated below).

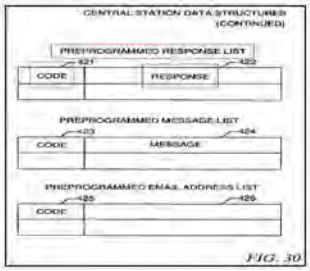


FIG. 30

12(c) maintaining, at the second terminal, a sixth file of canned multiple response options and response codes corresponding to the fourth file;

Cannon discloses that a portable messaging unit (PMU), 105 ("second terminal") stores database ("sixth file") of frequently transmitted information ("canned multiple response options") and associated aliases ("response codes") where the database stored in the PMU 105 is equivalent to that stored in the system controller ("corresponding to the fourth file"), as described with reference to 12(b). *See* 12(b).

While Cannon discloses that a PMU 105 stores a database of frequently transmitted information and associated message aliases, Will discloses that a communications unit ("second terminal") includes data structures ("sixth file") that store preprogrammed responses and associated codes, as described with reference to 12(b). *See* 12(b).

12(d) wherein the selecting step further includes the step of selecting appropriate canned multiple response options from the fifth file;

Cannon discloses that a sender 240 in the PMU 105 prepares the information ("selecting appropriate canned multiple response options from the fifth file") for transmission to a

receiver 245, as described with reference to 8(d). *See* 8(d).

While Cannon discloses that the sender 240 prepares information for transmission to receiver 245, Will discloses that the sender selects preprogrammed responses ("appropriate canned multiple response options") from the memory of the communications unit ("fifth file"): *see* 4:41-53; "FIG. 3 is a block diagram that shows the hardware architecture of the communications unit." 8:46-47. "A thumbwheel 32 allows the user to display messages and responses that are stored in memory. []A user may also press the control key 34 to send a response to a message, to transmit a message, to select a command, or to delete a message," 9:24-30. *See also* Fig. 3, 10:3-10, Fig. 4; 26:30-58, 27:49-52 and Fig. 33 and 11(e).

12(e) the sending step further includes the step of sending the response codes assigned to the selected multiple response options together with the message code to the network operation center;

Cannon discloses that the sender 240 in the PMU 105 provides the message code ("response code") to the transceiver 205, which sends the message code to the system controller 110 ("network operation center"), as described with reference to 8(e). *See* 8(e).

While Cannon discloses that the transceiver 205 sends the message code to the system controller, Will discloses that a communications unit transmits messages, responses and associated codes to the central station ("network operation center"): *see* 7:60-65, 8:21-24 and Fig. 1.

"FIG. 12 shows the format of packets sent from the communications unit to one or more remote stations[.]" 11:63-64. *See also* 12:47-13:1 and Fig.12 (annotated previously).

12(f) the relaying step further includes the step of relaying the message and response codes from the network operation center to the second terminal; and

Cannon discloses that when the system controller ("network operation center") receives from a source terminal a message alias ("message and response code") that is present in its database, the router included in the system controller is activated to relay the message alias to the recipient device ("second terminal"), as described above in 8(f). See 8(f).

While Cannon discloses relaying the message and response code from the system controller to the second terminal, Will discloses that the message code that is relayed by the central station ("network operation center") to the second terminal includes the added multiple response options, as discussed above with reference to 11(c). See 11(c).

12(g) the retrieving step further includes the step of retrieving the selected canned multiple response options from the sixth file using the assigned response codes received from the network operation center.

Cannon discloses that a PMU 105 that is a receiver receives a message from the system controller ("network operation center"), and compares the received message information to aliases ("assigned response code") stored in the message list ("sixth file") and retrieves the message associated with the matching alias ("retrieving the selected canned

multiple response option"), as discussed with reference to 8(g). *See* 8(g).

While Cannon discloses that the PMU retrieves the message associated with the matching alias from the message list, Will discloses that a communications unit prepares information extracted from received messages ("retrieving the selected canned multiple response options") for display to the user. *See* 7:53-56 and Fig. 1.

"Associated with the microprocessor is [] a random access memory (RAM) 29 with 8K bytes of storage. [T]he RAM contains messages after conversion to digital codes, information extracted from the messages for display to the user … Software in the microprocessor extracts information to be displayed… ." 9:9-18. *See also 9*:24-25 and Fig. 3.

"FIG. 33 shows a variety of displays illustrating different situations and the interface presented in each situation.... The responses are chosen by the sender or software associated with origination of the message and are optional." 26:30-40. "Display 454 shows examples of preprogrammed responses that can be selected by the user and sent." 27:49-50. *See also* Fig. 33; 42:22-23 (preprogrammed response communications unit).

D. [GROUND 4] – Cannon in view of Will and in further view of LaPorta renders obvious Claims 13-14.

As explained below, the features of claims 13 and 14 of the '506 Patent are obvious over Cannon in view of Will and further in view of LaPorta, rendering claims 13 and 14 unpatentable under 35 U.S.C. § 103(a). As discussed by Dr. Surati, a skilled artisan would have been motivated, at the time of the effective filing date of the '506 Patent, to combine the teachings of Cannon with the teachings of Will to establish a dialogue between PMUs in

which an originating PMU sends a frequently transmitted information to a recipient PMU that is customized with multiple response options and in return receive an answer from the recipient, where the frequently transmitted information with the response options are communicated end-to-end through a system controller using message codes, as taught by Cannon. *See* Surati at ¶¶95-97. *See also* §V.C above.

Although the combination of Cannon and Will discloses communicating messages with response options using message aliases and response codes, the two references do not describe customizing the messages or the response options by adding other forms of parameters. LaPorta teaches precisely this feature. Specifically, LaPorta describes an originator customizing their message by adding, to the "fixed pre-canned" message, "dynamic components" that can be "choices, pre-defined variables, etc.," in addition to "embedded replies." LaPorta at 2:13-21. Moreover, while Will overtly details that the response options are furnished to the recipient with the message (or an alias thereof, per the Cannon/Will combination), *see, e.g.*, Will at 13:66-14:13, 26:38-41, 12:47-13:1, LaPorta enables the addition of other parameters such as "choices, pre-defined variables, etc.," LaPorta at 2:16-17, to be sent along with the message (or its alias), as detailed by claims 13 and 14.

A skilled artisan would be motivated, at the time of filing the application to which the '506 Patent claims priority, to augment the communication of messages with response options using message aliases and response codes, as taught by the combination of Cannon and Will, with the "dynamic components such as embedded replies, choices, predefined

variables," *id.*, as taught by LaPorta. This would allow Cannon's PMUs to establish transactional dialogue. The originating PMU sends a message that includes frequently transmitted information with response options using the associated alias and corresponding response codes, which are forwarded to the recipient by the system controller. The message also includes predefined variables for the recipient to enter additional information when selecting a response option. To illustrate, a message originator may seek to send a message soliciting input for weekend activities and to include several selectable response options such as going to see a movie or a rock concert. For the movie response option, the contemplated combination affords them the opportunity to include, as a predefined variable or parameter, names of several movies, enabling the recipient to select one of these. Alternatively, it affords them the opportunity to include as a parameter a field for the recipient to specify the preferred day and time for the selected weekend activity. The recipient's messaging device is made able to send back a code corresponding to the selected response option, along with the entered value of the parameter. *See, e.g.*, Surati at ¶97.

13(a) The method defined in claim 12, further including the step of adding a parameter to the canned message selected from the second file;

While Cannon discloses that a PMU 105 selects a canned message from the database ("second file") as discussed in 8(d) above, LaPorta discloses adding a parameter to the canned message, as discussed with reference to 10(a). *See* 10(a).

13(b) the sending step further including the step of sending the added parameter to the network operation center together with the assigned message and response codes;

Cannon discloses that a sender 240 in the PMU 105 prepares information for transmission to a receiver 245, and that the sender provides the message code to the transceiver 205, which sends the message code to the system controller 110 ("network operation center"), as discussed in 8(e) above. *See* 8(e). While Cannon discloses that the transceiver 205 sends the message code to the system controller, Will discloses that a communications unit transmits messages, responses and associated codes to the central station ("network operation center"), as discussed with reference to 12(e). *See* 12(e).

While Cannon in view of Will discloses sending the assigned message and response codes to the network operation center, LaPorta discloses sending the coded message with the dynamic component ("added parameter") to the user agent ("network operation center"), as discussed with reference to 10(b). *See* 10(b). LaPorta further discloses that "[d]ynamic components can be nested as needed," 13:37-38.

13(c) the relaying step further including the step of relaying the added parameter with the assigned message and response codes to the second terminal, and

Cannon discloses that when the system controller ("network operation center") receives from a source terminal a message alias ("message code") that is present in its database, the router included as part of the system controller relays the message alias to the recipient device ("second terminal"), as described above in 8(f). *See* 8(f). While Cannon

discloses relaying the message code assigned to the selected canned message from the network operation center to the second terminal, Will discloses that the message code that is relayed by the central station ("network operation center") to the second terminal includes the added multiple response options, as discussed above with reference to 11(c). *See* 11(c).

While Cannon in view of Will discloses relaying the assigned message and response codes to the second terminal, LaPorta discloses that the message includes dynamic component values ("added parameters"), as discussed in 10(c). The message relayed by Cannon's system controller to the second terminal includes the message and response codes along with the dynamic component values ("added parameters").

13(d) the displaying step at the second terminal further including the step of displaying the selected canned message and multiple response options with the added parameter incorporated therein.

Cannon discloses that a PMU 105 includes a display for presenting information to the user. When the received message information is equivalent to a canned message alias, the message associated with the matching alias is retrieved from the message list ("selected canned message") and presented to the user, as described in 8(h) above. *See* 8(h)While Cannon discloses displaying the selected canned message, Will discloses that response options are displayed to the recipient, as discussed with reference to 11(d). *See* 11(d).

LaPorta discloses that the displayed message includes the added parameter in describing that the canned message includes dynamic components, such as embedded reply with choices ("added parameter incorporated therein"), which are shown to the user, as discussed with reference to 10(d). *See* 10(d).

14. The method defined in claim 13, further including the step of correspondingly updating the first through sixth files.

Cannon discloses that the system controller updates the databases at the system controller and at the PMUs 105 ("first through sixth files"), as discussed with reference to claim 9. *See* 9. Cannon also discloses that the system controller uses AF, AM, DF, or DM codes to communicate with the PMU 105 for adding or deleting ("updating") friends or messages to lists stored in the database ("first through sixth files"), as discussed with reference to claim 9. *See* claim 9. While Cannon discloses that the system controller updates the databases, LaPorta discloses that any change to the address and message tables ("first through sixth files") are propagated. *See* 5:62-6:3 and Fig. 3.

VI. CONCLUSION

The cited prior art grounds identified in this Petition highlight new, non-cumulative teachings. Accordingly, Petitioner respectfully requests institution of an IPR for those claims of the '506 patent for each ground presented herein.

Respectfully submitted,

Dated: June 27, 2014

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(1) and 42.6(e)(4)(iii), the undersigned certifies that on June 27, 2014, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided via FedEx, to the Patent Owner by serving the correspondence address of record as follows:

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US005894506A

United States Patent [19]

Pinter

[11] Patent Number: 5,894,506

[45] Date of Patent: Apr. 13, 1999

[54] **METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK**

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[21] Appl. No.: **08/708,696**

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[51] **Int. Cl.**[6] **H04M 1/64**

[52] **U.S. Cl.** **379/88.23**; 379/88.15; 379/93.24; 340/825.44; 455/412

[58] **Field of Search** 379/67, 88, 89, 379/93.24, 93.25, 93.26; 455/31.3, 31.2; 395/200.3, 200.31, 200.34, 200.37, 200.41

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,978,676	4/1961	Spencer	340/154
3,513,443	5/1970	Andersen	340/164
3,714,375	1/1973	Stover	179/2
3,818,145	6/1974	Hanway	179/41
3,846,783	11/1974	Apsell et al.	340/311
3,851,251	11/1974	Wigner et al.	325/55
3,944,724	3/1976	Kilby et al.	178/4.1
3,976,995	8/1976	Sebestyen	340/337
3,984,775	10/1976	Canel et al.	325/55
4,010,460	3/1977	DeRosa	340/311
4,010,461	3/1977	Stodolski	340/311
4,160,240	7/1979	Partipilo	340/311
4,178,475	12/1979	Taylor et al.	179/2
4,197,526	4/1980	Levine	340/311
4,249,165	2/1981	Mori	340/311
4,263,480	4/1981	Levine	179/2
4,330,780	5/1982	Masaki	340/825.44
4,336,524	6/1982	Levine	340/311
4,382,256	5/1983	Nagata	340/825.44
5,327,486	7/1994	Wolff et al.	379/210
5,381,466	1/1995	Shibayama et al.	379/88
5,539,808	7/1996	Inniss et al.	379/67

OTHER PUBLICATIONS

"New Radio Paging System," by Mitsuru Komura et al, Japan Telecommunications Review, Jul. 1977, vol. 19, No. 3, pp. 217 and 220–225.

"Paging System Broadcasts Nationwide on FM Radio Channel," Electronics International, Jan. 4, 1979, vol. 52, No. 1, pp. 67–68.

"A Development Project of a Pocketsize Receiver for a Nationwide Paging System," by Kari Kiishinen et al, IEEE, 1979, pp. 383–387.

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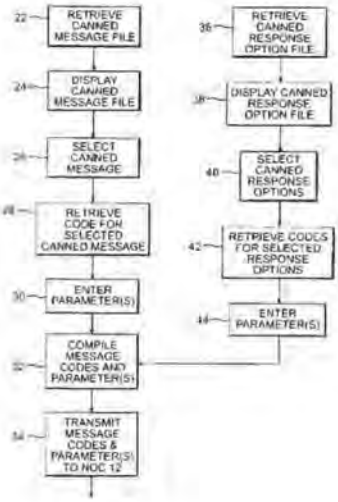
Attorney, Agent, or Firm—Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

[57] **ABSTRACT**

An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center. The receiving terminal retrieves the selected canned message from its memory using the received message code for display to the receiving party. Files of canned responses and associated response codes may also be stored in the memories at the terminals and network operation center to allow the exchange of selected canned response options in conjunction with canned messages to be in response code form.

21 Claims, 7 Drawing Sheets



APPLE 1001

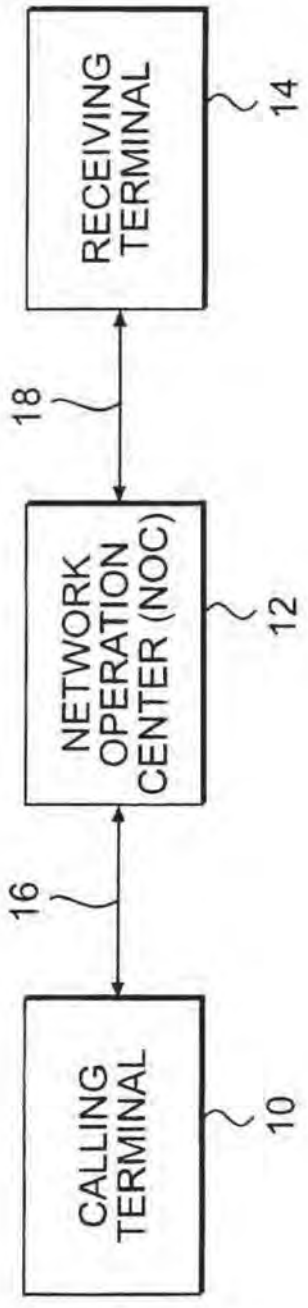

RECEIVING TERMINAL
14
18
NETWORK OPERATION CENTER (NOC)
12
16
CALLING TERMINAL
10

FIG. 1

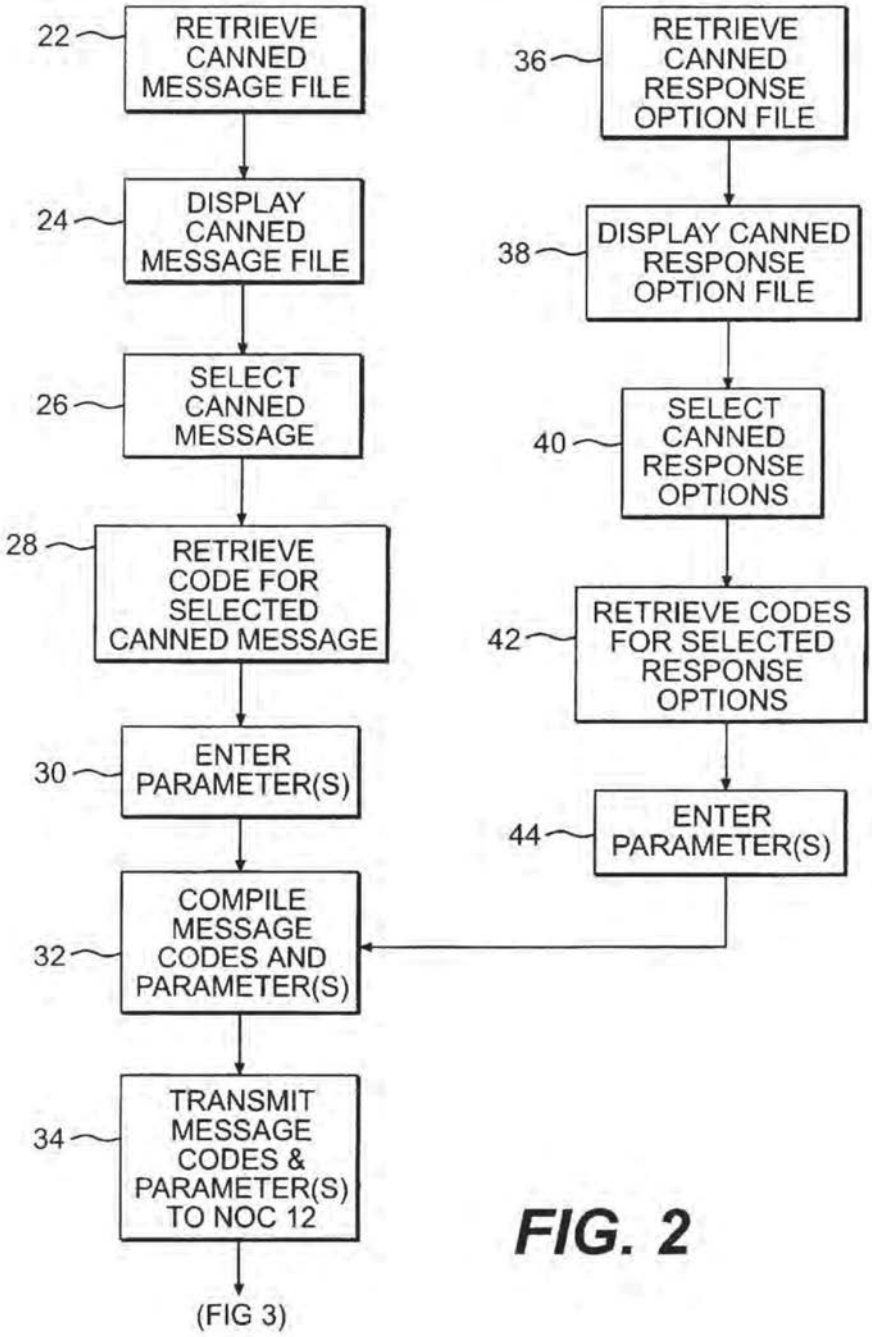

22
RETRIEVE CANNED MESSAGE FILE
24
DISPLAY CANNED MESSAGE FILE
26
SELECT CANNED MESSAGE
28
RETRIEVE CODE FOR SELECTED CANNED MESSAGE
30
ENTER PARAMETER(S)
32
COMPILE MESSAGE CODES AND PARAMETER(S)
34
TRANSMIT MESSAGE CODES & PARAMETER(S) TO NOC 12
(FIG 3)
36
RETRIEVE CANNED RESPONSE OPTION FILE
38
DISPLAY CANNED RESPONSE OPTION FILE
40
SELECT CANNED RESPONSE OPTIONS
42
RETRIEVE CODES FOR SELECTED RESPONSE OPTIONS
44
ENTER PARAMETER(S)

FIG. 2

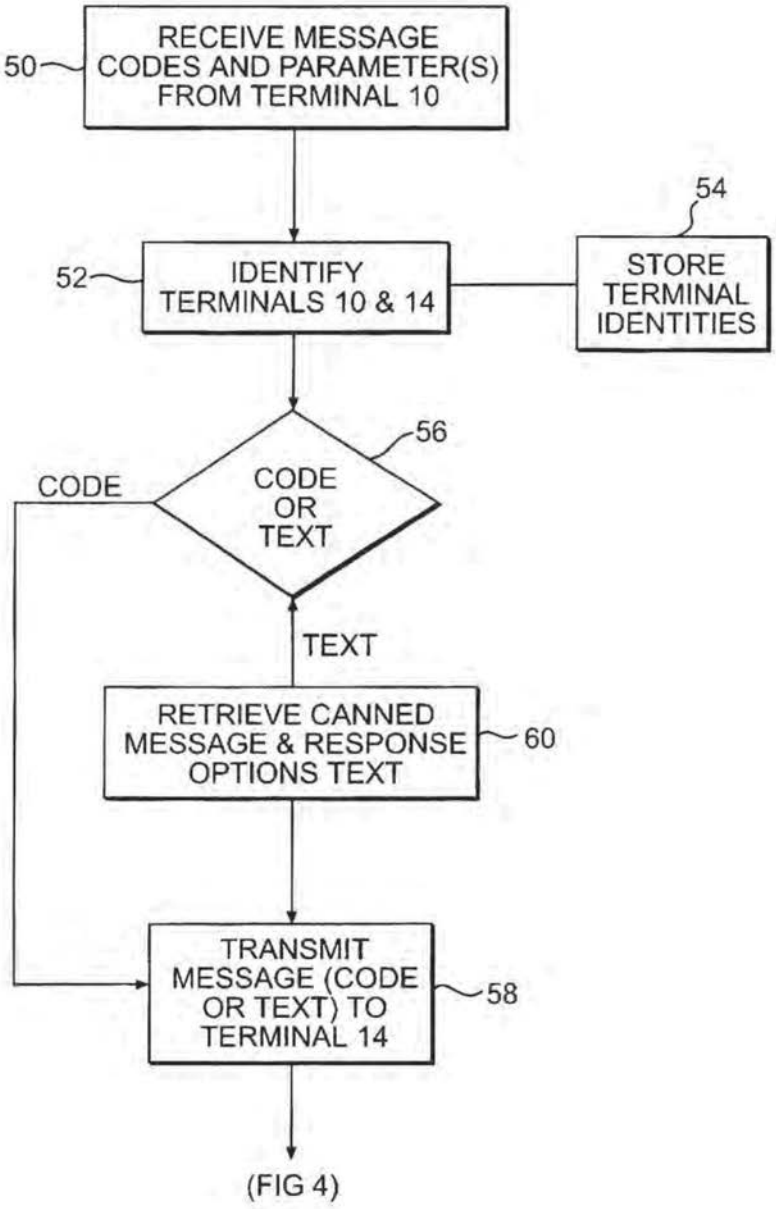

RECEIVE MESSAGE CODES AND PARAMETER(S) FROM TERMINAL 10
50
IDENTIFY TERMINALS 10 & 14
52
STORE TERMINAL IDENTITIES
54
CODE OR TEXT
56
CODE
TEXT
RETRIEVE CANNED MESSAGE & RESPONSE OPTIONS TEXT
60
TRANSMIT MESSAGE (CODE OR TEXT) TO TERMINAL 14
58
(FIG 4)

FIG. 3

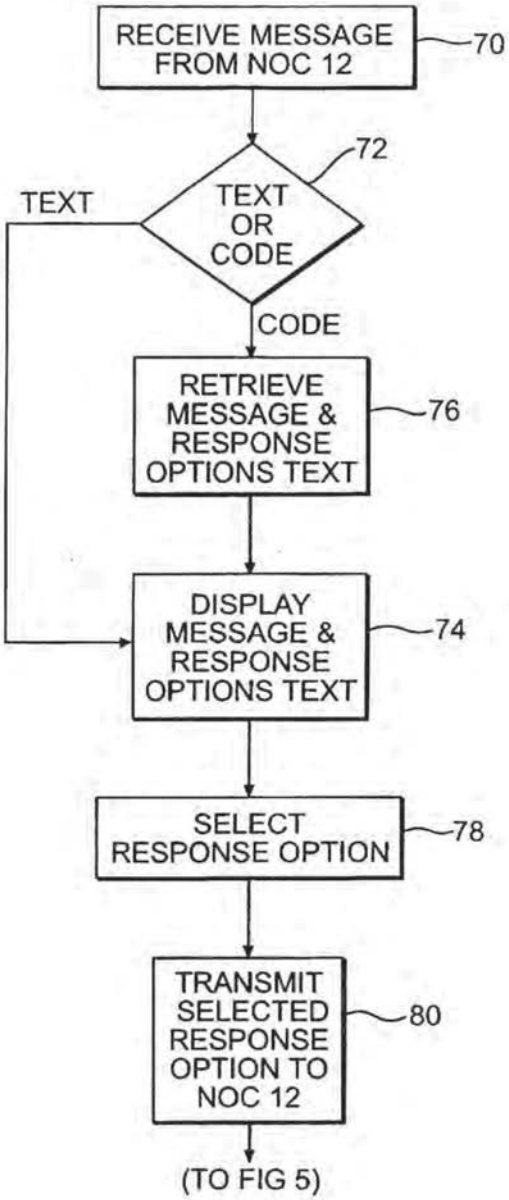

RECEIVE MESSAGE FROM NOC 12
70
72
TEXT OR CODE
TEXT
CODE
RETRIEVE MESSAGE & RESPONSE OPTIONS TEXT
76
DISPLAY MESSAGE & RESPONSE OPTIONS TEXT
74
SELECT RESPONSE OPTION
78
TRANSMIT SELECTED RESPONSE OPTION TO NOC 12
80
(TO FIG 5)

FIG. 4

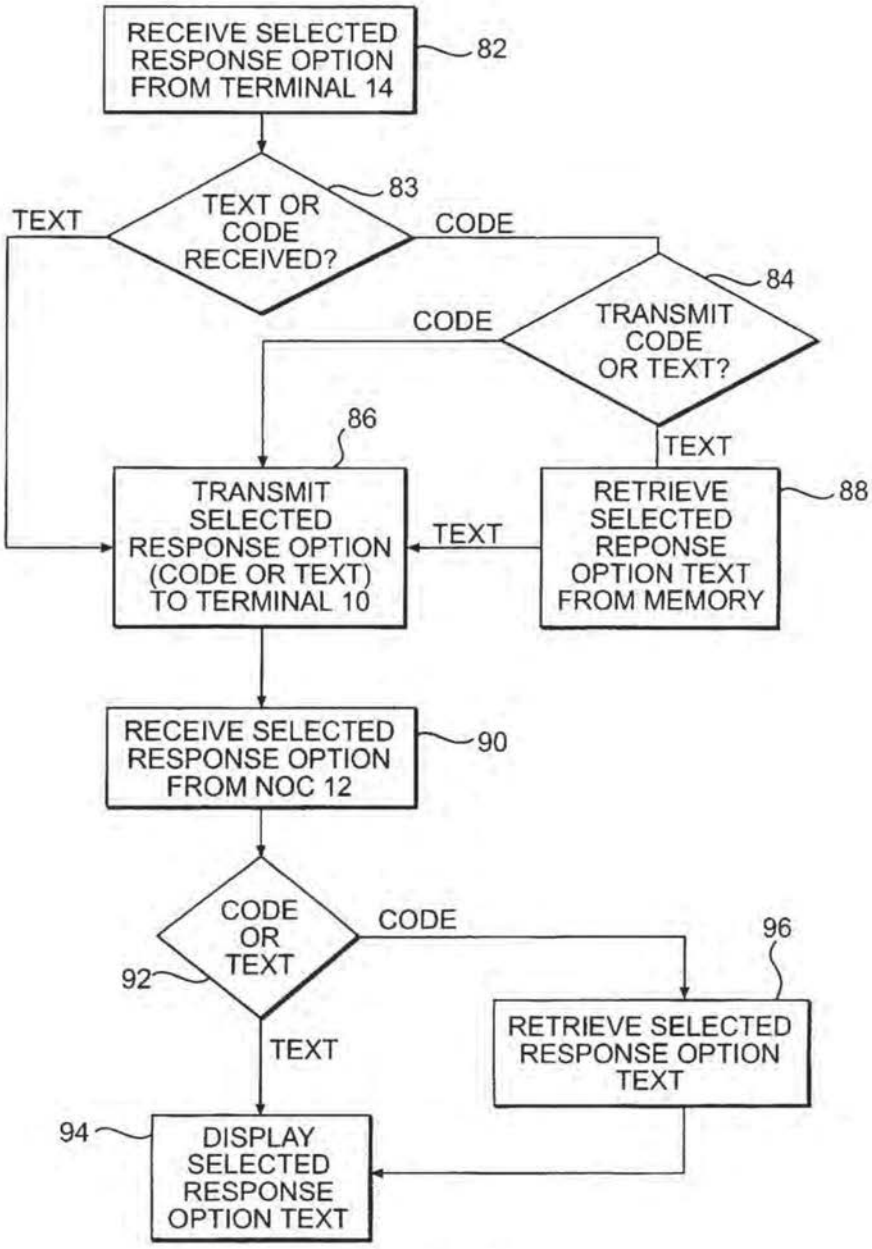

RECEIVE SELECTED RESPONSE OPTION FROM TERMINAL 14
82
TEXT OR CODE RECEIVED?
83
TEXT
CODE
TRANSMIT CODE OR TEXT?
84
CODE
TEXT
TRANSMIT SELECTED RESPONSE OPTION (CODE OR TEXT) TO TERMINAL 10
86
RETRIEVE SELECTED REPONSE OPTION TEXT FROM MEMORY
88
TEXT
RECEIVE SELECTED RESPONSE OPTION FROM NOC 12
90
CODE OR TEXT
92
CODE
TEXT
RETRIEVE SELECTED RESPONSE OPTION TEXT
96
DISPLAY SELECTED RESPONSE OPTION TEXT
94

FIG. 5

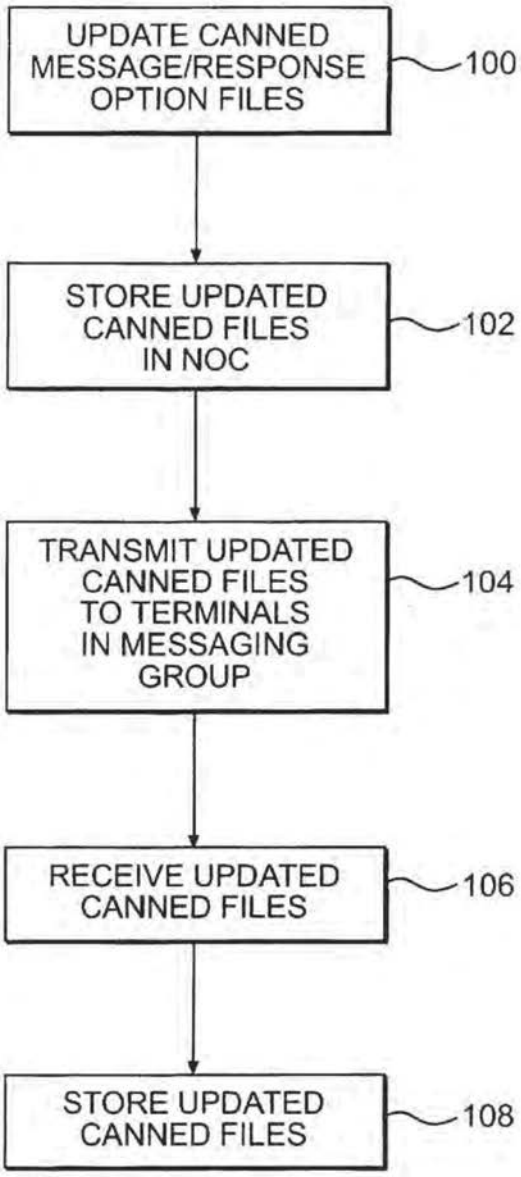

UPDATE CANNED MESSAGE/RESPONSE OPTION FILES
100
STORE UPDATED CANNED FILES IN NOC
102
TRANSMIT UPDATED CANNED FILES TO TERMINALS IN MESSAGING GROUP
104
RECEIVE UPDATED CANNED FILES
106
STORE UPDATED CANNED FILES
108

FIG. 6

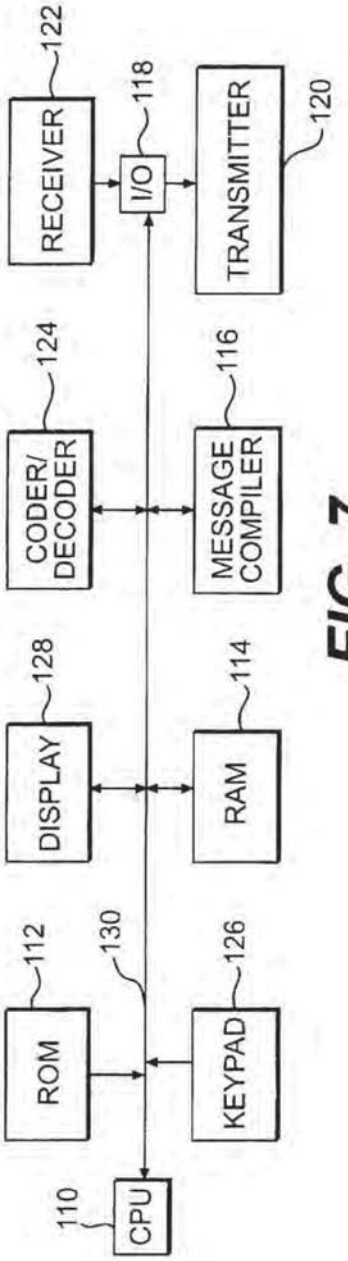

RECEIVER
122
I/O
118
TRANSMITTER
120
CODER/
DECODER
124
MESSAGE
COMPILER
116
DISPLAY
128
RAM
114
ROM
112
130
KEYPAD
126
110
CPU

FIG. 7

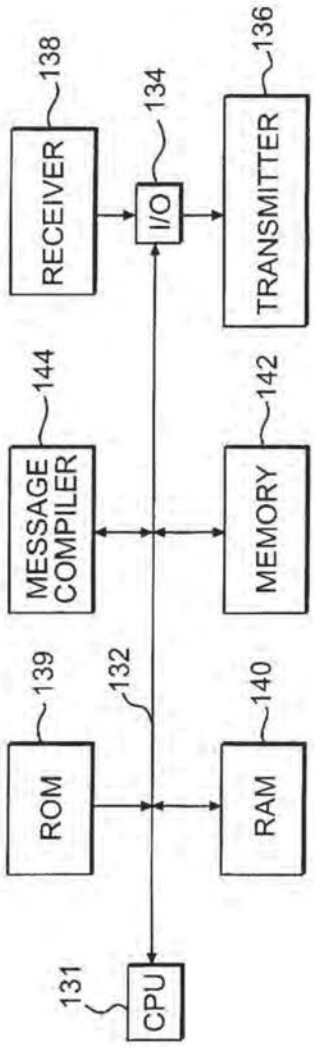

RECEIVER
138
I/O
134
TRANSMITTER
136
MESSAGE
COMPILER
144
MEMORY
142
ROM
139
132
RAM
140
131
CPU

FIG. 8

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

FIELD OF THE INVENTION

The present invention relates to electronic information services and more particularly to the exchange of electronic messages among subscribers to an electronic messaging network.

BACKGROUND OF THE INVENTION

As more and more people sign on to information networks, congestion of the communications links comprising these networks, both wireline and wireless, and the consequential transmission delays become increasingly significant problems. Faster transmission rates, data compression techniques, and more efficient spectrum utilization are among the approaches that have been considered, and to some extent implemented, to increase the capacities of communications links.

One area of particularly rapid growth is the electronic messaging field. More and more people are moving about with portable devices, such as laptop computers and portable digital devices, which can be economically equipped to function as message sending/receiving terminals. Moreover, wireless paging hardware, software, and support services are being upgraded to accommodate two-way messaging. That is, portable pagers are being developed not only to receiving paging messages, but also to send back a signal acknowledging receipt of a paging message or even a message answering the received paging message. While such upgraded paging services are highly desirable, they can severely strain the capacity of wireless paging channels.

SUMMARY OF THE INVENTION

It is accordingly a principle object of the present invention to provide an improved electronic messaging network and method, wherein communications link capacity is conserved by transmitting certain messages with an improved degree of message compression.

Particularly in the case of radio paging, many paging messages consists of a relatively small number of common phrases, such as "I am on the way home", "I am working late", "Can we meet for lunch", etc. This being the case, such commonly used phrases can be treated as "canned" messages that can be replaced by short message codes as simple as, for example, one or several ASCII characters.

The present invention takes advantage of this fact by providing, in accordance with one preferred embodiment, a method of communicating messages between subscribers of an electronic messaging network, comprising the steps of maintaining, at a network operation center, a first file of canned messages individually retrievable using unique, abbreviated message codes respectively assigned to the canned messages; maintaining, at a terminal of a calling subscriber, a second file of canned messages corresponding to the first file; selecting an appropriate canned message from the second file for transmission to a terminal of a designated receiving subscriber; sending the message code assigned to the selected canned message to the network operation center; retrieving the selected canned message from the first file using the message code received from the calling subscriber terminal; and communicating the selected canned message to the designated receiving party terminal where it is displayed.

In accordance with a feature of the present invention, the first and second canned message files may be updated, either by the network operation center or from a subscriber terminal in order to customize the canned messages according to the needs of a particular group or organization of subscribers. In addition, the canned messages may be phrased to accept the addition of one or more parameters, which are entered at the calling subscriber terminal and then included with the message codes sent to the network operation center. The selected canned messages are retrieved from the first file using the message codes and communicated to terminals of designated receiving subscribers with the added parameters incorporated in the bodies of the canned messages.

The present invention also accommodates the addition of multiple response options to the canned messages selected by calling subscribers. The multiple response options are then included with the canned message codes sent to the network operation center. The selected canned messages are then retrieved from the first file and communicated to the designated receiving subscribers, together with the added multiple response options. The receiving parties then select the appropriate one of the multiple options for transmission back to the appropriate calling subscribers via the network operation center. The multiple response options may also be canned responses maintained in files at the network operation center and the subscriber terminals and, like the canned messages, have assigned response codes that are handled in the same manner as the message codes.

In accordance with another feature of the present invention, corresponding canned message files are also maintained at receiving subscriber terminals, such that the canned messages may be communicated to the receiving subscribers in message code form. The received message codes are then used to retrieve the appropriate canned messages and multiple response options from stored files, and displayed by the receiving party terminals.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention may be realized and attained by the method and apparatus particularly pointed out in the written description and the appended claims, as well as the accompanying drawings.

It will be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

The accompanying drawings are intended to provide a further understanding of the invention and are incorporated in and constitute a part of the specification, illustrate a preferred embodiment of the invention, and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating an electronic messaging network utilized in the practice of a preferred embodiment of the present invention;

FIG. 2 is a flow diagram illustrating the operation of a calling terminal in the network of FIG. 1 when sending a message in accordance with one embodiment of the invention;

FIG. 3 is a flow diagram illustrating the operation of the network operation center (NOC) in the network of FIG. 1 when relaying a message from the calling terminal to the receiving terminal in accordance with one embodiment of the invention;

FIG. **4** is a flow diagram illustrating the operation of the receiving terminal in the network of FIG. **1** when receiving a message in accordance with one embodiment of the invention;

FIG. **5** is a flow diagram illustrating the operations of the NOC and the calling terminal regarding a message response from the receiving terminal in accordance with one embodiment of the invention;

FIG. **6** is a flow diagram illustrating the network operation to update message files in the NOC and the calling/receiving terminals in accordance with one embodiment of the invention;

FIG. **7** is a schematic block diagram of the calling terminal of FIG. **1** in accordance with one embodiment of the invention; and

FIG. **8** is a schematic block diagram of the NOC of FIG. **1** in accordance with one embodiment of the invention.

Corresponding reference numerals refer to like parts throughout the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in FIG. **1**, an electronic messaging network in accordance with a preferred embodiment of the present invention includes, a calling party terminal **10**, a network operation center (NOC) **12**, and a receiving party terminal **14**. It will be appreciated that, in practice, the network will include pluralities of calling and receiving party terminals. The calling party terminal **10** is connected to NOC **12** by a communications link **16**, which may take the form of land line (e.g., phonelines), a direct computer link, a wireless link, or a satellite link. NOC **12** is preferably connected to receiving party terminal **14** by a wireless communications link **18**. An example of a preferable network operation center that can be implemented in the practice of the present invention is the network operation center being developed by Destineer Corporation of Jackson, Miss. to handle their Nationwide Wireless Network (NWN) paging services. That NOC and a preferred two-way wireless network for implementing the present invention are described in U.S. patent application Ser. Number 08/124,216, the contents of which are hereby incorporated by reference.

In accordance with the present invention, calling terminal **10** includes a stored file of canned messages and associated canned message codes. Referring to the flow chart of FIG. **2**, when a calling party wishes to send a message to a receiving party at terminal **14** (FIG. **1**), the terminal retrieves the file of the canned messages from storage (step **22**) and displays the file to the calling party (step **24**). The calling party browses through the file to determine if the text of any of the canned messages is appropriate to convey the particular message that the calling party wishes to send to the receiving party. If an appropriate canned message is noted, the calling party selects this canned message (step **26**) using suitable pointing means, such as a mouse, cursor, etc. Based on the canned message selection, terminal **10** retrieves the associated canned message code from the file (step **28**).

If the selected canned message calls for the inclusion of a parameter(s), such as, for example, time, date, phone number, etc., the calling party enters a desired parameter(s), using an appropriate entry device, such as a keypad (step **30**). The calling terminal **10** compiles the retrieved message code associated with the selected canned message with an appropriate indicator code, calling and receiving terminal addresses, and added parameters, if any (step **32**). Terminal **10** then transmits the compiled canned message codes and parameters, if any, together with calling and receiving terminal addresses to NOC **12** over communications link **16** (FIG. **1**) (step **34**).

Assume, for example, that the canned message selected by the calling party in step **26** is "I am on my way home". This canned message does not call for the addition of parameters. The associated code for this canned message, may be, for example, the number **36** in ASCII code. To indicate that number **36** is a canned message code, the calling terminal **10** adds a suitable indicator code, such as ASCII control character **26**. Thus, the compiled canned message codes representing the canned message "I am on my way home" is transmitted in step **34** to NOC **12** simply as <26>36.

An example of a canned message calling for the inclusion of parameters may be "Call me at at phone number . This canned message calls for the calling party to fill in a desired time parameter and a phone number (step **30**). Suppose the calling party wishes the receiving party to call him at 4 PM at phone number 555-1212, the following canned message codes are then compiled by the calling terminal **10** and transmitted to NOC **12** as:

<26>18<29>4PM<29>5551212

where:

<26> is an ASCII control character serving as a canned message indicator.

18 is the code associated with canned message "Call me at at phone number ".

<29> is an ASCII control character serving as a parameter separator, and

4PM and 5551212 are the keyed-in parameters.

In addition to parameters, the present invention also provides for the addition of response options to certain canned messages typically posed as questions. To this end, terminal **10** maintains a file of canned response options. Then, if the calling party wishes to add response options to a selected canned message, the calling party accesses the canned response options file (step **36**), which is then displayed by terminal **10** (step **38**). The calling party browses through this file to determine which of the multiple response options are appropriate for addition to the selected canned message to be sent to the designated receiving party. The calling party selects the appropriate canned response options (step **40**) in the same manner as in the selection of the canned message, and the calling terminal **10** retrieves the particular codes associated with the selected canned response options (step **42**). If the selected canned response options call for the addition of parameters, such as time, the calling party enters the desired parameter(s) (step **44**). The selected canned response codes and parameters are then compiled with the canned message code and any canned message parameters (step **32**). The calling terminal then transmits the compiled canned message and response codes, together with any parameters to NOC **12** (step **34**).

By way of example, if the selected canned message is "Can we sign the document first thing tomorrow?" followed by selected canned response options "yes", "no", and "change to 1 PM", the canned message codes and parameters transmitted to NOC **12** would preferably be as follows:

<26>62<31><26>1<31><26>2<31><26>7<29>1PM

where:

<26> is an ASCII control character serving as the canned message and multiple response options indicator.

<29> is an ASCII control character serving as the parameter separator.

<31> is an ASCII control character unit separator used as a delineator separating multiple response options from the canned message and from each other,

62 is the code associated with canned message "Can we sign the document first thing tomorrow?",

1 is the code associated with canned response option "yes",

2 is the code associated with canned response option ¢no",

7 is the code associated with canned response option "change to", and

1PM is the keyed-in parameter.

The following example illustrates that, in some cases, parameters added to canned messages may be canned parameters also stored at the calling terminal **10**. Such canned parameters may be included in the canned message file, the canned multiple response options file, or in a separate canned parameter file stored at the calling terminal. If canned parameters are stored in separate file from the canned message file and the canned multiple response option file, parameter selection by the calling party is achieved using a separate subroutine corresponding to the subroutine used to select canned multiple response options.

To illustrate this case, consider the canned message "Can we meet for lunch at or ?", and the selected multiple response options are "noon", "12:30" or "call me". The compilation of codes and parameters transmitted to NOC **12** would then be:

<26>10<26>15<29>12:30<31><26>15<31>12:30<31><26>8

where:

<26> is the ASCII control character serving as the canned message and multiple response options indicator,

<31> is the ASCII control character serving as a delineator for separating the canned message and multiple response options from each other,

<29> is the parameter separator,

10 is the code associated with canned message "Can we meet for lunch at or ?",

8 is the code associated with the canned parameter and response option "call me",

15 is the code associated with canned parameter and response option "noon", and

12:30 is the keyed-in parameter.

FIG. **3** illustrates the operation of NOC **12** in accordance with one embodiment of the invention. The canned message/response option codes and any parameters transmitted by calling terminal **10** over communications link **16** are received by a NOC receiver (step **50**). From the calling and receiving terminal addresses included with the canned message/response option codes, the identities of the calling and receiving terminals **10** and **14** (FIG. **1**) are determined (step **52**). These determinations are stored in memory (step **54**). From the identity of the receiving terminal **14**, NOC **12** determines if receiving terminal **14** is capable of accepting this particular canned message/response option. NOC **12** is programmed to make this determination for several reasons. For example, NOC **12** needs to know whether the designated receiving party is a member of a messaging group or organization that has established a file of customized canned messages and response options and thus has access to a terminal in which files of the customized canned messages/response options and associated codes are stored in memory. Also, the files of canned messages may include both standard, network-wide canned messages and canned messages customized for a particular group. Thus, NOC **12** must determine whether the designated receiving party terminal can accept only standard canned messages/response options, only customized canned messages/response options or both. In any case, NOC **12** maintains multiple files of canned messages and canned response options, including files identical to those stored at calling terminal **10** and possibly also at receiving terminal **14**.

Based on this determination, NOC **12** determines whether the designated receiving party terminal can accept the canned message in code form, i.e., as received from the sending party terminal, or whether the canned message must be transmitted in full text to the receiving party terminal (step **56**). If the designated receiving terminal can accept canned message/response option codes, they are transmitted to the designated receiving party terminal in the same form as received from the sending party terminal (step **58**). If the designated receiving party terminal is not equipped to process canned message/response option codes, NOC **12** uses the canned message/response option codes received from the calling party terminal **10** to retrieve from the appropriate file(s) the text of the associated canned message and multiple response options, if any, from a memory (step **60**). The text of the canned message and response options, together with parameters, is then transmitted in standard message code format by NOC **12** to the receiving terminal (step **58**).

FIG. **4** illustrates the operation of receiving terminal **14** upon receiving a message transmission, according to an embodiment of the invention. Initially, terminal **14** receives the canned message/response option transmission from NOC **12** (step **70**). The receiving terminal then determines whether the canned message/response option reception is in message text or canned message code (step **72**). If in text, the canned message and any response options are displayed to the receiving party (step **74**). Alternatively, if the reception is in canned message/response option codes, the receiving party terminal **14**, using these codes, retrieves the associated canned messages, canned response options, and canned parameters from the various stored files identical to those stored at calling terminal **10** and NOC **12** (step **76**). The retrieved canned message, response options, and parameters, if any, are displayed in text form for viewing by the receiving party terminal (step **74**).

If any response options are included with the canned message, the receiving party selects the appropriate response option (step **78**), which is then transmitted by the receiving terminal back to NOC **12** (step **80**). Since a typical response option is very short, it can be efficiently transmitted back to NOC **12** in ASCII text code format. However, it will be appreciated that the receiving terminal may be so equipped that the code associated with the selected response, as received from NOC **12**, may simply be transmitted back to the NOC **12** in response option code. Alternatively, the receiving terminal may be equipped with keys positioned in associated relation with the display of the multiple response options. Depression of any one of the keys selects the associated one of the response options, and a unique, simple code assigned to the depressed key is transmitted back to the NOC **12**.

FIG. **5** illustrates the operation of the NOC and the calling terminal in relaying a selected response option from the receiving terminal to the calling terminal in accordance with an embodiment of the invention. Initially, NOC **12** receives the selected response option transmitted by the receiving party terminal **14** (step **82**). NOC then determines whether the received response option is in ASCII text code format or in canned response option code (step **83**). If in text code, NOC simply relays the selected response option to the calling party terminal **10** (step **86**). If the selected response

option is received from the receiving party terminal in canned response option code, a decision is made whether to transmit the selected response option to the calling party terminal in canned response code or in ASCII text code (step **84**). If the former, the canned response code is simply transmitted to the calling party terminal **10** as received from the receiving terminal (step **86**). If in ASCII text code, NOC **12** is programmed to access its stored canned multiple response option file and, using the received response option code, retrieve the selected canned response option text (step **88**), which is then transmitted in ASCII text code to the calling party terminal **10** (step **86**).

The selected response option relayed by NOC **12** is received by calling terminal **10** (step **90**), which then determines whether the response option is in text code format or canned response code (step **92**). If in text code, the response option is decoded and displayed to the calling party (step **94**). If the selected response option is in code form, the calling terminal simply accesses its stored response options file and, using the received response option code, retrieves the associated response option text (step **96**), which is then displayed to the calling party (step **94**).

NOC **12**, as part of its system responsibilities, is capable of updating the canned message, canned response option, and canned parameter files. FIG. **6** illustrates the procedure for updating these files in accordance with one embodiment of the invention. NOC **12** updates the files (step **100**) and stores the canned file updates in the NOC memory (step **102**). NOC **12** then transmits the updated canned files to all of the terminals in a particular two-way messaging group, including calling terminal **10** and receiving terminal **14** (step **104**). The canned file updates are received by the messaging group terminals (step **106**) and stored in the terminal memories (step **108**). It will be appreciated that updated canned files may be created at one of the terminals and transmitted to NOC **12**, which then operates to disseminate the file updates to other terminals of the messaging group.

As indicated above, the calling terminal **10** and NOC **12** are disclosed more fully in the cited application Ser. No. 08/124,216 and preferably comprise the structure disclosed in this application. For illustrative purposes, applicants include FIGS. **7** and **8** to illustrate preferred structure in block diagram form.

A preferred structure of calling terminal **10** appropriate for practicing the present invention is illustrated in FIG. **7**. As shown, the calling terminal **10** includes a CPU **110**, a ROM **112** to store an application program for controlling terminal operation in accordance with the present invention, a RAM **114** to store the canned message/response options/parameter files and associated codes, and a compiler **116** for assembling the message/response options/parameter codes, indicator and separator codes, and address codes into a message under the control of the application program and CPU **110**. Calling terminal **10** also includes an input/output (I/O) device **118** selectively connecting a transmitter **120** and a receiver **122** into the terminal circuitry. A coder/decoder **124** encodes text messages transmitted by the terminal to NOC **12** and decodes text messages received from NOC, including selected response options in text code received from a receiving terminal **14**. A terminal keypad **126** is used by the calling party to designate a receiving party (typically by phone number), to retrieve canned message/response options/parameter files from RAM **114**, to scroll through the displayed files, and to select the canned message/response options/parameter(s) appropriate for sending to the receiving party. Display **128** also displays selected response options from receiving parties relayed by NOC **12**. These terminal components are interconnected in operative relation by a system bus **130**. While FIG. **7** illustrates the operative structural configuration of calling terminal **10**, it will be appreciated that, preferably, receiving terminal **14** is structurally configured in the same manner.

FIG. **8** illustrates the structure of NOC **12** in accordance with one embodiment of the invention. As shown, NOC **12** includes a CPU **131** connected by a system bus **132** to an input/output (I/O) device **134**, to which a transmitter **136** and a receiver **138** are connected. A ROM **139** stores an application program appropriate for controlling NOC **12** in accordance with the present invention. A RAM **140** stores sets of canned messages/response options/parameters files for various messaging groups, including the group to which terminals **10** and **14** belong. Thus, RAM **140** stores a set of canned files identical to the set stored in the RAMs of terminals **10** and **14**. NOC **12** also includes a memory **142** for storing the identities of the calling and receiving terminals involved in a message that is being relayed, as well as the messages. Message storage is preferred in case receiving terminals do not receive an original message transmission and, thus, retransmission is required. Retention of terminal identities is required so that selected response options received from receiving terminals are correctly relayed to the appropriate calling terminals.

Finally, NOC **12** also includes a message compiler **144** that may be required for message formatting and for adding appropriate codes, such as terminal address codes not included in the messages being relayed by the NOC. This is particularly so in the case of a selected response option which typically does not include the calling terminal address. NOC then refers to the calling terminal identify stored in memory **142** pursuant to determining the calling terminal address that must be included in the transmission of the selected response option, if it is to be relayed to the correct calling terminal.

It will be apparent to those skilled in the art that various modifications and variations can be made in the method of the present invention without departing from the spirit of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal;

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

2. The method defined in claim **1**, further including the step of updating the first and second canned message files.

3. The method defined in claim 1, further including the step of displaying the selected canned message at the second terminal.

4. The method defined in claim 3, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the communicating step including the step of communicating the added parameter with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

5. The method defined in claim 3, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the communicating step including the step of communicating the added multiple response options with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

6. The method defined in claim 5, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message code and the multiple response options;

the communicating step further including the step of communicating the selected canned message, multiple response options, and added parameter to the second terminal; and

the displaying step at the second terminal further including the step of displaying the selected canned message, added parameter, and multiple response options.

7. The method defined in claim 6, further including the step of correspondingly updating the first and second canned message files.

8. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber, a second file of canned messages and message codes corresponding to the first file;

maintaining, at a second terminal of a second subscriber, a third file of canned messages and message codes corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to the second terminal;

sending the message code assigned to the selected canned message to the network operation center;

relaying the message code assigned to the selected canned message from the network operation center to the second terminal;

retrieving the selected canned message from the third file using the assigned message code received from the network operation center; and

displaying the selected canned message retrieved from the third file.

9. The method defined in claim 8, further including the step of updating the first, second, and third canned message files.

10. The method defined in claim 8, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the relaying step including the step of relaying the added parameter with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

11. The method defined in claim 8, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the relaying step including the step of relaying the added multiple response options with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

12. The method defined in claim 11, further including the steps of:

maintaining at the network operation center, a fourth file of canned multiple response options and response codes respectively assigned to the canned multiple response options;

maintaining at the first terminal, a fifth file of canned multiple response options and response codes corresponding to the fourth file; and

maintaining, at the second terminal, a sixth file of canned multiple response options and response codes corresponding to the fourth file;

wherein the selecting step further includes

the step of selecting appropriate canned multiple response options from the fifth file;

the sending step further includes the step of sending the response codes assigned to the selected multiple

response options together with the message code to the network operation center;

the relaying step further includes the step of relaying the message and response codes from the network operation center to the second terminal; and

the retrieving step further includes the step of retrieving the selected canned multiple response options from the sixth file using the assigned response codes received from the network operation center.

13. The method defined in claim **12**, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message and response codes; the relaying step further including the step of relaying the added parameter with the assigned message and response codes to the second terminal, and

the displaying step at the second terminal further including the step of displaying the selected canned message and multiple response options with the added parameter incorporated therein.

14. The method defined in claim **13**, further including the step of correspondingly updating the first through sixth files.

15. A network operation center for use in an electronic messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

means responsive to the received message code for retrieving from the memory the canned message assigned thereto;

means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form; and

a transmitter for transmitting the retrieved canned message in text form or message code form in response to the determining means.

16. The network operation center defined in claim **15**, the determining means routing the received message code directly to the transmitter upon determination that the receiving terminal can receive the canned message in message code form.

17. The network operation center defined in claim **15**, further including means for updating the canned message file stored in the memory and a corresponding canned message file stored in a memory in at least the calling terminal.

18. The network operation center defined in claim **15**, wherein the memory stores a separate file of canned multiple response options having response codes respectively assigned thereto;

said responsive means further including means for retrieving from the memory those canned multiple response options assigned to response codes received from the calling terminal by the receiver, the retrieved canned message and multiple response options being transmitted to the receiving terminal by the transmitter; and

the network operation center further including means for routing a selected canned multiple response option received from the receiving terminal to the calling terminal in either text or response code form.

19. A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and the file of canned multiple response options from the memory;

a display for displaying the canned messages and the multiple response options in the retrieved file;

means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message and the response code assigned to the at least one multiple response option over a communications link of the network.

20. The message terminal defined in claim **19**, further including means for adding parameters to the selected canned message for inclusion with the assigned message code transmitted over the communications link.

21. A message terminal for use in an electronic messaging network, comprising:;

a memory storing a file of canned messages, and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and message codes from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal and for selecting multiple response options appropriate for the selected canned message;

a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.: 5,894,506

DATED: April 13, 1999

INVENTOR: Gregory J. Pinter

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

Claim 5, column 9, line 34, after "work" insert --operation center;-- then start a new indented line beginning with "routing".

Signed and Sealed this

Fourteenth Day of September, 1999

Attest:

Q. TODD DICKINSON

Attesting Officer

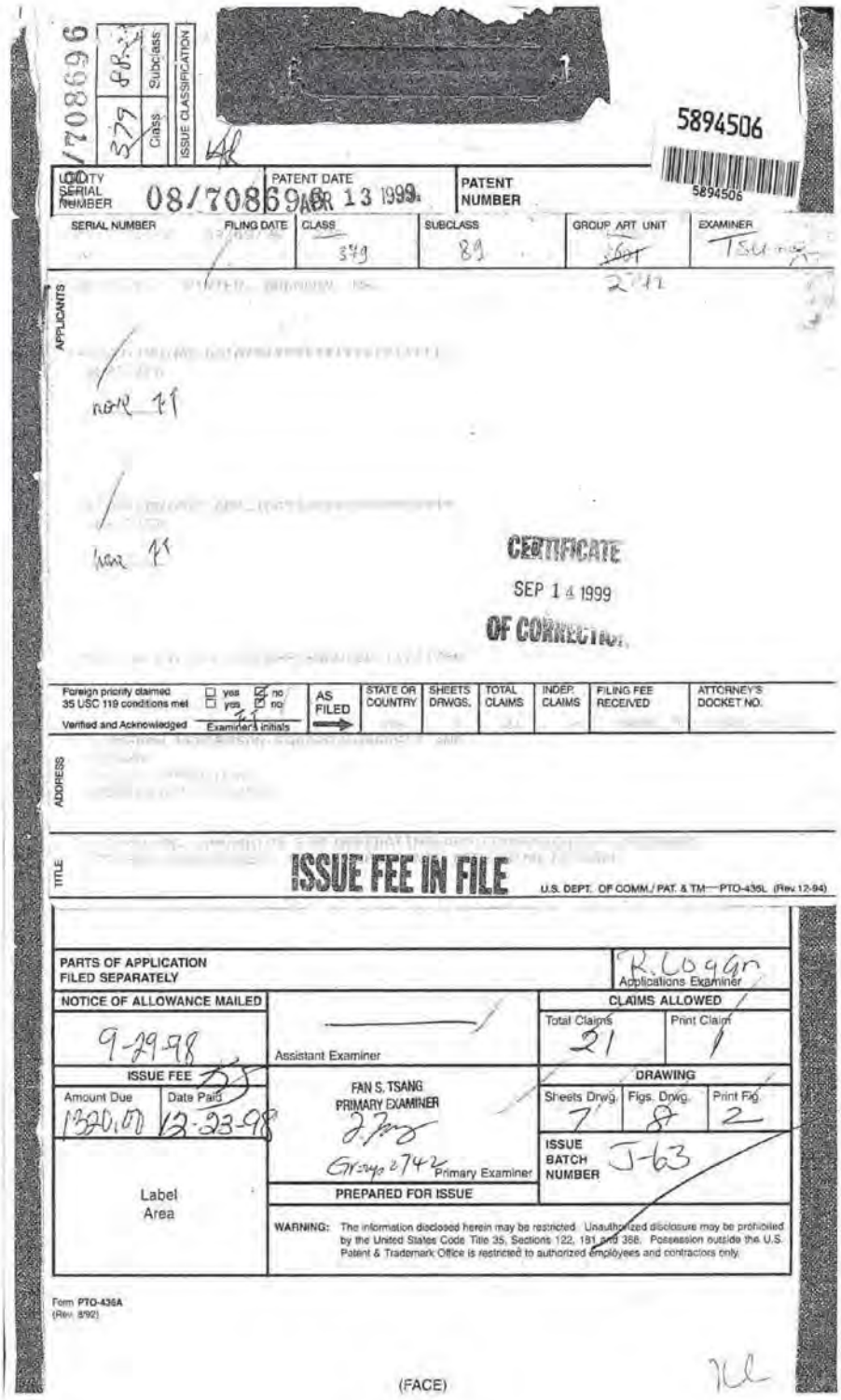
Acting Commissioner of Patents and Trademarks

FILE HISTORY

US 5,894,506

PATENT:	5,894,506
INVENTORS:	Pinter, Gregory J.
TITLE:	Method and apparatus for generating and communicating messages between subscribers to an electronic messaging network
APPLICATION NO:	US1996708696A
FILED:	05 SEP 1996
ISSUED:	13 APR 1999
COMPILED:	13 JUN 2013

APPLE 1002



/708696

Class	Subclass	ISSUE CLASSIFICATION
379	88	

[redacted]

5894506

5894506

UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
08/708696	APR 13 1999	

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER
		379	89	~~2601~~ 2742	Tsang

APPLICANTS

none 77

none 77

CERTIFICATE

SEP 14 1999

OF CORRECTION

Foreign priority claimed 35 USC 119 conditions met	☐ yes ☑ no ☐ yes ☑ no	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
Verified and Acknowledged	Examiner's initials							

ADDRESS

TITLE

ISSUE FEE IN FILE

U.S. DEPT. OF COMM./PAT. & TM—PTO-436L (Rev.12-94)

PARTS OF APPLICATION FILED SEPARATELY

R. Logan
Applications Examiner

NOTICE OF ALLOWANCE MAILED		CLAIMS ALLOWED	
9-29-98	Assistant Examiner	Total Claims 21	Print Claim 1

ISSUE FEE			DRAWING		
Amount Due	Date Paid	FAN S. TSANG PRIMARY EXAMINER	Sheets Drwg.	Figs. Drwg.	Print Fig.
1320.00	12-23-98	F. Tsang	7	8	2
Label Area		Group 2742 Primary Examiner	ISSUE BATCH NUMBER J-63		
		PREPARED FOR ISSUE			

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Form PTO-436A
(Rev. 8/92)

(FACE)

2

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Transaction History

Date	Transaction Description
9/16/1996	Initial Exam Team nn
11/7/1996	Application Captured on Microfilm
4/29/1997	Case Docketed to Examiner in GAU
1/12/1998	Case Docketed to Examiner in GAU
2/19/1998	Non-Final Rejection
2/26/1998	Mail Non-Final Rejection
7/24/1998	Response after Non-Final Action
7/24/1998	Information Disclosure Statement (IDS) Filed
7/24/1998	Information Disclosure Statement (IDS) Filed
7/24/1998	Request for Extension of Time - Granted
7/30/1998	Date Forwarded to Examiner
9/18/1998	Examiner Interview Summary Record (PTOL - 413)
9/29/1998	Mail Notice of Allowance
9/29/1998	Notice of Allowance Data Verification Completed
9/29/1998	Mail Examiner's Amendment
9/29/1998	Examiner's Amendment Communication
12/23/1998	Issue Fee Payment Verified
12/23/1998	Mailroom Date of Drawing(s)
12/29/1998	Drawing(s) Received at Publications
1/14/1999	Drawing(s) Processing Completed
1/14/1999	Drawing(s) Matched to Application
2/18/1999	Workflow - File Sent to Contractor
4/7/1999	Issue Notification Mailed
4/15/1999	Recordation of Patent Grant Mailed
8/16/1999	Post Issue Communication - Certificate of Correction

08/708696

PATENT APPLICATION

08708696

APPROVED FOR LICENSE ☑

INITIALS OCT 029645

Date Entered or Counted	CONTENTS	Date Received or Mailed
	1. Application 7 pts papers.	
2-19	2. Rej (3 mos)	2-26-98
7-30	3. Req. Ext. time (2) & Amdt A	7-24-98
	4. Prior Art	7-24-98
	5. Interview Summary	9-18-98
9-28	6. EXR Amdt/B	9-29-98
1-14-99	7. Formal Drawings (7 shts) and N/A	12-23-98
	8. PTO GRANT APR 13 1999	
	9. Req. for CfC	5-14-99
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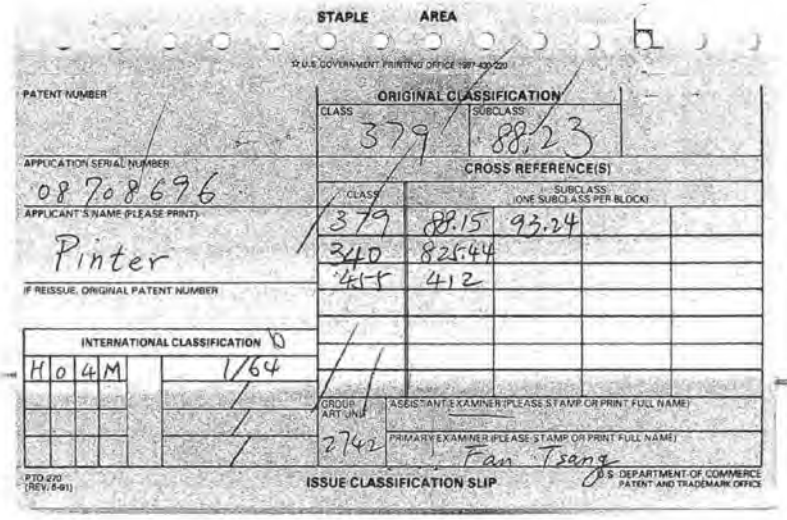

STAPLE AREA

☆ U.S. GOVERNMENT PRINTING OFFICE 1997-430-220

PATENT NUMBER

ORIGINAL CLASSIFICATION

CLASS 379 SUBCLASS 88.23

APPLICATION SERIAL NUMBER

08/708,696

CROSS REFERENCE(S)

APPLICANT'S NAME (PLEASE PRINT)

Pinter

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
379	88.15	93.24			
340	825.44				
455	412				

IF REISSUE, ORIGINAL PATENT NUMBER

INTERNATIONAL CLASSIFICATION

H	0	4	M	1/64

GROUP ART UNIT 2742

ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME)

PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME)

Fan Tsang

PTO-270 (REV. 6-91)

ISSUE CLASSIFICATION SLIP

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

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POSITION		ID NO.	DATE
CLASSIFIER		10	10/2/96
EXAMINER		414	10-29-96
TYPIST	MH		11-1-96
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DRAFTING			

INDEX OF CLAIMS

Claim Final	Claim Original	Date
1	1	✓ =
2	2	
3	3	
4	4	
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6	6	
7	7	✓
8	8	=
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SYMBOLS

✓	Rejected
=	Allowed
- (through numberal)	Cancelled
+	Restricted
N	Non-elected
I	Interference
A	Appeal
O	Objected

Claim Final	Claim Original	Date
	51	
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SEARCHED

Class	Sub.	Date	Exmr.
379	67 ~~88~~ ~~87~~	3/15/98	ZT.
455	31.3 31.2		
395	200.3 200.31 200.34 200.37 200.41		
379	93.24 93.25 93.26		
update	searched	9/17/98	Z.T.

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
379	88.23 88.15 93.24 93.25 93.26	9/17/98	Z.T.

SEARCH NOTES

	Date	Exmr.
W. Cummings (for paging) D. Hunter	2/15/98	ZT

(RIGHT OUTSIDE)

7

US005894506A

United States Patent [19]

Pinter

[11] Patent Number: 5,894,506

[45] Date of Patent: Apr. 13, 1999

[54] **METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK**

[75] Inventor: **Gregory J. Pinter**, Brandon, Miss.

[73] Assignee: **SkyTel Communications, Inc.**, Jackson, Miss.

[21] Appl. No.: **08/708,696**

[22] Filed: **Sep. 5, 1996**

[51] **Int. Cl.**[6] **H04M 1/64**

[52] **U.S. Cl.** **379/88.23**; 379/88.15; 379/93.24; 340/825.44; 455/412

[58] **Field of Search** 379/67, 88, 89, 379/93.24, 93.25, 93.26; 455/31.3, 31.2; 395/200.3, 200.31, 200.34, 200.37, 200.41

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,978,676	4/1961	Spencer	340/154
3,513,443	5/1970	Andersen	340/164
3,714,375	1/1973	Stover	179/2
3,818,145	6/1974	Hanway	179/41
3,846,783	11/1974	Apsell et al.	340/311
3,851,251	11/1974	Wigner et al.	325/55
3,944,724	3/1976	Kilby et al.	178/4.1
3,976,995	8/1976	Sebestyen	340/337
3,984,775	10/1976	Caricl et al.	325/55
4,010,460	3/1977	DeRosa	340/311
4,010,461	3/1977	Stodolski	340/311
4,160,240	7/1979	Partipilo	340/311
4,178,475	12/1979	Taylor et al.	179/2
4,197,526	4/1980	Levine	340/311
4,249,165	2/1981	Mori	340/311
4,263,480	4/1981	Levine	179/2
4,330,780	5/1982	Masaki	340/825.44
4,336,524	6/1982	Levine	340/311
4,382,256	5/1983	Nagata	340/825.44
5,327,486	7/1994	Wolff et al.	379/210
5,381,466	1/1995	Shibayama et al.	379/88
5,539,808	7/1996	Inniss et al.	379/67

OTHER PUBLICATIONS

"New Radio Paging System," by Mitsuru Komura et al. Japan Telecommunications Review, Jul. 1977, vol. 19, No. 3, pp. 217 and 220–225.

"Paging System Broadcasts Nationwide on FM Radio Channel," Electronics International, Jan. 4, 1979, vol. 52, No. 1, pp. 67–68.

"A Development Project of a Pocketsize Receiver for a Nationwide Paging System," by Kari Kiishinen et al. IEEE, 1979, pp. 383–387.

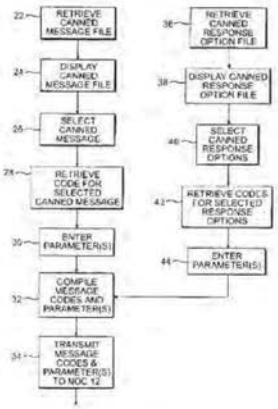
Primary Examiner—Fan S. Tsang

Attorney, Agent, or Firm—Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

[57] **ABSTRACT**

An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center. The receiving terminal retrieves the selected canned message from its memory using the received message code for display to the receiving party. Files of canned responses and associated response codes may also be stored in the memories at the terminals and network operation center to allow the exchange of selected canned response options in conjunction with canned messages to be in response code form.

21 Claims, 7 Drawing Sheets



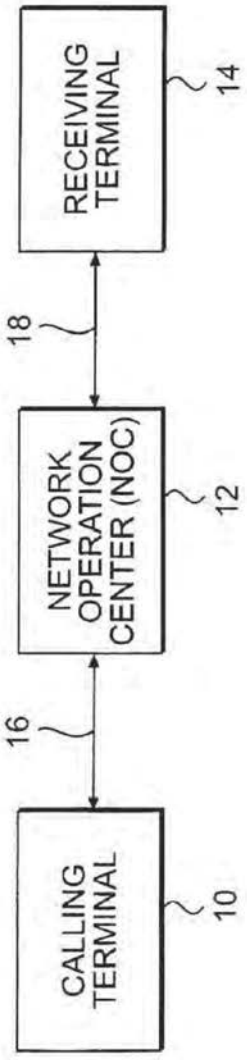

RECEIVING TERMINAL
14
18
NETWORK OPERATION CENTER (NOC)
12
16
CALLING TERMINAL
10

FIG. 1

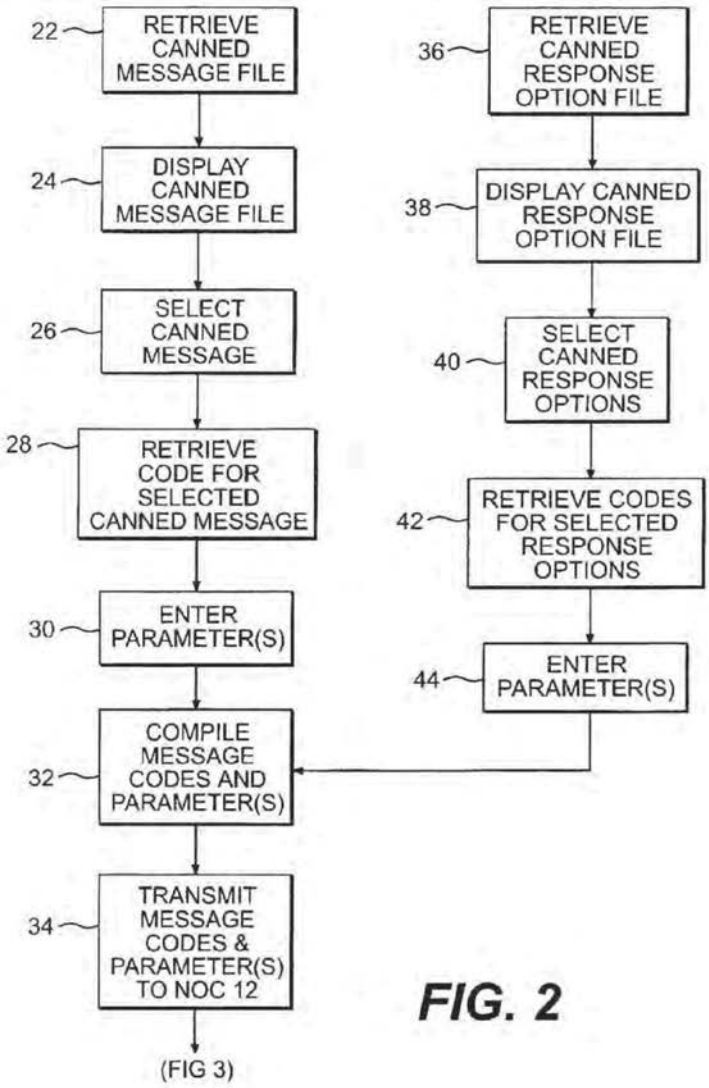

22
RETRIEVE CANNED MESSAGE FILE
24
DISPLAY CANNED MESSAGE FILE
26
SELECT CANNED MESSAGE
28
RETRIEVE CODE FOR SELECTED CANNED MESSAGE
30
ENTER PARAMETER(S)
32
COMPILE MESSAGE CODES AND PARAMETER(S)
34
TRANSMIT MESSAGE CODES & PARAMETER(S) TO NOC 12
(FIG 3)
36
RETRIEVE CANNED RESPONSE OPTION FILE
38
DISPLAY CANNED RESPONSE OPTION FILE
40
SELECT CANNED RESPONSE OPTIONS
42
RETRIEVE CODES FOR SELECTED RESPONSE OPTIONS
44
ENTER PARAMETER(S)

FIG. 2

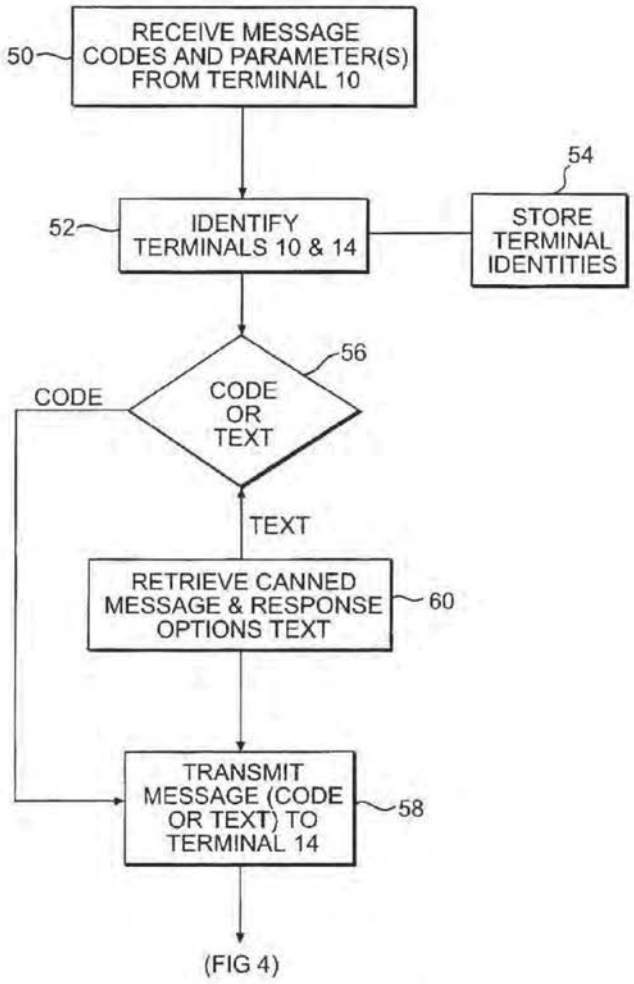

RECEIVE MESSAGE CODES AND PARAMETER(S) FROM TERMINAL 10
50
IDENTIFY TERMINALS 10 & 14
52
STORE TERMINAL IDENTITIES
54
CODE OR TEXT
56
CODE
TEXT
RETRIEVE CANNED MESSAGE & RESPONSE OPTIONS TEXT
60
TRANSMIT MESSAGE (CODE OR TEXT) TO TERMINAL 14
58
(FIG 4)

FIG. 3

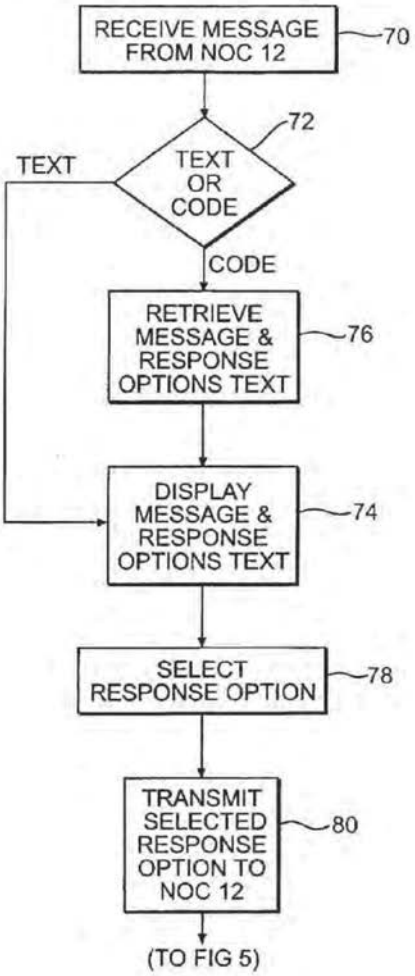

RECEIVE MESSAGE FROM NOC 12
70
72
TEXT OR CODE
TEXT
CODE
RETRIEVE MESSAGE & RESPONSE OPTIONS TEXT
76
DISPLAY MESSAGE & RESPONSE OPTIONS TEXT
74
SELECT RESPONSE OPTION
78
TRANSMIT SELECTED RESPONSE OPTION TO NOC 12
80
(TO FIG 5)

FIG. 4

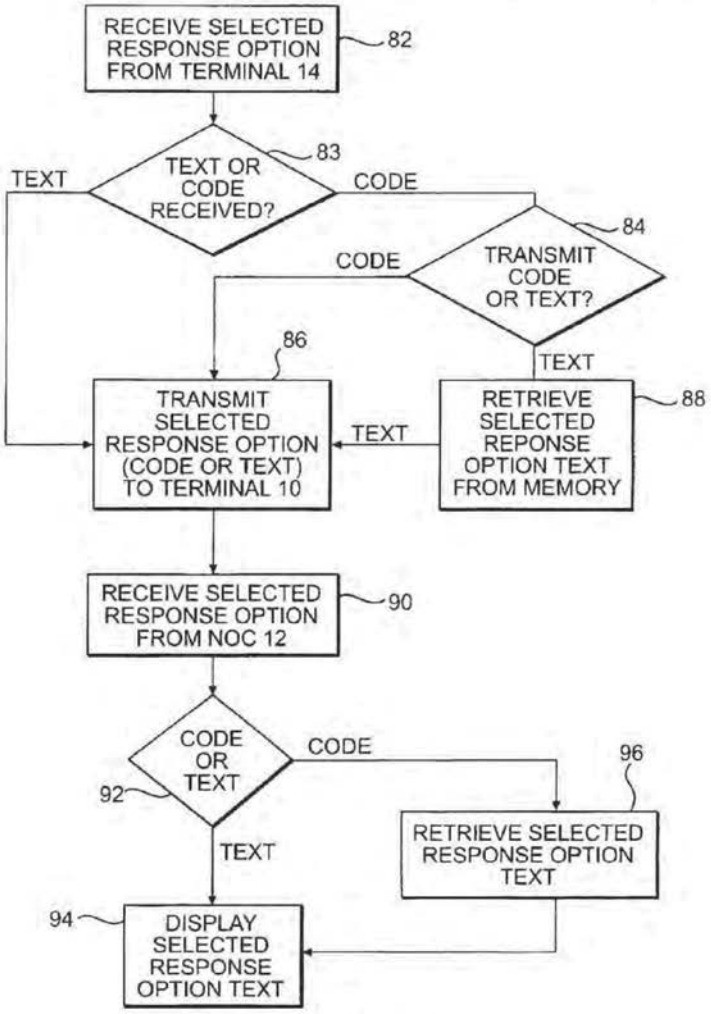

RECEIVE SELECTED RESPONSE OPTION FROM TERMINAL 14
82
TEXT OR CODE RECEIVED?
83
TEXT
CODE
TRANSMIT CODE OR TEXT?
84
CODE
TEXT
TRANSMIT SELECTED RESPONSE OPTION (CODE OR TEXT) TO TERMINAL 10
86
TEXT
RETRIEVE SELECTED REPONSE OPTION TEXT FROM MEMORY
88
RECEIVE SELECTED RESPONSE OPTION FROM NOC 12
90
CODE OR TEXT
92
CODE
96
TEXT
RETRIEVE SELECTED RESPONSE OPTION TEXT
94
DISPLAY SELECTED RESPONSE OPTION TEXT

FIG. 5

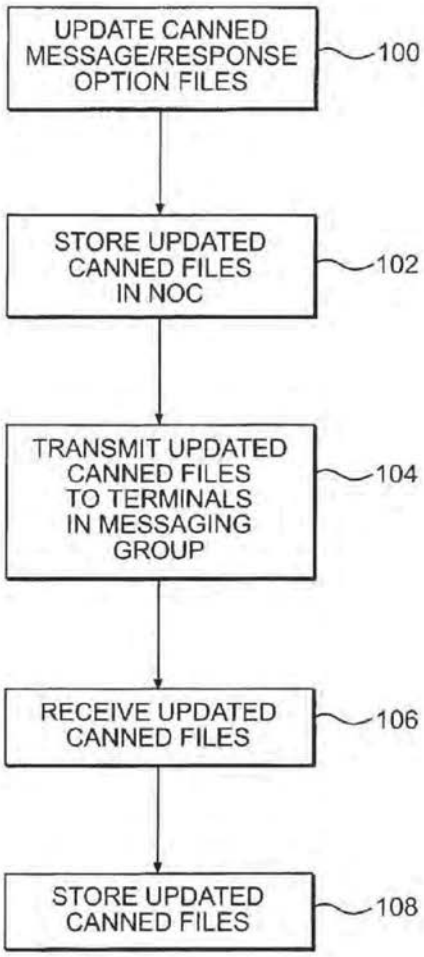

UPDATE CANNED MESSAGE/RESPONSE OPTION FILES
100
STORE UPDATED CANNED FILES IN NOC
102
TRANSMIT UPDATED CANNED FILES TO TERMINALS IN MESSAGING GROUP
104
RECEIVE UPDATED CANNED FILES
106
STORE UPDATED CANNED FILES
108

FIG. 6

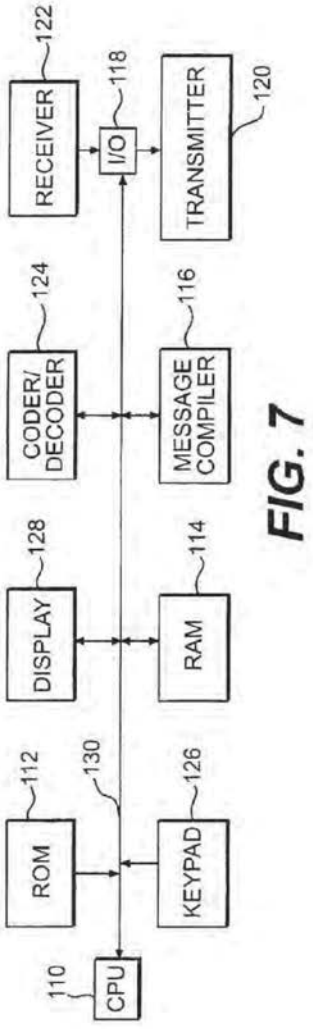

110
CPU
112
ROM
130
126
KEYPAD
128
DISPLAY
114
RAM
124
CODER/
DECODER
116
MESSAGE
COMPILER
122
RECEIVER
118
I/O
120
TRANSMITTER

FIG. 7

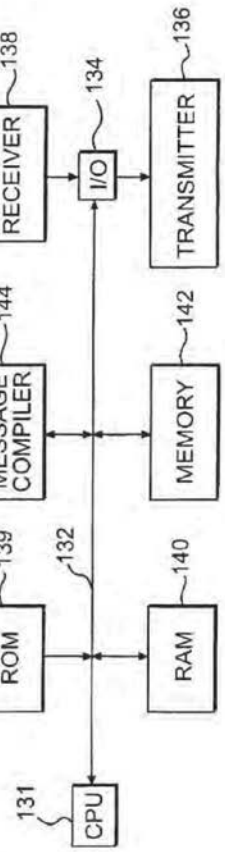

131
CPU
139
ROM
132
140
RAM
144
MESSAGE
COMPILER
142
MEMORY
138
RECEIVER
134
I/O
136
TRANSMITTER

FIG. 8

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

FIELD OF THE INVENTION

The present invention relates to electronic information services and more particularly to the exchange of electronic messages among subscribers to an electronic messaging network.

BACKGROUND OF THE INVENTION

As more and more people sign on to information networks, congestion of the communications links comprising these networks, both wireline and wireless, and the consequential transmission delays become increasingly significant problems. Faster transmission rates, data compression techniques, and more efficient spectrum utilization are among the approaches that have been considered, and to some extent implemented, to increase the capacities of communications links.

One area of particularly rapid growth is the electronic messaging field. More and more people are moving about with portable devices, such as laptop computers and portable digital devices, which can be economically equipped to function as message sending/receiving terminals. Moreover, wireless paging hardware, software, and support services are being upgraded to accommodate two-way messaging. That is, portable pagers are being developed not only to receiving paging messages, but also to send back a signal acknowledging receipt of a paging message or even a message answering the received paging message. While such upgraded paging services are highly desirable, they can severely strain the capacity of wireless paging channels.

SUMMARY OF THE INVENTION

It is accordingly a principle object of the present invention to provide an improved electronic messaging network and method, wherein communications link capacity is conserved by transmitting certain messages with an improved degree of message compression.

Particularly in the case of radio paging, many paging messages consists of a relatively small number of common phrases, such as "I am on the way home", "I am working late", "Can we meet for lunch", etc. This being the case, such commonly used phrases can be treated as "canned" messages that can be replaced by short message codes as simple as, for example, one or several ASCII characters.

The present invention takes advantage of this fact by providing, in accordance with one preferred embodiment, a method of communicating messages between subscribers of an electronic messaging network, comprising the steps of maintaining, at a network operation center, a first file of canned messages individually retrievable using unique, abbreviated message codes respectively assigned to the canned messages; maintaining, at a terminal of a calling subscriber, a second file of canned messages corresponding to the first file; selecting an appropriate canned message from the second file for transmission to a terminal of a designated receiving subscriber; sending the message code assigned to the selected canned message to the network operation center; retrieving the selected canned message from the first file using the message code received from the calling subscriber terminal; and communicating the selected canned message to the designated receiving party terminal where it is displayed.

In accordance with a feature of the present invention, the first and second canned message files may be updated, either by the network operation center or from a subscriber terminal in order to customize the canned messages according to the needs of a particular group or organization of subscribers. In addition, the canned messages may be phrased to accept the addition of one or more parameters, which are entered at the calling subscriber terminal and then included with the message codes sent to the network operation center. The selected canned messages are retrieved from the first file using the message codes and communicated to terminals of designated receiving subscribers with the added parameters incorporated in the bodies of the canned messages.

The present invention also accommodates the addition of multiple response options to the canned messages selected by calling subscribers. The multiple response options are then included with the canned message codes sent to the network operation center. The selected canned messages are then retrieved from the first file and communicated to the designated receiving subscribers, together with the added multiple response options. The receiving parties then select the appropriate one of the multiple options for transmission back to the appropriate calling subscribers via the network operation center. The multiple response options may also be canned responses maintained in files at the network operation center and the subscriber terminals and, like the canned messages, have assigned response codes that are handled in the same manner as the message codes.

In accordance with another feature of the present invention, corresponding canned message files are also maintained at receiving subscriber terminals, such that the canned messages may be communicated to the receiving subscribers in message code form. The received message codes are then used to retrieve the appropriate canned messages and multiple response options from stored files, and displayed by the receiving party terminals.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention may be realized and attained by the method and apparatus particularly pointed out in the written description and the appended claims, as well as the accompanying drawings.

It will be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

The accompanying drawings are intended to provide a further understanding of the invention and are incorporated in and constitute a part of the specification, illustrate a preferred embodiment of the invention, and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating an electronic messaging network utilized in the practice of a preferred embodiment of the present invention;

FIG. 2 is a flow diagram illustrating the operation of a calling terminal in the network of FIG. 1 when sending a message in accordance with one embodiment of the invention;

FIG. 3 is a flow diagram illustrating the operation of the network operation center (NOC) in the network of FIG. 1 when relaying a message from the calling terminal to the receiving terminal in accordance with one embodiment of the invention;

FIG. 4 is a flow diagram illustrating the operation of the receiving terminal in the network of FIG. 1 when receiving a message in accordance with one embodiment of the invention;

FIG. 5 is a flow diagram illustrating the operations of the NOC and the calling terminal regarding a message response from the receiving terminal in accordance with one embodiment of the invention;

FIG. 6 is a flow diagram illustrating the network operation to update message files in the NOC and the calling/receiving terminals in accordance with one embodiment of the invention;

FIG. 7 is a schematic block diagram of the calling terminal of FIG. 1 in accordance with one embodiment of the invention; and

FIG. 8 is a schematic block diagram of the NOC of FIG. 1 in accordance with one embodiment of the invention.

Corresponding reference numerals refer to like parts throughout the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in FIG. 1, an electronic messaging network in accordance with a preferred embodiment of the present invention includes, a calling party terminal **10**, a network operation center (NOC) **12**, and a receiving party terminal **14**. It will be appreciated that, in practice, the network will include pluralities of calling and receiving party terminals. The calling party terminal **10** is connected to NOC **12** by a communications link **16**, which may take the form of land line (e.g., phonelines), a direct computer link, a wireless link, or a satellite link. NOC **12** is preferably connected to receiving party terminal **14** by a wireless communications link **18**. An example of a preferable network operation center that can be implemented in the practice of the present invention is the network operation center being developed by Destineer Corporation of Jackson, Miss. to handle their Nationwide Wireless Network (NWN) paging services. That NOC and a preferred two-way wireless network for implementing the present invention are described in U.S. patent application Ser. Number 08/124,216, the contents of which are hereby incorporated by reference.

In accordance with the present invention, calling terminal **10** includes a stored file of canned messages and associated canned message codes. Referring to the flow chart of FIG. **2**, when a calling party wishes to send a message to a receiving party at terminal **14** (FIG. **1**), the terminal retrieves the file of the canned messages from storage (step **22**) and displays the file to the calling party (step **24**). The calling party browses through the file to determine if the text of any of the canned messages is appropriate to convey the particular message that the calling party wishes to send to the receiving party. If an appropriate canned message is noted, the calling party selects this canned message (step **26**) using suitable pointing means, such as a mouse, cursor, etc. Based on the canned message selection, terminal **10** retrieves the associated canned message code from the file (step **28**).

If the selected canned message calls for the inclusion of a parameter(s), such as, for example, time, date, phone number, etc., the calling party enters a desired parameter(s), using an appropriate entry device, such as a keypad (step **30**). The calling terminal **10** compiles the retrieved message code associated with the selected canned message with an appropriate indicator code, calling and receiving terminal addresses, and added parameters, if any (step **32**). Terminal **10** then transmits the compiled canned message codes and parameters, if any, together with calling and receiving terminal addresses to NOC **12** over communications link **16** (FIG. 1) (step **34**).

Assume, for example, that the canned message selected by the calling party in step **26** is "I am on my way home". This canned message does not call for the addition of parameters. The associated code for this canned message, may be, for example, the number **36** in ASCII code. To indicate that number **36** is a canned message code, the calling terminal **10** adds a suitable indicator code, such as ASCII control character **26**. Thus, the compiled canned message codes representing the canned message "I am on my way home" is transmitted in step **34** to NOC **12** simply as <26>36.

An example of a canned message calling for the inclusion of parameters may be "Call me at at phone number . This canned message calls for the calling party to fill in a desired time parameter and a phone number (step **30**). Suppose the calling party wishes the receiving party to call him at 4 PM at phone number 555-1212, the following canned message codes are then compiled by the calling terminal **10** and transmitted to NOC **12** as;

<26>18<29>4PM<29>5551212

where:

<26> is an ASCII control character serving as a canned message indicator,

18 is the code associated with canned message "Call me at at phone number ",

<29> is an ASCII control character serving as a parameter separator, and

4PM and 5551212 are the keyed-in parameters.

In addition to parameters, the present invention also provides for the addition of response options to certain canned messages typically posed as questions. To this end, terminal **10** maintains a file of canned response options. Then, if the calling party wishes to add response options to a selected canned message, the calling party accesses the canned response options file (step **36**), which is then displayed by terminal **10** (step **38**). The calling party browses through this file to determine which of the multiple response options are appropriate for addition to the selected canned message to be sent to the designated receiving party. The calling party selects the appropriate canned response options (step **40**) in the same manner as in the selection of the canned message, and the calling terminal **10** retrieves the particular codes associated with the selected canned response options (step **42**). If the selected canned response options call for the addition of parameters, such as time, the calling party enters the desired parameter(s) (step **44**). The selected canned response codes and parameters are then compiled with the canned message code and any canned message parameters (step **32**). The calling terminal then transmits the compiled canned message and response codes, together with any parameters to NOC **12** (step **34**).

By way of example, if the selected canned message is "Can we sign the document first thing tomorrow?" followed by selected canned response options "yes", "no", and "change to 1 PM", the canned message codes and parameters transmitted to NOC **12** would preferably be as follows:

<26>62<31><26>1<31><26>2<31><26>7<29>1PM

where:

<26> is an ASCII control character serving as the canned message and multiple response options indicator.

<29> is an ASCII control character serving as the parameter separator.

<31> is an ASCII control character unit separator used as a delincator separating multiple response options from the canned message and from each other.

62 is the code associated with canned message "Can we sign the document first thing tomorrow?".

1 is the code associated with canned response option "yes".

2 is the code associated with canned response option ¢no".

7 is the code associated with canned response option "change to", and

IPM is the keyed-in parameter.

The following example illustrates that, in some cases, parameters added to canned messages may be canned parameters also stored at the calling terminal **10**. Such canned parameters may be included in the canned message file, the canned multiple response options file, or in a separate canned parameter file stored at the calling terminal. If canned parameters are stored in separate file from the canned message file and the canned multiple response option file, parameter selection by the calling party is achieved using a separate subroutine corresponding to the subroutine used to select canned multiple response options.

To illustrate this case, consider the canned message "Can we meet for lunch at or ?", and the selected multiple response options are "noon", "12:30" or "call me". The compilation of codes and parameters transmitted to NOC **12** would then be:

<26>10<26>15<29>12:30<31><26>15<31>12:30<31><26>8

where:

<26> is the ASCII control character serving as the canned message and multiple response options indicator.

<31> is the ASCII control character serving as a delineator for separating the canned message and multiple response options from each other.

<29> is the parameter separator.

10 is the code associated with canned message "Can we meet for lunch at or ?",

8 is the code associated with the canned parameter and response option "call me".

15 is the code associated with canned parameter and response option "noon", and

12:30 is the keyed-in parameter.

FIG. **3** illustrates the operation of NOC **12** in accordance with one embodiment of the invention. The canned message/response option codes and any parameters transmitted by calling terminal **10** over communications link **16** are received by a NOC receiver (step **50**). From the calling and receiving terminal addresses included with the canned message/response option codes, the identities of the calling and receiving terminals **10** and **14** (FIG. **1**) are determined (step **52**). These determinations are stored in memory (step **54**). From the identity of the receiving terminal **14**, NOC **12** determines if receiving terminal **14** is capable of accepting this particular canned message/response option. NOC **12** is programmed to make this determination for several reasons. For example, NOC **12** needs to know whether the designated receiving party is a member of a messaging group or organization that has established a file of customized canned messages and response options and thus has access to a terminal in which files of the customized canned messages/response options and associated codes are stored in memory. Also, the files of canned messages may include both standard, network-wide canned messages and canned messages customized for a particular group. Thus, NOC **12** must determine whether the designated receiving party terminal can accept only standard canned messages/response options, only customized canned messages/response options or both. In any case, NOC **12** maintains multiple files of canned messages and canned response options, including files identical to those stored at calling terminal **10** and possibly also at receiving terminal **14**.

Based on this determination, NOC **12** determines whether the designated receiving party terminal can accept the canned message in code form, i.e., as received from the sending party terminal, or whether the canned message must be transmitted in full text to the receiving party terminal (step **56**). If the designated receiving terminal can accept canned message/response option codes, they are transmitted to the designated receiving party terminal in the same form as received from the sending party terminal (step **58**). If the designated receiving party terminal is not equipped to process canned message/response option codes, NOC **12** uses the canned message/response option codes received from the calling party terminal **10** to retrieve from the appropriate file(s) the text of the associated canned message and multiple response options, if any, from a memory (step **60**). The text of the canned message and response options, together with parameters, is then transmitted in standard message code format by NOC **12** to the receiving terminal (step **58**).

FIG. **4** illustrates the operation of receiving terminal **14** upon receiving a message transmission, according to an embodiment of the invention. Initially, terminal **14** receives the canned message/response option transmission from NOC **12** (step **70**). The receiving terminal then determines whether the canned message/response option reception is in message text or canned message code (step **72**). If in text, the canned message and any response options are displayed to the receiving party (step **74**). Alternatively, if the reception is in canned message/response option codes, the receiving party terminal **14**, using these codes, retrieves the associated canned messages, canned response options, and canned parameters from the various stored files identical to those stored at calling terminal **10** and NOC **12** (step **76**). The retrieved canned message, response options, and parameters, if any, are displayed in text form for viewing by the receiving party terminal (step **74**).

If any response options are included with the canned message, the receiving party selects the appropriate response option (step **78**), which is then transmitted by the receiving terminal back to NOC **12** (step **80**). Since a typical response option is very short, it can be efficiently transmitted back to NOC **12** in ASCII text code format. However, it will be appreciated that the receiving terminal may be so equipped that the code associated with the selected response, as received from NOC **12**, may simply be transmitted back to the NOC **12** in response option code. Alternatively, the receiving terminal may be equipped with keys positioned in associated relation with the display of the multiple response options. Depression of any one of the keys selects the associated one of the response options, and a unique, simple code assigned to the depressed key is transmitted back to the NOC **12**.

FIG. **5** illustrates the operation of the NOC and the calling terminal in relaying a selected response option from the receiving terminal to the calling terminal in accordance with an embodiment of the invention. Initially, NOC **12** receives the selected response option transmitted by the receiving party terminal **14** (step **82**). NOC then determines whether the received response option is in ASCII text code format or in canned response option code (step **83**). If in text code, NOC simply relays the selected response option to the calling party terminal **10** (step **86**). If the selected response

option is received from the receiving party terminal in canned response option code, a decision is made whether to transmit the selected response option to the calling party terminal in canned response code or in ASCII text code (step **84**). If the former, the canned response code is simply transmitted to the calling party terminal **10** as received from the receiving terminal (step **86**). If in ASCII text code, NOC **12** is programmed to access its stored canned multiple response option file and, using the received response option code, retrieve the selected canned response option text (step **88**), which is then transmitted in ASCII text code to the calling party terminal **10** (step **86**).

The selected response option relayed by NOC **12** is received by calling terminal **10** (step **90**), which then determines whether the response option is in text code format or canned response code (step **92**). If in text code, the response option is decoded and displayed to the calling party (step **94**). If the selected response option is in code form, the calling terminal simply accesses its stored response options file and, using the received response option code, retrieves the associated response option text (step **96**), which is then displayed to the calling party (step **94**).

NOC **12**, as part of its system responsibilities, is capable of updating the canned message, canned response option, and canned parameter files. FIG. **6** illustrates the procedure for updating these files in accordance with one embodiment of the invention. NOC **12** updates the files (step **100**) and stores the canned file updates in the NOC memory (step **102**). NOC **12** then transmits the updated canned files to all of the terminals in a particular two-way messaging group, including calling terminal **10** and receiving terminal **14** (step **104**). The canned file updates are received by the messaging group terminals (step **106**) and stored in the terminal memories (step **108**). It will be appreciated that updated canned files may be created at one of the terminals and transmitted to NOC **12**, which then operates to disseminate the file updates to other terminals of the messaging group.

As indicated above, the calling terminal **10** and NOC **12** are disclosed more fully in the cited application Ser. No. 08/124,216 and preferably comprise the structure disclosed in this application. For illustrative purposes, applicants include FIGS. **7** and **8** to illustrate preferred structure in block diagram form.

A preferred structure of calling terminal **10** appropriate for practicing the present invention is illustrated in FIG. **7**. As shown, the calling terminal **10** includes a CPU **110**, a ROM **112** to store an application program for controlling terminal operation in accordance with the present invention, a RAM **114** to store the canned message/response options/parameter files and associated codes, and a compiler **116** for assembling the message/response options/parameter codes, indicator and separator codes, and address codes into a message under the control of the application program and CPU **110**. Calling terminal **10** also includes an input/output (I/O) device **118** selectively connecting a transmitter **120** and a receiver **122** into the terminal circuitry. A codec/decoder **124** encodes text messages transmitted by the terminal to NOC **12** and decodes text messages received from NOC, including selected response options in text code received from a receiving terminal **14**. A terminal keypad **126** is used by the calling party to designate a receiving party (typically by phone number), to retrieve canned message/response options/parameter files from RAM **114**, to scroll through the displayed files, and to select the canned message/response options/parameter(s) appropriate for sending to the receiving party. Display **128** also displays selected response options from receiving parties relayed by NOC **12**. These terminal components are interconnected in operative relation by a system bus **130**. While FIG. **7** illustrates the operative structural configuration of calling terminal **10**, it will be appreciated that, preferably, receiving terminal **14** is structurally configured in the same manner.

FIG. **8** illustrates the structure of NOC **12** in accordance with one embodiment of the invention. As shown, NOC **12** includes a CPU **131** connected by a system bus **132** to an input/output (I/O) device **134**, to which a transmitter **136** and a receiver **138** are connected. A ROM **139** stores an application program appropriate for controlling NOC **12** in accordance with the present invention. A RAM **140** stores sets of canned messages/response options/parameters files for various messaging groups, including the group to which terminals **10** and **14** belong. Thus, RAM **140** stores a set of canned files identical to the set stored in the RAMs of terminals **10** and **14**. NOC **12** also includes a memory **142** for storing the identities of the calling and receiving terminals involved in a message that is being relayed, as well as the messages. Message storage is preferred in case receiving terminals do not receive an original message transmission and, thus, retransmission is required. Retention of terminal identities is required so that selected response options received from receiving terminals are correctly relayed to the appropriate calling terminals.

Finally, NOC **12** also includes a message compiler **144** that may be required for message formatting and for adding appropriate codes, such as terminal address codes not included in the messages being relayed by the NOC. This is particularly so in the case of a selected response option which typically does not include the calling terminal address. NOC then refers to the calling terminal identity stored in memory **142** pursuant to determining the calling terminal address that must be included in the transmission of the selected response option, if it is to be relayed to the correct calling terminal.

It will be apparent to those skilled in the art that various modifications and variations can be made in the method of the present invention without departing from the spirit of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal;

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

2. The method defined in claim **1**, further including the step of updating the first and second canned message files.

3. The method defined in claim 1, further including the step of displaying the selected canned message at the second terminal.

4. The method defined in claim 3, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the communicating step including the step of communicating the added parameter with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

5. The method defined in claim 3, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the communicating step including the step of communicating the added multiple response options with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

6. The method defined in claim 5, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message code and the multiple response options;

the communicating step further including the step of communicating the selected canned message, multiple response options, and added parameter to the second terminal; and

the displaying step at the second terminal further including the step of displaying the selected canned message, added parameter, and multiple response options.

7. The method defined in claim 6, further including the step of correspondingly updating the first and second canned message files.

8. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber, a second file of canned messages and message codes corresponding to the first file;

maintaining, at a second terminal of a second subscriber, a third file of canned messages and message codes corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to the second terminal;

sending the message code assigned to the selected canned message to the network operation center;

relaying the message code assigned to the selected canned message from the network operation center to the second terminal;

retrieving the selected canned message from the third file using the assigned message code received from the network operation center; and

displaying the selected canned message retrieved from the third file.

9. The method defined in claim 8, further including the step of updating the first, second, and third canned message files.

10. The method defined in claim 8, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the relaying step including the step of relaying the added parameter with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

11. The method defined in claim 8, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the relaying step including the step of relaying the added multiple response options with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

12. The method defined in claim 11, further including the steps of:

maintaining at the network operation center, a fourth file of canned multiple response options and response codes respectively assigned to the canned multiple response options;

maintaining at the first terminal, a fifth file of canned multiple response options and response codes corresponding to the fourth file; and

maintaining, at the second terminal, a sixth file of canned multiple response options and response codes corresponding to the fourth file;

wherein the selecting step further includes

the step of selecting appropriate canned multiple response options from the fifth file;

the sending step further includes the step of sending the response codes assigned to the selected multiple

response options together with the message code to the network operation center;

the relaying step further includes the step of relaying the message and response codes from the network operation center to the second terminal; and

the retrieving step further includes the step of retrieving the selected canned multiple response options from the sixth file using the assigned response codes received from the network operation center.

13. The method defined in claim **12**, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message and response codes; the relaying step further including the step of relaying the added parameter with the assigned message and response codes to the second terminal, and

the displaying step at the second terminal further including the step of displaying the selected canned message and multiple response options with the added parameter incorporated therein.

14. The method defined in claim **13**, further including the step of correspondingly updating the first through sixth files.

15. A network operation center for use in an electronic messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

means responsive to the received message code for retrieving from the memory the canned message assigned thereto;

means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form; and

a transmitter for transmitting the retrieved canned message in text form or message code form in response to the determining means.

16. The network operation center defined in claim **15**, the determining means routing the received message code directly to the transmitter upon determination that the receiving terminal can receive the canned message in message code form.

17. The network operation center defined in claim **15**, further including means for updating the canned message file stored in the memory and a corresponding canned message file stored in a memory in at least the calling terminal.

18. The network operation center defined in claim **15**, wherein the memory stores a separate file of canned multiple response options having response codes respectively assigned thereto;

said responsive means further including means for retrieving from the memory those canned multiple response options assigned to response codes received from the calling terminal by the receiver, the retrieved canned message and multiple response options being transmitted to the receiving terminal by the transmitter; and

the network operation center further including means for routing a selected canned multiple response option received from the receiving terminal to the calling terminal in either text or response code form.

19. A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and the file of canned multiple response options from the memory;

a display for displaying the canned messages and the multiple response options in the retrieved file;

means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message and the response code assigned to the at least one multiple response option over a communications link of the network.

20. The message terminal defined in claim **19**, further including means for adding parameters to the selected canned message for inclusion with the assigned message code transmitted over the communications link.

21. A message terminal for use in an electronic messaging network, comprising:;

a memory storing a file of canned messages, and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and message codes from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal and for selecting multiple response options appropriate for the selected canned message;

a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.: 5,894,506

DATED: April 13, 1999

INVENTOR: Gregory J. Pinter

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

Claim 5, column 9, line 34, after "work" insert --operation center;-- then start a new indented line beginning with "routing".

Signed and Sealed this

Fourteenth Day of September, 1999

Attest:

Q. TODD DICKINSON

Attesting Officer

Acting Commissioner of Patents and Trademarks

PATENT APPLICATION SERIAL NO. 08/708696

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APPLICANT

GREGORY J. PINTER, BRANDON, MS.

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TITLE

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES
BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

This is to certify that annexed hereto is a true copy from the records of the United States Patent and Trademark Office of the application which is identified above.

By authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

Date Certifying Officer

08/708696

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September 5, 1996

ATTORNEY DOCKET NO. 03680.0132

Box Patent Application
Assistant Commissioner for Patents
Washington, D. C. 20231

Re: New U.S. Patent Application
Title: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK
Inventor: Gregory J. Pinter

Sir:

We enclose the following papers for filing in the United States Patent and Trademark Office in connection with the above patent application:

1. Application - 28 pages, including 4 independent claims and 21 claims total;
2. Drawings - 7 sheets of informal drawings;
3. Declaration and Power of Attorney;
4. Recordation Form Cover Sheet and Assignment to Mobile Telecommunication Technologies; and
5. A check for $890.00, representing a $750.00 filing fee, an additional claims fee of $100.00, and $40.00 for recordation of the Assignment.

Please accord this application a serial number and filing date and record and return the Assignment to the undersigned.

The Commissioner is hereby authorized to charge any additional filing fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to our Deposit Account No. 06-0916.

Respectfully submitted,

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Enclosures

Attorney Docket No.: 3680.0132

APPLICATION FOR

UNITED STATES LETTERS PATENT

OF

GREGORY J. PINTER

FOR

METHOD AND APPARATUS

FOR GENERATING AND COMMUNICATING

MESSAGES BETWEEN SUBSCRIBERS

TO AN ELECTRONIC MESSAGING NETWORK

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850-101 08/708646

FIELD OF THE INVENTION

The present invention relates to electronic information services and more particularly to the exchange of electronic messages among subscribers to an electronic messaging network.

BACKGROUND OF THE INVENTION

As more and more people sign on to information networks, congestion of the communications links comprising these networks, both wireline and wireless, and the consequential transmission delays become increasingly significant problems. Faster transmission rates, data compression techniques, and more efficient spectrum utilization are among the approaches that have been considered, and to some extent implemented, to increase the capacities of communications links.

One area of particularly rapid growth is the electronic messaging field. More and more people are moving about with portable devices, such as laptop computers and portable digital devices, which can be economically equipped to function as message sending/receiving terminals. Moreover, wireless paging hardware, software, and support services are being upgraded to accommodate two-way messaging. That is, portable pagers are being developed not only to receiving paging messages, but also to send back a signal acknowledging receipt of a paging message or even a message answering the received paging message. While such upgraded paging services are highly desirable, they can severely strain the capacity of wireless paging channels.

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SUMMARY OF THE INVENTION

It is accordingly a principle object of the present invention to provide an improved electronic messaging network and method, wherein communications link capacity is conserved by transmitting certain messages with an improved degree of message compression.

Particularly in the case of radio paging, many paging messages consists of a relatively small number of common phrases, such as "I am on the way home", "I am working late", "Can we meet for lunch", etc. This being the case, such commonly used phrases can be treated as "canned" messages that can be replaced by short message codes as simple as, for example, one or several ASCII characters.

The present invention takes advantage of this fact by providing, in accordance with one preferred embodiment, a method of communicating messages between subscribers of an electronic messaging network, comprising the steps of maintaining, at a network operation center, a first file of canned messages individually retrievable using unique, abbreviated message codes respectively assigned to the canned messages; maintaining, at a terminal of a calling subscriber, a second file of canned messages corresponding to the first file; selecting an appropriate canned message from the second file for transmission to a terminal of a designated receiving subscriber; sending the message code assigned to the selected canned message to the network operation center; retrieving the selected canned message from the first file using the message code received from the

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calling subscriber terminal; and communicating the selected canned message to the designated receiving party terminal where it is displayed.

In accordance with a feature of the present invention, the first and second canned message files may be updated, either by the network operation center or from a subscriber terminal in order to customize the canned messages according to the needs of a particular group or organization of subscribers. In addition, the canned messages may be phrased to accept the addition of one or more parameters, which are entered at the calling subscriber terminal and then included with the message codes sent to the network operation center. The selected canned messages are retrieved from the first file using the message codes and communicated to terminals of designated receiving subscribers with the added parameters incorporated in the bodies of the canned messages.

The present invention also accommodates the addition of multiple response options to the canned messages selected by calling subscribers. The multiple response options are then included with the canned message codes sent to the network operation center. The selected canned messages are then retrieved from the first file and communicated to the designated receiving subscribers, together with the added multiple response options. The receiving parties then select the appropriate one of the multiple options for transmission back to the appropriate calling subscribers via the network operation center. The multiple response options may also be canned responses

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maintained in files at the network operation center and the subscriber terminals and, like the canned messages, have assigned response codes that are handled in the same manner as the message codes.

In accordance with another feature of the present invention, corresponding canned message files are also maintained at receiving subscriber terminals, such that the canned messages may be communicated to the receiving subscribers in message code form. The received message codes are then used to retrieve the appropriate canned messages and multiple response options from stored files, and displayed by the receiving party terminals.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention may be realized and attained by the method and apparatus particularly pointed out in the written description and the appended claims, as well as the accompanying drawings.

It will be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

The accompanying drawings are intended to provide a further understanding of the invention and are incorporated in and constitute a part of the specification, illustrate a

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preferred embodiment of the invention, and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram illustrating an electronic messaging network utilized in the practice of a preferred embodiment of the present invention;

Fig. 2 is a flow diagram illustrating the operation of a calling terminal in the network of Fig. 1 when sending a message in accordance with one embodiment of the invention;

Fig. 3 is a flow diagram illustrating the operation of the network operation center (NOC) in the network of Fig. 1 when relaying a message from the calling terminal to the receiving terminal in accordance with one embodiment of the invention;

Fig. 4 is a flow diagram illustrating the operation of the receiving terminal in the network of Fig. 1 when receiving a message in accordance with one embodiment of the invention;

Fig. 5 is a flow diagram illustrating the operations of the NOC and the calling terminal regarding a message response from the receiving terminal in accordance with one embodiment of the invention;

Fig. 6 is a flow diagram illustrating the network operation to update message files in the NOC and the calling/receiving terminals in accordance with one embodiment of the invention;

Fig. 7 is a schematic block diagram of the calling terminal of Fig. 1 in accordance with one embodiment of the invention; and

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Fig. 8 is a schematic block diagram of the NOC of Fig. 1 in accordance with one embodiment of the invention.

Corresponding reference numerals refer to like parts throughout the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As seen in Fig. 1, an electronic messaging network in accordance with a preferred embodiment of the present invention includes, a calling party terminal 10, a network operation center (NOC) 12, and a receiving party terminal 14. It will be appreciated that, in practice, the network will include pluralities of calling and receiving party terminals. The calling party terminal 10 is connected to NOC 12 by a communications link 16, which may take the form of land line (e.g., phonelines), a direct computer link, a wireless link, or a satellite link. NOC 12 is preferably connected to receiving party terminal 14 by a wireless communications link 18. An example of a preferable network operation center that can be implemented in the practice of the present invention is the network operation center being developed by Destineer Corporation of Jackson, MS to handle their Nationwide Wireless Network (NWN) paging services. That NOC and a preferred two-way wireless network for implementing the present invention are described in U.S. Patent Application Serial Number 08/124,216, the contents of which are hereby incorporated by reference.

In accordance with the present invention, calling terminal 10 includes a stored file of canned messages and associated canned message codes. Referring to the flow chart of Fig. 2,

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when a calling party wishes to send a message to a receiving party at terminal 14 (Fig. 1), the terminal retrieves the file of the canned messages from storage (step 22) and displays the file to the calling party (step 24). The calling party browses through the file to determine if the text of any of the canned messages is appropriate to convey the particular message that the calling party wishes to send to the receiving party. If an appropriate canned message is noted, the calling party selects this canned message (step 26) using suitable pointing means, such as a mouse, cursor, etc. Based on the canned message selection, terminal 10 retrieves the associated canned message code from the file (step 28).

If the selected canned message calls for the inclusion of a parameter(s), such as, for example, time, date, phone number, etc., the calling party enters a desired parameter(s), using an appropriate entry device, such as a keypad (step 30). The calling terminal 10 compiles the retrieved message code associated with the selected canned message with an appropriate indicator code, calling and receiving terminal addresses, and added parameters, if any (step 32). Terminal 10 then transmits the compiled canned message codes and parameters, if any, together with calling and receiving terminal addresses to NOC 12 over communications link 16 (Fig. 1) (step 34).

Assume, for example, that the canned message selected by the calling party in step 26 is "I am on my way home". This canned message does not call for the addition of parameters. The associated code for this canned message, may be, for

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example, the number 36 in ASCII code. To indicate that number 36 is a canned message code, the calling terminal 10 adds a suitable indicator code, such as ASCII control character 26. Thus, the compiled canned message codes representing the canned message "I am on my way home" is transmitted in step 34 to NOC 12 simply as <26>36.

An example of a canned message calling for the inclusion of parameters may be "Call me at _____ at phone number _____." This canned message calls for the calling party to fill in a desired time parameter and a phone number (step 30). Suppose the calling party wishes the receiving party to call him at 4 PM at phone number 555-1212, the following canned message codes are then compiled by the calling terminal 10 and transmitted to NOC 12 as:

<26>18<29>4PM<29>5551212

where:

<26> is an ASCII control character serving as a canned message indicator,

18 is the code associated with canned message "Call me at _____ at phone number _____",

<29> is an ASCII control character serving as a parameter separator, and

4PM and 5551212 are the keyed-in parameters.

In addition to parameters, the present invention also provides for the addition of response options to certain canned messages typically posed as questions. To this end, terminal 10 maintains a file of canned response options. Then, if the

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calling party wishes to add response options to a selected canned message, the calling party accesses the canned response options file (step 36), which is then displayed by terminal 10 (step 38). The calling party browses through this file to determine which of the multiple response options are appropriate for addition to the selected canned message to be sent to the designated receiving party. The calling party selects the appropriate canned response options (step 40) in the same manner as in the selection of the canned message, and the calling terminal 10 retrieves the particular codes associated with the selected canned response options (step 42). If the selected canned response options call for the addition of parameters, such as time, the calling party enters the desired parameter(s) (step 44). The selected canned response codes and parameters are then compiled with the canned message code and any canned message parameters (step 32). The calling terminal then transmits the compiled canned message and response codes, together with any parameters to NOC 12 (step 34).

By way of example, if the selected canned message is "Can we sign the document first thing tomorrow?" followed by selected canned response options "yes", "no", and "change to 1PM", the canned message codes and parameters transmitted to NOC 12 would preferably be as follows:

<26>62<31><26>1<31><26>2<31><26>7<29>1PM

where:

<26> is an ASCII control character serving as the canned message and multiple response options indicator,

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<29> is an ASCII control character serving as the parameter separator,

<31> is an ASCII control character unit separator used as a delineator separating multiple response options from the canned message and from each other,

62 is the code associated with canned message "Can we sign the document first thing tomorrow?",

1 is the code associated with canned response option "yes",

2 is the code associated with canned response option "no",

7 is the code associated with canned response option "change to", and

1PM is the keyed-in parameter.

The following example illustrates that, in some cases, parameters added to canned messages may be canned parameters also stored at the calling terminal 10. Such canned parameters may be included in the canned message file, the canned multiple response options file, or in a separate canned parameter file stored at the calling terminal. If canned parameters are stored in a separate file from the canned message file and the canned multiple response option file, parameter selection by the calling party is achieved using a separate subroutine corresponding to the subroutine used to select canned multiple response options.

To illustrate this case, consider the canned message "Can we meet for lunch at ____ or _____?", and the selected multiple

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response options are "noon", "12:30" or "call me". The compilation of codes and parameters transmitted to NOC 12 would then be:

<26>10<26>15<29>12:30<31><26>15<31>12:30<31><26>8

where:

<26> is the ASCII control character serving as the canned message and multiple response options indicator,

<31> is the ASCII control character serving as a delineator for separating the canned message and multiple response options from each other,

<29> is the parameter separator,

10 is the code associated with canned message "Can we meet for lunch at _____ or _____?",

8 is the code associated with the canned parameter and response option "call me",

15 is the code associated with canned parameter and response option "noon", and

12:30 is the keyed-in parameter.

Fig. 3 illustrates the operation of NOC 12 in accordance with one embodiment of the invention. The canned message/response option codes and any parameters transmitted by calling terminal 10 over communications link 16 are received by a NOC receiver (step 50). From the calling and receiving terminal addresses included with the canned message/response option codes, the identities of the calling and receiving terminals 10 and 14 (Fig. 1) are determined (step 52). These determinations are stored in memory (step 54). From the identity of the

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receiving terminal 14, NOC 12 determines if receiving terminal 14 is capable of accepting this particular canned message/response option. NOC 12 is programmed to make this determination for several reasons. For example, NOC 12 needs to know whether the designated receiving party is a member of a messaging group or organization that has established a file of customized canned messages and response options and thus has access to a terminal in which files of the customized canned messages/response options and associated codes are stored in memory. Also, the files of canned messages may include both standard, network-wide canned messages and canned messages customized for a particular group. Thus, NOC 12 must determine whether the designated receiving party terminal can accept only standard canned messages/response options, only customized canned messages/response options or both. In any case, NOC 12 maintains multiple files of canned messages and canned response options, including files identical to those stored at calling terminal 10 and possibly also at receiving terminal 14.

Based on this determination, NOC 12 determines whether the designated receiving party terminal can accept the canned message in code form, i.e., as received from the sending party terminal, or whether the canned message must be transmitted in full text to the receiving party terminal (step 56). If the designated receiving terminal can accept canned message/response option codes, they are transmitted to the designated receiving party terminal in the same form as received from the sending party terminal (step 58). If the designated receiving party

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terminal is not equipped to process canned message/response option codes, NOC 12 uses the canned message/response option codes received from the calling party terminal 10 to retrieve from the appropriate file(s) the text of the associated canned message and multiple response options, if any, from a memory (step 60). The text of the canned message and response options, together with parameters, is then transmitted in standard message code format by NOC 12 to the receiving terminal (step 58).

Fig. 4 illustrates the operation of receiving terminal 14 upon receiving a message transmission, according to an embodiment of the invention. Initially, terminal 14 receives the canned message/response option transmission from NOC 12 (step 70). The receiving terminal then determines whether the canned message/response option reception is in message text or canned message code (step 72). If in text, the canned message and any response options are displayed to the receiving party (step 74). Alternatively, if the reception is in canned message/response option codes, the receiving party terminal 14, using these codes, retrieves the associated canned messages, canned response options, and canned parameters from the various stored files identical to those stored at calling terminal 10 and NOC 12 (step 76). The retrieved canned message, response options, and parameters, if any, are displayed in text form for viewing by the receiving party terminal (step 74).

If any response options are included with the canned message, the receiving party selects the appropriate response

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option (step 78), which is then transmitted by the receiving terminal back to NOC 12 (step 80). Since a typical response option is very short, it can be efficiently transmitted back to NOC 12 in ASCII text code format. However, it will be appreciated that the receiving terminal may be so equipped that the code associated with the selected response, as received from NOC 12, may simply be transmitted back to the NOC 12 in response option code. Alternatively, the receiving terminal may be equipped with keys positioned in associated relation with the display of the multiple response options. Depression of any one of the keys selects the associated one of the response options, and a unique, simple code assigned to the depressed key is transmitted back to the NOC 12.

Fig. 5 illustrates the operation of the NOC and the calling terminal in relaying a selected response option from the receiving terminal to the calling terminal in accordance with an embodiment of the invention. Initially, NOC 12 receives the selected response option transmitted by the receiving party terminal 14 (step 82). NOC then determines whether the received response option is in ASCII text code format or in canned response option code (step 83). If in text code, NOC simply relays the selected response option to the calling party terminal 10 (step 86). If the selected response option is received from the receiving party terminal in canned response option code, a decision is made whether to transmit the selected response option to the calling party terminal in canned response code or in ASCII text code (step 84). If the former, the canned

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response code is simply transmitted to the calling party terminal 10 as received from the receiving terminal (step 86). If in ASCII text code, NOC 12 is programmed to access its stored canned multiple response option file and, using the received response option code, retrieve the selected canned response option text (step 88), which is then transmitted in ASCII text code to the calling party terminal 10 (step 86).

The selected response option relayed by NOC 12 is received by calling terminal 10 (step 90), which then determines whether the response option is in text code format or canned response code (step 92). If in text code, the response option is decoded and displayed to the calling party (step 94). If the selected response option is in code form, the calling terminal simply accesses its stored response options file and, using the received response option code, retrieves the associated response option text (step 96), which is then displayed to the calling party (step 94).

NOC 12, as part of its system responsibilities, is capable of updating the canned message, canned response option, and canned parameter files. Fig. 6 illustrates the procedure for updating these files in accordance with one embodiment of the invention. NOC 12 updates the files (step 100) and stores the canned file updates in the NOC memory (step 102). NOC 12 then transmits the updated canned files to all of the terminals in a particular two-way messaging group, including calling terminal 10 and receiving terminal 14 (step 104). The canned file updates are received by the messaging group terminals (step 106)

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and stored in the terminal memories (step 108). It will be appreciated that updated canned files may be created at one of the terminals and transmitted to NOC 12, which then operates to disseminate the file updates to other terminals of the messaging group.

As indicated above, the calling terminal 10 and NOC 12 are disclosed more fully in the cited application Serial No. 08/124,216 and preferably comprise the structure disclosed in this application. For illustrative purposes, applicants include Figs. 7 and 8 to illustrate preferred structure in block diagram form.

A preferred structure of calling terminal 10 appropriate for practicing the present invention is illustrated in Fig. 7. As shown, the calling terminal 10 includes a CPU 110, a ROM 112 to store an application program for controlling terminal operation in accordance with the present invention, a RAM 114 to store the canned message/response options/parameter files and associated codes, and a compiler 116 for assembling the message/response options/parameter codes, indicator and separator codes, and address codes into a message under the control of the application program and CPU 110. Calling terminal 10 also includes an input/output (I/O) device 118 selectively connecting a transmitter 120 and a receiver 122 into the terminal circuitry. A coder/decoder 124 encodes text messages transmitted by the terminal to NOC 12 and decodes text messages received from NOC, including selected response options in text code received from a receiving terminal 14. A terminal keypad

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126 is used by the calling party to designate a receiving party (typically by phone number), to retrieve canned message/response options/ parameter files from RAM 114, to scroll through the displayed files, and to select the canned message/response options/ parameter(s) appropriate for sending to the receiving party. Display 128 also displays selected response options from receiving parties relayed by NOC 12. These terminal components are interconnected in operative relation by a system bus 130. While Fig. 7 illustrates the operative structural configuration of calling terminal 10, it will be appreciated that, preferably, receiving terminal 14 is structurally configured in the same manner.

Fig. 8 illustrates the structure of NOC 12 in accordance with one embodiment of the invention. As shown, NOC 12 includes a CPU 131 connected by a system bus 132 to an input/output (I/O) device 134, to which a transmitter 136 and a receiver 138 are connected. A ROM 139 stores an application program appropriate for controlling NOC 12 in accordance with the present invention. A RAM 140 stores sets of canned messages/response options/ parameters files for various messaging groups, including the group to which terminals 10 and 14 belong. Thus, RAM 140 stores a set of canned files identical to the set stored in the RAMs of terminals 10 and 14. NOC 12 also includes a memory 142 for storing the identities of the calling and receiving terminals involved in a message that is being relayed, as well as the messages. Message storage is preferred in case receiving terminals do not receive an original message transmission and,

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thus, retransmission is required. Retention of terminal identities is required so that selected response options received from receiving terminals are correctly relayed to the appropriate calling terminals.

Finally, NOC 12 also includes a message compiler 144 that may be required for message formatting and for adding appropriate codes, such as terminal address codes not included in the messages being relayed by the NOC. This is particularly so in the case of a selected response option which typically does not include the calling terminal address. NOC then refers to the calling terminal identify stored in memory 142 pursuant to determining the calling terminal address that must be included in the transmission of the selected response option, if it is to be relayed to the correct calling terminal.

It will be apparent to those skilled in the art that various modifications and variations can be made in the method of the present invention without departing from the spirit of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

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WHAT IS CLAIMED IS:

1. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal; and

communicating the selected canned message to the second terminal.

2. The method defined in claim 1, further including the step of updating the first and second canned message files.

3. The method defined in claim 1, further including the step of displaying the selected canned message at the second terminal.

4. The method defined in claim 3, further including the step of adding a parameter to the canned message selected from the second file;

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the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the communicating step including the step of communicating the added parameter with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

5. The method defined in claim 3, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the communicating step including the step of communicating the added multiple response options with the selected canned message to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

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routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

6. The method defined in claim 5, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message code and the multiple response options;

the communicating step further including the step of communicating the selected canned message, multiple response options, and added parameter to the second terminal; and

the displaying step at the second terminal further including the step of displaying the selected canned message, added parameter, and multiple response options.

7. The method defined in claim 6, further including the step of correspondingly updating the first and second canned message files.

8. A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber, a second file of canned messages and message codes corresponding to the first file;

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maintaining, at a second terminal of a second subscriber, a third file of canned messages and message codes corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to the second terminal;

sending the message code assigned to the selected canned message to the network operation center;

relaying the message code assigned to the selected canned message from the network operation center to the second terminal;

retrieving the selected canned message from the third file using the assigned message code received from the network operation center; and

displaying the selected canned message retrieved from the third file.

9. The method defined in claim 8, further including the step of updating the first, second, and third canned message files.

10. The method defined in claim 8, further including the step of adding a parameter to the canned message selected from the second file;

the sending step including the step of sending the added parameter with the assigned message code to the network operation center;

the relaying step including the step of relaying the added parameter with the assigned message code to the second terminal; and

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the displaying step including the step of displaying the selected canned message with the added parameter incorporated therein.

11. The method defined in claim 8, further including the steps of:

adding multiple response options to the canned message selected from the second file;

the sending step including the step of sending the added multiple response options with the assigned message code to the network operation center;

the relaying step including the step of relaying the added multiple response options with the assigned message code to the second terminal; and

the displaying step including the step of displaying the selected canned message together with the added multiple response options;

selecting one of the multiple response options at the second terminal;

communicating the selected response option to the network operation center;

routing the selected response option from the network operation center to the first terminal; and

displaying the selected response option at the first terminal.

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12. The method defined in claim 11, further including the steps of:

maintaining at the network operation center, a fourth file of canned multiple response options and response codes respectively assigned to the canned multiple response options;

maintaining at the first terminal, a fifth file of canned multiple response options and response codes corresponding to the fourth file; and

maintaining, at the second terminal, a sixth file of canned multiple response options and response codes corresponding to the fourth file;

wherein the selecting step further includes

the step of selecting appropriate canned multiple response options from the fifth file;

the sending step further includes the step of sending the response codes assigned to the selected multiple response options together with the message code to the network operation center;

the relaying step further includes the step of relaying the message and response codes from the network operation center to the second terminal; and

the retrieving step further includes the step of retrieving the selected canned multiple response options from the sixth file using the assigned response codes received from the network operation center.

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13. The method defined in claim 12, further including the step of adding a parameter to the canned message selected from the second file;

the sending step further including the step of sending the added parameter to the network operation center together with the assigned message and response codes; the relaying step further including the step of relaying the added parameter with the assigned message and response codes to the second terminal, and

the displaying step at the second terminal further including the step of displaying the selected canned message and multiple response options with the added parameter incorporated therein.

14. The method defined in claim 13, further including the step of correspondingly updating the first through sixth files.

~~15. A network operation center for use in an electronic~~ messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

means responsive to the received message code for retrieving from the memory the canned message assigned thereto; and

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a transmitter for transmitting the retrieved canned message in text form to a receiving terminal included in the network.

16. The network operation center defined in claim 15, further including means for determining whether to transmit the canned message to the receiving terminal in text or message code form, said determining means routing the received message code directly to the transmitter upon determination to transit the canned message in code form to the receiving terminal.

17. The network operation center defined in claim 15, further including means for updating the canned message file stored in the memory and a corresponding canned message file stored in a memory in at least the calling terminal.

18. The network operation center defined in claim 15, wherein the memory stores a separate file of canned multiple response options having response codes respectively assigned thereto;

said responsive means further including means for retrieving from the memory those canned multiple response options assigned to response codes received from the calling terminal by the receiver, the retrieved canned message and multiple response options being transmitted to the receiving terminal by the transmitter; and

the network operation center further including means for routing a selected canned multiple response option received from the receiving terminal to the calling terminal in either text or response code form.

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19. A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto;

means for retrieving the file from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

20. The message terminal defined in claim 19, further including means for adding parameters to the selected canned message for inclusion with the assigned message code transmitted over the communications link.

21. The message terminal defined in claim 20, wherein the memory further stores a file of canned multiple response options and response codes respectively assigned thereto for retrieval by the retrieving means and display by the display;

the selecting means further including means for selecting multiple response options appropriate for the selected canned message; and

the message terminal further comprising a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter.

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ABSTRACT OF THE 08/708696 DISCLOSURE

An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center. The receiving terminal retrieves the selected canned message from its memory using the received message code for display to the receiving party. Files of canned responses and associated response codes may also be stored in the memories at the terminals and network operation center to allow the exchange of selected canned response options in conjunction with canned messages to be in response code form.

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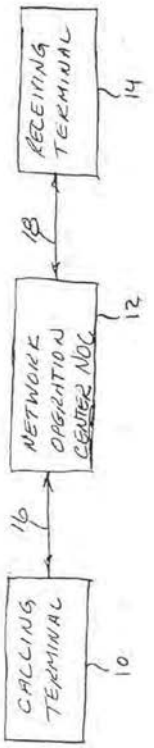

Fig 1

8 Figures

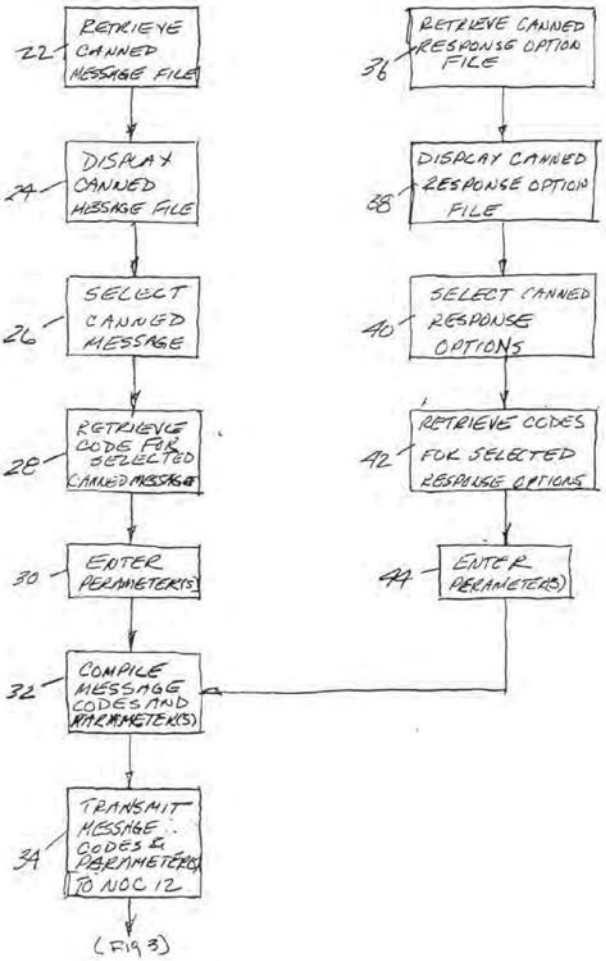
22
RETRIEVE CANNED MESSAGE FILE
24
DISPLAY CANNED MESSAGE FILE
26
SELECT CANNED MESSAGE
28
RETRIEVE CODE FOR SELECTED CANNED MESSAGE
30
ENTER PARAMETER(S)
32
COMPILE MESSAGE CODES AND PARAMETER(S)
34
TRANSMIT MESSAGE CODES & PARAMETERS TO NOC 12
(FIG 3)
36
RETRIEVE CANNED RESPONSE OPTION FILE
38
DISPLAY CANNED RESPONSE OPTION FILE
40
SELECT CANNED RESPONSE OPTIONS
42
RETRIEVE CODES FOR SELECTED RESPONSE OPTIONS
44
ENTER PARAMETER(S)

FIG 2

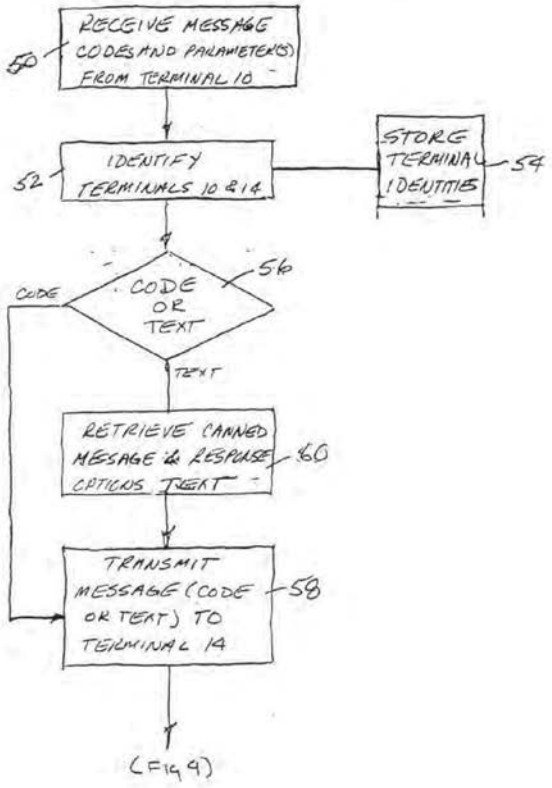
RECEIVE MESSAGE CODES AND PARAMETER(S) FROM TERMINAL 10
50
IDENTIFY TERMINALS 10 & 14
52
STORE TERMINAL IDENTITIES
54
CODE OR TEXT
56
CODE
TEXT
RETRIEVE CANNED MESSAGE & RESPONSE OPTIONS TEXT
60
TRANSMIT MESSAGE (CODE OR TEXT) TO TERMINAL 14
58
(FIG 9)

FIG 3

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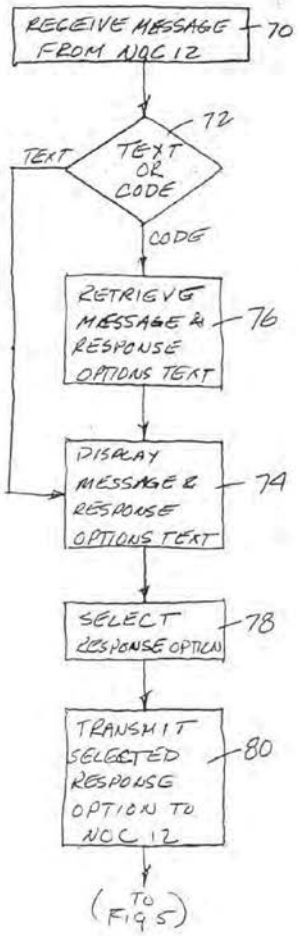

Fig 4.

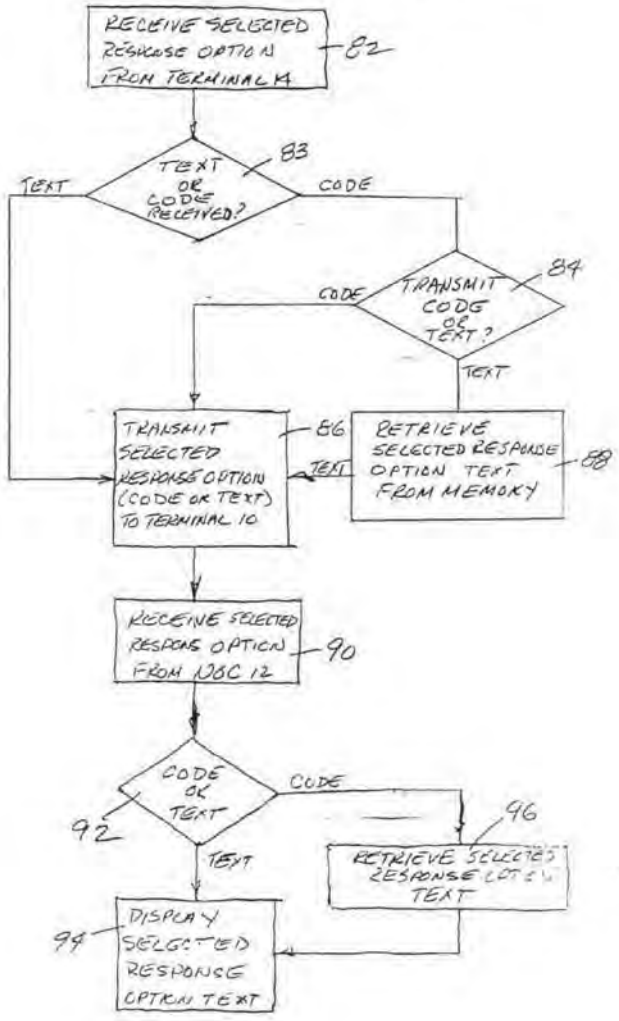
RECEIVE SELECTED RESPONSE OPTION FROM TERMINAL M
82
TEXT OR CODE RECEIVED?
83
TEXT
CODE
TRANSMIT CODE OR TEXT?
84
CODE
TEXT
TRANSMIT SELECTED RESPONSE OPTION (CODE OR TEXT) TO TERMINAL 10
86
RETRIEVE SELECTED RESPONSE OPTION TEXT FROM MEMORY
88
TEXT
RECEIVE SELECTED RESPONSE OPTION FROM NSC 12
90
CODE OR TEXT
92
CODE
TEXT
96
RETRIEVE SELECTED RESPONSE OPTION TEXT
DISPLAY SELECTED RESPONSE OPTION TEXT
94

Fig 5

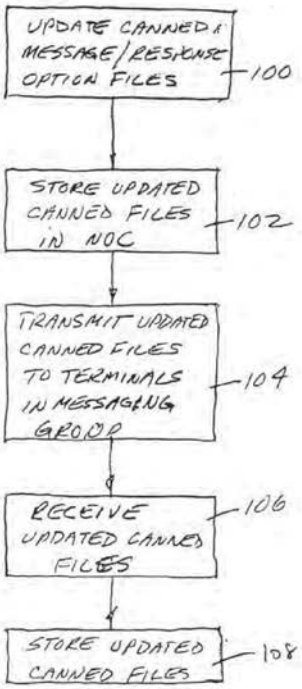
UPDATE CANNED MESSAGE/RESPONSE OPTION FILES
100
STORE UPDATED CANNED FILES IN NOC
102
TRANSMIT UPDATED CANNED FILES TO TERMINALS IN MESSAGING GROUP
104
RECEIVE UPDATED CANNED FILES
106
STORE UPDATED CANNED FILES
108

Fig 6

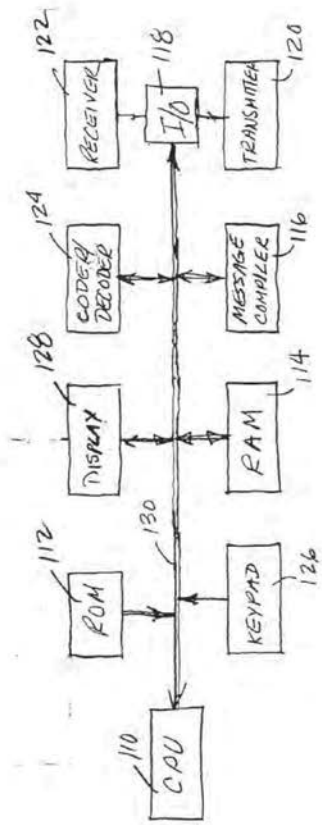
CPU
110
ROM
112
DISPLAY
128
CODEC/ DECODER
124
RECEIVER
122
KEYPAD
126
RAM
114
MESSAGE COMPILER
116
I/O
118
TRANSMITTER
120
130

Fig 7.

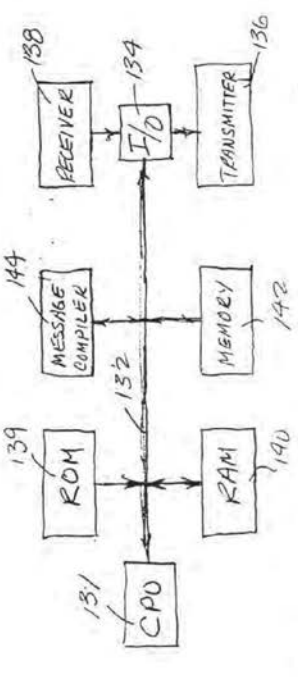
CPU
131
ROM
139
MESSAGE COMPILER
144
RECEIVER
138
RAM
140
MEMORY
142
I/O
134
TRANSMITTER
136
132

Fig 8

PRINT OF ... WINGS
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Fig 1

PRINT OF D WINGS
AS ORIGI Y FILED

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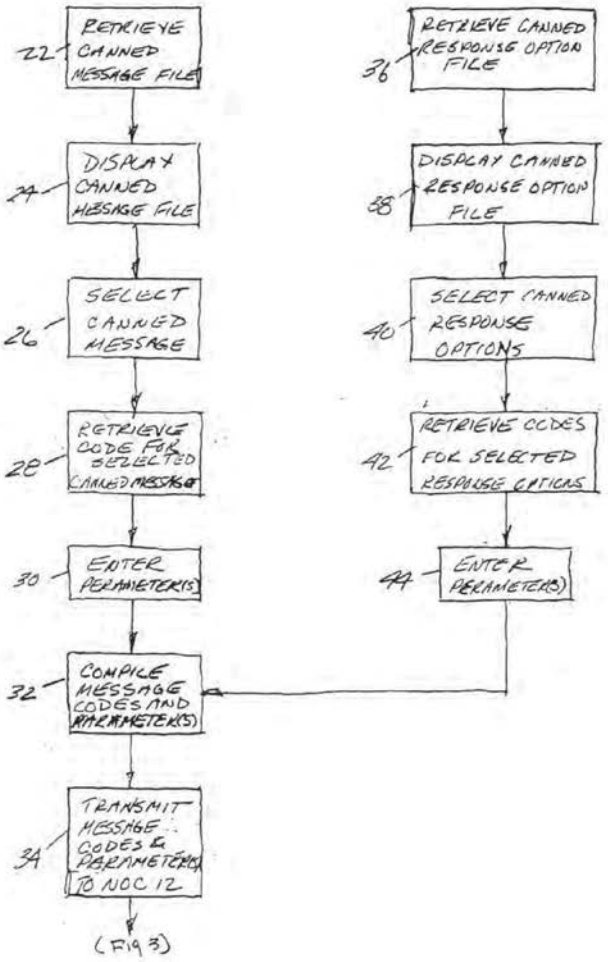

Fig 2

PRINT OF D WINGS
AS ORIGL Y FILED

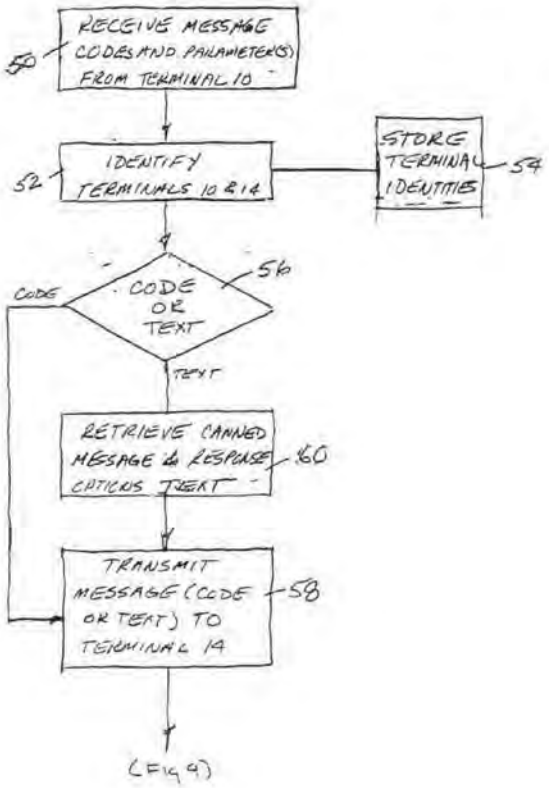

Fig 3

PRINT OF DRAWINGS AS ORIGINALLY FILED

08/708696

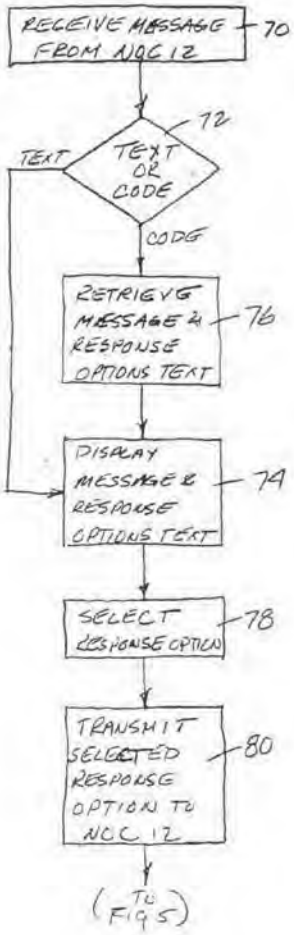

Fig. 4.

PRINT OF D WINGS
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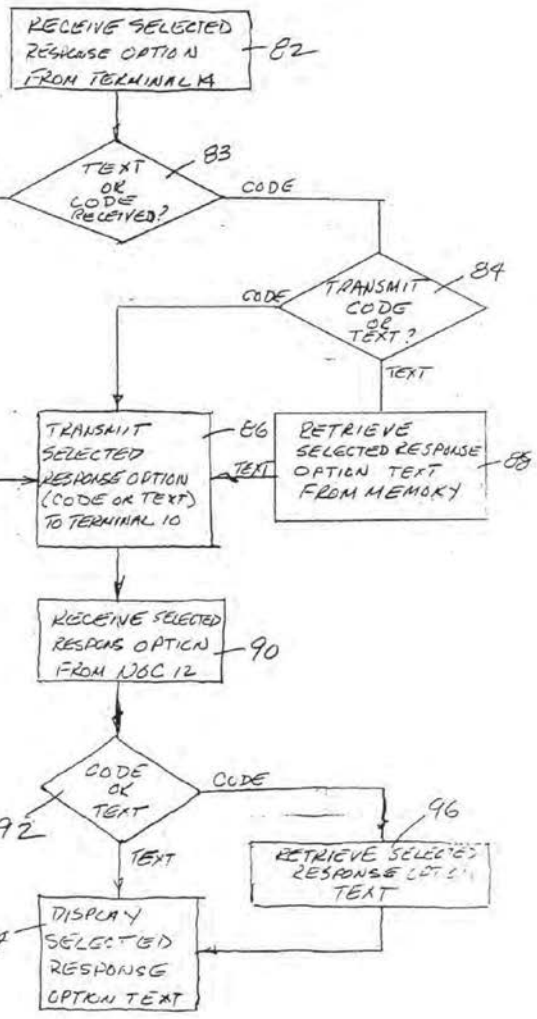

FIG 5

PRINT OF D[illegible] WINGS
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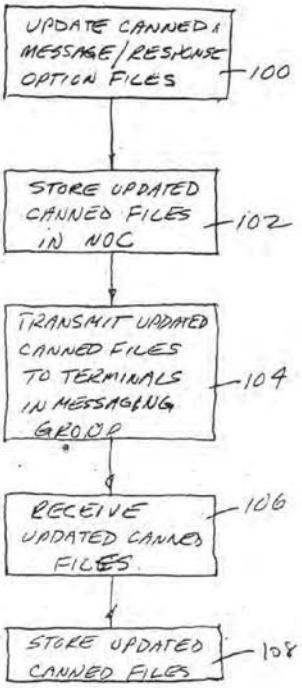

Fig 6

PRINT OF DRAWINGS
AS ORIGINALLY FILED

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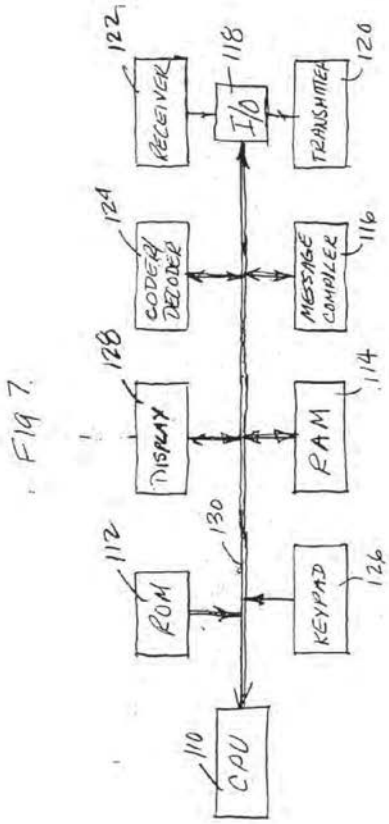

FIG 7.

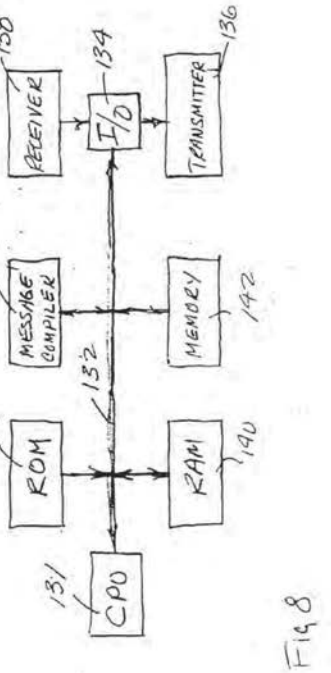

FIG 8

Attorney Docket No. 03680.0132-00000

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

the specification of which [X] is attached and/or [ ] was filed as United States Application Serial No. _____ on _____ and was amended on _____ (if applicable); or was filed as PCT International Application Number _____ on _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

COUNTRY (if PCT indicate PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No
			[ ] Yes [ ] No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56 which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

U.S. APPLICATIONS			STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO	PCT FILING DATE	U.S. SERIAL NUMBER ASSIGNED (if any)			

I hereby appoint the following attorney and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. **FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.**, Reg. No. 22,540; Douglas B. Henderson, Reg. No. 20,293; Ford F. Farabow, Jr., Reg. No. 20,630; Arthur S. Garrett, Reg. No. 20,338; Donald R. Dunner, Reg. No. 19,073; Brian G. Brunsvold, Reg. No. 22,593; Tipton D. Jennings, IV, Reg. No. 20,645; Jerry D. Voight, Reg. No. 23,020; Laurence R. Hefter, Reg. No. 20,827; Kenneth E. Payne, Reg. No. 23,098; Herbert H. Mintz, Reg. No. 26,691; C. Larry O'Rourke, Reg. No. 26,014; Albert J. Santorelli, Reg. No. 22,610; Michael C. Elmer, Reg. No. 25,852; Richard E. Smith, Reg. No. 20,609; Stephen L. Peterson, Reg. No. 26,325; John M. Romary, Reg. No. 26,331; Bruce C. Zotter, Reg. No. 27,680; Dennis P. O'Reilley, Reg. No. 27,932; Allen M. Sokal, Reg. No. 26,695; Robert D. Bajefsky, Reg. No. 25,387; Richard L. Stroup, Reg. No. 28,478; David W. Hill, Reg. No. 28,220; Thomas L. Irving, Reg. No. 28,619; Charles E. Lipsey, Reg. No. 28,165; Thomas W. Winland, Reg. No. 27,605; Basil J. Lewris, Reg. No. 28,810; Martin I. Fuchs, Reg. No. 28,500; E. Robert Yoches, Reg. No. 30,120; Barry W. Graham, Reg. No. 29,924; Susan Haberman Griffen, Reg. No. 30,907; Richard B. Racine, Reg. No. 30,415; Thomas H. Jenkins, Reg. No. 30,957; Robert E. Converse, Jr., Reg. No. 27,432; Clair X. Mullen, Jr., Reg. No. 20,348; Christopher P. Foley, Reg. No. 31,354; John C. Paul, Reg. No. 30,413; Roger D. Taylor, Reg. No. 28,997; David M. Kelly, Reg. No. 30,953; Kenneth J. Meyers, Reg. No. 25,146; Carol P. Einaudi, Reg. No. 32,220; Walter Y. Boyd, Jr., Reg. No. 31,738; Steven M. Anzalone, Reg. No. 32,035; Jean B. Fordis, Reg. No. 32,984; Barbara C. McCurdy, Reg. No. 32,120; James K. Hammond, Reg. No. 31,964; Richard V. Burgujian, Reg. No. 31,744; J. Michael Jakes, Reg. No. 32,824 and Robert A. Cahill, Reg. No. 20,557. Please address all correspondence to **FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.**, 1300 I Street, N.W., Washington, D.C. 20005, Telephone No. (202) 408-4000.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

FULL NAME OF FIRST INVENTOR	INVENTOR'S SIGNATURE	DATE
Gregory J. Pinter		7/6/96
RESIDENCE		COUNTRY OF CITIZENSHIP
203 Haddon Circle, Brandon, MS 39042		U.S.A.
POST OFFICE ADDRESS		
203 Haddon Circle, Brandon, MS 39042		
FULL NAME OF SECOND INVENTOR	INVENTOR'S SIGNATURE	DATE
RESIDENCE		COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS		

Application Assignment Record

According to the application transmittal letter, an assignment recording ownership was filed with this application; however, a copy of this record was not located in the original file history record obtained from the United States Patent and Trademark Office. Upon your request, we will attempt to obtain the assignment documents from the Assignment Recordation Branch of of the United States Patent and Trademark Office or from a related application case (if applicable). Please note that additional charges will apply for this service.

This page is not part of the official USPTO record. It has been determined that content identified on this document is missing from the original file history record.

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Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/708,696	09/05/96	PINTER	G 09680.0132

EXAMINER

LM61/0226
FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

ART UNIT	PAPER NUMBER
TSANG, P	2

DATE MAILED: 02/26/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
☒ Claim(s) 8-14 is/are allowed.
☒ Claim(s) 1-7, 15-21 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
☐ Interview Summary, PTO-413
☐ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

PTOL 326 (Rev. 3/95) ★ U.S. GPO: 1995-421-032/40000

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means recited on claims 15-21 (e.g. memory, receiver, retrieving means and transmitter recited on claim 15, and memory, retrieving means, display, selecting means and transmitter recited on claim 19, and message compiler recited on claim 21) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

3. Claim 16 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites that the retrieved canned message in text form is transmitted to the receiving terminal. However, the dependent claim 16 recites that it is the code of the message being transmitted to the receiving terminal. This leads to

confusion because it is not clear if the message itself, or the code of the message, or both are transmitted to the receiving terminal.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

5. Claims 1, 2, 19 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Wolff et al, U.S.Patent No.5327486 (hereinafter Wolff).

Regarding claim 1 and 19, Wolff discloses a method of communication messages between subscribers to an electronic messaging network, comprising:

maintaining, at a network operation center (PTM 12, Fig.1), a first file of canned messages (pre-recorded messages stored in PTM12, column 5, lines 57-61) and message codes (Wolff inherently has the claimed message codes because the called party of Wolff can select a message on the PTM by activating a key stroke

(column 6, line 18) from a remote computer) respectively assigned to the canned messages;

maintaining at a first terminal (21, Fig.1) of a first subscriber a second file (Fig.8) of canned messages corresponding to the first file;

selecting (step 58, Fig.3) an appropriate canned message from the second file for transmission to a second terminal (the terminal of the caller) of a designated second subscriber (caller);

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code receiving from the first terminal; and

communicating the selected canned message to the second terminal (columns 5-6).

Regarding claim 2, see the modification feature on Fig.8.

Regarding claim 20, see column 6, line 42 (variable parameters).

6. Claims 15-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Inniss et al, U.S.Patent No.5539808 (hereinafter Inniss).

Inniss discloses a network operation center (12 and 18 in Fig.1) comprising a memory, a receiver, means responsive to the

received message code for retrieving from the memory the canned message assigned thereto; and a transmitter (Figs 2-5 and columns 5-9).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff in view of Shibayama et al, U.S.Patent NO.5381466 (hereinafter Shibayama).

Wolff as applied to claim 2 above differs from claim 3 in that Wolff does not disclose that the second terminal (caller's terminal) has a display. However, Shibayama discloses a terminal with a display for receiving a voice message and then converting the received voice message to a text message (Fig.3D and Fig.9). Since voice-to-text message conversation is old and well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolff by including a display in the second terminal such that the received

message can be displayed as a text message to the second user. The modification allows the message receiver to read the message.

Regarding claim 4, see Wolff, column 6, line 42.

Allowable Subject Matter

9. Claims 5-7, 18 and 21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 8-14 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 5-7, 18 and 21, prior art fail to disclose the feature of selecting one of the multiple response options at the second terminal, communicating the selected response option to the network center, routing the option from the network center to the first terminal, and displaying the selected response option at the first terminal.

Regarding claims 8-14, prior art fail to teach a network center with a first file, a first terminal with a second file and a second terminal with a third file.

Conclusion

12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-5403 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fan Tsang whose telephone number is (703)305-4895. The examiner can normally be reached on Monday to Friday from 8.30 AM to 6.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista Zele, can be reached on (703) 305-4701. The fax phone number for this Group

is (703) 308-5403.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**krista.zele@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Fan Tsang
Primary Examiner
Group 2742
February 18, 1998

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP--APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

NOTICE OF REFERENCES CITED

SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
08/708,696	2742	2

APPLICANT(S): Pinter

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	5539808	Jul 1996	Inniss et al.	379	67	
	B	5327488	Jul 1994	Wolff et al.	379	210	
	C	5381466	Jan 1995	Shibayama et al.	379	88	
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG.	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
S	
T	
U	

EXAMINER: Tom Tsang DATE: 2/18/98

* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05 (a).)

GDU 2742
$

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OIPE
JUL 24 1998
PATENT & TRADEMARK OFFICE

In re Application of:

Gregory J. PINTER

Serial No.: 08/708,696 — Group Art Unit: 2742

Filed: September 5, 1996 — Examiner: F. Tsang

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

RECEIVED
98 JUL 22 PM 2:56
GROUP 2700

Assistant Commissioner for Patents
Washington, D.C. 20231

TRANSMITTAL LETTER

Sir:

Enclosed is a response to the Office Action of February 26, 1998. The items checked below are appropriate:

[X] Applicant hereby petitions for a two-month extension of time to respond to the above Office Action. The fee of $400.00 for the Extension is enclosed.

The claims are calculated below:

	Claims Remaining After Amendment		Highest Number Previously Paid	Present Extra	Rate	Additional Fee
Total	21	-	21		x $ 22	$
Indep.	5	-	4	1	x $ 80	$ 80
[ ] First Presentation of Multiple Dep. Claim(s)					+ $260	
					Subtotal	$
					Reduction by ½ if small entity	-
					TOTAL	$ 80

[X] A fee of $ 80.00 to cover the cost of the additional claims added by this response is enclosed.

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& DUNNER, L.L.P.
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HINGTON, D. C. 20005
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[X] A fee of $ 240.00 to cover the cost filing an Information Disclosure Statement under 37 C.F.R. 1.97(c).

[X] A check for $ 720.00 to cover the above fees are enclosed.

To the extent any further extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

Date: July 24, 1998

By: _____

John M. Romary
Reg. No. 26,331
FINNEGAN, HENDERSON, FARABOW,
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98 JUL 29 PM 2:56
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Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#3
Req Ext (2)
+
Amdt a
Rec'd 10 yr
7-30-98
Fee
ok

In re Application of:	)	
Gregory J. PINTER	)	
Serial No.: 08/708,696	)	Group Art Unit: 2742
Filed: September 5, 1996	)	Examiner: F. Tsang
For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK	)	

RECEIVED
98 JUL 28 PM 2:56
GROUP 2700

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

AMENDMENT

In response to the Office Action of February 26, 1998, the period of response to which extends through July 27, 1998 (July 26 being a Sunday) by filing a petition for a two-month extension of time included herewith, please amend the application as follows:

07/27/1998 SSANDARA 00000102 060916 08708696
02 FC:116 400.00 OP
03 FC:102 2.00 CH 80.00 OP

IN THE CLAIMS

Please cancel claim 21 without prejudice or disclaiming the subject matter thereof and amend claims 1, 15, 16, and 19 as follows:

1. (Amended) A method of communicating messages between subscribers to an electronic messaging network, comprising the steps of:

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cont'd

maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

selecting an appropriate canned message from the second file for transmission to a second terminal of a designated second subscriber;

sending the message code assigned to the selected canned message to the network operation center;

retrieving the selected canned message from the first file using the message code received from the first terminal;

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

15. (Amended) A network operation center for use in an electronic messaging network, comprising:

a memory storing a file of canned messages in text form, each canned message having a unique, abbreviated message code assigned thereto;

a receiver for receiving a message code from a calling terminal included in the network;

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means responsive to the received message code for retrieving from the memory the canned message assigned thereto;

means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form; and

a transmitter for transmitting the retrieved canned message in text form or message code form in response to the determining means [to a receiving terminal included in the network].

16. (Amended) The network operation center defined in claim 15, [further including means for determining whether to transmit the canned message to the receiving terminal in text or message code form, said] the determining means routing the received message code directly to the transmitter upon determination [to transit the canned message in code form to] that the receiving terminal can receive the canned message in message code form.

19. (Amended) A message terminal for use in an electronic messaging network, comprising:

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and the file of canned multiple response options from the memory;

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a display for displaying the canned messages and the multiple response options in the retrieved file;

means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal; and

a transmitter for transmitting the message code assigned to the selected canned message and the ~~message~~ response code assigned to the at least one multiple response option over a communications link of the network.

Please add claim 22 as follows:

~~22.~~ 21. A message terminal for use in an electronic messaging network, comprising:;

a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;

means for retrieving the file of canned messages and message codes from the memory;

a display for displaying the canned messages in the retrieved file;

means for selecting one of the canned messages for communication to a designated other message terminal and for selecting multiple response options appropriate for the selected canned message;

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a message compiler for compiling the assigned message code and the response codes assigned to the selected multiple response options into a message for transmission by the transmitter; and

a transmitter for transmitting the message code assigned to the selected canned message over a communications link of the network.

A4 concl

REMARKS

In the Office Action, the Examiner (1) allowed claims 8-14; (2) rejected claims 1, 2, 19, and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,327,486, issued to Wolff et al.; (3) rejected claims 15-17 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,539,808, issued to Inniss et al.; (4) rejected claim 16 under 35 U.S.C. § 112, second paragraph; (5) rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Wolff et al. in view of U.S. Patent No. 5,381,466, issued to Shibayama; (6) objected to claims 5-7, 18, and 21 as being dependent upon a rejected base claim, but otherwise allowable; and (7) objected to the drawings under 37 C.F.R. 1.83(a).

Applicant has amended claims 1 and 19 to clarify the invention further, and amended claims 15 and 16, overcome the rejection of claim 16 under 35 U.S.C. § 112, second paragraph. In addition, applicants have canceled claim 21 and added claim 22 to recite the allowable subject matter of claim 21.

Applicant respectfully traverses the Examiner's objections to the drawings under 37 C.F.R. 1.83(a) for the following reasons. The Examiner contends that several of the

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elements recited in claims 15-21 are not shown in the drawings. Fig. 8 shows a structural embodiment of the network operation center (NOC) in accordance with the invention, as recited in claim 15. In this embodiment, the NOC includes a memory (RAM 140) for storing canned messages, a receiver 138, a transmitter 136, and a message compiler 144. Also included in this embodiment are a CPU 131 and a ROM 149. As described in the specification and recognized by those skilled in the art, CPU 131 and ROM 149 inherently provide the means for selecting and the means for retrieving, recited in claims 15 and 18, respectively.

Fig. 7 shows a structural embodiment of a calling terminal in accordance with the invention. In this embodiment, the calling terminal includes a memory (RAM 114) for storing a file of canned messages, a message compiler 116, a display 128, a transmitter 120 as recited in claim 18. Further, the means for selecting, for purposes of this embodiment, may be equated with keypad 126 alone or in combination with CPU 110 and ROM 112. Finally, contrary to the Examiner's objection, the message compiler of claim 21 is clearly depicted by element 116. For at least these reasons, Applicant asserts that the drawings comply with 37 C.F.R. 1.83(a).

Applicant respectfully traverses the rejection of claims 1, 2, 19 and 20 under § 102(b) in view of Wolff et al for the following reasons. Claim 1 recites a method of communicating between subscribers. The method comprises a combination of steps, including:

> maintaining, at a network operation center, a first file of canned messages and message codes respectively assigned to the canned messages;

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maintaining at a first terminal of a first subscriber a second file of canned messages corresponding to the first file;

. . .

determining whether the second terminal can receive the canned message in a text form or message code form; and

communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination.

In contrast, Wolff et al. does not disclose the combination of steps recited in claim 1 including, at least, "determining whether the second terminal can receive the canned message in a text form or message code form; and communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination."

The Examiner contends that Wolff et al. inherently includes codes assigned to its messages. Wolff et al., however, merely stores a series of prerecorded messages that a user can select and send to another. Wolff et al. discloses that a message selected by a user is placed in a packet and the entire message packet is transmitted and converted to speech so that the receiving party can appreciate its contents. [See Col 5, lines 7-27]. This disclosure is distinguishable from assigning a message code to a canned message, determining whether a receiving terminal can receive a code associated with the message, and communicating the message in code or text format in accordance with the determination, as described in claim 1. For at least this reason, Wolff et al. does not recite each and every element in claim 1, and therefore can not anticipate this claim.

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Applicant also traverses the rejection of claims 19 and 20 under 102(b) for the following reasons. Wolff et al. does not disclose the combination of elements including, at least, "a memory storing a file of canned messages and message codes respectively assigned thereto and a file of canned multiple response options and response codes respectively assigned thereto;" and "means for selecting one of the canned messages and at least one of the multiple response options appropriate for the selected canned message for communication to a designated other message terminal." As the Examiner has stated, none of the cited references discloses "selecting one of the multiple response options" and "communicating the selected response option to another terminal" through the network center. [See Office Action, page 6, lines 12-15].

Because Wolff et al. does not recite each and every element of claims 1 and 19, this reference cannot anticipate these claims, and therefore the rejection under § 102(b) should be withdrawn. Claims 2 and 20, at least by virtue of their dependence on claims 1 and 19, respectively, are also allowable over the reference.

Applicant respectfully traverses the rejections of claims 3 and 4, because Shibayama, in any reasonable combination with Wolff et al., does not make up for the deficiencies of Wolff et al. alone. Shibayama does not disclose or suggest, at least, the step of determining recited in claims 3 and 4 by virtue of their dependence on claim 1. For at least this reason, the rejection under § 103(a) should be withdrawn.

Applicant also respectfully traverses the rejections of claims 15-17 under § 102(e) for following reason. Claim 15 recites a combination of elements including "a receiver for receiving a message code from a calling terminal included in the network;"

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"means for determining whether a receiving terminal in the network can receive the canned message in text form or message code form, and a transmitter for transmitting the retrieved canned message in text form or code form in response to the determining means."

Inniss et al., in contrast, does not disclose the combination of elements including, among other things, the determining means recited in claim 15. Instead, Inniss et al. merely discloses allowing the user to create an audio message and forwarding the message to the receiving user. After creation of the message, the system disclosed in Inniss et al. attempts to deliver the message to the receiving user. If the message is valid the delivery is successful. If, on the other hand, the message is invalid (*i.e.*, the receiving unit cannot process the message) an error message is returned and the sending user has the option of either (1) recreating the message; (2) rerouting the message; or (3) terminating the delivery attempt. [Col. 5, line 54 - Col. 6, line 6].

The present invention, as recited in claim 15, prevents this type of trial and error by determining, prior to transmission, whether a receiving terminal can actually receive a shortened message code or whether the entire text message must be delivered. Inniss et al., therefore, does not disclose, at least, determining whether the receiving party can receive a message code or text and then transmit the message in text or code form based upon the determination, as recited in claim 15. Moreover, there is no disclosure of suggestion in the reference for modifying its disclosure to recite the combination of elements recited in amended claim 15.

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Applicant respectfully requests the withdrawal of the rejection under §102 (e), because Inniss et al. fails to disclose each and every element recited in claim 15. Further, claims 16 and 17, at least by virtue of their dependence on claim 15, are also allowable over the cited reference.

In view of the foregoing amendments and remarks, applicant requests that the Examiner withdraw the rejections under §102(b), §102(e), and §103 and allow the pending claims.

Applicant also requests that all the documents listed in the accompanying Information Disclosure Statement be considered and made of record. The Examiner's attention is particularly directed toward U.S. Patent Nos. 4,263,480 and 4,336,524 issued to Levine, each of which discloses "prestored limited content messages," but which, applicant respectfully submits, do not disclose the invention of the present application.

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To the extent any extension of time under 37 C.F.R. 1.136 is required to obtain entry of this response, such extension is hereby requested. If there are any fees due under 37 C.F.R. 1.16 or 1.17 which are not enclosed, including any fees required for an extension of time under 37 C.F.R. 1.136, please charge those fees to our Deposit Account No. 06-916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

Dated: July 24, 1998

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Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#4
P10391
7-30-98

In re Application of:	)	
	)	
Gregory J. PINTER	)	
	)	
Serial No.: 08/708,696	)	Group Art Unit: 2742
	)	
Filed: September 5, 1996	)	Examiner: F. Tsang
	)	

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(c)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(c), applicant brings to the attention of the Examiner the documents listed on the attached PTO 1449. This Information Disclosure Statement is being filed after the events recited in Section 1.97(b) but, to the undersigned's knowledge, before the mailing date of either a Final Action or a Notice of Allowance. Under the provisions of 37 C.F.R. § 1.97(c), this Information Disclosure Statement is accompanied by a fee of $240.00 as specified by Section 1.17(p).

07/27/1998 SSAKDARA 00000102 060916 08708696
01 FC:126 240.00 OP

Copies of the listed documents are attached.

Applicant respectfully requests that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are

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material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claims in the application and applicant determines that the cited documents do not constitute "prior art" under United States law, applicant reserves the right to present to the office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

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John M. Romary
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Date: July 24, 1998

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JUL 24 1998

INFORMATION DISCLOSURE CITATION
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PAGE 1 of 2

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Atty. Docket No.	03680.0132-0	Serial No.	08/708,696
Applicant	Gregory J. PINTER		
Filing Date	September 5, 1996	Group	2742

U.S. PATENT DOCUMENTS

Examiner Initial*		Document Number	Date	Name	Class	Sub Class	Filing Date If Appropriate
T-T		2,978,676	04/04/61	J. A. Spencer	340	154	
T-T		3,513,443	02/27/67	V. Andersen	340	164	
T-T		3,714,375	01/30/73	H. A. Stover	179	2	
T-T		3,818,145	06/18/74	J. R. Hanway	179	41	
T-T		3,846,783	11/05/74	S. P. Apsell et al	340	311	
T-T		3,851,251	11/26/74	W. K. Wigner et al	325	55	
T-T		3,944,724	03/16/76	J. S. Kilby et al	178	4.1	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Sub Class	Translation Yes or No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

T-T	"New Radio Paging System," by Mitsuru Komura et al, Japan Telecommunications Review, July 1977, Vol. 19, No. 3, pps. 217 and 220-225
T-T	"Paging System Broadcasts Nationwide on FM Radio Channel," Electronics International, January 4, 1979, Vol. 52, No. 1, pps. 67-68
T-T	"A Development Project of a Pocketsize Receiver for a Nationwide Paging System," by Kari Kiiskinen et al, IEEE, 1979, pps. 383-387

Examiner	Fan Tsang	Date Considered	9/18/98

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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PAGE 2 of 2

Atty. Docket No.	03680.0132-0	Serial No.	08/708,696
Applicant	Gregory J. PINTER		
Filing Date	September 5, 1996	Group	2742

U.S. PATENT DOCUMENTS

Examiner Initial*		Document Number	Date	Name	Class	Sub Class	Filing Date If Appropriate
FT		3,976,995	08/24/76	G. Sebestyen	340	337	
FT		3,984,775	10/05/76	L. Cariel et al	325	55	
FT		4,010,460	03/01/77	J. DeRosa	340	311	
FT		4,010,461	03/01/77	T. Stodolski	340	311	
FT		4,160,240	07/03/79	P. Partipilo	340	311	
FT		4,178,475	12/11/79	F. D. Taylor et al	179	2	
FT		4,197,526	04/08/80	A. B. Levine	340	311	
FT		4,249,165	02/03/81	T. Mori	340	311	
FT		4,263,480	04/21/81	A. B. Levine	179	2	
FT		4,330,780	05/18/82	M. Masaki	340	825.44	
FT		4,336,524	06/22/82	A. B. Levine	340	311	
FT		4,382,256	05/03/83	K. Nagata	340	825.44	

		Document Number	Date	Country	Class	Sub Class	Translation Yes or No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner		Date Considered	9/18/98

*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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New Radio Paging System

By Mitsuru Komura*, Akira Yokokura*,
Tadatoshi Hagihira** and Masanori Ogasawara***

ENGINEERING BUREAU, NTT*
ATSUTA CONTROLLING RADIO TERMINAL STATION, NTT**
AOMORI CONTROLLING RADIO TERMINAL STATION, NTT***

Since the Pocket Bell radio paging service in Japan was inaugurated in 1968, it has been extended to 49 areas with a total of approximately 600,000 subscribers. The demand for Pocket Bell service is also expected to increase largely hereafter.

To meet the demand in the future, NTT has developed a new radio paging system which uses a new frequency band. Many improvements, such as reduction in receiver size and weight, considerable extension in battery life, increase in subscriber capacity per radio channel, etc. have been made. This new radio paging system has many advanced technical features, such as new digital signaling technique, carrier frequency off-set technique for simultaneous transmission from base stations, use of one large scale integrated circuit for the entire decoding function of a receiver, etc. Commercial tests of this new system will commence in the end of 1977. This paper describes outline and features of the radio paging system.

1. Introduction

Utility of the "Pocket Bell" radio paging service, which makes it possible to call a person who is out of his office and to contact him at any time at very low charge, has been so widely accepted that service has extended to 49 areas with a total of approximately 600,000 subscribers, as shown in Fig. 1, since the service was commenced in the Tokyo area in 1968. Subscriber occupations vary widely, from salesmen to physicians. The demand for this paging service is foreseen to continue increasing hereafter.

To meet the demand, NTT has developed a new radio paging system. It can accommodate 30,000 subscribers per radio channel, using the new frequency band. Many improvements, such as reduction in receiver size and weight, considerable extension in battery life, selection function for two alerting tone levels, economical composition of trunks and registers using XB switch, and so on have been made.

Field tests on the new paging system using the prototype equipment were carried out successfully in Tokyo in 1976. Service involving the new system will start in Tokyo and Sapporo areas in the end of 1977, as commercial tests.

2. System Features

The new radio paging system has many advanced technical features as follows, compared with the conventional system.

(1) High Capacity

This system can accommodate 30,000 subscribers per radio channel, at a two calls per day calling rate. This is realized by shortening selective calling signal duration per call to one third, using newly developed high speed digital signaling technique.

(2) Reduction in Receiver Size and Weight

The new receiver size and weight are largely reduced by using a C-MOS LSI as decoder, UM-3 dry battery as power supply and a miniaturized switch for power, reset on alerting, selection of alerting levels. It is about 70% of the volume and the weight of the existing receiver, measuring 97 mm × 37 mm × 18 mm and weighing less than 100 grams.

More than 97% calling reliability is expected in a service area boundary by triple transmission of a selective calling signal per call.

(7) Receiver Battery Life

A UM-3 dry cell (1.5V, 450 mAH) can be used for more than 2 months by the battery saving function, assuming 8 hour operation, 2 calls per day.

(8) New Functions

(a) 2 alerting ringing tone audio levels

The alerting ringing tone can be switched at two levels, to prevent disturbing people around a called person in a quiet place.

(b) Dual Call

A receiver may be equipped with dual address. There are two kinds of intermittent alerting tones whose intervals differ, to discriminate between called addresses.

A list of characteristics and functions is shown in Table 1.

4. Radio Propagation Characteristics

Radio paging system propagation tests were carried out in the 150, 250, 400 and 800 MHz bands in Tokyo in 1975. Test results showed that the 150 to 400 MHz bands were applicable for the paging service under almost the same conditions and that there was slight difficulty regarding propagation loss, cost etc. in the 800 MHz band.

Distance vs. median field strength characteristics in the 250 MHz band are shown in Fig. 3 and field strength distribution on the street in Fig. 4 according to propagation test results. Building penetrating losses

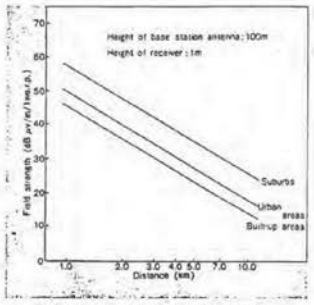


Figure 3. Distance vs. median field strength

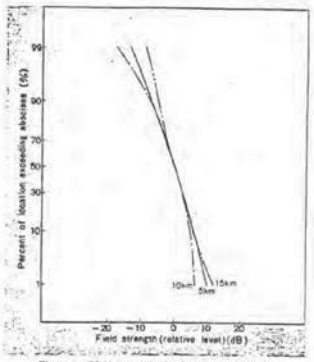


Figure 4. Field strength distribution on the street

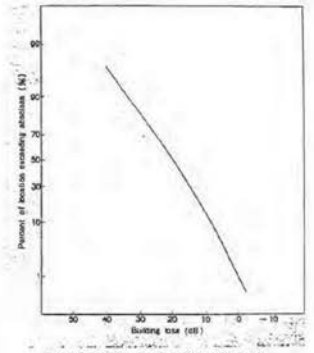


Figure 5. Building loss in the 250 MHz band

Table 2. Building Losses in the 250 MHz Band

Minimum	Maximum	Average	Standard Deviation
6 dB	35 dB	19.7 dB	8.6 dB

in the 250 MHz band are shown in Table 2 and Fig. 5. These losses equal the difference between the median field strength outside of the building and that on the first floor within the building. As building penetrating losses vary widely, due to the size and the structure of the building, Table 2 and Fig. 5 are based on results from tests in various kinds of building. As the total propagation characteristics in the 250 MHz band are near those of the 150 MHz band, the service area of the 250 MHz system is almost the same as the 150 MHz system.

5. Signaling System

The new system uses NRZ digital signal, instead of the selective calling signal of two sequential double tones used by the conventional system. Comparison between tone and digital selective-call signaling systems is shown in Table 3. According to Table 3, a binary digital selective-call signaling system is advantageous, from view points of receiver size and accommodating capacity.

5.1 Signal Composition

The signal composition used in the new system is shown in Fig. 6. All receivers are divided into 15 groups. Selective calling signals for a receiver in a group are sent only for a corresponding duration to the group, for receiver battery saving. A synchronizing signal and a maximum of eight selective calling signals are sent for each group. A 31 bit synchronizing signal is composed of 9 bit synchronizing signal, 15 bit frame synchronizing signal and 7 bit group indicating signal.

(1) Bit Synchronizing Signal

This signal is used in order to synchronize the inner clock of a receiver to that of a received signal.

(2) Frame Synchronizing Signal

This signal indicates the position of selective calling signals and uses a 15 bit *PN* code, which is the same signal sent for each group.

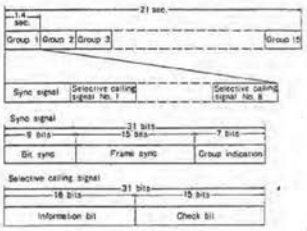


Figure 6. Signal composition

Table 3. Comparison between Tone and Digital Selective Calling Signal System

Terms		Multi-Frequency Tone Signaling System	Digital Signaling System	Note
Calling Reliability	Sensitivity in the Rayleigh Field	○	○	By adopting a suitable error correction in a digital signaling system
	Sensitivity in the Interference Area	○	○	
Occupation Band-Width and Channel Separation		○	○	
Multiple Simultaneous Transmission from Base Stations		○	○	By adopting the new off-set carrier frequency technique in a digital signaling system
New Functions	Dual Calling	○	○	
	Battery Saving	○	○	
Possibility of Reduction in Decoder Size		△	○	Active filter for tone signaling system is larger, even using RC elements
System Cost		○	○	
Increase in Subscriber Capacity in the Future		△	○	

(3) Group Indicating Signal

This signal identifies a group and uses a 7-bit BCH code composed of 4 information bits and 3 check bits.

(4) Selective Calling Signal

A selective calling signal in the system is a 31-bit BCH code composed of 16 bits for information and 15 bits for check, which is capable of correcting one bit.

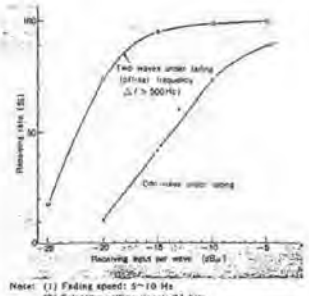
5.2 *Carrier Frequency Off-Set Technique*

Simultaneous transmission from several base stations in the radio paging system is important to cover a wide service area, which involves no problem in multi-frequency tone signaling systems. However, it was difficult in a binary digital paging system, because beat carriers degrade the receiving rate in an interference area where radio fields from more than 2 transmitters are nearly equal. Therefore, the new carrier frequency off-set technique has been developed. It has been made clear that, if the frequency difference between carriers is larger than the bit clock frequency of a selective calling signal, more than one cycle of a carrier beat can be received in a receiver for a duration of one bit and the selective calling signal receiving rate does not reduce. Off-set frequency vs. receiving rate is shown in Fig. 7. Moreover, a space diversity effect can be obtained by the carrier off-set technique in the interference area, as shown in Fig. 8. In the new system, five frequencies (f_0, f_0 ±250 Hz and f_0 ±500 Hz) are provided for transmitting, where f_0 is central frequency in the 250 MHz band, considering stability of transmitting frequency, channel seperation and so on.

5.3 *Automatic Delay Equalizing Technique*

Phase error of modulating signals from base stations cause a degradation in receiving rate in an interference area. Phase error vs. receiving rate for selective calling signals is shown in Fig. 9. If a transmission line from a central base station to a satellite base station is a metallic line, it is only neccessary to equalize the transmission line delay, using the fixed delay circuits. However, if it is a carrier transmission circuit, a variable delay equalizer which automatically follows delay shift is necessary. The automatic delay equalizing system adopted in the new system is described in the following.

The phase monitor in the central base station continuously monitors the phase of signals returned from each satellite stations. If it detects a delay shift, the encoder stops transmitters at all satellite stations and sends pre-determined pattern signals for delay



Note: (1) Fading speed: 5~10 Hz
(2) Selective calling signal: 32 bits
(3) Transmission rate: 250 bits/sec.
(4) Complete delay equalizing of two base stations

Figure 8. Digital signal system calling reliability in interference area

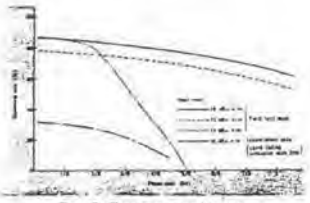


Figure 9. Phase error vs. receiving rate

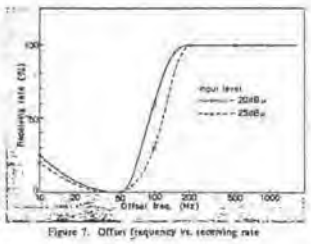


Figure 7. Offset frequency vs. receiving rate

equalizing to each satellite station, using both radio and telecommunications line. At each station, the phase compensator receives the pattern signals and executes delay equalization. During this time, service is discontinued. However, there is no service degrading because only a short time, within several seconds, is involved. None of the calls during this time are deleted but are stored.

6. Equipment Outline

The major components of the new radio paging system are paging terminal equipment, phase compensators, radio transmitters, antennas and receivers.

6.1 Paging Terminal Equipment

The paging terminal equipment is composed of trunks, a register link, registers, a subscriber number check circuit, an encoder and a phase monitor.

(1) Trunk and Register

Trunks selected from the telephone network are switched to registers by register link.

Trunks relay MF signals corresponding to the called number from telephone networks to registers and send either a recorded announcement or a busy tone to a caller, according to the information from the subscriber number check circuit through registers. Registers receive and store the subscriber number and send it to the subscriber number check circuit.

(2) Subscriber Number Check Circuit

Subscriber number check circuit consists of check circuit and pin-board translator. The pin board translator receives a called number from the check circuit and sends back subscriber information. The check circuit checks the subscriber information. If the information is valid, normalized subscriber number is sent to the encoder, and if not, a number unobtainable signal is sent to the register.

(3) Encoder

This consists of a signal converter unit and an encoder unit.

The signal converter transfers the subscriber number to the binary code and sends the corresponding memory to the group.

The encoder composes the complete selective calling signal of a binary digital BCH code. Moreover, the encoder continuously sends such signals as synchronizing signals, selective calling signals and dummy calling signals when there is no call. The memory stores the number until each selective calling signal is transmitted three times at intervals of about 20 seconds. The encoder also controls delay equalizing according to phase monitor requirements.

(4) Phase Monitor

The phase monitor sends selective calling signals to each base station and continuously monitors signals returned from each base station. If any delay shift is detected in the returned signals, the monitor requires delay equalizing to the encoder.

6.2 Phase Compensator

The phase compensator at each station sends selective calling signals from the encoder at the central base station to a radio transmitter, and returns them to the central base station. The phase compensator also equalizes delay between base stations, according to the control signals from the encoder.

6.3 Radio Transmitter

This all solid-state transmitter transmits selective calling signals from the phase compensator. Considering the installation in the satellite base station, it is designed to be remotely monitored and controlled. There is one stand-by transmitter for every four main transmitters. In order to ensure a frequency offset, the transmitter has a high-stability crystal oscillator. Principal transmitter performance specification are as follow.

(1) Transmitting Power : 250 W
(2) Frequency : 250 MHz band
(3) Modulation : Frequency shift keying
(4) Frequency Deviation : ±2.5 kHz
(5) RF Frequency Tolerance : Less than $\pm 2 \times 10^{-7}$
(6) Power Supply : DC −21V or DC −48V
(7) Alarms : Transmitting power, antenna mismatching, power supply,

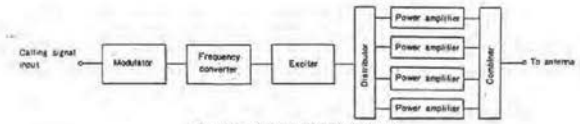


Figure 10. Radio transmitter block diagram

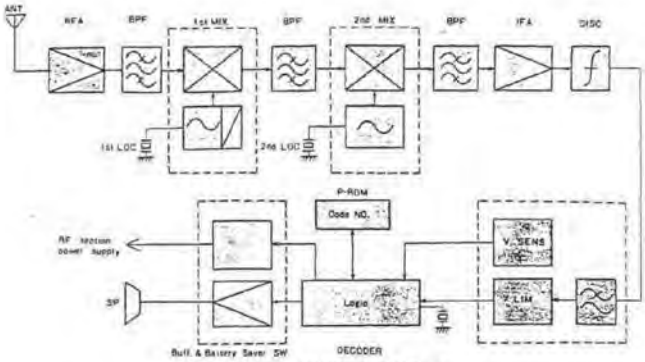


Figure 11. New pocket bell receiver blockdiagram

Figure 12. Exterior views of pocket bell receivers

Figure 13. Interior view of new pocket bell receiver

line, modulation, etc.

A blockdiagram of the transmitter is shown in Fig. 10.

6.4 *Receiver*

Principle receiver performance specifications are as follow.

(1) Double superheterodyne receiver in the 250 MHz band.

(2) The pocket bell number is memorized in an exclusive ROM.

(3) Power supply is one 1.5V UM-3 size dry cell. Battery life is more than 2 months, by adopting battery saving.

Table 4. Radio Transmitting Antenna

Type	Construction	Frequency	Gain
1	Co-linear	250 MHz bands	3 dB
2	Dipole with plane reflector	250 MHz bands	3 dB
3	Dipole with 90° corner reflector	250 MHz bands	7 dB
4	Co-linear	150 MHz and 250 MHz bands	3 dB
5	6 elements, log-periodic	150 MHz and 250 MHz bands	3 dB
6	22 elements, log-periodic	150 MHz and 250 MHz bands	7 dB

(4) Dimensions are 97 mm x 37 mm x 18 mm and weight is less than 100 grams.
(5) New facilities are dual call, 2 alerting ringing tone levels and single alerting by three times calling.

A blockdiagram of the receiver is shown in Fig. 11. External and internal views are shown in Fig. 12 and Fig. 13, respectively.

6.5 *Antenna*

Six types of antennas listed in Table 4 were designed for the new radio paging service.

7. Conclusion

Commercial tests on this new radio paging system will start in Tokyo and Sapporo areas in the end of 1977. Dual call function is expected to be introduced several years hence.

8. Acknowledgment

The authors greatly appreciate the contributions of the engineers of Nippon Electric Co., Matsushita Communication Industrial Co. and Tokyo Shibaura Electric Co., who engaged in the design and manufacture of the equipment.

Reference

(1) N. Mino, Y. Yamada: "Pocket Bell" Personal Signaling Service, JTR, Vol. 7, No. 4, 1965.
(2) M. Kimura, C. Nakamura: "Pocket Bell" Radio Paging Service, JTR, Vol. 11, No. 4.
(3) Y. Kikuchi, S. Sada: A Small-Sized Pocket Bell Receiver, JTR, Vol. 14, No. 3.

S 90 54 00-

Electronics international

Significant developments in technology and business

Paging system broadcasts nationwide on fm radio channel

System broadcasts over Sweden's existing network; commercial service performs a variety of tasks

The Swedish penchant for solitude—immortalized by Greta Garbo's "I vant to be alone"—suggests that Sweden is a most unlikely place for a nationwide personal paging system. But the Swedish Telecommunications Administration, Televerket, has launched just such a system, using the existing fm radio network for signal transmission.

Known as MBS (for *mobilsoekning*, mobile searching), the system has been in planning for almost 10 years. Now the first subscribers have signed up and bought pocket page receivers. Televerket operates the service, which cost $1.5 million to develop and install, on a purely commercial basis.

It charges a one-time sign-up fee of $23, plus a quarterly fee that ranges from $15 to $85, depending on the type of paging service required. There is a charge of about 7 cents—the cost of two local phone calls—for each paging. In addition, the subscriber purchases a pocket receiver for about $900.

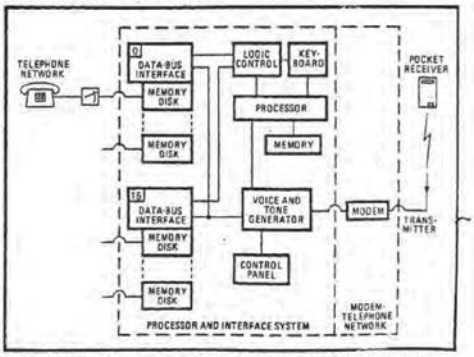
Recycled. Setting up a transmission network dedicated solely to paging would have been economically prohibitive in thinly populated Sweden: 8 million Swedes are spread out across a nation the size of the state of California. So Televerket decided to use the 87-to-104-megahertz band of the fm radio network, which covers some 99% of the nation's geography, as well as some of Denmark and Norway.

Political approval for use of the existing fm radio transmission system was easier to obtain than might have been expected. Televerket handles transmission of all programs broadcast by the Swedish Broadcasting Corp., the sole radio and television broadcasting company in the nation. Three channels, called programs, are broadcast over fm, all of them stereo. For the paging system, Televerket uses the third program, which plays popular music.

According to Oesten Maekitalo, who heads Televerket's Radio Laboratory, a major problem in using the fm band for transmitting additional information was finding a way to modulate the signal without interfering with existing stereo program reception. Televerket's solution was to add an extra subcarrier in the fm broadcast transmissions.

The frequency of the paging subcarrier is 57 kilohertz (±6 hertz) and the frequency deviation caused by the subcarrier is ±3 kHz. When paging signals are transmitted simultaneously with stereo programs, the 57-kHz subcarrier is phase-locked to the 19-kHz stereo multiplexed pilot signal.

Each 52-bit paging code consists of two blocks of 16 information bits and 10 parity check bits. To broadcast a subscriber's code, the paging subcarrier is product-modulated by a signal obtained by phase-modulating a 1.187-MHz (±0.1-Hz) tone with differentially coded binary informa-



Paging. After caller dials in subscriber's code, it is converted into a 52-bit binary code by the central processor. Code is used to modulate the paging subcarrier.

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379-57

tion. A 1 in the original binary information causes a phase shift of 180°, while a 0 means unaltered phase.

Televerket offers seven different paging services—from the simplest—transmission of an audio or visual paging signal—to the most sophisticated, in which the caller's number is displayed on a light-emitting-diode display on the receiver.

In the middle is a system that enables a caller to dial the subscriber's paging number and then dial in the number for the subscriber to call back. The caller's phone number, which is stored in a central computer for two hours, is repeated to the subscriber in synthesized voice form when he dials the central exchange. Another option is a privacy code that prevents unauthorized callers from paging the subscriber.

Getting in touch. To page someone, the caller dials a four-digit entry number, then the subscriber's six-digit number. If the subscriber has additional services, such as the call-back display or a privacy code, the caller then dials in these digits.

The signals from the telephone network are sent to a central processor, a Motorola M/6800, over a data bus interface and a logic controller, which checks and processes all incoming calls and calls in progress. There are 15 data-bus interface units in the system nationwide, each equipped with disk memory. After processing, the information is sent through modems to transmitters located throughout the nation.

Receivers. At the subscriber's end, the receiver scans the 87-to-104-MHz frequency range every 10 seconds. It is designed so that it automatically tunes in for reception of a radio paging call by searching for and locking onto the special MBS system identification code. This feature is necessary because third program transmission is on various frequencies in different areas.

The first manufacturer to gain Televerket's type approval on a receiver is Japan's Mitsubishi Electric Corp. The Mitsubishi receiver has a complementary-metal-oxide-semiconductor microprocessor with programs stored in a C-MOS programmable read-only memory. An LED readout displays up to 12 digits for subscribers who opt for the call-back feature. Expected to gain type approval soon are Sonab of Sweden and Salora of Finland. □

West Germany

Intermetall GmbH goes it alone in developing very large-scale integration

In their anxiety to keep up with the U. S., government after government in Europe is helping semiconductor firms prepare for the very large-scale integration technology of the 1980s. So when a company gets set for VLSI without governmental financial help, the effort becomes noteworthy.

One such company is Intermetall GmbH, lead house of the ITT Semiconductors Group, based in Freiburg, West Germany. Probably the only semiconductor producer in Europe that has thus far financed its VLSI efforts entirely on its own, the group has dished out more than $13 million during the past two years to get itself into harness for the future. Additionally, some $5 million to $7 million are currently being spent for further VLSI projects.

Facilities. In the group's new six-story research and development facility, centers for computer design, mask making, and diffusion stand ready for the challenges of VLSI design and fabrication. "For our VLSI activities we have installed the latest research, development, and production equipment available on world markets," says Heinz Rössle, group general manager for ITT Semiconductors worldwide. The lineup includes modern data-processing gear for circuit design, a new electron-beam system for mask making, and equipment for processing 4-inch wafers—all installed in super-clean environments.

In the design center, a model 400 Prime Computer is being used in an approach that, says Rössle, should halve VLSI development time, even when circuits become more complex and exhibit increasingly higher levels of integration. Because the computer takes on an active role in circuit design, Rössle prefers to call the approach "computer design" instead of the conventional computer-aided

Clean job. Inspector checks circuit in super-clean environment of mask-making center at ITT Semiconductors' new research and development facility in Freiburg, West Germany.

(CONFIRMED: Proceedings of the 29th Electronic Components Conference, Cherry Hill, NJ, USA (1st-3rd May 1979))

S 9215 0044

A DEVELOPMENT PROJECT OF A POCKETSIZE RECEIVER FOR A NATIONWIDE PAGING SYSTEM

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Summary

A nationwide paging system was taken into use in Sweden in 1978. The Radiotelephone Division of Salora Ltd., Finland, has developed a receiver for this system. This paper discusses the most significant aspects of this development project. The main part of the paper deals with the use of hybrid technology in the project.

The system design of the paging receiver is discussed and the results are presented. Because the receiver was realized almost entirely with thick film hybrid circuits, special attention was given to the selection of the thick film materials. The manufacture of hybrid circuits and the receiver itself, and some special aspects of the development project are reviewed. The microprocessor, included in the receiver, and the tasks it performs, are also discussed.

Introduction

A nationwide paging system was taken into use in Sweden in 1978. The system was developed by the Swedish Telecommunications Administration, or Televerket. By utilizing the national telephone and FM-broadcasting networks, the system makes it possible to find a person with a small paging receiver from anywhere in Sweden by dialling from any telephone within the country. The basic system structure is presented in Figure 1. This paging system has been dubbed "MBS" according to "mobilsökning", which means "mobile searching".

At the end of 1977, the Radiotelephone Division of Salora Ltd. in Finland started a project to develop a paging receiver for this system. The schedule of the project was very tight. It was known that at least two competitors, who had started the development work considerably earlier, were also entering the market. From the very beginning of the project, maximal utilization of outside resources was planned with only two full-time persons at the Radiotelephone Division appointed to the project. On developing the logic circuitry and the necessary programs the subcontracts were signed between Salora and the Technical Research Centre of Finland. Salora's thick film hybrid circuit plant was employed to develop part of the hybrid circuits and to prepare the production of all of them.

System Design

The specifications established by Televerket for the MBS receiver, formed the basis of the development project. Some of the main requirements and recommendations are presented in Table 1.

The receiver to be developed differed considerably from the previous products of the Radiotelephone Division. Therefore special emphasis was laid on the system design of the pager [1]. The main effort was put onto easy and rational operation of the relatively complicated equipment. Also some standards on the producibility were laid down.

The most important technological choice of the project was the decision to employ a CMOS-microprocessor, instead of custom-LSI's in realizing the required features of the pager. Another major decision during the system design was to take only one hardware model into production and to make versions for the different service categories of the system by software programs.

Other important decisions during the system design were the utilization of plug-in changeable and rechargeable batteries, and the definition of the mechanical structure and the appearance of the paging equipment.

Electrical Structure

The electrical structure of the Salora MBS Receiver is presented in Figure 2.

Altogether, there are 12 hybrid circuits and two resistor networks in the pager. The electronics of the pager is functionally and mechanically divided into three parts, FM-receiver, data decoder, and data processor, each of which is shielded separately because of noise suppression.

The data processor is the most complex of these three parts. It has been realized with a RCA 1600-microprocessor consisting of a CPU, a 2 kbyte program memory (ROM), a 128 x 8 bit data memory (RAM), two I/O-circuits, a PROM-circuit for the subscriber number and some MSI logic circuits. The processor operates at 2.9 MHz clockfrequency. It takes care of the following tasks:

- performs the testing of the display and the alarm transducer when switching on the power
- controls the searching of a sufficiently strong MBS-transmitter
- synchronizes itself into the incoming data-stream
- does the parity check of the data
- compares the received calling numbers against its own numbers
- strikes an alarm when its own number is identified
- stores into the data memory possible additional information coming in after the call
- controls the display functions
- scans channel holding and battery condition and gives an alarm if required.

CH1457-1/79/1000-0384 $00.75 ©1979 IEEE

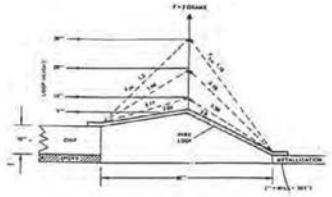

Figure 10. Resolution of forces example # 1.

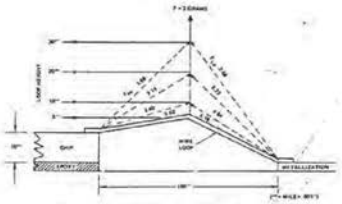

Figure 11. Resolution of forces example # 2.

CONCLUSIONS

The integration of ultrasonic bonding and NDPT has proven to be feasible by the equipment developed, retrofitted and tested under this contract. Test results indicate no degrading of bond quality when safe recommended NDPFs are used. The concepts developed thus far serve as a sound foundation for subsequent self test bonders with totally automated NDPT features which promise to be most cost effective and to eliminate potentially unreliable human/fatigue factors now currently used.

Acknowledgements

The work described in this writing was funded by contract NO-123-77-C-0671. The authors wish to thank C. Caposell of NAVAIR for supporting this project; to G. Harman of NBS for his technical assistance and recommendations throughout this effort; to W. Wing of K&S for refining and implementing the design concepts, and to D. Vilenski of K&S for his technical assistance.

REFERENCES

1. J. W. Slemmons, Rockwell International, Internal Document, 1968.
2. J. W. Slemmons, The Microworld of Joining Technology, American Welding Society 50th Annual Meeting and Welding Exposition, Philadelphia, Pa., April 29 - May 1, 1969.
3. A. P. Bertin, Development of Microcircuit Bond-Pull Screening Techniques, Rome Air Development Center TR 73-123 (General Electric Co., Utica) April 1973.
4. G. C. Harman and C. A. Cannon, the Microelectronic Wire Bond Pull Test – How to use, How to Abuse it, Proceedings, 28th Annual Electronic Components Conference, Anaheim, CA, pp 291- 299.
5. J. Roddy, N. Spann and P. Seese, Nondestructive Bond-Pull in High Reliability Applications, Proceeding, 28th Annual Electronics Components Conference, Anahtim, CA, pp 300 - 326.
6. Recommended Practice for Nondestructive Pull Testing of Wire Bonds (ASTM F 458-78).
7. Stand Methods for Measuring Pull Strengths of Microelectronic Wire Bonds (ASTM F 459-78).
8. B. D. Martin, Design and Use of a Laser Interferometer for Ultrasonic Bonding Studies, Proceedings, 14th Annual Reliability Physics Symposium, Las Vegas, Nevada, pp 82-85.
9. W. T. Fitch, Extended Temperature Cycling of Plastic and Ceramic I/Cs with Thermal Shock Preconditioning, 14th Annual Reliability Physics Symposium, Las Vegas, Nevada, pp 240-247.

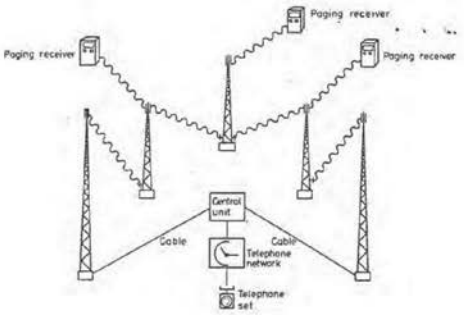

Figure 1. The Swedish "MBS" public radio paging system.

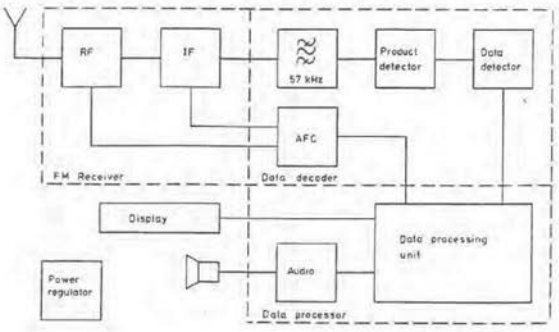

Figure 2. Electrical structure of the Saluda MBS Receiver.

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Table 1A. Requirements for the MBS Receiver

	with built-in antenna	intended for connection to external antenna
Frequency range	87 to 104 MHz	87 to 104 MHz
Operational temperature range - portable - installed in vehicle	-10°C to +55°C	-25°C to +55°C
Sensitivity	35 dB(µV/m)	15 dB(µV)emf
Overload	110 dB(µV/m)	106 dB(µV)emf
Selectivity (> ± 1 MHz)	110 dB(µV/m)	106 dB(µV)emf
Intermodulation	80 dB(µV/m)	80 dB(µV)emf

Table 1B. Recommendations for the MBS Receiver

Weight	max. 200 g
Size	max. 140 mm x 60 mm x 22 mm
Operating time without recharging	min. 200 h

Table 2. Properties of the Salora MBS Receiver

	with small batteries	with R6 batteries
Size	110 mm x 65 mm x 19 mm	145 mm x 65 mm x 19 mm
Weight	180 g	240 g
Operating time	150 h	500 h
MBS subscriber number capacity	3	3
Storage capacity for received numbers (calls)	4	4

aterial and component selection for hybridization

he main requirements for the thick film materials ere:

- suitability for multilayer structures even on larger substrates
- possibility of printing resistors on dielectric layers in some circuits
- solderability, preferably re-solderability of conductors on multilayer structures
- solderability and wire-bondability of conductors in certain circuits.

After several tests and prototyping, palladium/silver nd palladium/gold pastes were chosen for the onductor materials. Resistor and dielectric naterials were chosen as compatible with the con-uctor materials.

Because the space did not allow the use of standard dual-in-line components, it was decided to use leadless ceramic chip carriers, although we could not obtain microprocessor components readily packaged in chip carriers from the market. Consequently, we had to do the bonding and the sealing ourselves whilst part of it has been done outside of the company.

We had the following requirements for the ceramic hip carriers:

- the cavity area had to be large enough for microprocessor chips
- the free height inside the carrier had to be high enough to allow 0,5 mm (20 mils) thick chips to be mounted and bonded in the carrier.

All these requirements could be met with the products already available on the market.

Because of space limitations, standard packaged components could be used only in a few cases. Therefore, most of the selected components are minicomponents like SOT-23's, chip capacitors and miniature coils. Integrated circuits are used as naked chips.

Fabrication of hybrid circuits

Hybrid circuits are fabricated in a normal thick film process. Except for the digital part, the circuits are printed on prescribed ceramic substrates.

The tolerance requirements in the printing process are taut because the packaging density is quite high, and there are 8 to 10 printings per circuit on an average. The resistors are air-abrasively trimmed. To attach the components we use manual and reflow soldering, epoxy and chip-and-wire bonding. Because of these various attachment methods and comparatively short production series, the process has been automated only at some few phases.

Results and special aspects of the project

The developed Salora MBS receiver, and its properties, are presented in Figure 5 and Table 2.

Figure 1. The Salora MRS Receiver

One of the problems encountered during the project was:

the combination of hybrid technology and a microprocessor, and the use of new ceramic chip carriers brought many new tasks, like the incoming inspection for the LSI chips, testing the devices after bonding and sealing etc. Splitting the electronics of the pager with three parts and shielding each or them was due to the difficulty of controlling the noise. New techniques like the hybridized microprocessor and the adoption of a "higher state of the art" of the old techniques, required extra studies and new training of the personnel.

Conclusions

The object of the project was to develop a compact pocketsize MRS Receiver, which fully meets the specifications established by the Swedish Telecommunications Administration. For this purpose several alternatives were examined and assessed, both on component and circuit level. Effective use of hybrid technology was necessary to put the electronics of the receiver into the available space. The hybrid technology used, ranges from simple resistor networks to a hybridized microprocessor, with new leadless ceramic chip carriers.

In addition to the required functions, the microprocessor also made possible the inclusion of several extra functions which remarkably facilitate the everyday use of the receiver.

Acknowledgements

The development work was carried out in co-operation with several laboratories. The authors wish to thank the staff of Salora Ltd., Radiotelephone and Hybrid Laboratories, and the staff of the Technical Research Centre of Finland, Electronics Laboratory, for their co-operation and efforts during this project. The authors are also grateful to all persons who helped to complete this paper.

References

1. Televerket, "Paging receiver for the Swedish public radio paging system", Specification 76-16560-GB and its supplement 76-32302-GB, Sweden, 1976.

2. P. Aura, J. Kleminen, "Paging equipment for the national paging system of Sweden", Intelcom '79, Dallas, Texas, USA, 1979.

UNITED S\ :S DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/708,696	09/05/96	PINTER	G 03680.0132

LM61/0929
FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

EXAMINER	
TSANG, F	
ART UNIT	PAPER NUMBER
2742	5

DATE MAILED: 09/29/98

INTERVIEW SUMMARY

All participants (applicant, applicant's representative, PTO personnel):

(1) J. Romary (3) _____

(2) F. Tsang (4) _____

Date of Interview 9/18/98

Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No If yes, brief description: _____

Agreement ☒ was reached. ☐ was not reached.

Claim(s) discussed: 19

Identification of prior art discussed: _____

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: Claim 19, Line 14, (copy) "the message code" should be changed to "the response code". Applicant agreed the above change to put the application into condition for allowance.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

1. ☒ It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph above has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a response to the last Office action has are ready been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW.

2. ☐ Since the Examiner's Interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the interview unless box 1 above is also checked.

Examiner Note: You must sign this form unless it is an attachment to another form.

FORM PTOL-413 (REV.1-96)

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/708,696	09/05/96	PINTER	G 03680 0132

EXAMINER

LM61/0929
FINNEGAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STRET N W
WASHINGTON DC 20005

ART UNIT TSANG PAPER NUMBER

DATE MAILED 2742

5/B

09/29/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

R. Joyan 9-23-98

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to amendment A filed 7/24/98.

☒ The allowed claim(s) is/are 1-20 & 22.

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS

☒ because the originally filed drawings were declared by applicant to be informal.

☐ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. ____

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Interview Summary, PTO-413

☒ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☐ Examiner's Statement of Reasons for Allowance

FAN S. TSANG
PRIMARY EXAMINER

PTOL-37 (Rev. 10/95)

* U.S. GPO: 1996-404-496/40507

1. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

Claim 19, line 14, "message" (second occurrence) was changed to --response--.

2. Authorization for this Examiner's Amendment was given in a telephone interview with Mr. J. Romary on Sept. 18, 1998.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fan Tsang whose telephone number is (703)305-4895. The examiner can normally be reached on Monday to Friday from 8.30 AM to 6.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista Zele, can be reached on (703) 305-4701. The fax phone number for this Group is (703) 308-5403.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**krista.zele@uspto.gov**].

All Internet e-mail communications will be made of record

in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Fan Tsang
Primary Examiner
Group 2742
September 18, 1998

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

LM61/0929
FINNEGAN HENDERSON FARABOW GARRETT AND
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APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/700,696	09/05/96	021	TSANG, F	2702 09/29/98

First Named Applicant: PINTER,

TITLE OF INVENTION: GREGORY J.

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 03630.0152	379-088.230	J63	UTILITY	NO	$1320.00	12/29/98

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

PTOL-85 (REV. 10-96) Approved for use through 06/30/99. (0651-0033)

U.S. GPO: 1998-437-639/80023

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Gregory J. PINTER	Group Art Unit: 2742
Serial No.: 08/708,696	Examiner: F. Tsang
Filed: September 5, 1996	**Allowed: 09/29/98**
	Batch No. J63

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Assistant Commissioner for Patents
Washington, D.C. 20231

RECEIVED
Publishing Division
DEC 23 1998

Sir:

SUBMISSION OF FORMAL DRAWINGS

Subject to the approval of the Examiner, please replace the informal drawings with the formal drawings (seven sheets, Figs. 1-8) filed herewith. If the formal drawings for any reason are not in full compliance with the pertinent statutes and regulations, please so advise the undersigned.

If any fees are necessary for the submission of these formal drawings, please charge our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

December 22, 1998

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

APPROVED BY DRAFTSMAN | O.G. FIG. CLASS | SUBCLASS

5894506

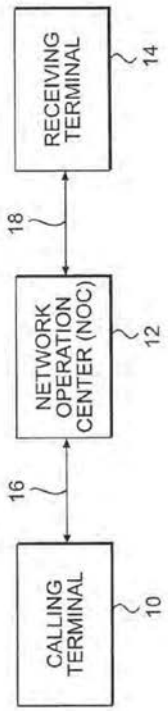


FIG. 1

APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS | SUBCLASS

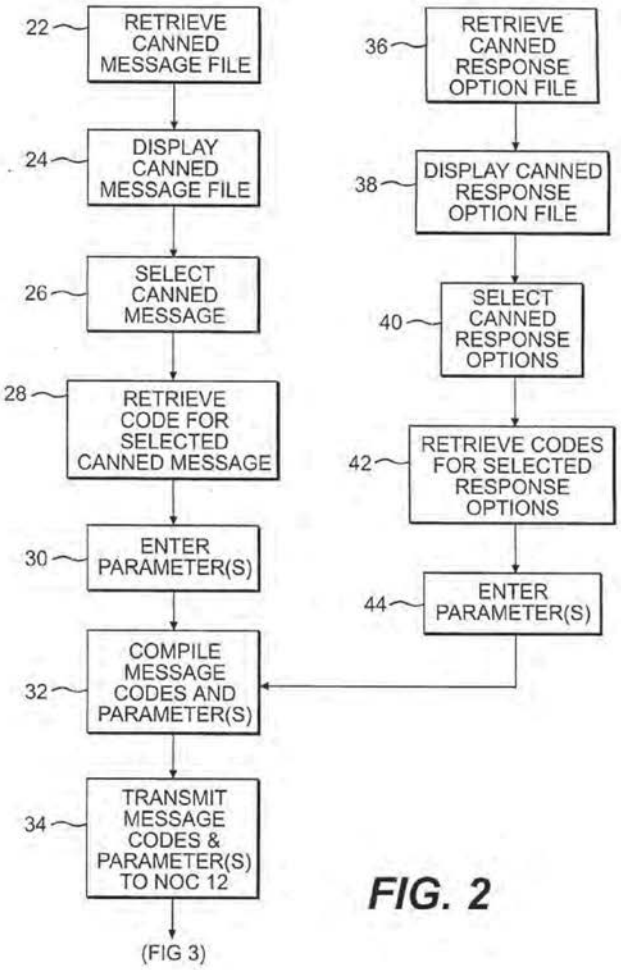


FIG. 2

120

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

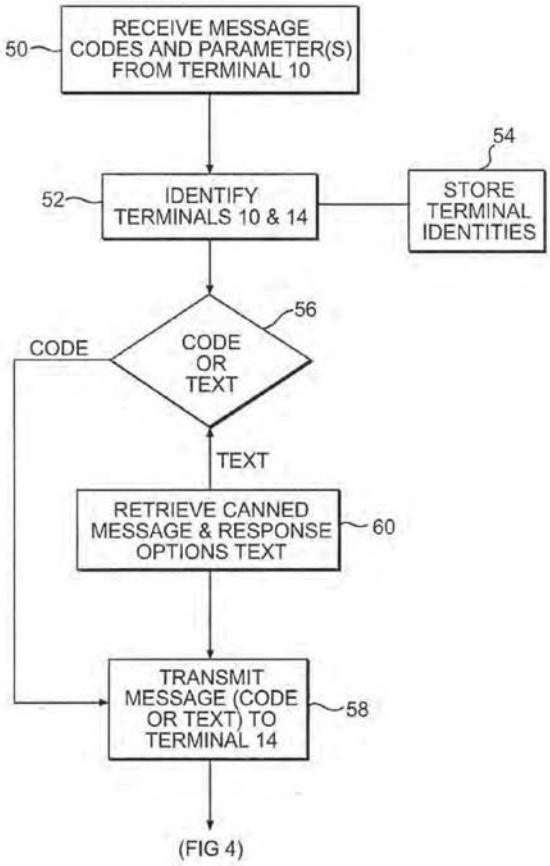


FIG. 3

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

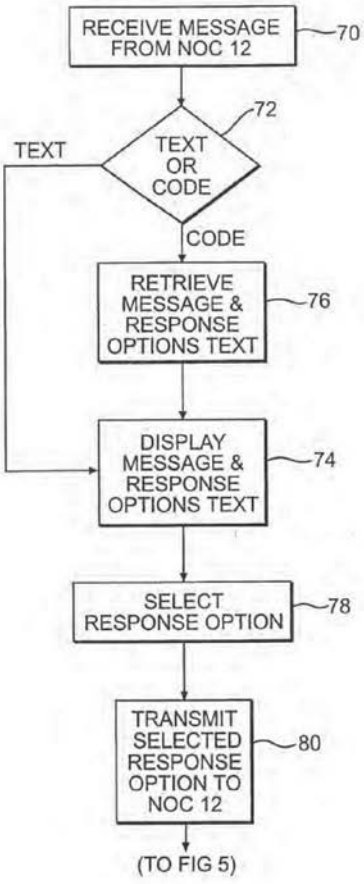


FIG. 4

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

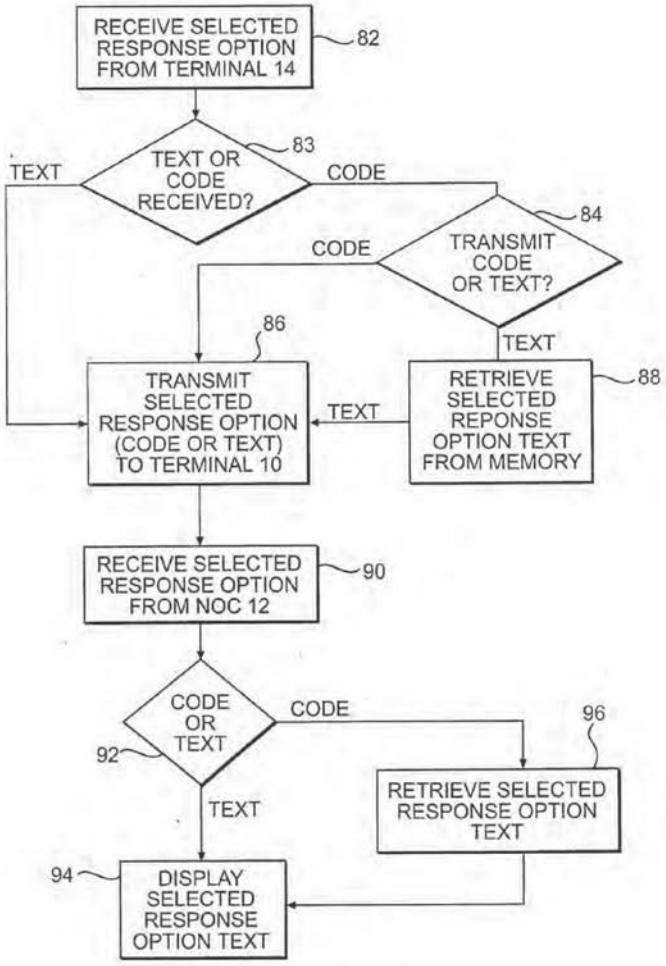


FIG. 5

APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

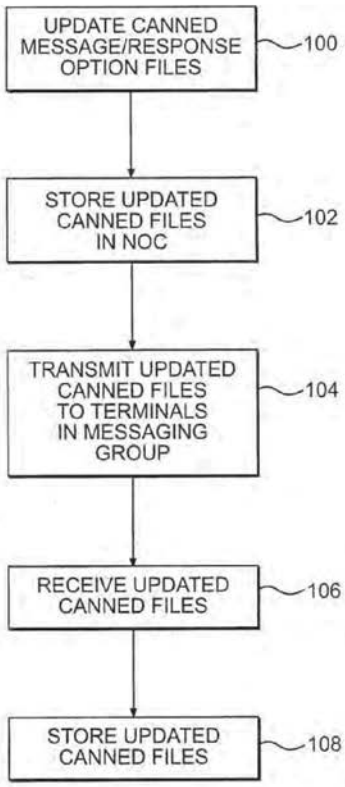


FIG. 6

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

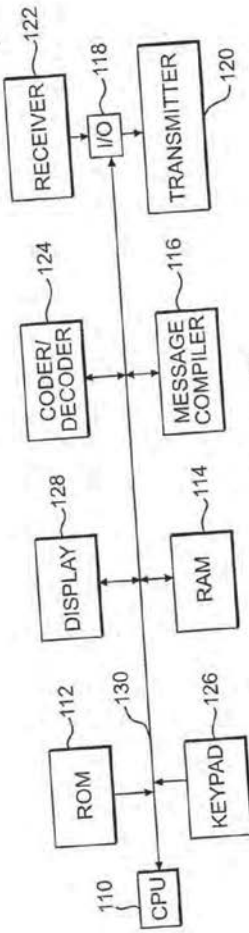


FIG. 7

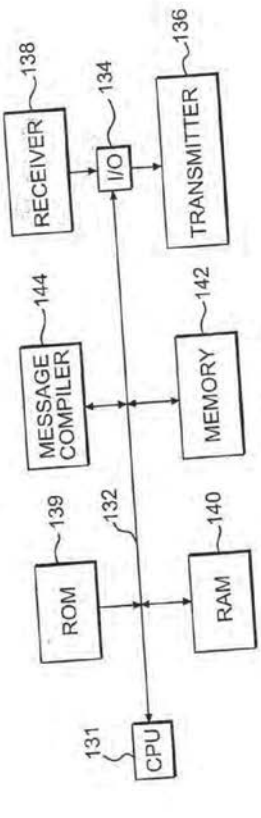


FIG. 8

142-120

PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with applicable fees, to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

LM61/0929

FINNEBAN HENDERSON FARABOW GARRETT AND DUNNER
1300 I STREET N W
WASHINGTON DC 20005

OIPE JC60 DEC 23 1999 PATENT & TRADEMARK OFFICE

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED

First Named Applicant: 08/708,636 09/08/96 021 TRANN, F 2742 09/29/98

TITLE OF INVENTION: PINTER, GREGORY J.

METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

$1320.00 12/29/98

1 Finnegan, Henderson,
Farabow, Garrett
2 & Dunner, L.L.P.
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: SkyTel Communications, Inc.

(B) RESIDENCE: (CITY & STATE OR COUNTRY) Jackson, Mississippi

Please check the appropriate assignee category or categories (will not be printed on the patent):
☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):
☒ Issue Fee
☐ Advance Order - # of Copies

4b. The following fee or deficiency in these fees should be charged to:
DEPOSIT ACCOUNT NUMBER 06-0916
(ENCLOSE AN EXTRA COPY OF THIS FORM)
☐ Issue Fee
☐ Advance Order - # of Copies

The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) John M. Romary, Reg. No. 26,331 (Date) 22 Dec 98

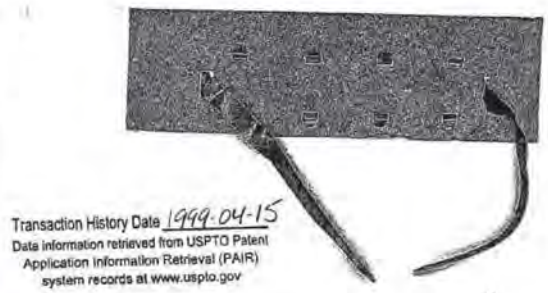
NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

01/08/1999 ZABDALLA 00000020 08708636
01 FC:142 1210.00 OP

TRANSMIT THIS FORM WITH FEE



Transaction History Date 1999-04-15
Data information retrieved from USPTO Patent Application Information Retrieval (PAIR) system records at www.uspto.gov

PTO UTILITY GRANT
Paper Number 8

The United States of America

The Commissioner of Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to an statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

Bruce Lehman
Commissioner of Patents and Trademarks

Attest

Form PTO-1584 (Rev. 2/97)

(RIGHT INSIDE)

Attorney Docket No. 03680.0132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

OIPE
MAY 14 1999
PATENT & TRADEMARK OFFICE

In re U.S. Patent No.: 5,894,506)
Inventor: Gregory J. Pinter)
Issue Date: April 13, 1999)

For: METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK

Certificate of Correction Branch

Assistant Commissioner for Patents
Washington, D.C. 20231

APPROVED
AUG 13 1999
FOR THE COMMISSIONER OF PATENTS & TM

CERTIFICATE
MAY 24 1999
OF CORRECTION

Sir:

REQUEST FOR CERTIFICATE OF CORRECTION

Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, this is a request for the issuance of a Certificate of Correction in the above-identified patent. Two (2) copies of PTO Form 1050 are appended. The complete Certificate of Correction involves one page.

The mistake identified in the appended Form occurred through the fault of the Office, as clearly disclosed by the records of the application which matured into this patent.

Issuance of the Certificate of Correction containing the correction is earnestly requested.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: _____
John M. Romary
Reg. No. 26,331

Dated: May 14, 1999

LAW OFFICES
FINNEGAN, HENDERSON, FARABOW, GARRETT, & DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.: 5,894,506

DATED: April 13, 1999

INVENTOR: Gregory J. Pinter

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

Claim 5, column 9, line 34, after "work" insert --operation center;-- then start a new indented line beginning with "routing".

Mailing Address of Sender:

Finnegan, Henderson, Farabow
Garrett & Dunner, L.L.P.
1300 I Street, N.W.
Washington, DC 20005-3315

FORM PTO 1050 (Rev.2-93)

PATENT NO. 5,894,506

No. of addl copies
@ 50¢ per page

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

CHANGE OF ADDRESS/POWER OF ATTORNEY

FILE LOCATION 9200 SERIAL NUMBER 08708696 PATENT NUMBER 5894506

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 25537

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 25537

THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 25537

ON 11/21/00 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 25537 IS:

WORLDCOM, INC
TECHNOLOGY LAW DEPARTMENT
1133 19TH ST, NW
WASHINGTON DC 20036

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 25537 ARE:

34958 40289 41467 42408 42761 43792

PTO INSTRUCTIONS: PLEASE TAKE THE FOLLOWING ACTION WHEN THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER NUMBER: RECORD, ON THE NEXT AVAILABLE CONTENTS LINE OF THE FILE JACKET, 'ADDRESS CHANGE TO CUSTOMER NUMBER'. LINE THROUGH THE OLD ADDRESS ON THE FILE JACKET LABEL AND ENTER ONLY THE 'CUSTOMER NUMBER' AS THE NEW ADDRESS. FILE THIS LETTER IN THE FILE JACKET. WHEN ABOVE CHANGES ARE ONLY TO FEE ADDRESS AND/OR PRACTITIONERS OF RECORD, FILE LETTER IN THE FILE JACKET.
THIS FILE IS ASSIGNED TO GAU 2742.

PTO-FMD
TALBOT-1/97

Form PTO 1130 (REV 2/94)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

PACE DATA ENTRY CODING SHEET

1ST EXAMINER 414 | DATE 10-29-96
2ND EXAMINER | DATE

APPLICATION NUMBER	TYPE APPL	FILING DATE (MONTH DAY YEAR)	SPECIAL HANDLING	GROUP ART UNIT	CLASS	SHEETS OF DRAWING
08/708696	1	09 05 96	0	2603	370	7

TOTAL CLAIMS	INDEPENDENT CLAIMS	SMALL ENTITY?	FILING FEE	FOREIGN LICENSE	ATTORNEY DOCKET NUMBER
21	4	0	850	Y	036801.0132

CONTINUITY DATA

CONT CODE	STATUS CODE	PARENT APPLICATION SERIAL NUMBER	PCT APPLICATION SERIAL NUMBER	PARENT PATENT NUMBER	PARENT FILING DATE (MONTH DAY YEAR)
			PCT/		
			PCT/		
			PCT/		
			PCT/		
			PCT/		

PCT/FOREIGN APPLICATION DATA

FOREIGN PRIORITY CLAIMED	COUNTRY CODE	PCT/FOREIGN APPLICATION SERIAL NUMBER	FOREIGN FILING DATE (MONTH DAY YEAR)

131

330

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1995

Application or Docket Number: 708696

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE	SMALL ENTITY FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY FEE
BASIC FEE				375.00	OR		750.00
TOTAL CLAIMS	21 minus 20 =	* 1	x$11=		OR	x$22=	22
INDEPENDENT CLAIMS	4 minus 3 =	* 1	x39=		OR	x78=	78
MULTIPLE DEPENDENT CLAIM PRESENT			+125=		OR	+250=	
			TOTAL		OR	TOTAL	850

* If the difference in column 1 is less than zero, enter "0" in column 2.

CLAIMS AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
AMENDMENT A	Total	* 21	Minus	** 21	=	x$11=		OR	x$22=	
	Independent	* 5	Minus	*** 4	= 1	x39=		OR	~~x78=~~ 82	82
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+125=		OR	+250=	Del
						TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	
AMENDMENT B	Total	*	Minus	**	=	x$11=		OR	x$22=	
	Independent	*	Minus	***	=	x39=		OR	x78=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+125=		OR	+250=	
						TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	
AMENDMENT C	Total	*	Minus	**	=	x$11=		OR	x$22=	
	Independent	*	Minus	***	=	x39=		OR	x78=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+125=		OR	+250=	
						TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

FORM PTO-875 (Rev. 10/95)

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Thomson Innovation Patent Export, 2013-06-13 09:37:06 -0500

Table of Contents

1. US5894506A Method and apparatus for generating and communicating messages between subscribers to an electronic messaging network

Family 1/1
1 record(s) per family

Record 1/1 US5894506A Method and apparatus for generating and communicating messages between subscribers to an electronic messaging network

Publication Number: US5894506A 19990413

Title: Method and apparatus for generating and communicating messages between subscribers to an electronic messaging network
Title - DWPI: Message generation and communication method between subscribers of electronic messaging network
Priority Number: US1996708696A
Priority Date: 1996-09-05
Application Number: US1996708696A
Application Date: 1996-09-05
Publication Date: 1999-04-13
IPC Class Table:

IPC	Section	Class	Subclass	Class Group	Subgroup
H04L001258	H	H04	H04L	H04L0012	H04L001258
H04M0003533	H	H04	H04M	H04M0003	H04M0003533
H04M001102	H	H04	H04M	H04M0011	H04M001102
H04M000353	H	H04	H04M	H04M0003	H04M000353

IPC Class Table - DWPI:

IPC - DWPI	Section - DWPI	Class - DWPI	Subclass - DWPI	Class Group - DWPI	Subgroup - DWPI
H04M000164	H	H04	H04M	H04M0001	H04M000164

Assignee/Applicant: SkyTel Communications Inc.,Jackson,MS,US
JP F Terms:
JP FI Codes:
Assignee - Original: SkyTel Communications Inc.

Any CPC Table:

Type	Invention	Additional	Version	Office
Current	H04L 12/5835	H04M 3/5322	20130101	EP
Current	H04L 51/066	H04M 2203/4581	20130101	EP
Current	H04M 3/53316		20130101	EP
Current	H04M 11/022		20130101	EP

ECLA: H04L001258C2 | H04L005106B | H04M0003533D | H04M001102A | T04M000353T | T04M020345I

Abstract:

An electronic messaging network comprises a network operation center and plural message terminals, all including memories for storing corresponding files of canned messages and associated message codes. To send a canned message, a calling party selects a canned message stored at one message terminal and transmits the assigned message code to a receiving party at another message terminal via the network operation center. The receiving terminal retrieves the selected canned message from its memory using the received message code for display to the receiving party. Files of canned responses and associated response codes may also be stored in the memories at the terminals and network operation center to allow the exchange of selected canned response options in conjunction with canned messages to be in response code form.

Language of Publication: EN

INPADOC Legal Status Table:

Gazette Date	Code	INPADOC Legal Status Impact
2010-10-13	FPAY	+
Description: FEE PAYMENT		
2007-03-14	AS	-
Description: ASSIGNMENT NEWCASTLE PARTNERS, L.P., TEXAS SECURITY AGREEMENT; ASSIGNORS:BELL INDUSTRIES, INC.; BELL INDUSTRIES, INC.; REEL/FRAME:019009/0529 2007-03-12		
2007-01-31	AS	-
Description: ASSIGNMENT WELLS FARGO FOOTHILL, INC., AS AGENT, CALIFORNIA PATENT SECURITY AGREEMENT; ASSIGNORS:BELL INDUSTRIES, INC., A CALIFORNIA CORPORATION; BELL INDUSTRIES, INC., A MINNESOTA CORPORATION; REEL/FRAME:018826/0503 2007-01-31		
2007-01-24	AS	-

Description: ASSIGNMENT SKYTEL CORP., VIRGINIA MERGER; ASSIGNOR:SKYTEL COMMUNICATIONS, INC.; REEL/FRAME:018797/0318 2004-12-31		
2006-10-13	FPAY	+
Description: FEE PAYMENT		
2002-10-30	REMI	-
Description: MAINTENANCE FEE REMINDER MAILED		
2002-10-11	FPAY	+
Description: FEE PAYMENT		
1999-09-14	CC	-
Description: CERTIFICATE OF CORRECTION		
1998-12-22	AS	-
Description: ASSIGNMENT SKYTEL COMMUNICATIONS, INC., MISSISSIPPI ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:MOBILE TELECOMMUNICATION TECHNOLOGIES (NTEL); REEL/FRAME:009657/0936 1998-12-14		
1996-09-05	AS	-
Description: ASSIGNMENT MOBILE TELECOMMUNICATION TECHNOLOGIES, MISSISSIPPI ASSIGNMENT OF ASSIGNORS INTEREST; ASSIGNOR:PINTER, GREGORY J.; REEL/FRAME:008218/0879 1996-07-16		

Post-Issuance (US): CORR-CERT Certificate of Correction 1999-09-14 1999 a Certificate of Correction was issued for this patent

Reassignment (US) Table:

Assignee	Assignor	Date Signed	Reel/Frame	Date
NEWCASTLE PARTNERS L.P.,DALLAS,TX,US	BELL INDUSTRIES, INC.	2007-03-12	019009/0529	2007-03-14
	BELL INDUSTRIES, INC.	2007-03-12		
Conveyance: SECURITY AGREEMENT				
Corresponent: RANDY M. FRIEDBERG, ESQ. OLSHAN GRUNDMAN FROME ROSENSZWEIG ET AL PARK AVENUE TOWER 65 EAST 55TH STREET NEW YORK, NY 10022				
WELLS FARGO FOOTHILL INC. AS AGENT,SANTA	BELL INDUSTRIES, INC., A CALIFORNIA	2007-01-31	018826/0503	2007-01-31

MONICA,CA,US	CORPORATION			
	BELL INDUSTRIES, INC., A MINNESOTA CORPORATION	2007-01-31		
Conveyance: PATENT SECURITY AGREEMENT				
Corresponent: PAUL HASTINGS JANOFSKY & WALKER LLP 515 SOUTH FLOWER STREET, 25TH FLOOR LOS ANGELES, CA 90071				
SKYTEL CORP.,ASHBURN,VA,US	SKYTEL COMMUNICATIONS, INC.	2004-12-31	018797/0318	2007-01-24
Conveyance: MERGER (SEE DOCUMENT FOR DETAILS).				
Corresponent: EDEN STRIGHT 1515 COURTHOUSE ROAD, SUITE 500 ARLINGTON, VA 22201-2909				
SKYTEL COMMUNICATIONS INC.,JACKSON,MS,US	MOBILE TELECOMMUNICATION TECHNOLOGIES (NTEL)	1998-12-14	009657/0936	1998-12-22
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).				
Corresponent: FINNEGAN, HENDERSON, FARABOW ETAL. JOHN M. ROMARY 1300 I STREET, N.W. WASHINGTON, DC 20005-3315				
MOBILE TELECOMMUNICATION TECHNOLOGIES,JACKSON, MS,US	PINTER, GREGORY J.	1996-07-16	008218/0879	1996-09-05
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).				
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Gregory J. Pinter	
U.S. Patent No.:	5,894,506	Attorney Docket No.: 39521-0003IP1
Issue Date:	April 13, 1999	
Appl. Serial No.:	08/708,696	
Filing Date:	September 5, 1996	
Title:	METHOD AND APPARATUS FOR GENERATING AND COMMUNICATING MESSAGES BETWEEN SUBSCRIBERS TO AN ELECTRONIC MESSAGING NETWORK	

DECLARATION OF DR. RAJEEV SURATI

1. My name is Dr. Rajeev Surati of Cambridge, Massachusetts. I understand that I am submitting a declaration offering technical opinions in connection with the above-referenced *Inter Partes* review proceeding pending in the United States Patent and Trademark Office for U.S. Patent No. 5,894,506 ("the '506 Patent"), and prior art references relating to its subject matter. My current curriculum vita is attached and some highlights follow.

2. I have over twenty (20) years of experience in electrical engineering and computer science and in network messaging. I attended the Massachusetts Institute of Technology (MIT) from 1988 to 1999, during which, I earned a Bachelor of Science (1992) , Master of Science (1995) and a Doctor of Philosophy (1999) in electrical engineering and computer science.

3. While at MIT, starting in 1988, I extensively worked with a two-way network messaging system known as the Zephyr messaging system, which was part of MIT's project Athena, MIT's LAN based distributed computing infrastructure.

4. I am the inventor of US Patent 5,943,478, which is titled, "System for Popup Messaging over the Internet," and describes a two-way messaging system like AOL Instant Messenger and MIT's Zephyr service built at Internet scale.

5. In 1996, I founded a company, Flash Communications, which was focused on technology related to US Patent 5,943,478 and associated technology that I had developed related to pop-up two-way messaging over the Internet. Flash Communications was sold to Microsoft Corporation in 1998,

and Flash Communications' messaging technology was incorporated into Microsoft's Messenger service and Microsoft Exchange 2000 Instant Messaging Server.

6. While working at Microsoft between 1999 and 2000, I implemented an XML-based protocol that formed a basis for the Extensible Messaging and Presence Protocol (XMPP), which is now an IETF standard for the Exchange Instant Messaging Server. I participated internally with the program management team on helping specify this protocol for the IETF standardization process.

7. During my work at Microsoft, I co-invented the technology described in US Patent 6,415,318, titled "Inter-enterprise Messaging System Using Bridgehead Servers," which describes a particular type of instant two-way messaging system now being used in the Microsoft Exchange product, and US Patent 6,260,148, titled "Methods and Systems for Message Forwarding and Property Notifications Using Electronic Subscriptions," which describes a particular scheme for implementing two-way network based instant messaging.

8. Between 2000 and 2004, I worked as a consultant and investor at Nexaweb Corporation, where I helped implement several two-way messaging features over HTTP.

9. I founded Scalable Display Technologies in 2004, and I have been the President and Chairman of the company since the founding. The products and services of the company are based on technologies developed for my Ph.D. thesis and related patents.

10. Over the course of my career, I have authored and co-authored some ten (10) publications and invited talks on various aspects of electrical engineering and computer science, including my Bachelor of Science thesis entitled "A Parallelizing Compiler based on Partial Evaluation," which was awarded the Best Undergraduate Thesis in Computer Science in 1992 at MIT.

11. For my contributions as an inventor and entrepreneur, I have received several awards, including the Global Indus Technovator Award 2009 and Laureate of 2009 Computer World Honors Program.

12. I am on the advisory boards of several technology companies, including UnifySquare, which is a unified communications/realtime collaboration consultancy; Paneve, which develops general purpose ASIC coupled with compiler technology; Nexaweb, which develops realtime web

application frameworks using HTTPS; Antix Labs, which develops compiler technology for universal gaming platform; Permabit, which develops content addressable storage; and Evoque, which is an ecommerce enabling platform publisher.

13. I have no financial interest in either party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

14. I have reviewed the content of U.S. Patent No. 5,894,506 (the "'506 Patent"). Additionally, I have reviewed the following documents, each cited by/in this declaration, including: U.S. Patent No. 5,850,594 to Cannon et al. ("Cannon"); U.S. Patent No. 5,970,122 to LaPorta et al. ("LaPorta"); U.S. Patent No. 5,588,009 to Craig A. Will ("Will"); and U.S. Patent No. 5,784,001 to Deluca et al. ("Deluca"). I have also reviewed certain sections of the prosecution history of the '506 Patent; the claim construction order from *Mobile Telecommunications Technologies, LLC v. Apple Inc.*, Docket No. 2:13-cv-258 (E.D. Tex.) ("MTel Litigation"); and Plaintiff's Opening Brief on Issues of Claim Construction from the MTel Litigation ("Patent Owner's Opening Brief").

15. Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the '506 Patent at the time of the invention, and I have done so during my review of these materials. I believe one of ordinary skill as of September 5, 1996 (the priority date of the '506 Patent) would have a Bachelor's degree in computer science or computer engineering, as well as practical experience in computer networking and in some aspect of two-way messaging with respect to computer networks. I base this on my own personal experience, including my knowledge of colleagues and others at the time. With this in mind, for purposes of this analysis, references that I make to the views of a person of ordinary skill are intended to relate the views of that person as of September 5, 1996 or earlier, whether stated with respect to the present or past tense.

16. I have been informed that claim terminology must be given the broadest reasonable interpretation during an IPR proceeding. I have been informed that this means the claims should be interpreted as broadly as their terms reasonably allow, but that such interpretation should not be inconsistent with the patent's specification and with usage of the terms by one of ordinary skill in the art.

Counsel has also informed me that this may yield interpretations that are broader than the interpretation applied during a District Court proceeding, such as the pending MTel litigation.

17. My findings, as explained below, are based on my study, experience, and background in the fields discussed above, informed by my education in electrical engineering and computer science, and my experience in the design and analysis of messaging systems.

18. This declaration is organized as follows:

I. Brief Overview of the '506 Patent (page 4)

II. Discussion of Cannon (page 11)

III. Discussion of Will and Combination with Cannon (page 17)

IV. Discussion of LaPorta and Combinations with Cannon and Will (page 26)

V. Discussion of Deluca and Combinations with LaPorta (page 37)

VI. Conclusion (page 43)

I. BRIEF OVERVIEW OF THE '506 PATENT

19. The '506 Patent is directed to a "method and apparatus for generating and communicating messages between subscribers to an electronic messaging network." APL-1001, Title. The '506 Patent includes 21 claims, of which claims 1, 8, 15, 19 and 21 are independent.

20. As a preferred implementation of an electronic messaging network, the '506 Patent describes a calling party terminal 10 that is connected, via communications link 16, to a network operation center (NOC) 12. In turn, the NOC is connected, via communications link 18, to a receiving party terminal. *Id.* at 3:24-35; *see also* Fig. 1 (reproduced below).

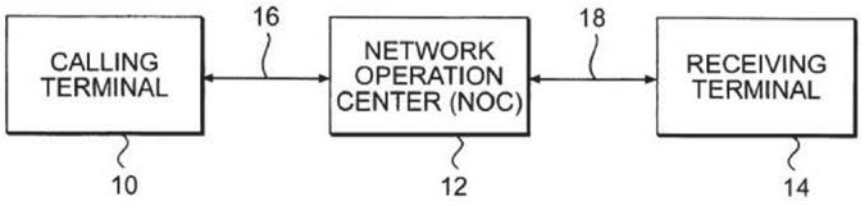

FIG. 1

21. The calling terminal stores a file of canned messages and associated canned message codes. When a calling party at terminal 10 wishes to send a message to a receiving party at terminal 14, the calling terminal 10 retrieves the file of canned messages from the terminal storage and displays the file to the calling party. The calling party selects one of the canned messages from the displayed file of canned messages using a suitable pointing means, such as a mouse or a cursor. Based on the calling party's selection, the terminal 10 retrieves from the file the canned message code associated with the selected canned message. *Id.* at 3:44-58.

22. The '506 Patent describes that in some implementations, the calling party may add response options to the selected canned messages. In such implementations, the calling terminal 10 maintains a file of canned response options and associated response codes. When a calling party at terminal 10 wishes to add response options to a selected canned message, the calling terminal 10 retrieves the file of canned response options from the terminal storage and displays the file to the calling party. The calling party selects one of the canned response options from the displayed file of canned response options using a suitable pointing means, such as a mouse or a cursor. Based on the calling party's selection, the terminal 10 retrieves the canned response code associated with the selected canned response option. *Id.* at 4:33-48.

23. In some implementations, the calling party may add a parameter, e.g., time, date, or phone number, to the selected canned message, using an appropriate entry device, e.g. a keypad. *Id.* at 5:59-63. The parameter may be added as an alternative, or in addition, to the response options. *Id.* at 4:48-56.

24. The calling terminal 10 compiles the retrieved message code associated with the selected canned message with an appropriate indicator code, calling and receiving terminal addresses. *Id.* at 3:66. If a response option is selected, the associated response code is compiled with the canned message code. Additionally or alternatively, if a parameter is selected, the parameter is compiled with the canned message code (along with possibly the canned response code). *Id.* at 3:59-66, 4:48-53. The calling party then transmits the compiled canned message code, together with the compiled canned response code or added parameters, or both, if any, with calling and receiving terminal addresses to NOC 12 over communications link 16. *Id.* at 3:66-4:32, 4:53-5:44.

25. Upon receiving the compiled canned message code (along with the response code and/or added parameters, if any) with calling and receiving terminal addresses from the calling terminal 10, the NOC 12 determines whether the receiving terminal 14 can accept the canned message/response options in code form, or whether these must be transmitted in full text to the receiving terminal 14. If the receiving terminal 14 can accept the canned message/response option code(s), they are transmitted to the receiving terminal 14 in code form. *Id.* at 5:45-6:15.

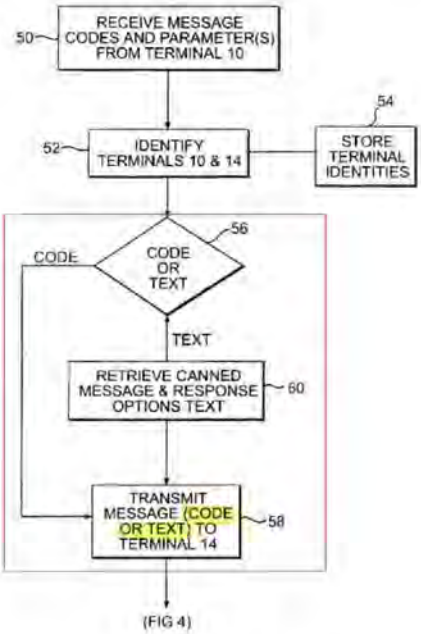

FIG. 3

26. If the designated receiving party terminal is not equipped to process canned message/response option codes, NOC 12 uses the canned message/response option codes received from the calling terminal 10 to retrieve from the appropriate file(s) the text of the associated canned message and multiple response options, if any. The text of the canned message and response options, together with parameters, is then transmitted in standard message code format by NOC 12 to the receiving terminal 14. *Id.* at 6:15-24. *See also* Fig. 3 (reproduced and annotated herein).

27. The '506 Patent describes that the NOC 12 stores in memory a file of canned messages and associated canned message codes or a file of canned response options and associated response codes, or both, that correspond to the file of canned response options and associated response codes stored at the calling terminal 10. *Id.* at 1:54-59, 2:23-27. In some implementations, the receiving terminal 14 also stores corresponding files of canned messages and message codes, and canned multiple response options and response codes. *Id.* at 2:28-35, 6:35-38.

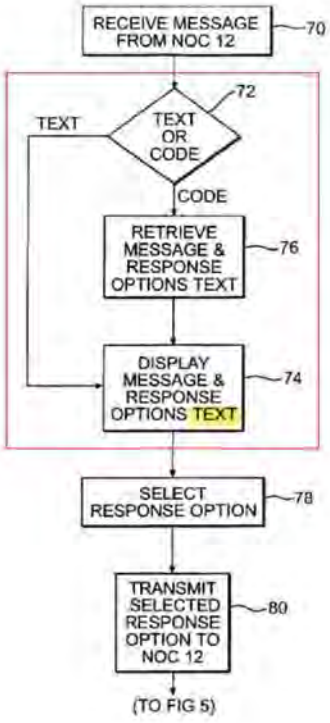

FIG. 4

28. Describing the operation of the receiving terminal 14, the '506 Patent discloses that upon receiving the canned message/response option transmission from NOC 12, the receiving terminal 14 determines whether the canned message/response option reception is in message text or code. If in text, the canned message, along with any response options and/or parameters, are displayed to the receiving party. However, if the reception is in canned message/response option codes, the

receiving terminal 14 retrieves the associated canned messages along with the canned response options and/or parameters, if any, from the files stored at the receiving terminal 14. The retrieved canned message is displayed, along with the response options and/or parameters, if any, in text form for viewing by the receiving party terminal. *Id.* at 6:25-41. *See also* Fig. 4 (reproduced and annotated herein).

29. If any response options are displayed to the receiving party, the receiving party may select an appropriate response option, which is then transmitted by the receiving terminal 14 back to NOC 12. *Id.* at 6:42-45. When the NOC 12 receives the selected response option transmitted by the receiving party terminal 14, it determines whether the received response option is in ASCII text code format or in canned response option code. If in text code, the NOC relays the selected response option to the calling party terminal 10. However, if the selected response option is in canned response option code, the NOC 12 determines whether to transmit the selected response option to the calling party terminal in canned response code or in ASCII text code. If the former, the canned response code is transmitted to the calling party terminal 10 as received from the receiving terminal. If in ASCII text code, NOC 12 accesses its stored canned multiple response option file and, using the received response option code, retrieves the selected canned response option text, which the NOC then transmits in ASCII text code to the calling party terminal 10. *Id.* at 6:57-7:12.

30. Upon receiving the selected response option relayed by NOC 12, the calling terminal 10 determines whether the response option is in text code format or canned response code. If in text code, the calling terminal 10 decodes the response option and displays to the calling party. If the selected response option is in code form, the calling terminal 10 accesses the stored response options file and, using the received response option code, retrieves the associated response option text, which is then displayed to the calling party. *Id.* at 7:13-22.

31. In describing a canned message and message code, the '506 Patent discloses that "many paging messages consists of a relatively small number of common phrases, such as 'I am on the way home', 'I am working late', 'Can we meet for lunch', etc. This being the case, such commonly used phrases can be treated as 'canned' messages that can be replaced by short message codes as simple as, for example, one or several ASCII characters." *Id.* at 1:43-49 (emphasis added). The '506 Patent also states that "[t]he calling party browses through the file to determine if the text of

any of the canned messages is appropriate to convey the particular message that the calling party wishes to send to the receiving party," *id.* at 1:38-49 (emphasis added); "NOC . . . determines . . . whether the canned message must be transmitted in full text to the receiving party terminal," *id.* at 6:7-12 (emphasis added); "determining whether the second terminal can receive the canned message in a text form or message code form; and communicating the selected canned message to the second terminal in either message code form or text code form in response to the determination," *id.* at 8:60-65 (emphasis added).

32. With reference to a canned response, the '506 Patent discloses that "multiple response options may also be canned responses maintained in files at the network operation center and the subscriber terminals and, like the canned messages, have assigned response codes that are handled in the same manner as the message codes." *Id.* at 2:23-27.

33. Based on the above teachings of the '506 Patent and in view of my education and experience, it is my understanding that, to a person of ordinary skill in the art at the time of filing the '506 Patent, a broadest reasonable interpretation of a "canned message" and "canned multiple response options" would be broad enough to cover a "predefined sequence of characters" and "predefined responses to a canned message," respectively. In addition, a broadest reasonable interpretation of a "message code" or "response code" would be broad enough to cover any relatively short code, e.g., one or several ASCII characters, *id.* at 1:48-49, with the understanding that a "message code" corresponds to a "canned message" and a response code corresponds to a "canned response."

34. In describing the NOC and the calling terminal, the '506 Patent illustrates a preferred structure of the calling terminal in Fig. 7 (reproduced below). With reference to Fig. 7, the '506 Patent describes the calling terminal as including, among other components, a central processing unit CPU 110, a read-only memory ROM 112 that stores an application program for controlling terminal operation and a random access memory RAM 114 that stores the canned message/response options/parameter files and associated codes. *Id.* at 7:46-50.

35. The '506 Patent states that the calling terminal also includes a message compiler 116 that is used for "assembling the message/response options/parameter codes, indicator and separator codes, and address codes into a message under the control of the application program and CPU 110." *Id.* at 7:50-54. In addition, the calling terminal 10 includes a terminal keypad 126 that is used to

retrieve canned message/response options/parameter files from RAM 114, to scroll through the displayed files, and to select the canned message/response options/parameter(s) appropriate for sending to the receiving party, among other uses. *Id.* at 7:60-66.

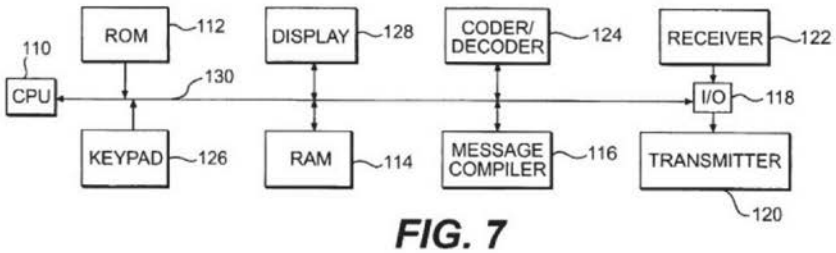

FIG. 7

36. Based on the above teaching of the '506 Patent and in view of my education and experience, it is my understanding that, to a person of ordinary skill in the art at the time of filing the '506 Patent, a broadest reasonable interpretation of a "calling terminal" or a receiving terminal" would be broad enough to cover a messaging device, including, for example, a two-way paging receiver ("pager"). *See also id.* at 1:22-35 and 3:32-38.

37. Based on the above teaching of the '506 Patent and in view of my education and experience, it is my understanding that, to a person of ordinary skill in the art at the time of filing the '506 Patent, a broadest reasonable interpretation of a "message compiler" would be broad enough to cover a processor that executes a software program for processing messages and associated message codes, or a software program executed by a processor for processing messages and associated message codes. See, e.g., ¶34.

38. In addition, based on the above teaching of the '506 Patent and in view of my education and experience, it is my understanding that, under a broadest reasonable interpretation, a person of ordinary skill in the art at the time of filing the '506 Patent would use the calling terminal, or components of the calling terminal (e.g., CPU 110, ROM 112, RAM 114, or any suitable combination of these) for retrieving from memory the file of canned messages, the file of multiple response options, the file of added parameters, or any suitable combination of these, along with the associated message codes, response codes, parameter codes, or any suitable combination of these. See, e.g., ¶¶21-22, 34.

39. Furthermore, based on the above teaching of the '506 Patent and in view of my education and experience, it is my understanding that, under a broadest reasonable interpretation, a person of ordinary skill in the art at the time of filing the '506 Patent would use the calling terminal, or components of the calling terminal (e.g., terminal keypad 126, a mouse, a cursor, or any suitable combination of these), for selecting a canned message, a response option, a parameter, or any suitable combination of these, for sending to the receiving party. See, e.g., ¶¶22, 34.

40. The '506 Patent also illustrates a preferred structure of the NOC in Fig. 8 (reproduced below). With reference to Fig. 8, the '506 Patent describes the NOC as including a "CPU 131 [that is] connected by a system bus 132 to an input/output (I/O) device 134, to which a transmitter 136 and a receiver 138 are connected." APL-1001, 8:8-10. The NOC also includes memory, such as ROM 139 for storing application programs, and RAM 140 for storing canned messages, response options, and parameters files, among others. *Id.* at 8:10-24. In addition, the NOC includes a message compiler for message formatting and for adding appropriate codes. *Id.* at 8:25-28.

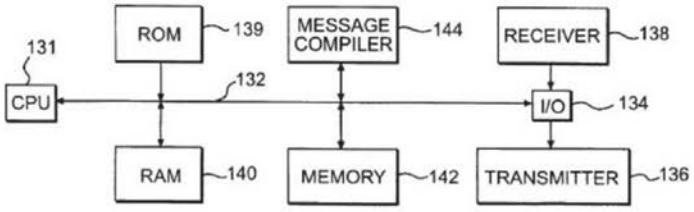

FIG. 8

41. Based on the above teaching of the '506 Patent and in view of my education and experience, it is my understanding that, to a person of ordinary skill in the art at the time of filing the '506 Patent, a broadest reasonable interpretation of a "network operation center " would be broad enough to cover a network device. See, e.g., *id.* at 3:25-40, ¶¶19-20, 39 and Fig. 1.

II. DISCUSSION OF CANNON

42. In general, Cannon describes a method and apparatus for efficiently transmitting addresses and messages from portable messaging units (PMUs) over a wireless communication channel. APL-1004, title. The communications system disclosed by Cannon provides two-way messaging

in which a subscriber of the communications system, e.g., a user of a portable messaging unit is able to transmit messages to a user of another portable unit or a fixed device. It may be desirable to keep such messages short because the messages are generally delivered and/or received over a wireless communication channel, which usually has a limited bandwidth that permits only a limited amount of information to be transmitted over the channel within a specified time interval. However, subscribers to the communication system often wish to send and receive relatively long messages. APL-1004, 1:14-27.

43. The communications system 100 described by Cannon and illustrated in Fig. 1 (reproduced below) includes a system controller 110 and multiple PMUs 105. *Id.* at 1:41-43. The communications system 100 communicates messages between an originator PMU 105 and a destination PMU 105 through the system controller 110 for providing two-way communication. *Id.* at 2:8-13.

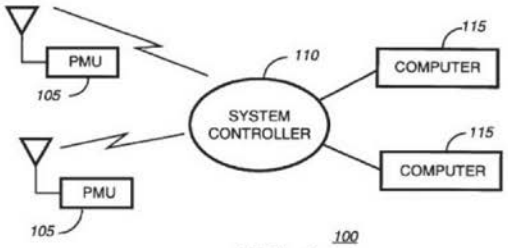

FIG. 1

44. Cannon discloses that the PMUs use relatively short codes, which are referred to as "aliases," to communicate frequently transmitted information, where the frequently used messages are represented by message aliases. *Id.* at 2:19-24. Each message alias can be associated with a more lengthy message. *Id.* at 2:31-32.