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041305

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	51876P836
First Inventor	JinWoo You, et al.
Title	wireless communicating terminal for providing integrated messaging service and method thereof
Express Mail Label No.	EV339909104US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

ADDRESS TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. ☐ Applicant claims small entity status. See 37 CFR 1.27.
3. ☒ Specification *[Total Pages 25]* *(preferred arrangement set forth below)*
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table, or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
4. ☒ Drawing(s) *(35 U.S.C. 113)* *[Total Sheets 6]*
5. Oath or Declaration *[Total Pages _]*
   a. ☐ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies

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9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R. § 3.73(b) Statement *(when there is an assignee)* ☐ Power of Attorney
11. ☐ English Translation Document *(if applicable)*
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment ☐ Application Amended to Reflect Claim of Priority
14. ☒ Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. ☒ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other: priority request; formal drawings transmittal

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____

Prior application Information: Examiner _____ *Group/Art Unit:* _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

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Signature		*Date*	4/18/05

Based on PTO/SB/05 (04-04) as modified by Blakely, Sokoloff, Taylor & Zafman (Wr) 06/04/2004.
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LG Elecs. v. Pantech Corp.
IPR2023-01271 Page 1

Effective 12/08/2004
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818)

FEE TRANSMITTAL for FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT	($)	1,000.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	JinWoo You
Examiner Name	
Art Unit	
Attorney Docket No.	51876P836

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20. ☐ Credit any overpayments

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee(s) Paid ($)
Utility	300	150	500	250	200	100	1,000.00
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description

Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent

Each independent claim over 3 or, Reissues, each independent claim more than in the original patent

Multiple independent claims

Total Claims		Extra Claims		Fee ($)		Fee Paid	Multiple Dependent Claims Fee ($)	Multiple Dependent Claims Fee Paid
15	- 20 or HP =	0	X	50.00	=	$0.00		

HP = highest number of total claims paid for, if greater than 20

Indep. Claims		Extra Claims		Fee ($)		Fee Paid
3	- 3 or HP =	0	X	200.00	=	$0.00

HP = highest number of independent claims paid for, if greater than 3

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets of sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
31	- 100 =	-69	/ 50 =	_____ (round up to a whole number)	X	_____	=	_____

4. OTHER FEE(S) **Fees Paid ($)**

Non-English Specification, $130 fee (no small entity discount)

Other: _____

Recording of a patent assignment

5. TOTAL AMOUNT OF PAYMENT ($) 1,000.00

SUBMITTED BY Complete (if applicable)

Name (Print/Type)	Eric S. Hyman	Registration No. (Attorney/Agent)	30,139	Telephone	(310) 207-3800
Signature				Date	4/12/05

Based on PTO/SB/17 (10-03) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 02/10/2004.
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Express Mail No.: EV339909104US
DOCKET NO.: 51876P836

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

JINWOO YOU, ET AL.

Application No.:

Filed:

For: **wireless communicating terminal for providing integrated messaging service and method thereof**

Art Group:

Examiner:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF FORMAL DRAWINGS

Sir:

Enclosed herewith for filing in the above-identified U.S. Patent Application are the formal drawings, 6 sheets including 6 Figures. Please charge any additional fees or credit any overpayment to Deposit Account No. 02-2666. A duplicate copy of the Fee Transmittal is enclosed for this purpose.

Respectfully submitted,
Blakely, Sokoloff, Taylor & Zafman LLP

Dated: 4/19/05

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Our Docket No.: 51876P836
Express Mail No.: EV339909104US

UTILITY APPLICATION FOR UNITED STATES PATENT

FOR

WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

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WIRELESS COMMUNICATIN TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

Field of the Invention

The present invention relates to a wireless communication terminal having a function of providing an integrated messaging service; and, more particularly, to a wireless communication terminal and a method for transmitting and receiving various kinds of messages, e.g., a text message and a multimedia message, by using an integrated messaging service program without changing a transmission protocol or a network.

Description of Related Art

A wireless communication terminal includes a mobile communication terminal, a Personal Communication Station (PCS), a Personal Digital Assistance (PDA), a smart phone, an International Mobile Telecommunication (IMT)-2000 terminal and a wireless Local Area Network (LAN) terminal capable of transmitting and receiving multimedia contents, e.g., text data, voice data, images, and moving pictures.

The wireless communication terminal provides functions of voice communications and a text messaging. Recently, the mobile terminal is provided with a multimedia message transceiving service including text data, voice data, images, and moving pictures.

A conventional wireless communication terminal provides messaging services in different user interfaces according to the kind of messages e.g., a text message and a multimedia message.

Therefore, in the conventional method, a user should use a different interface according to the message kind to transmit and receive the text message or the multimedia message.

Also, although the user does not need to know each technology used for each message type, the conventional wireless terminal provides different terms for each of messaging menus. Therefore, there is a problem that the user should use the various messaging services frequently in the conventional method.

The conventional wireless communication terminal manages incoming/outgoing messages in an in-box and an out-box based on a concept that the message is a kind of a letter. The conventional messaging service provides late response in a communication, compared to an Internet instant messenger.

Summary of the Invention

It is, therefore, an object of the present invention to provide a wireless communication terminal and a method for transmitting and receiving different kinds of messages, e.g., a text message and a multimedia message in an integrated user interface by using an integrated messaging service program in

order to provide an easy and user-friendly interface without modifying a transmission protocol or a network.

In accordance with an aspect of the present invention, there is provided a wireless communication terminal having a function of providing an integrated messaging service, the wireless communication terminal including: a wireless transceiver for transceiving a message to/from an outside device through a wireless network; a storage for storing an integrated messaging service program and messages in order to provide an integrated user interface (IUI); a keypad for receiving a message content and a menu selecting signal in the IUI; a displayer for displaying the message content and description data in the IUI; and a controller for providing the IUI to the keypad and the displayer by operating the integrated messaging service program, determining a message kind of the message to be transmitted which is inputted in the IUI, generating an outgoing message including identification data corresponding to the message kind, transmitting the outgoing message, displaying the message content and the description data of the outgoing message in the IUI, determining a message kind of a received message, dividing the received message into a message content and description data, displaying the message content and the description data in the IUI, and controlling elements in the wireless communication terminal.

In accordance with another aspect of the present invention, there is provided a method for transmitting a

message in a wireless communication terminal for providing an integrated messaging service, the method including the steps of: inputting a message content in an IUI; determining a message kind of the message content; generating an outgoing message including identification data; transmitting the outgoing message to a receiving terminal; and displaying the message content with description data in the IUI.

In accordance with another aspect of the present invention, there is provided a method for receiving a message in a wireless communication terminal for providing an integrated message service, the method including the steps of: determining a message kind of an incoming message; informing of the incoming message to a user; when a display form transformation request is received, dividing the incoming message into a message content and identification data and transforming the message content into a display form of an IUI; and displaying the transformed message content and description data in the IUI.

Brief Description of the Drawings

The above and other objects and features of the present invention will become apparent from the following description of the preferred embodiments given in conjunction with the accompanying drawings, in which:

Fig. 1 is a block diagram showing a wireless communication terminal having a function of providing an

integrated message service in accordance with a preferred embodiment of the present invention;

Fig. 2 is a flowchart describing a method for transmitting a message in a wireless communication terminal having a function of providing an integrated message service in accordance with a preferred embodiment of the present invention;

Fig. 3 is a flowchart describing a method for receiving a message of a wireless communication terminal having a function of providing an integrated message service in accordance with a preferred embodiment of the present invention; and

Figs. 4A to 4C are block diagrams showing an integrated user interface in a wireless communication terminal having a function of providing an integrated message service in accordance with a preferred embodiment of the present invention.

Detailed Description of the Invention

Hereinafter, a wireless communication terminal and the method for providing the integrated messaging service will be described in detail with reference to the accompanying drawings.

The wireless communication terminal in accordance with the present invention can transmit/receive various kinds of messages such as a text message and a multimedia message.

Fig. 1 is a block diagram showing the wireless

communication terminal having a function of providing an integrated message service in accordance with a preferred embodiment of the present invention.

As shown, the wireless communication terminal having a function of providing an integrated messaging service includes a wireless transceiver 11, a storage 12, a CODEC 13, a controller 14, a speaker 15, a keypad 16, a displayer 17 and a microphone 18.

The wireless transceiver 11 transmits/receives a text message and an informing message of a multimedia message to/from another terminal through a wireless network and transmits/receives the multimedia message including a multimedia file to/from a multimedia contents server.

The storage 12 stores an integrated messaging program, a phone book, wherein the integrated messaging program provides an integrated user interface (IUI) for transmitting/receiving messages regardless of a message kind and the phone book includes a telephone number and a nick name of another terminal.

The CODEC 13 converts a voice signal received from the wireless communication terminal into voice and outputs the voice to the speaker 15. Also, the CODEC 13 converts the voice received from the microphone 18 into the voice signal and then transmits the voice signal to the controller 14 so that the voice signal is released through the wireless transceiver 11 under the control of the controller 14.

The controller 14 provides the IUI to the inputting unit

16 and the displayer 17 by operating the integrated messaging program stored in the storage 12. When the wireless communication terminal transmits a message (hereinafter, which is referred to as an outgoing message), the controller 14 determines the message kind of an outgoing message based on whether a multimedia file is included in the message content or not; generates the outgoing message provided with identification data of a determined message kind and transmits the outgoing message; and displays the message content and the identification data of the outgoing message in the IUI. When the wireless communication terminal receives a message (hereinafter, which is referred to as an incoming message), the controller 14 determines the message kind of the incoming message based on the identification data of the incoming message; divides the incoming message into message content and the identification data and transforms the message content according to a display form of the IUI; displays the message content and description data; and controls other elements included in the wireless communication terminal.

The speaker 15 receives the voice from the CODEC 13 and outputs the voice.

The inputting unit 16 receives the message content of the outgoing message and a menu selection signal from the user in the integrated user interface.

The displayer 17 displays the message content of the incoming and outgoing message and the description data.

The microphone 18 receives the voice and transmits the

voice to the CODEC 13.

Fig. 2 is a flowchart describing a method for transmitting a message in the wireless communication terminal having a function of providing an integrated message service in accordance with a preferred embodiment of the present invention.

A message content of the outgoing message is inputted by a user in the IUI at step S201. Because the IUI is one of main menus of the wireless communication terminal, the integrated messaging service is operated automatically by the controller 14 to provide the IUI when the power of the wireless communication terminal is turned on. Therefore, the IUI can be used without an additional request for operating the integrated messaging service.

The controller 14 determines the kind of a message according to whether a multimedia file is included in the message content or not at step S202. If the message content include only texts, the kind of the message content is determined as a text message. If the message content include a multimedia file, the kind of a message is determined as a multimedia message.

The multimedia file means a file including text, image, voice and/or moving pictures. The multimedia file must be transmitted to a receiving terminal through the multimedia contents server differently from the text that is transmitted to the receiving terminal directly.

If the message kind of the outgoing message is the text

message, the identification data for the text message is generated at step S203. The identification data include caller information such as a telephone number and a name and time information such as transmission time.

The outgoing message which is a text message (hereinafter, which will be referred to as an outgoing text message) provided with the message content and the identification data are generated at step S204, and the outgoing text message is transmitted to the receiving terminal at step S205.

The identification data identify the kind of the outgoing message. The text message and the multimedia message are transmitted to the receiving terminal in different routes. Therefore, the identification data of the text message are different from the identification data of the multimedia message.

The message content of the outgoing text message, i.e., the text is transformed into a display form of the IUI and displayed with description data in the IUI at step S206.

The description data present the description of the incoming/outgoing messages in the IUI on the displayer. The description data include incoming/outgoing description data for indicating the incoming message or the outgoing message and file description data, which are applied to only multimedia messages, for indicating a kind of multimedia files such as images, voice and moving images.

For example, the incoming/outgoing description data can be a sender/recipient name, a nickname, a telephone number or

an icon, and the incoming/outgoing description data are displayed on a side of the message content. Also, the file description data can be icons, thumbnails or snapshots of the moving pictures and the file description data are displayed to inform that the multimedia files are included in the messages.

At the step S206, the description data for the outgoing text message includes the outgoing description data.

If the message kind of the outgoing message is the multimedia message, the identification data for the multimedia message are generated at step S203. The identification data for the multimedia messages include the caller information such as a telephone number and a name, the time information such as transmission time, and multimedia file information at step S207.

The multimedia message including the multimedia file and the informing message of the multimedia message are generated at step S208. The informing message is a text message for informing multimedia message transmission and it includes the message content except the multimedia file and the identification data generated at step S207.

The informing message is transmitted to the receiving terminal at step S209 and the multimedia message is transmitted to the multimedia contents server so that the receiving terminal can access to the multimedia contents server to receive the multimedia message with the multimedia file at step S210.

The message content is transformed into the display form

of the IUI and displayed with the description data, wherein the description data include the outgoing description data and the multimedia file data.

Fig. 3 is a flowchart describing a method for receiving a message of a wireless communication terminal having a function of providing an integrated message service in accordance with a preferred embodiment of the present invention.

The message kind of the message received from a transmitting terminal (hereinafter, which is referred to as an incoming message) is determined based on the identification data included in the incoming message at step S301.

If the incoming message is a text message, reception of the incoming message is informed to the user by using an icon, sound or vibration at step S302.

When a request signal for displaying the text message is received through the inputting unit at step S303, the text message is divided into the message content and the identification data at step S304 and the message content is transformed into the display form of the IUI at step S304.

The message content of the text message and the description data are displayed in the IUI at step S305.

If the incoming message is an informing message, reception of the incoming message which is a multimedia message is informed to the user by using an icon, sound or vibration at step S306.

When a request signal for displaying the multimedia message is received through the inputting unit 17 at step S307,

the informing message is divided into the identification data and the message content and then the message content is transformed into the display form of the IUI at step S308.

The message content of the informing message and the description data are displayed in the IUI at step S309, wherein the description data include the incoming description data and the file description data. The file description data can be obtained based on the identification data.

When a request signal for receiving the multimedia message is received through the inputting unit 17 at step S307, the receiving terminal accesses to the multimedia contents server having a Uniform Resource Locator (URL) of the identification data in the informing message and receives the multimedia message with the multimedia file at step S311.

The displayer 16 displays the multimedia message in a display form of a letter supported the conventional wireless communication terminal at step S312.

When a user uses a messaging service in the initial time, the user selects an IUI menu in an initial menu screen to transmit/receive a message in the IUI. On other hand, if a new message is transmitted or received when the user uses the messaging service in the IUI, a message list is scrolled on the displayer so that the oldest message disappears in the message list and the new message is displayed in the message list in a sequence of message reception/transmission. The oldest message can be back to be displayed again upon a user request.

Figs. 4A and 4C are diagrams illustrating integrated user interface of the wireless communication terminal having an integrated messaging service in accordance with an embodiment of the present invention.

Fig. 4A shows an initial screen display of the integrated user interface outputted to provide the integrated messaging service upon a menu selecting signal from the user in accordance with an embodiment of the present invention. Prior to regular message transmission/reception, a user selects a message receiving part to receive a message on the integrated user interface by searching the telephone book, inputting a telephone number directly, or selecting a particular person in the recent call record, which is a list containing recent message transmitting/receiving parts who have transmitted/received messages through the integrated user interface.

Fig. 4B presents an example of messages transmitted and received between a user A and a current user B of the wireless communication terminals. To identify transmitted/received message, 'A' and 'B,' which mean two users, are used as transmitting/receiving identifying information. Also, '(MMS)' is used as data classifying information to distinguish the data type of a multimedia message. Also, it is possible to realize the data classifying information in forms of icons, thumbnail preview images, and miniaturized images from the first scene of video in order to distinguish the data type more in detail.

As shown in a display image 41 of Fig. 4B, short messages transmitted/received between the users A and B and an informing message of a multimedia message transmitted from the user A are outputted onto the integrated user interface in the transmitted/received order. Herein, the messages outputted onto the integrated user interface can be displayed in a plurality of lines or they can be displayed in the form of a letter supported in the conventional wireless communication terminal by selecting a particular message with a cursor or an item selecting signal. Then, a message outputted upon the selection can be converted into an output form of the integrated user interface, i.e., a messenger form. For example, when a short message is elected with a cursor, a full text message is outputted in a plurality of lines. Before the selection, only part of the text message is displayed. When the short message selected with the cursor is selected again by using an item selecting signal, it can be outputted in a letter form, which is supported in the conventional wireless communication terminal, on the entire screen, instead of being outputted in the output form of the integrated user interface.

An image 42 of Fig. 4B shows a display outputted when an informing message of the multimedia message shown in the image 41 is selected by using the item selecting signal. The wireless communication terminal accesses to a multimedia contents server based on the URL of identifying information included in the informing message, receives the multimedia message, i.e., a multimedia file, and outputs it in a letter

form of the integrated user interface supported in the conventional wireless communication terminal. It is also possible to convert the output form from the letter form to the integrated user interface upon a request from the user.

As described above, an entire message can be outputted in the integrated user interface by selecting the cursor and an item selecting signal, and it can be also outputted in the output form of the integrated user interface in the letter form supported by the conventional wireless communication terminal compatibly.

Meanwhile, referring to images 43 and 45 of Fig. 4C, a multimedia message is authored by the user B on an input window of the integrated user interface.

That is, after the text content to be included in the multimedia message is inputted (to be more precise, after the text content is included in an informing message and transmitted), which is shown in the image 43 of Fig. 4C, the user B enters the file selecting menu by inputting a predetermined key and selects a multimedia file to be transmitted to another user, such as an image file, which is shown in an image 44 of Fig. 4C. Herein, the predetermined key means a predetermined menu key, a side key, or a soft key. The key can be embodied in diverse methods. The multimedia file selected by the user B is converted to conform to the output form of the integrated user interface and displayed on the input window and, thus, previously transmitted and received messages are scrolled up and not shown on the monitor,

which is illustrated in an image 45 of Fig. 4C.

Also, the image 45 of Fig. 4C shows that the size of the input window is changed, as the size of the message inputted by the user B becomes large. For example, in case where the content of the text message is long, the size of the input window becomes large. If a multimedia file is attached, the input window becomes small to show the file. Herein, data classification information can be used to inform the user of the attachment of the multimedia file, instead of outputting the file itself.

As described above, the present invention provides an integrated user interface for transmitting/receiving diverse kinds of messages through one integrated user interface by using an integrated messaging service program.

The present invention provides a wireless communication terminal and a method for transmitting and receiving messages of various kinds, e.g., a text message and a multimedia message, by using an integrated messaging service program without changing a transmission protocol or a network to thereby provide a user-friendly interface to a user.

The present invention provides user-friendly interface of the messaging service so that the user can use multimedia messaging service frequently and provides an instant messenger-like interface that can be compared with the conventional messaging service so that the user can exchange responses fast using the integrated messaging service.

Since the present invention can be embodied without

changing the conventional protocol or the network, it does not require additional expense for it.

The present application contains subject matter related to Korean patent application Nos. 2004-25882 and 2004-83073, filed in the Korean intellectual Property Office on April 14, 2004, and October 18, 2004, respectively, the entire contents of which being incorporated herein by reference.

While the present invention has been described with respect to certain preferred embodiments, it will be apparent to those skilled in the art that various changes and modifications may be made without departing from the scope of the invention as defined in the following claims.

What is claimed is:

1. A wireless communication terminal having a function of providing an integrated messaging service, the wireless communication terminal comprising:

a wireless transceiver for transceiving a message to/from an outside device through a wireless network;

a storage for storing an integrated messaging service program and messages in order to provide an integrated user interface (IUI);

a keypad for receiving a message content and a menu selecting signal in the IUI;

a displayer for displaying the message content and description data in the IUI; and

a controller for providing the IUI to the keypad and the displayer by operating the integrated messaging service program, determining a message kind of the message to be transmitted which is inputted in the IUI, generating an outgoing message including identification data corresponding to the message kind, transmitting the outgoing message, displaying the message content and the description data of the outgoing message in the IUI, determining a message kind of a received message, dividing the received message into a message content and description data, displaying the message content and the description data in the IUI, and controlling elements in the wireless communication terminal.

2. The wireless communication terminal as recited in claim 1, wherein the description data include incoming/outgoing description data in order to present whether the message is transmitted or received.

3. The wireless communication terminal as recited in claim 1, wherein the controller generates a multimedia message including a multimedia file and transmits the multimedia message to a multimedia contents server so that a wireless communication terminal of a receiving part accesses to the multimedia contents server and receives the multimedia message when the outgoing message is a multimedia message; and

the controller accesses to the multimedia contents server based on a Uniform Resource Locator (URL) included in an informing message and receives the multimedia message including the multimedia file to thereby display the multimedia message in the IUI when an incoming message is an informing message of the multimedia message.

4. The wireless communication terminal as recited in claim 3, wherein the outgoing/incoming message is displayed with incoming/outgoing description data to indicate whether the message is transmitted or received and file description data to present a file kind included in the message content.

5. The wireless communication terminal as recited in claim 3, wherein when a display form transformation request is

received, an IUI display form is transformed into a conventional display form or the conventional display form into the IUI display form, and the message content is displayed on the displayer.

6. A method for transmitting a message in a wireless communication terminal for providing an integrated messaging service, the method comprising the steps of:

a) inputting a message content in an integrated user interface (IUI);

b) determining a message kind of the message content;

c) generating an outgoing message including identification data;

d) transmitting the outgoing message to a receiving terminal; and

e) displaying the message content with description data in the IUI.

7. The method as recited in claim 6, wherein the description data include incoming/outgoing description data in order to inform whether the message is transmitted or received.

8. The method as recited in claim 6, further comprising a step of:

f) generating a multimedia message including a multimedia file and transmitting the multimedia message to a multimedia contents server so that, at a receiving terminal connects to

the multimedia contents server and receives the multimedia message when an outgoing message is a multimedia message.

9. The method as recited in claim 8, wherein the description data include incoming/outgoing description data in order to inform whether the message is transmitted or received and file description data to inform a file kind of the message content.

10. The method as recited in claim 6, wherein the step d) includes a step of:

d1) when a display form transformation request is received, transforming an IUI display form into a conventional display form or the conventional display form into the IUI display form, and displaying the message content on the displayer.

11. A method for receiving a message in a wireless communication terminal for providing an integrated message service, the method comprising the steps of:

a) determining a message kind of an incoming message;

b) informing of the incoming message to a user;

c) when a display form transformation request is received, dividing the incoming message into a message content and identification data and transforming the message content into a display form of an integrated user interface (IUI); and

d) displaying the transformed message content and

description data in the IUI.

12. The method as recited in claim 11, wherein the description data include incoming/outgoing description data in order to present whether the message is transmitted or received.

13. The method as recited in claim 11, further comprising a step of:

e) in the receiving terminal, accessing to the multimedia contents server based on a Uniform Resource Locator (URL) included in an informing message and receiving the multimedia message including the multimedia file to thereby display the multimedia in the IUI when a receiving message is an informing message of the multimedia message.

14. The method as recited in claim 13, wherein the description data include incoming/outgoing description data in order to present whether the message is transmitted or received and file description data to present the file description data of the message content.

15. The method as recited in claim 11, wherein the step d) includes a step of:

d1) when a display form transformation request is received, transforming an IUI display form into a conventional display form or the conventional display form into the IUI

display form, and displaying the message content on the displayer.

Abstract of the Disclosure

Provided is a wireless communication terminal having a function of providing an integrated messaging service. The wireless communication terminal includes: a wireless transceiver for transceiving a message to/from an outside device through a wireless network; a storage for storing an integrated messaging service program and messages; a keypad for receiving a message content and a menu selecting signal in the IUI; a displayer for displaying the message content and description data in the IUI; and a controller for providing the IUI to the keypad and the displayer, determining a message kind of the message to be transmitted, generating an outgoing message including identification data, transmitting the outgoing message, displaying the message content and the description data in the IUI, determining a message kind of a received message, dividing the received message into a message content and description data, and displaying the message content and the description data in the IUI.

FIG. 1

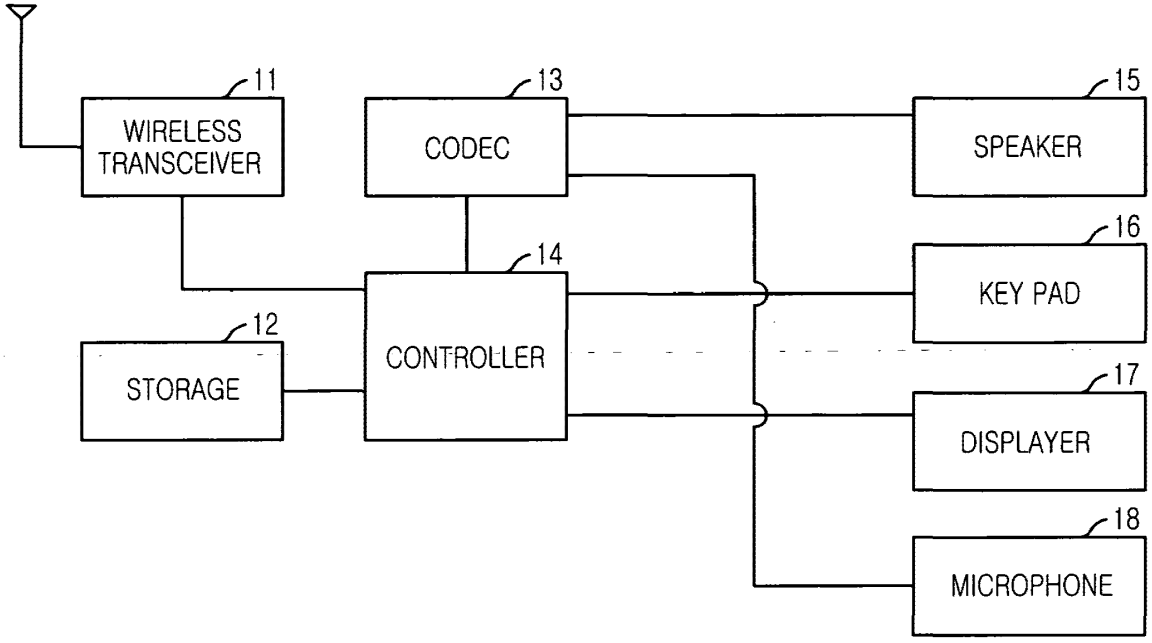

11
WIRELESS TRANSCEIVER
13
CODEC
15
SPEAKER
16
KEY PAD
14
CONTROLLER
12
STORAGE
17
DISPLAYER
18
MICROPHONE

FIG. 2

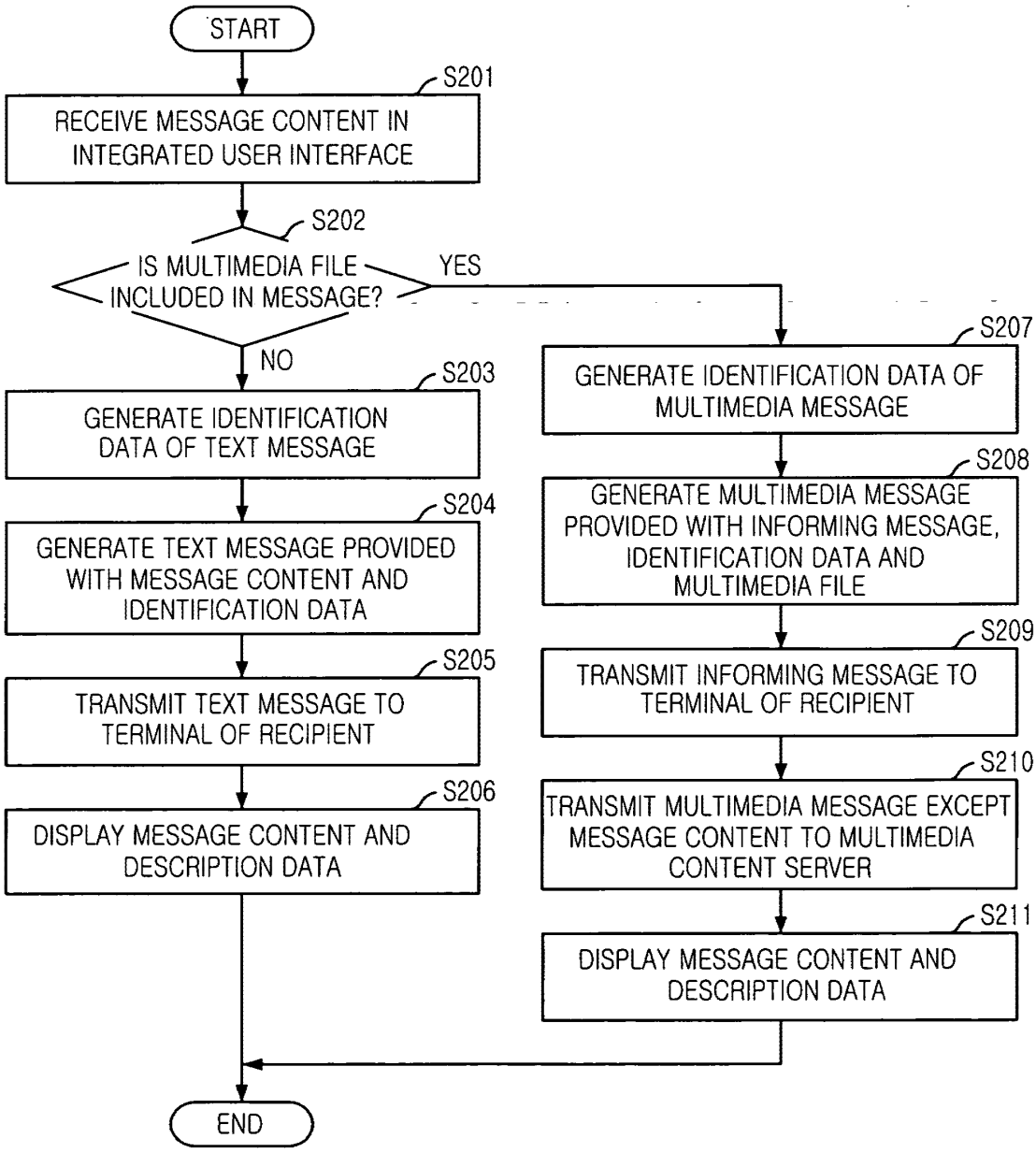

START
S201
RECEIVE MESSAGE CONTENT IN INTEGRATED USER INTERFACE
S202
IS MULTIMEDIA FILE INCLUDED IN MESSAGE?
YES
NO
S203
GENERATE IDENTIFICATION DATA OF TEXT MESSAGE
S204
GENERATE TEXT MESSAGE PROVIDED WITH MESSAGE CONTENT AND IDENTIFICATION DATA
S205
TRANSMIT TEXT MESSAGE TO TERMINAL OF RECIPIENT
S206
DISPLAY MESSAGE CONTENT AND DESCRIPTION DATA
S207
GENERATE IDENTIFICATION DATA OF MULTIMEDIA MESSAGE
S208
GENERATE MULTIMEDIA MESSAGE PROVIDED WITH INFORMING MESSAGE, IDENTIFICATION DATA AND MULTIMEDIA FILE
S209
TRANSMIT INFORMING MESSAGE TO TERMINAL OF RECIPIENT
S210
TRANSMIT MULTIMEDIA MESSAGE EXCEPT MESSAGE CONTENT TO MULTIMEDIA CONTENT SERVER
S211
DISPLAY MESSAGE CONTENT AND DESCRIPTION DATA
END

FIG. 3

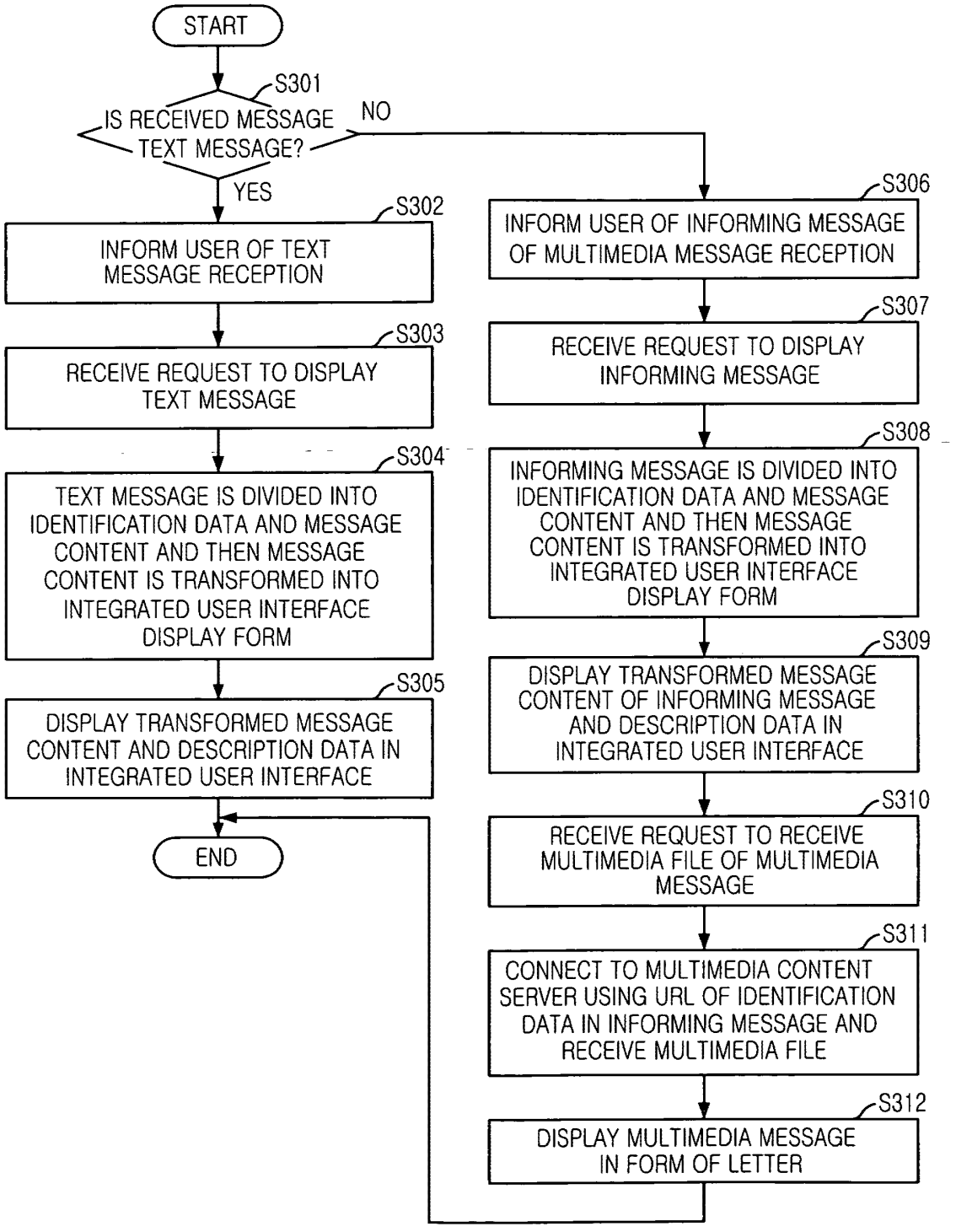
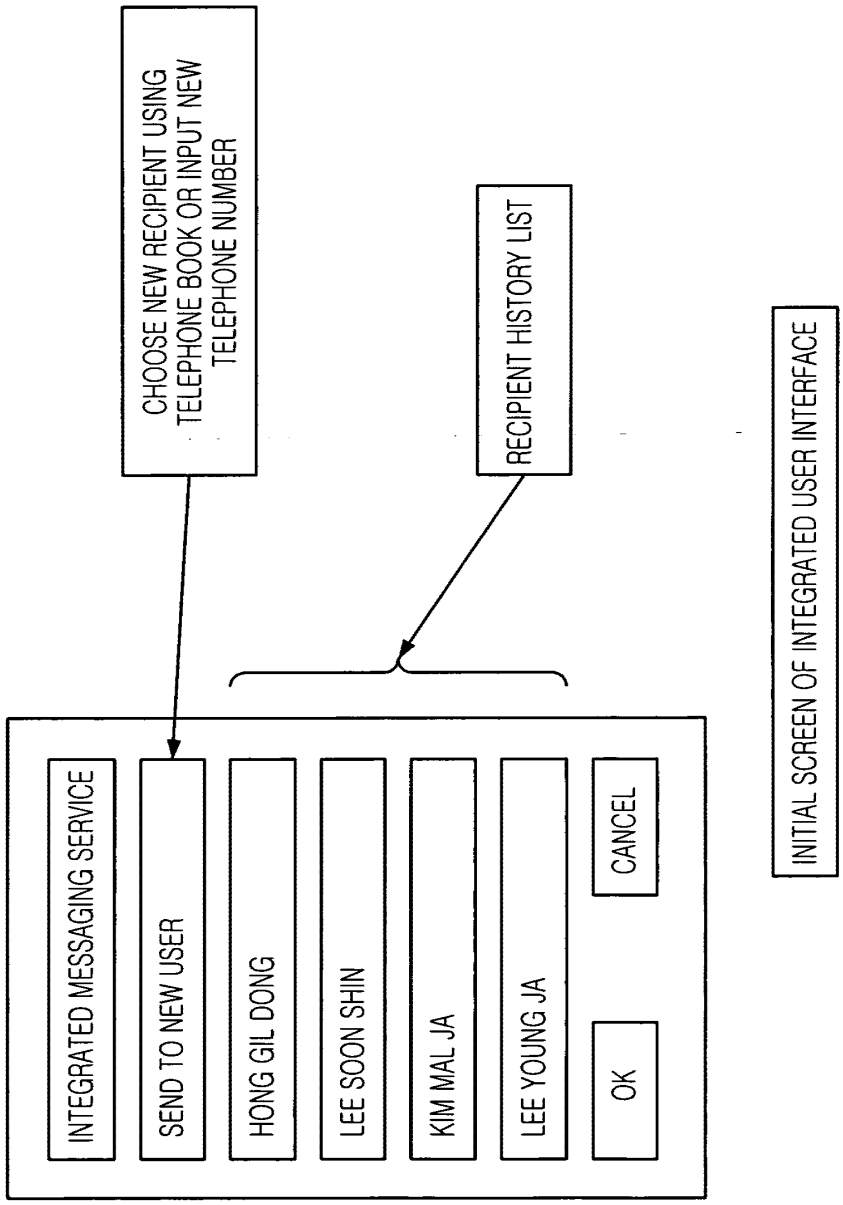

START
S301
IS RECEIVED MESSAGE TEXT MESSAGE?
NO
YES
S302
INFORM USER OF TEXT MESSAGE RECEPTION
S303
RECEIVE REQUEST TO DISPLAY TEXT MESSAGE
S304
TEXT MESSAGE IS DIVIDED INTO IDENTIFICATION DATA AND MESSAGE CONTENT AND THEN MESSAGE CONTENT IS TRANSFORMED INTO INTEGRATED USER INTERFACE DISPLAY FORM
S305
DISPLAY TRANSFORMED MESSAGE CONTENT AND DESCRIPTION DATA IN INTEGRATED USER INTERFACE
END
S306
INFORM USER OF INFORMING MESSAGE OF MULTIMEDIA MESSAGE RECEPTION
S307
RECEIVE REQUEST TO DISPLAY INFORMING MESSAGE
S308
INFORMING MESSAGE IS DIVIDED INTO IDENTIFICATION DATA AND MESSAGE CONTENT AND THEN MESSAGE CONTENT IS TRANSFORMED INTO INTEGRATED USER INTERFACE DISPLAY FORM
S309
DISPLAY TRANSFORMED MESSAGE CONTENT OF INFORMING MESSAGE AND DESCRIPTION DATA IN INTEGRATED USER INTERFACE
S310
RECEIVE REQUEST TO RECEIVE MULTIMEDIA FILE OF MULTIMEDIA MESSAGE
S311
CONNECT TO MULTIMEDIA CONTENT SERVER USING URL OF IDENTIFICATION DATA IN INFORMING MESSAGE AND RECEIVE MULTIMEDIA FILE
S312
DISPLAY MULTIMEDIA MESSAGE IN FORM OF LETTER

FIG. 4A


CHOOSE NEW RECIPIENT USING TELEPHONE BOOK OR INPUT NEW TELEPHONE NUMBER
RECIPIENT HISTORY LIST
INITIAL SCREEN OF INTEGRATED USER INTERFACE
INTEGRATED MESSAGING SERVICE
SEND TO NEW USER
HONG GIL DONG
LEE SOON SHIN
KIM MAL JA
LEE YOUNG JA
CANCEL
OK

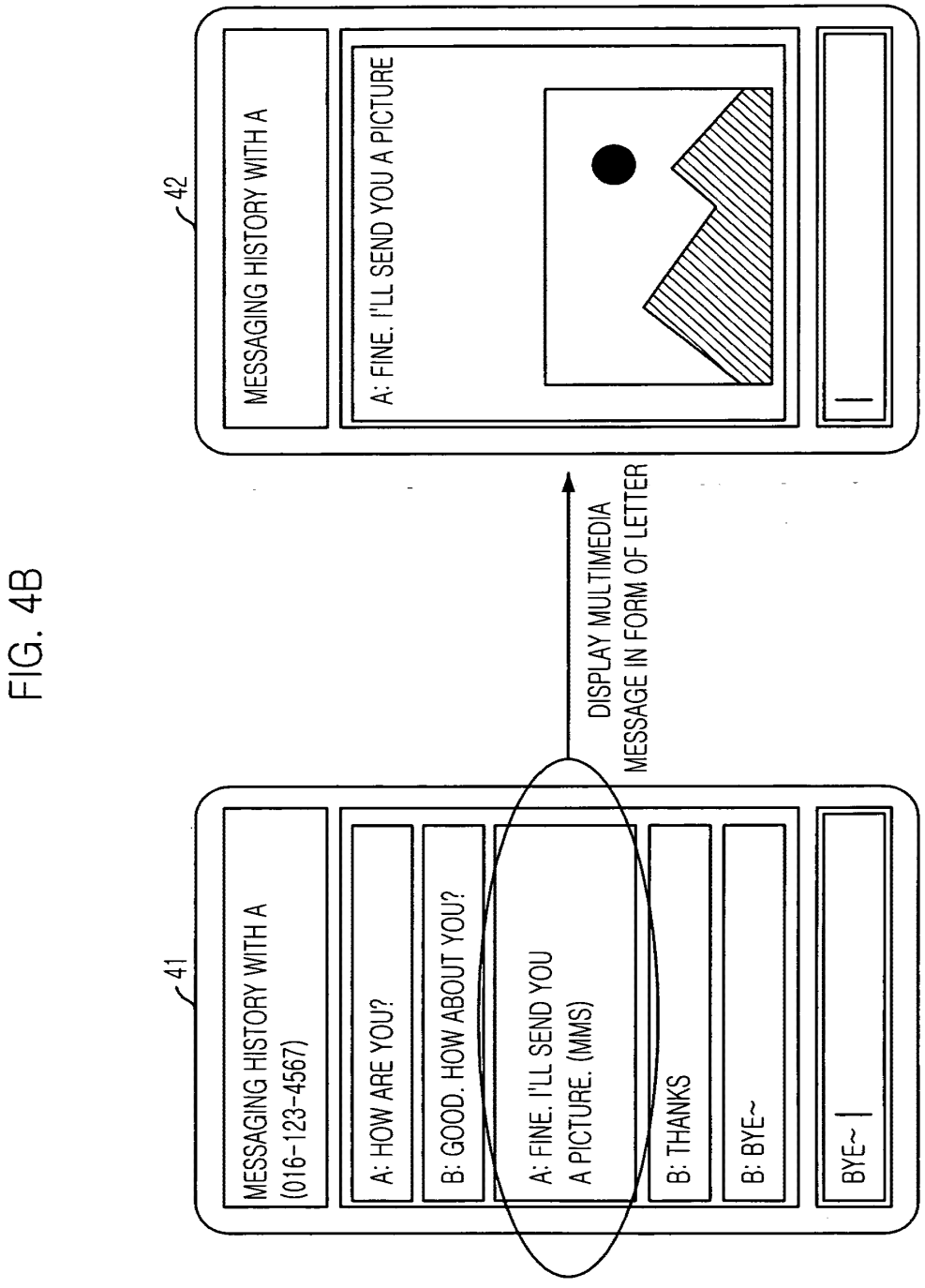

41
MESSAGING HISTORY WITH A (016-123-4567)
A: HOW ARE YOU?
B: GOOD. HOW ABOUT YOU?
A: FINE. I'LL SEND YOU A PICTURE. (MMS)
B: THANKS
B: BYE~
BYE~
DISPLAY MULTIMEDIA MESSAGE IN FORM OF LETTER
42
MESSAGING HISTORY WITH A
A: FINE. I'LL SEND YOU A PICTURE

FIG. 4B

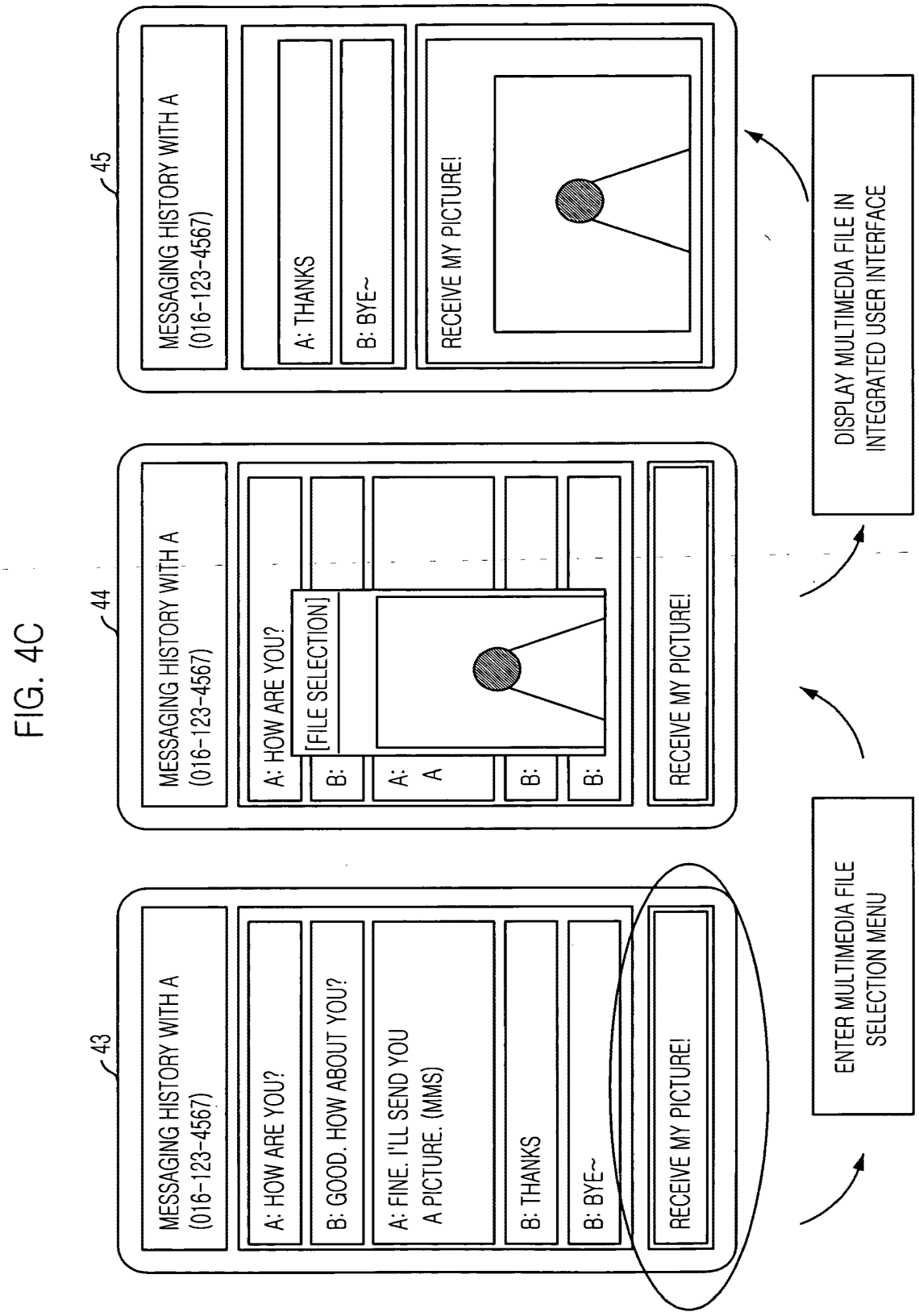

43
MESSAGING HISTORY WITH A (016-123-4567)
A: HOW ARE YOU?
B: GOOD. HOW ABOUT YOU?
A: FINE. I'LL SEND YOU A PICTURE. (MMS)
B: THANKS
B: BYE~
RECEIVE MY PICTURE!
ENTER MULTIMEDIA FILE SELECTION MENU
44
MESSAGING HISTORY WITH A (016-123-4567)
A: HOW ARE YOU?
[FILE SELECTION]
B:
A:
A
B:
B:
RECEIVE MY PICTURE!
DISPLAY MULTIMEDIA FILE IN INTEGRATED USER INTERFACE
45
MESSAGING HISTORY WITH A (016-123-4567)
A: THANKS
B: BYE~
RECEIVE MY PICTURE!

FIG. 4C

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

04/18/2005 SDENBOB1 00000019 11106160

01 FC:1011	300.00	OP
02 FC:1111	500.00	OP
03 FC:1311	200.00	OP

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002 — 489-267/69033

6, 11

PATENT APPLICATION FEE DETERMINATION RECORD
Effective December 8, 2004

11106160

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	15	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	15 minus 20=	* 0
INDEPENDENT CLAIMS	3 minus 3 =	* 0
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	150.00	OR	BASIC FEE	300.00
X$ 25=		OR	X$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL		OR	TOTAL	300

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 25=		OR	X$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 25=		OR	X$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 25=		OR	X$50=	
X100=		OR	X200=	
+180=		OR	+360=	
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.

DOCKET NO.: 51876P836

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

JINWOO YOU, ET AL.

Application No.:

Filed:

For: **wireless communicating terminal for providing integrated messaging service and method thereof**

Art Group:

Examiner:

Commissioner for Patents
P.O, Box 1450
Alexandria, VA 22313-1450

REQUEST FOR PRIORITY

Sir:

Applicant respectfully requests a convention priority for the above-captioned application, namely:

COUNTRY	APPLICATION NUMBER	DATE OF FILING
Korea	10-2004-0083073	18 October 2004
Korea	10-2004-0025882	14 April 2004

☒ A certified copy of the document is being submitted herewith.

Respectfully submitted,

Blakely, Sokoloff, Taylor & Zafman LLP

Dated: 4/13/05

Eric S. Hyman, Reg. No. 30,139

12400 Wilshire Boulevard, 7th Floor
Los Angeles, CA 90025
Telephone: (310) 207-3800

대 한 민 국 특 허 청

KOREAN INTELLECTUAL PROPERTY OFFICE

별첨 사본은 아래 출원의 원본과 동일함을 증명함.

This is to certify that the following application annexed hereto is a true copy from the records of the Korean Intellectual Property Office.

출 원 번 호 : 10-2004-0083073
Application Number

CERTIFIED COPY OF PRIORITY DOCUMENT

출 원 년 월 일 : 2004년 10월 18일
Date of Application OCT 18, 2004

출 원 인 : 주식회사 팬택앤큐리텔
Applicant(s) Curitel Communications, Inc.

2005 년 03 월 24 일

특 허 청
COMMISSIONER

【서지사항】

【서류명】	특허출원서
【권리구분】	특허
【수신처】	특허청장
【제출일자】	2004.10.18
【발명의 국문명칭】	통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법
【발명의 영문명칭】	Wireless telecommunication terminal and method for unified messaging service
【출원인】	
【명칭】	주식회사 팬택앤큐리텔
【출원인코드】	1-2001-021691-6
【대리인】	
【명칭】	특허법인 신성
【대리인코드】	9-2000-100004-8
【지정된변리사】	변리사 원석희, 변리사 박해천
【포괄위임등록번호】	2003-003075-5
【발명자】	
【성명의 국문표기】	유진우
【성명의 영문표기】	YOU,Jin Woo
【주민등록번호】	760911-1462114
【우편번호】	143-130
【주소】	서울특별시 광진구 화양동 9-72번지 2층 2호
【국적】	KR
【발명자】	
【성명의 국문표기】	석상우
【성명의 영문표기】	SUK,Sang Woo
【주민등록번호】	750215-1005717

【우편번호】 411-410

【주소】 경기도 고양시 일산구 대화동 2147-1 3층

【국적】 KR

【우선권 주장】

【출원국명】 KR

【출원종류】 특허

【출원번호】 10-2004-0025882

【출원일자】 2004.04.14

【증명서류】 첨부

【심사청구】 청구

【취지】 특허법 제42조의 규정에 의한 출원, 특허법 제60조의 규정에 의한 출원심사 를 청구합니다. 대리인

특허법인 신성 (인)

【수수료】

【기본출원료】	0 면	38,000 원
【가산출원료】	31 면	0 원
【우선권주장료】	1 건	20,000 원
【심사청구료】	15 항	589,000 원
【합계】	647,000 원	

【요약서】

【요약】

1. 청구범위에 기재된 발명이 속하는 기술분야

본 발명은, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것임.

2. 발명이 해결하려고 하는 기술적 과제

본 발명은, 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 함으로써, 사용자에게 기술적인 이질감 없이 좀 더 친숙하고 직관적인 인터페이스를 제공하기 위한, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법을 제공하는데 그 목적이 있음.

3. 발명의 해결 방법의 요지

본 발명은, 통합 메시징 서비스 기능을 가지는 무선통신단말기에 있어서, 무선통신망을 통하여 외부 기기와 메시지를 송/수신하기 위한 무선송수신 수단; 통합 유저 인터페이스를 제공하기 위한 통합 메시징 서비스 프로그램 및 메시지를 저장하기 위한 저장 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 항목 선택 신호를 입력받기 위한 입력 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 구별 정보를 출력하기 위한 표시 수단; 및 상기 통합 메시징 서비스 프로그

램을 구동시켜 상기 입력 수단과 상기 표시 수단에 통합 유저 인터페이스를 제공하고, 상기 통합 유저 인터페이스를 통하여 입력받은 송신 메시지의 종류를 판단하여 그에 따른 식별 정보를 포함하는 메시지를 생성하여 송신하고 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 수신한 메시지 종류를 판단하여 상기 메시지를 메시지 내용과 식별 정보로 분리한 후 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 상기 각 구성 요소를 제어하기 위한 제어 수단을 포함한다.

4. 발명의 중요한 용도

본 발명은 무선통신단말기 등에 이용됨.

【대표도】

도 2

【색인어】

무선통신단말기, 단문 메시지, 멀티미디어 메시지, 메신저, 통합 유저 인터페이스

【명세서】

【발명의 명칭】

통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법{Wireless telecommunication terminal and method for unified messaging service}

【도면의 간단한 설명】

<1> 도 1은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에 대한 일실시예 구성도.

<2> 도 2는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 대한 일실시예 흐름도.

<3> 도 3은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 대한 일실시예 흐름도.

<4> 도 4a 내지 도 4c는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 통합 유저 인터페이스에 대한 일실시예 설명도.

<5> * 도면의 주요 부분에 대한 부호의 설명

<6> 11 : 무선송수신부 12 : 저장부

<7> 13 : 코덱(CODEC) 14 : 제어부

<8> 15 : 음성출력부(스피커) 16 : 입력부(키패드)

<9> 17 : 표시부(LCD) 18 : 음성입력부(마이크)

【발명의 상세한 설명】

【발명의 목적】

【발명이 속하는 기술분야 및 그 분야의 종래기술】

<10> 본 발명은, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것으로, 더욱 상세하게는 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지(SMS : Simple Messaging Service) 및 멀티미디어 메시지(MMS : Multimedia Messaging Service) 등과 같은 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신하기 위한, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것이다.

<11> 본 발명에서 무선통신단말기는 이동통신단말기, PCS(Personal Communication Service) 단말기, PDA(Personal Digital Assistant), 스마트폰, 차세대 이동 통신(IMT-2000) 단말기, 무선랜 단말기 등과 같이 무선통신을 이용하여 텍스트, 음성, 이미지, 영상 등 멀티미디어 콘텐츠를 송/수신할 수 있는 휴대 가능한 단말기를 말한다.

<12> 오늘날, 무선통신단말기는 음성 통화 기능과 단문 메시지 송/수신 기능을 기본적으로 제공하고 있으며, 최근에는 텍스트, 음성, 이미지, 영상 등 멀티미디어 콘텐츠를 포함하는 멀티미디어 메시지 송/수신 기능을 제공하는 경우가 늘고 있다.

<13> 한편, 종래의 무선통신단말기는 단문 메시지 및 멀티미디어 메시지 등과 같

은 다양한 종류의 메시지를 위한 유저 인터페이스를 각 메시지의 종류별로 구분하여 제공하고 있다.

<14> 따라서, 종래 기술은 다양한 종류의 메시지를 송/수신하기 위하여 메시지의 종류마다 서로 다른 메뉴와 서로 다른 경로를 이용해야 하는 불편함이 있었다.

<15> 또한, 종래 기술은 사용자 입장에서 각 종류의 메시지가 기술적으로 다른지 알 필요가 없음에도 불구하고, 구분된 인터페이스 및 용어를 사용함으로써 사용자의 메시지 송/수신에 혼란을 초래하고 기술적 이질감을 갖게 하여 해당 서비스의 사용률을 떨어뜨리는 문제점이 있었다.

<16> 또한, 종래의 무선통신단말기는 메시지를 일종의 편지라는 개념으로 파악하여 받은 편지함, 보낸 편지함 등과 같이 송/수신 관리함을 구분하고 있다. 이것은 인터넷 인스턴트 메신저를 이용한 실시간 채팅이 보편화된 상황에 비추어 볼 때, 상대적으로 느린 응답을 받게 하는 문제점이 있었다.

【발명이 이루고자 하는 기술적 과제】

<17> 본 발명은, 상기와 같은 문제점을 해결하기 위하여 제안된 것으로, 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 함으로써, 사용자에게 기술적인 이질감 없이 좀 더 친숙하고 직관적인 인터페이스를 제공하기 위한, 통합 메시징 서비스 기

능을 가지는 무선통신단말기 및 그 방법에 관한 것이다.

【발명의 구성】

<18> 상기의 목적을 달성하기 위한 본 발명의 장치는, 통합 메시징 서비스 기능을 가지는 무선통신단말기에 있어서, 무선통신망을 통하여 외부 기기와 메시지를 송/수신하기 위한 무선송수신 수단; 통합 유저 인터페이스를 제공하기 위한 통합 메시징 서비스 프로그램 및 메시지를 저장하기 위한 저장 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 항목 선택 신호를 입력받기 위한 입력 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 구별 정보를 출력하기 위한 표시 수단; 및 상기 통합 메시징 서비스 프로그램을 구동시켜 상기 입력 수단과 상기 표시 수단에 통합 유저 인터페이스를 제공하고, 상기 통합 유저 인터페이스를 통하여 입력받은 송신 메시지의 종류를 판단하여 그에 따른 식별 정보를 포함하는 메시지를 생성하여 송신하고 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 수신한 메시지 종류를 판단하여 상기 메시지를 메시지 내용과 식별 정보로 분리한 후 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 상기 각 구성 요소를 제어하기 위한 제어 수단을 포함한다.

<19> 한편, 본 발명의 송신 방법은, 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 있어서, 통합 유저 인터페이스를 통하여 메시지 내용을 입력받는 입력 단계; 상기 입력받은 메시지 내용의 데이터 종류를 판단하는

메시지 종류 판단 단계; 식별 정보를 포함하는 메시지를 생성하는 메시지 생성 단계; 상기 생성한 메시지를 상대측 무선통신단말기로 송신하는 송신 단계; 및 상기 입력 단계에서 입력받은 메시지 내용을 구별 정보와 함께 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계를 포함한다.

<20> 또한, 본 발명의 수신 방법은, 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 있어서, 상대측 무선통신단말기로부터 수신한 메시지의 종류를 판단하는 메시지 종류 판단 단계; 메시지의 수신을 사용자에게 알리는 알림 단계; 수신 메시지의 출력을 요청받음에 따라 메시지를 식별 정보와 메시지 내용으로 분리하여 통합 유저 인터페이스 출력 양식에 맞게 변환하는 메시지 변환 단계; 및 상기 변환한 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계를 포함한다.

<21> 상술한 목적, 특징들 및 장점은 첨부된 도면과 관련한 다음의 상세한 설명을 통하여 보다 분명해 질 것이다. 이하, 첨부된 도면을 참조하여 본 발명에 따른 바람직한 일실시예를 상세히 설명한다.

<22> 먼저, 본 발명의 바람직한 일실시예를 설명하기에 앞서, 본 발명의 무선통신단말기는 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 송/수신하는 기능이 지원됨을 미리 밝혀 둔다. 이하의 일실시예에서는 단문 메시지와 멀티미디어 메시지를 일예로 들어 설명하기로 한다.

<23> 도 1은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에

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대한 일실시예 구성도이다.

<24> 도 1에 도시된 바와 같이, 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기는, 무선통신망을 통하여 상대측 무선통신단말기와 단문 메시지 또는 멀티미디어 메시지의 알림 메시지를 송/수신하고, 멀티미디어 콘텐츠 서버와 멀티미디어 메시지(멀티미디어 파일 포함)를 송/수신하기 위한 무선송수신부(11), 단문 메시지와 멀티미디어 메시지를 메뉴 구분 없이 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 하는 통합 메시징 서비스 프로그램과 상대방의 전화번호와 닉네임 등을 포함하는 전화번호부 그리고 각종 메시지 등을 저장하기 위한 저장부(12), 통합 유저 인터페이스를 통하여 사용자로부터 단문 메시지 또는 멀티미디어 메시지의 메시지 내용과 항목 선택 신호 등을 입력받기 위한 입력부(16), 통합 유저 인터페이스를 통하여 단문 메시지 또는 멀티미디어 메시지의 메시지 내용과 송/수신 구별 정보 및 메시지의 데이터 구별 정보 등을 송/수신한 순서대로 출력하기 위한 표시부(17), 제어부(14)의 제어에 따라 상기 무선송수신부(11)를 통하여 전달받은 음성 신호를 음성으로 변환하여 음성출력부(스피커)(15)로 출력하고, 음성입력부(마이크)(18)로부터 입력받은 음성을 음성 신호로 변환하여 상기 제어부(14)로 전달하여 상기 무선송수신부(11)을 통하여 송출되도록 하기 위한 코덱(CODEC)(13), 상기 코덱(13)으로부터 전달받은 음성을 출력하기 위한 음성출력부(스피커)(15), 음성을 입력받아 상기 코덱(13)으로 전달하기 위한 음성입력부(마이크)(18), 상기 저장부(12)에 저장되어 있는 통합 메시징 서비스 프로그램을 구동시켜 상기 입력부(16)와 표시부(17)에 통합 유저 인터페이스를 제공하고, 메시

지를 송신하는 경우 통합 유저 인터페이스를 통하여 입력받은 메시지 내용에 멀티미디어 파일의 유무를 기준으로 전송할 메시지 종류를 판단하고 상기 판단 결과에 따라 식별 정보를 포함하는 메시지를 생성하여 송신하며 상기 통합 유저 인터페이스를 통하여 상기 입력받은 메시지 내용과 각종 구별 정보를 출력하고, 메시지를 수신하는 경우 수신한 메시지에 포함된 식별 정보를 이용하여 메시지의 종류를 판단하고 상기 메시지를 식별 정보와 메시지 내용으로 분리하여 통합 유저 인터페이스의 출력 양식에 맞게 변환한 후 통합 유저 인터페이스를 통하여 상기 메시지 내용과 각종 구별 정보를 출력하며, 상기 각 구성 요소를 제어하기 위한 제어부(14)를 포함한다. 그 상세 동작은 도 2 및 도 3을 참조하여 후술하기로 한다.

<25> 도 2는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 대한 일실시예 흐름도이다.

<26> 먼저, 사용자로부터 상대측 무선통신단말기로 송신할 메시지 내용을 통합 유저 인터페이스를 통하여 입력받는다(201). 통합 유저 인터페이스는 무선통신단말기의 메인 메뉴 중 하나이므로, 무선통신단말기의 전원이 켜짐과 동시에 제어부(14)의 제어에 의해 저장부(12)의 통합 메시징 서비스 프로그램이 구동되어 별도의 메신저 구동 요청없이 사용할 수 있다.

<27> 그러면, 제어부(14)는 입력받은 메시지 내용에 멀티미디어 파일이 포함되었는지의 여부를 기준으로 전송할 메시지의 종류를 판단한다(202). 즉, 메시지 내용이 텍스트로 이루어져 있으면 단문 메시지로 판단하고, 메시지 내용에 멀티미디어 파일이 포함되어 있으면 멀티미디어 메시지로 판단한다.

<28> 여기서, 멀티미디어 파일이란 텍스트는 물론 이미지, 음성, 영상 등의 멀티미디어 콘텐츠를 포함하는 파일을 말하며, 텍스트와 달리 곧바로 상대측 무선통신단말기로 송신할 수 없고 멀티미디어 콘텐츠 서버를 경유하여 송신한다.

<29> 상기 판단 결과(202), 단문 메시지일 경우에 송신자의 전화 번호, 송신자 이름 등의 송신자 정보와 보낸 시간 등의 시간 정보를 포함하는 단문 메시지의 식별 정보를 생성하고(203), 상기 식별 정보와 입력받은 메시지 내용(텍스트)을 포함하는 단문 메시지를 생성하여(204) 상대측 무선통신단말기로 송신한다(205).

<30> 여기서, 식별 정보란 송신자와 송신 메시지의 종류를 식별하기 위한 정보를 말한다. 단문 메시지와 멀티미디어 메시지는 상대측 무선통신단말기로 최종 전송되어지기까지의 중간 경로가 다르므로 서로 다른 정보를 포함하는 식별 정보를 생성한다.

<31> 그리고, 제어부(14)는 상대측 무선통신단말기로 송신한 메시지 내용(텍스트)을 통합 유저 인터페이스의 출력 양식에 맞게 변환한 후 각종 구별 정보와 함께 통합 유저 인터페이스를 통하여 사용자에게 출력한다(206).

<32> 여기서, 구별 정보란 하나의 인터페이스를 통하여 한 화면 내에 출력되는 다양한 종류의 송/수신 메시지를 서로 구별하기 위한 것으로, 송/수신 메시지를 구별하기 위한 송/수신 구별 정보와 멀티미디어 파일을 포함하는 멀티미디어 메시지의 경우에 이미지, 음성, 영상 등의 메시지의 데이터 종류를 구별하기 위한 데이터 구별 정보로 크게 나누어진다.

<33> 즉, 송/수신 구별 정보의 경우에 송/수신자의 이름, 전화번호부에 저장된 닉네임 또는 전화번호, 특정 아이콘 등을 송/수신 메시지 내용 옆에 함께 출력함으로써 송/수신 메시지를 서로 구별할 수 있다. 데이터 구별 정보의 경우에 멀티미디어 메시지의 각 데이터의 종류를 표시하는 아이콘이나 미리보기 식의 조그마한 그림, 동영상의 첫 장면의 축소판 등을 이용하여 멀티미디어 파일이 첨부되었음을 표시할 수 있다. 위의 "206" 과정에서의 구별 정보는 송신 여부를 나타내기 위한 송신 구별 정보를 포함한다.

<34> 한편, 상기 판단 결과(202), 멀티미디어 메시지일 경우에 송신자의 전화번호, 송신자 이름 등의 송신자 정보와 보낸 시간 등의 시간 정보 외에 멀티미디어 파일의 위치 정보 및 멀티미디어 파일의 종류 정보(멀티미디어 메시지의 데이터 종류 정보)를 더 포함하는 멀티미디어 메시지의 식별 정보를 생성한다(207).

<35> 그리고, 멀티미디어 파일을 포함하는 멀티미디어 메시지와 상기 멀티미디어 메시지의 알림 메시지를 생성한다(208).

<36> 여기서, 알림 메시지란 상대측 무선통신단말기로 멀티미디어 메시지의 전송 사실을 알려주기 위한 일종의 단문 메시지로서, 멀티미디어 파일을 제외한 텍스트 메시지 내용과 "207" 과정에서 생성한 식별 정보를 포함한다.

<37> 이후, 알림 메시지를 상대측 무선통신단말기로 송신하고(209), 상기 알림 메시지를 수신한 상대측 무선통신단말기가 멀티미디어 콘텐츠 서버에 접속하여 멀티미디어 메시지(멀티미디어 파일 포함)를 수신할 수 있도록 멀티미디어 메시지를 상

기 멀티미디어 콘텐츠 서버로 송신한다(210).

<38> 그리고, 제어부(14)는 상대측 무선통신단말기로 송신한 메시지 내용을 통합 유저 인터페이스의 출력 양식에 맞게 변환한 후에 앞서 말한 각종 구별 정보와 함께 통합 유저 인터페이스를 통하여 사용자에게 출력한다(211). 이 경우, 구별 정보는 메시지의 송신 여부를 나타내기 위한 송신 구별 정보와 멀티미디어 메시지가 포함하고 있는 데이터 종류를 나타내기 위한 데이터 구별 정보를 포함한다.

<39> 도 3은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 대한 일실시예 흐름도이다.

<40> 먼저, 제어부(14)는 상대측 무선통신단말기로부터 수신한 메시지의 종류를 상기 수신한 메시지에 포함된 식별 정보를 이용하여 판단한다(301).

<41> 상기 판단 결과(301), 단문 메시지일 경우에 아이콘, 소리, 진동 등을 이용하여 사용자에게 단문 메시지의 수신을 알린다(302).

<42> 이후, 사용자로부터 입력부(17)를 통하여 단문 메시지의 출력을 요청받음에 따라(303) 제어부(14)는 수신한 단문 메시지를 식별 정보와 메시지 내용(텍스트)으로 분리하여 통합 유저 인터페이스의 출력 양식에 맞게 변환하고(304), 단문 메시지 내용(텍스트)과 메시지의 수신 여부를 나타내기 위한 수신 구별 정보를 통합 유저 인터페이스를 통하여 사용자에게 출력한다(305).

<43> 한편, 상기 판단 결과(301), 멀티미디어 메시지의 알림 메시지일 경우에 아이콘, 소리, 진동 등을 이용하여 사용자에게 멀티미디어 메시지의 알림 메시지 수

신을 알린다(306).

<44> 이후, 사용자로부터 입력부(17)를 통하여 알림 메시지의 출력을 요청받음에 따라(307) 제어부(14)는 수신한 알림 메시지를 식별 정보와 메시지 내용(텍스트)으로 분리하여 통합 유저 인터페이스의 출력 양식에 맞게 변환하고(308), 메시지 내용(텍스트)과 각종 구별 정보를 통합 유저 인터페이스를 통하여 사용자에게 출력한다(309). 이 경우, 구별 정보는 메시지의 수신 여부를 나타내기 위한 수신 구별 정보와 멀티미디어 메시지가 포함하고 있는 데이터 종류를 나타내기 위한 데이터 구별 정보를 포함한다. 여기서, 멀티미디어 메시지가 포함하고 있는 데이터 종류는 알림 메시지의 식별 정보를 이용하여 알 수 있다.

<45> 이후, 사용자로부터 입력부(17)를 통하여 멀티미디어 메시지의 수신을 요청받음에 따라(310) 알림 메시지의 식별 정보에 포함된 멀티미디어 파일의 위치 정보를 이용하여 해당 URL(Uniform Resource Locator)의 멀티미디어 콘텐츠 서버에 접속한 후 멀티미디어 메시지 즉, 멀티미디어 파일의 바이너리 데이터를 수신한다(311).

<46> 그러면, 제어부(14)는 수신한 멀티미디어 메시지를 통합 유저 인터페이스 상에서 기존의 무선통신단말기가 지원하는 편지 형식(전체 화면)의 출력 양식으로 사용자에게 출력하도록 표시부(16)를 제어한다(312).

<47> 지금까지 설명한 송/수신 방법을 좀 더 구체적으로 살펴보면, 처음으로 메시지를 송/수신하는 경우에는 무선통신단말기의 메인 메뉴인 통합 유저 인터페이스를

선택함으로써 메시지를 송/수신할 수 있다. 반면에, 통합 유저 인터페이스를 사용하고 있는 상태에서 새로운 메시지를 송/수신하는 경우에는 인스턴트 메신저의 출력 양식과 같이 오래된 기존 메시지를 더이상 화면에 출력하지 않고 새로운 메시지를 위한 공간을 추가하는 방식을 이용(예 : 스크롤 기능)하여 송/수신한 순서대로 상기 송/수신 메시지를 구별하기 위한 구별 정보와 함께 출력하며, 입력부(17)를 통하여 사용자로부터 기존 메시지의 출력을 요청받음에 따라 기존 메시지를 다시 출력할 수 있다.

<48> 도 4a 내지 도 4c는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 통합 유저 인터페이스에 대한 일실시예 설명도이다.

<49> 도 4a는 사용자로부터의 메뉴 선택 신호에 따라 본 발명에 따른 통합 메시징 서비스를 제공하기 위하여 출력된 통합 유저 인터페이스의 초기 화면이다. 본격적인 메시지의 송/수신에 앞서, 전화번호부 검색 또는 전화번호 직접 입력 또는 최근 상대방 목록(근래 상기 통합 유저 인터페이스를 통해 메시지를 송/수신한 상대방의 목록)으로부터의 특정 인물 선택 등을 통해 상기 통합 유저 인터페이스를 통하여 메시지를 송/수신하려는 상대방을 선택한다.

<50> 도 4b는 상대측 무선통신단말기 사용자(A)와 현재 사용자(B) 사이의 송/수신 메시지 내용을 보여준다. 송/수신 메시지를 구별하기 위하여 두 명의 사용자를 나타내는 "A", "B"를 송/수신 구별 정보로 사용하고 있고, 멀티미디어 메시지의 데이터 종류를 구별하기 위하여 "(MMS)"를 데이터 구별 정보로 사용하고 있다. 물론, 아이콘이나 미리보기 식의 조그마한 그림, 동영상의 첫 장면의 축소판 등을 이용하

여 보다 상세하게 데이터 종류를 구별할 수 있도록 구현할 수도 있다.

<51> 도 4b의 "41"을 보면, A가 보낸 단문 메시지와 B가 보낸 단문 메시지 그리고 A가 보낸 멀티미디어 메시지의 알림 메시지가 송/수신된 순서대로 통합 유저 인터페이스를 통하여 출력되었음을 알 수 있다. 여기서, 상기 통합 유저 인터페이스를 통하여 출력된 메시지를 여러 줄로 늘려 출력하거나 기존의 무선통신단말기에서 지원하는 편지 형식으로 출력하기 위하여 커서, 항목 선택 신호 등을 이용하여 특정 메시지를 선택할 수 있고, 그에 따라 출력된 메시지를 커서, 항목 선택 신호 등을 이용하여 다시 상기 통합 유저 인터페이스의 출력 양식(즉, 메신저 양식)으로 변환할 수 있다. 예를 들어, 단문 메시지를 커서로 선택할 경우 일부만 출력하던 텍스트 메시지 내용을 여러 줄로 늘려 출력하고, 상기 커서로 선택된 단문 메시지를 항목 선택 신호를 이용하여 다시 선택할 경우에 원래의 통합 유저 인터페이스의 출력 양식이 아닌 기존의 무선통신단말기가 지원하는 편지 형식(전체 화면)으로 출력할 수 있다.

<52> 그리고, 도 4b의 "42"를 보면, 항목 선택 신호를 이용하여 "41"의 멀티미디어 메시지의 알림 메시지를 선택한 경우에 알림 메시지에 포함된 식별 정보의 URL을 이용하여 멀티미디어 콘텐츠 서버에 접속한 후에 수신한 멀티미디어 메시지(멀티미디어 파일)를 통합 유저 인터페이스 내에서 기존의 무선통신단말기가 지원하는 편지 형식(전체 화면)의 출력 양식으로 사용자에게 출력하였음을 알 수 있다. 이후, 사용자의 요청에 따라 편지 형식의 출력 양식에서 원래의 통합 유저 인터페이스의 출력 양식으로 변환할 수 있다.

<53> 이처럼, 특정 메시지를 커서 및 항목 선택 신호 등을 이용하여 선택함으로써 통합 유저 인터페이스 내에서 메시지를 늘려 출력할 수 있으며, 기존의 무선통신단말기가 지원하는 편지 형식으로 변환하여 출력하거나 또는 기존의 무선통신단말기가 지원하는 편지 형식에서 원래의 통합 유저 인터페이스의 출력 양식으로 상호 변환하여 출력하는 것이 가능하다.

<54> 한편, 도 4c의 "43" 내지 "45"를 보면, B가 통합 유저 인터페이스의 입력창을 통하여 멀티미디어 메시지를 작성하고 있음을 알 수 있다.

<55> 즉, 멀티미디어 메시지에 포함될 텍스트 내용(정확하게는, 상기 텍스트 내용은 알림 메시지에 포함되어 전송됨)의 입력 후(43) 소정의 키 입력을 통해 파일 선택 메뉴로 진입하여 상대방에게로 보내고자 하는 멀티미디어 파일(예 : 이미지 파일)을 선택할 수 있다(44). 여기서, 소정의 키 입력이란 소정 메뉴키나 사이드키 혹은 소프트키 등의 입력을 말하는 것으로 다양한 방법으로 구현이 가능하다. B에 의해 상기 선택된 멀티미디어 파일은 통합 유저 인터페이스의 출력 양식에 맞게 변환되어 입력창에 디스플레이되고, 그에 따라 이전 송/수신 메시지들은 스크롤되어 화면에서 보이지 않게 된다(45).

<56> 또한, 상기 도 4c의 "45"를 보면, 사용자로부터 입력받는 메시지의 크기가 커짐에 따라 통합 유저 인터페이스의 입력창의 크기가 변화하는 것을 볼 수 있다. 예를 들어, 텍스트 메시지 내용이 길 경우에 입력창의 크기가 커질 수 있고, 멀티미디어 파일을 첨부할 경우에 그 파일을 보여주기 위하여 입력창의 크기가 커질 수 있다. 여기서, 멀티미디어 파일의 첨부를 사용자에게 알리기 위하여 파일 자체를

출력하는 것이 아니라 데이터 구별 정보를 이용할 수도 있다.

<57> 이상에서 알 수 있듯이 본 발명은, 통합 메시징 서비스 프로그램을 이용하여 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 하는 통합 유저 인터페이스를 제공한다.

<58> 이상에서 설명한 본 발명은, 본 발명이 속하는 기술분야에서 통상의 지식을 가진 자에 있어 본 발명의 기술적 사상을 벗어나지 않는 범위 내에서 여러 가지 치환, 변형 및 변경이 가능하므로 전술한 실시예 및 첨부된 도면에 의해 한정되는 것이 아니다.

【발명의 효과】

<59> 상기와 같이 본 발명은, 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신하도록 함으로써, 사용자에게 기술적인 이질감 없이 좀 더 친숙하고 직관적인 인터페이스를 제공하는 효과가 있다.

<60> 이로써, 본 발명은, 구분된 인터페이스 및 용어의 사용으로 인한 사용자의 혼란과 기술적 차이에 대한 이질감을 감소시켜 해당 서비스의 이용률을 증가시킬 수 있는 효과가 있으며, 사용자 입장에서 단문 메시지 및 멀티미디어 메시지와 같은 다양한 종류의 메시지의 기술적 차이를 알지 못하더라도 자연스럽게 메시징 서

비스를 이용할 수 있으므로 사용상 편의성이 증대되고, 종래의 무선통신단말기의 메시징 서비스와 비교할 때 인스턴트 메신저라는 개념을 갖게 되어 상대적으로 빠르게 응답받을 수 있는 효과가 있다.

<61> 또한, 본 발명은, 기존의 전송 프로토콜과 네트웍을 바꾸지 않고서도 메신저 서비스를 구현할 수 있으므로 추가 비용이 들지 않는 장점이 있다.

【청구의 범위】

【청구항 1】

통합 메시징 서비스 기능을 가지는 무선통신단말기에 있어서,

무선통신망을 통하여 외부 기기와 메시지를 송/수신하기 위한 무선송수신 수단;

통합 유저 인터페이스를 제공하기 위한 통합 메시징 서비스 프로그램 및 메시지를 저장하기 위한 저장 수단;

상기 통합 유저 인터페이스를 통하여 메시지 내용과 항목 선택 신호를 입력받기 위한 입력 수단;

상기 통합 유저 인터페이스를 통하여 메시지 내용과 구별 정보를 출력하기 위한 표시 수단; 및

상기 통합 메시징 서비스 프로그램을 구동시켜 상기 입력 수단과 상기 표시 수단에 통합 유저 인터페이스를 제공하고, 상기 통합 유저 인터페이스를 통하여 입력받은 송신 메시지의 종류를 판단하여 그에 따른 식별 정보를 포함하는 메시지를 생성하여 송신하고 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 수신한 메시지 종류를 판단하여 상기 메시지를 메시지 내용과 식별 정보로 분리한 후 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 상기 각 구성 요소를 제어하기 위한 제어 수단

을 포함하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 2】

제 1항에 있어서,

상기 구별 정보는,

메시지의 송/수신 여부를 나타내기 위한 송/수신 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 3】

제 1항에 있어서,

상기 제어 수단은,

상기 송신 메시지가 멀티미디어 메시지임에 따라 멀티미디어 파일을 포함하는 멀티미디어 메시지를 생성한 후에, 상대측 무선통신단말기가 멀티미디어 콘텐츠 서버에 접속하여 상기 생성한 멀티미디어 메시지를 수신할 수 있도록, 상기 생성한 멀티미디어 메시지를 상기 멀티미디어 콘텐츠 서버로 송신하는 기능; 및

상기 상대측 무선통신단말기로부터 수신한 메시지가 멀티미디어 메시지의 알림 메시지임에 따라 상기 알림 메시지에 포함된 식별 정보의 URL(Uniform Resource Locator)을 이용하여 상기 멀티미디어 콘텐츠 서버에 접속한 후 멀티미디어 파일을 포함하는 멀티미디어 메시지를 수신하여 상기 통합 유저 인터페이스를 통하여 출력

하는 기능

을 더 수행하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 4】

제 3항에 있어서,

상기 제어 수단의 송/수신 메시지 출력 과정은,

송/수신 여부를 나타내기 위한 송/수신 구별 정보 및 메시지 내용에 포함된 데이터의 종류를 나타내기 위한 데이터 구별 정보를 함께 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 5】

제 1항 내지 제 4항 중 어느 한 항에 있어서,

상기 제어 수단이 상기 통합 유저 인터페이스를 통하여 메시지를 출력하는 과정은,

상기 입력 수단을 통하여 메시지 출력 양식의 변환을 요청받음에 따라 상기 통합 유저 인터페이스의 메시지 출력 양식을 기존 무선통신단말기의 출력 양식인 편지 형식으로 또는 기존 무선통신단말기의 출력 양식인 편지 형식을 상기 통합 유저 인터페이스의 메시지 출력 양식으로 상호 변환하여 메시지 내용을 상기 표시 수단을 통하여 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선

통신단말기.

【청구항 6】

통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 있어서,

통합 유저 인터페이스를 통하여 메시지 내용을 입력받는 입력 단계;

상기 입력받은 메시지 내용의 데이터 종류를 판단하는 메시지 종류 판단 단계;

식별 정보를 포함하는 메시지를 생성하는 메시지 생성 단계;

상기 생성한 메시지를 상대측 무선통신단말기로 송신하는 송신 단계; 및

상기 입력 단계에서 입력받은 메시지 내용을 구별 정보와 함께 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계

를 포함하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 7】

제 6항에 있어서,

상기 구별 정보는,

메시지의 송/수신 여부를 나타내기 위한 송/수신 구별 정보를 포함하는 것을

특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 8】

제 6항에 있어서,

상기 입력받은 메시지가 멀티미디어 메시지임에 따라 멀티미디어 파일을 포함하는 멀티미디어 메시지를 생성한 후에, 상기 상대측 무선통신단말기가 멀티미디어 콘텐츠 서버에 접속하여 상기 생성한 멀티미디어 메시지를 수신할 수 있도록, 상기 생성한 멀티미디어 메시지를 상기 멀티미디어 콘텐츠 서버로 송신하는 멀티미디어 메시지 송신 단계

를 더 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 9】

제 8항에 있어서,

상기 구별 정보는,

송/수신 여부를 나타내기 위한 송/수신 구별 정보 및 메시지 내용에 포함된 데이터의 종류를 나타내기 위한 데이터 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 10】

제 6항 내지 제 9항 중 어느 한 항에 있어서,

상기 메시지 출력 단계는,

메시지 출력 양식의 변환을 요청받음에 따라 상기 통합 유저 인터페이스의 메시지 출력 양식을 기존 무선통신단말기의 출력 양식인 편지 형식으로 또는 기존 무선통신단말기의 출력 양식인 편지 형식을 상기 통합 유저 인터페이스의 메시지 출력 양식으로 상호 변환하여 메시지 내용을 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 11】

통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 있어서,

상대측 무선통신단말기로부터 수신한 메시지의 종류를 판단하는 메시지 종류 판단 단계;

메시지의 수신을 사용자에게 알리는 알림 단계;

수신 메시지의 출력을 요청받음에 따라 메시지를 식별 정보와 메시지 내용으로 분리하여 통합 유저 인터페이스 출력 양식에 맞게 변환하는 메시지 변환 단계; 및

상기 변환한 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계

를 포함하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 12】

제 11항에 있어서,

상기 구별 정보는,

메시지의 송/수신 여부를 나타내기 위한 송/수신 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 13】

제 11항에 있어서,

상기 상대측 무선통신단말기로부터 수신한 메시지가 멀티미디어 메시지의 알림 메시지임에 따라 상기 알림 메시지에 포함된 식별 정보의 URL(Uniform Resource Locator)을 이용하여 상기 멀티미디어 콘텐츠 서버에 접속한 후 멀티미디어 파일을 포함하는 멀티미디어 메시지를 수신하여 상기 통합 유저 인터페이스를 통하여 출력하는 기능

을 더 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 14】

제 13항에 있어서,

상기 구별 정보는,

송/수신 여부를 나타내기 위한 송/수신 구별 정보 및 메시지 내용에 포함된 데이터의 종류를 나타내기 위한 데이터 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 15】

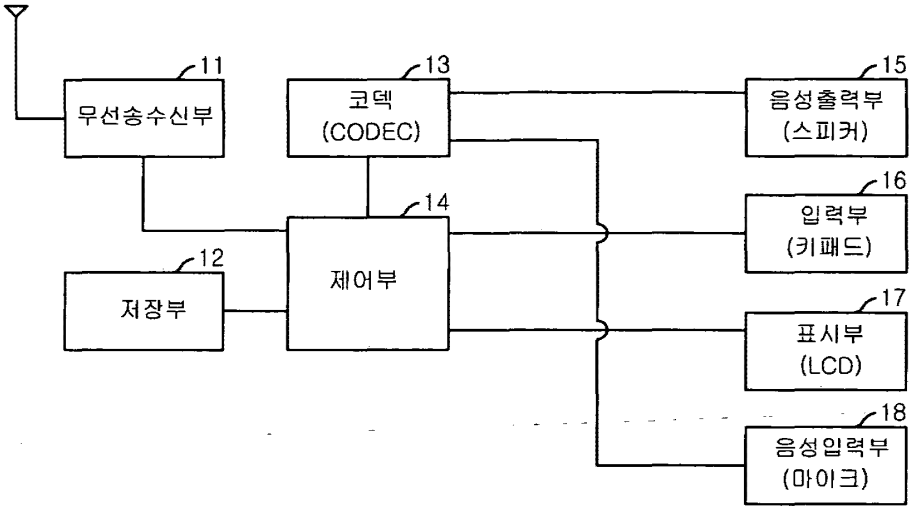
제 11항 내지 제 14항 중 어느 한 항에 있어서,

상기 메시지 출력 단계는,

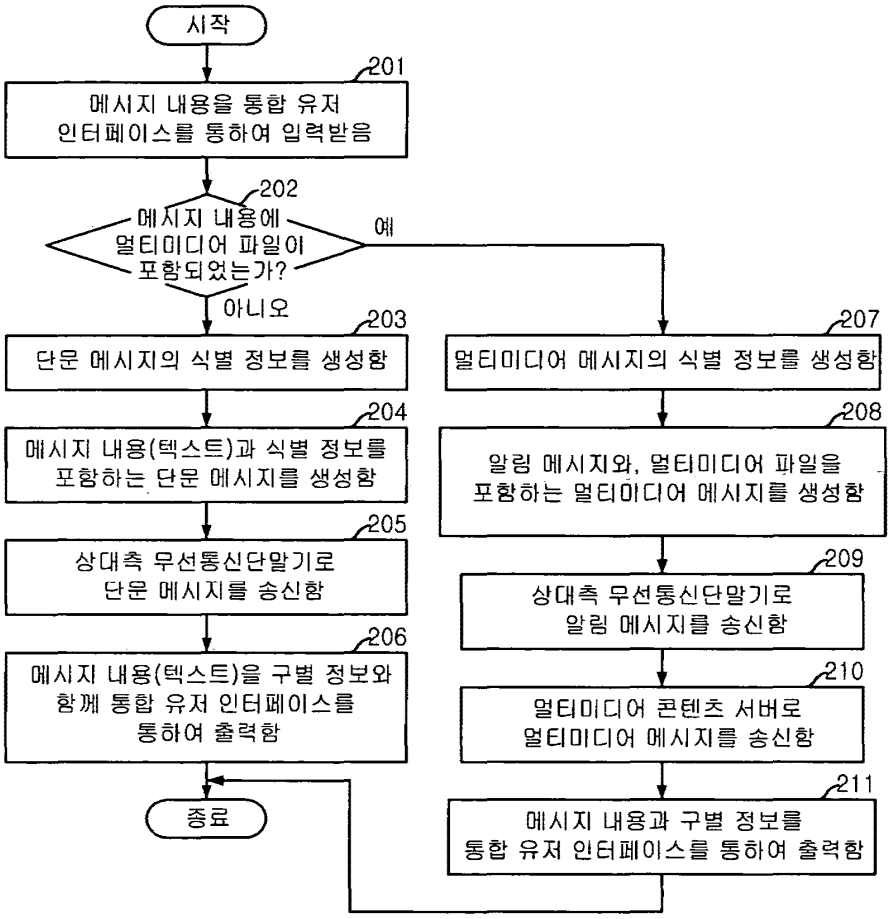
메시지 출력 양식의 변환을 요청받음에 따라 상기 통합 유저 인터페이스의 메시지 출력 양식을 기존 무선통신단말기의 출력 양식인 편지 형식으로 또는 기존 무선통신단말기의 출력 양식인 편지 형식을 상기 통합 유저 인터페이스의 메시지 출력 양식으로 상호 변환하여 메시지 내용을 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【도면】

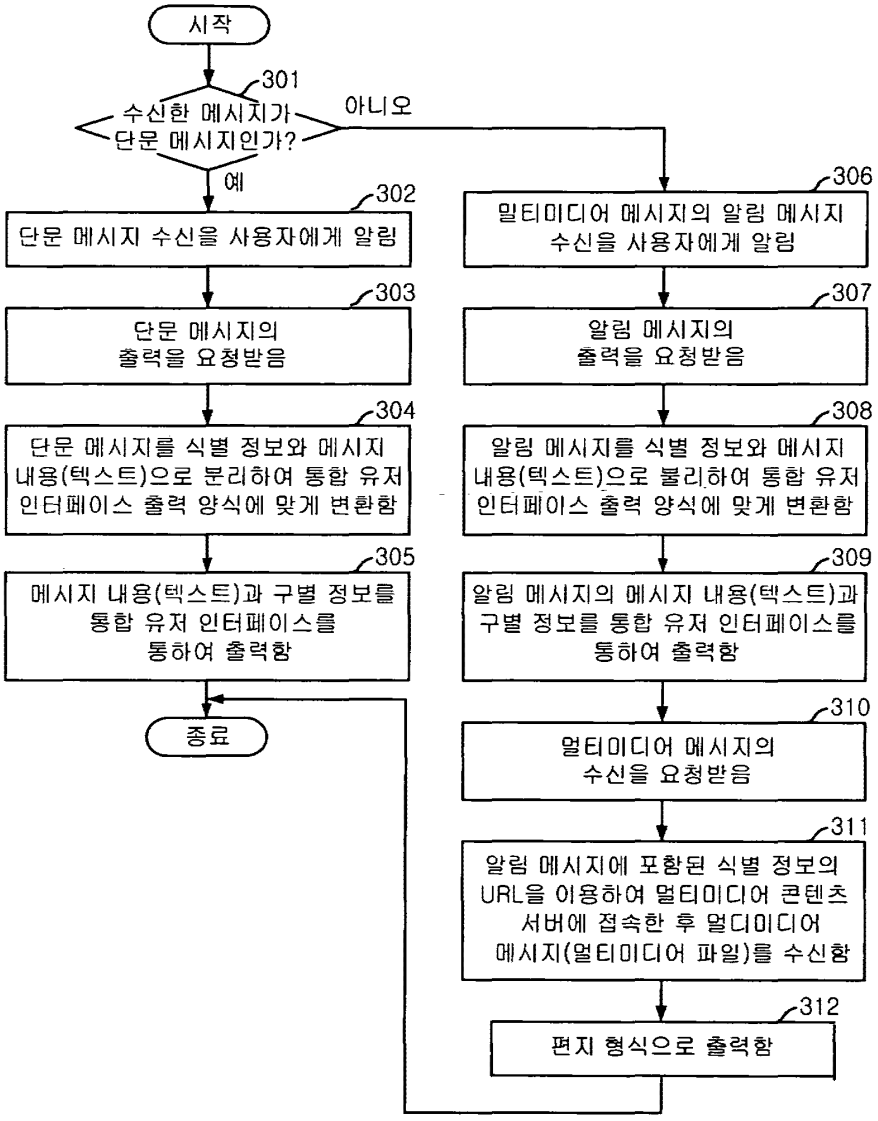
【도 1】


11
무선송수신부
13
코덱
(CODEC)
15
음성출력부
(스피커)
16
입력부
(키패드)
14
제어부
12
저장부
17
표시부
(LCD)
18
음성입력부
(마이크)

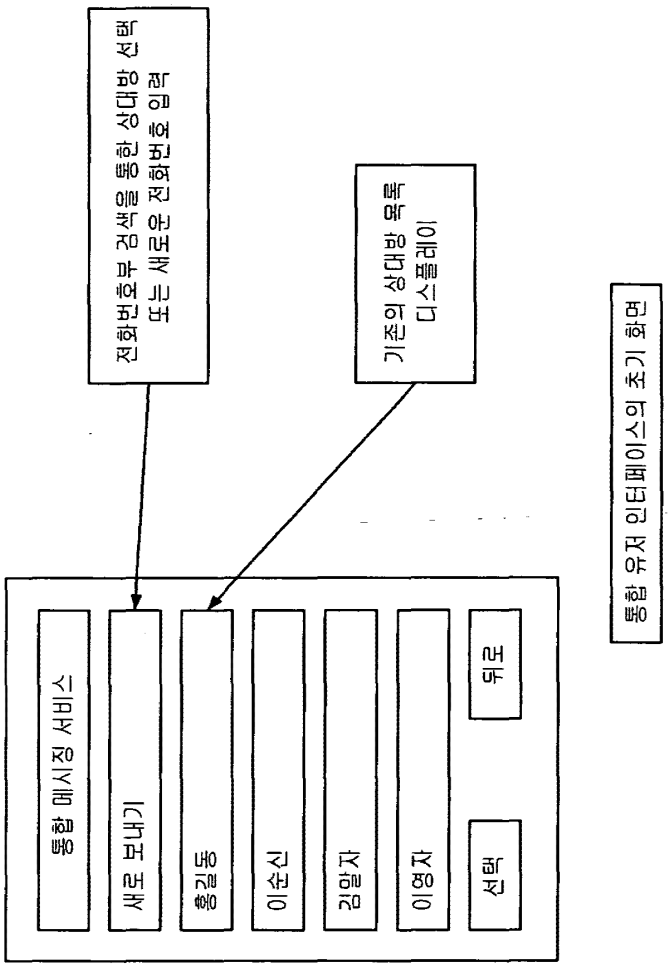
【도 2】


시작
201
메시지 내용을 통합 유저 인터페이스를 통하여 입력받음
202
메시지 내용에 멀티미디어 파일이 포함되었는가?
예
아니오
203
단문 메시지의 식별 정보를 생성함
204
메시지 내용(텍스트)과 식별 정보를 포함하는 단문 메시지를 생성함
205
상대측 무선통신단말기로 단문 메시지를 송신함
206
메시지 내용(텍스트)을 구별 정보와 함께 통합 유저 인터페이스를 통하여 출력함
종료
207
멀티미디어 메시지의 식별 정보를 생성함
208
알림 메시지와, 멀티미디어 파일을 포함하는 멀티미디어 메시지를 생성함
209
상대측 무선통신단말기로 알림 메시지를 송신함
210
멀티미디어 콘텐츠 서버로 멀티미디어 메시지를 송신함
211
메시지 내용과 구별 정보를 통합 유저 인터페이스를 통하여 출력함

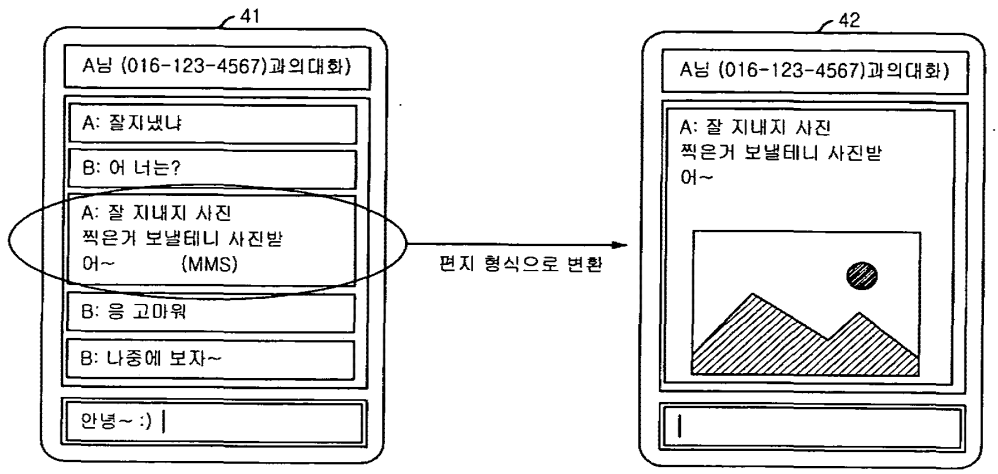
【도 3】


시작
301
수신한 메시지가 단문 메시지인가?
아니오
예
302
단문 메시지 수신을 사용자에게 알림
303
단문 메시지의 출력을 요청받음
304
단문 메시지를 식별 정보와 메시지 내용(텍스트)으로 분리하여 통합 유저 인터페이스 출력 양식에 맞게 변환함
305
메시지 내용(텍스트)과 구별 정보를 통합 유저 인터페이스를 통하여 출력함
종료
306
밀티미디어 메시지의 알림 메시지 수신을 사용자에게 알림
307
알림 메시지의 출력을 요청받음
308
알림 메시지를 식별 정보와 메시지 내용(텍스트)으로 볼리하여 통합 유저 인터페이스 출력 양식에 맞게 변환함
309
알림 메시지의 메시지 내용(텍스트)과 구별 정보를 통합 유저 인터페이스를 통하여 출력함
310
멀티미디어 메시지의 수신을 요청받음
311
알림 메시지에 포함된 식별 정보의 URL을 이용하여 멀티미디어 콘텐츠 서버에 접속한 후 멀디미디어 메시지(멀티미디어 파일)를 수신함
312
편지 형식으로 출력함

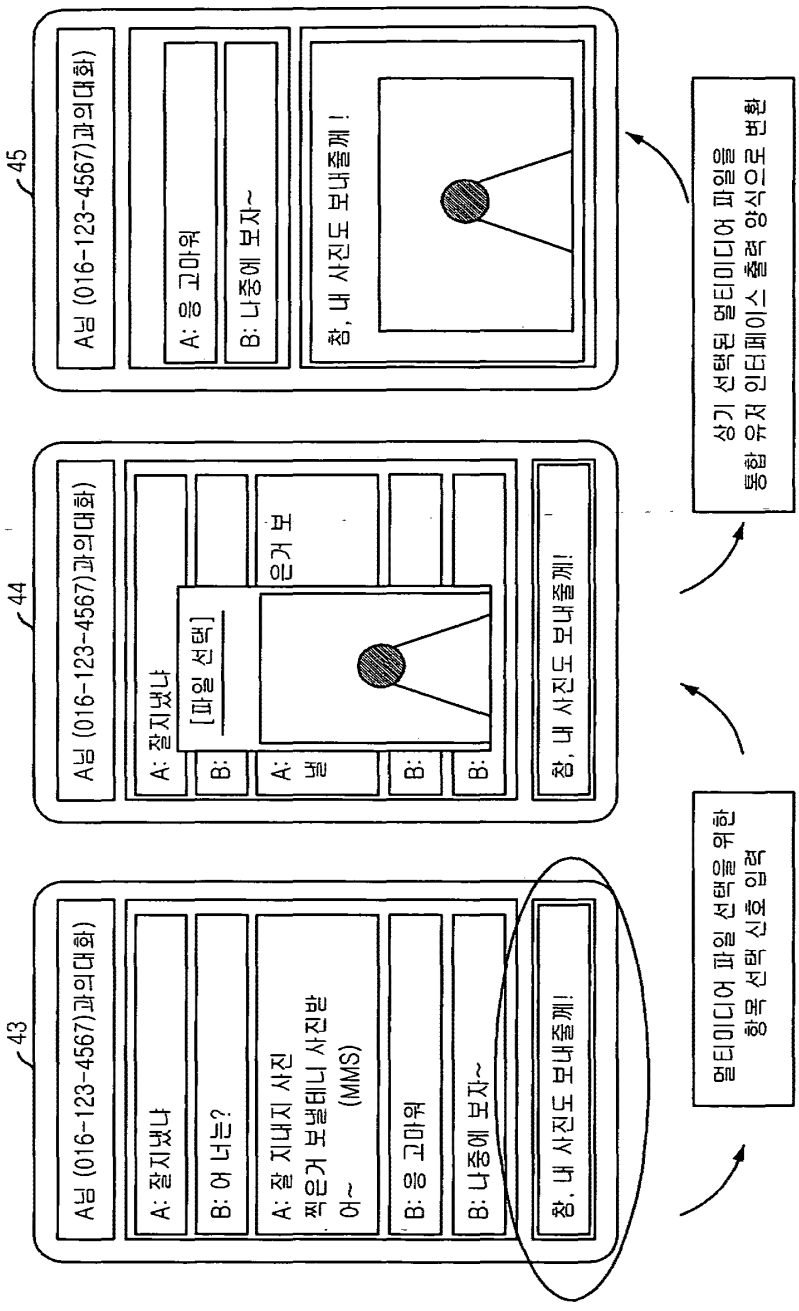
【도 4a】


통합 유저 인터페이스의 초기 화면
전화번호부 검색을 통한 상대방 선택
또는 새로운 전화번호 입력
기존의 상대방 목록
디스플레이
통합 메시징 서비스
새로 보내기
홍길동
이순신
김일자
이영자
선택
뒤로

【도 4b】


41
A님 (016-123-4567)과의대화)
A: 잘지냈냐
B: 어 너는?
A: 잘 지내지 사진
찍은거 보낼테니 사진받
어~ (MMS)
B: 응 고마워
B: 나중에 보자~
안녕~ :)
편지 형식으로 변환
42
A님 (016-123-4567)과의대화)
A: 잘 지내지 사진
찍은거 보낼테니 사진받
어~

【도 4c】


43
A님 (016-123-4567)과의대화)
A: 잘지냈나
B: 어 너는?
A: 잘 지내지 사진 찍은거 보낼테니 사진받아 어~ (MMS)
B: 응 고마워
B: 나중에 보자~
참, 내 사진도 보내줄께!
44
A님 (016-123-4567)과의대화)
A: 잘지냈나
[파일 선택]
B:
A: 날
은거 보
B:
B:
참, 내 사진도 보내줄께!
45
A님 (016-123-4567)과의대화)
A: 응 고마워
B: 나중에 보자~
참, 내 사진도 보내줄께!
멀티미디어 파일 선택을 위한 항목 선택 신호 입력
상기 선택된 멀티미디어 파일을 통합 유저 인터페이스 출력 양식으로 변환

대 한 민 국 특 허 청
KOREAN INTELLECTUAL PROPERTY OFFICE

별첨 사본은 아래 출원의 원본과 동일함을 증명함.

This is to certify that the following application annexed hereto is a true copy from the records of the Korean Intellectual Property Office.

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Application Number

CERTIFIED COPY OF PRIORITY DOCUMENT

출 원 년 월 일 : 2004년 04월 14일
Date of Application APR 14, 2004

출 원 인 : 주식회사 팬택앤큐리텔
Applicant(s) Curitel Communications, Inc.

2004 년 07 월 26 일

특 허 청
COMMISSIONER

【서지사항】

【서류명】	특허출원서
【권리구분】	특허
【수신처】	특허청장
【참조번호】	0002
【제출일자】	2004.04.14
【발명의 명칭】	통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법
【발명의 영문명칭】	Wireless telecommunication terminal and method for unified messaging service
【출원인】	
【명칭】	주식회사 팬택앤큐리텔
【출원인코드】	1-2001-021691-6
【대리인】	
【명칭】	특허법인 신성
【대리인코드】	9-2000-100004-8
【지정된변리사】	변리사 신윤정, 변리사 원석희, 변리사 박해천
【포괄위임등록번호】	2003-003075-5
【발명자】	
【성명의 국문표기】	유진우
【성명의 영문표기】	YOU,Jin Woo
【주민등록번호】	760911-1462114
【우편번호】	143-130
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【발명자】	
【성명의 국문표기】	석상우
【성명의 영문표기】	SUK,Sang Woo
【주민등록번호】	750215-1005717
【우편번호】	411-410
【주소】	경기도 고양시 일산구 대화동 2147-1 3층
【국적】	KR
【심사청구】	청구

1020040025882 출력 일자: 2004/7/27

【취지】 특허법 제42조의 규정에 의한 출원, 특허법 제60조의 규정에 의한 출원심사 를 청구합니다. 대리인 특허법인 신성 (인)

【수수료】

【기본출원료】	0 면	38,000 원
【가산출원료】	28 면	0 원
【우선권주장료】	0 건	0 원
【심사청구료】	15 항	589,000 원
【합계】	627,000 원	

【요약서】

【요약】

1. 청구범위에 기재된 발명이 속하는 기술분야

본 발명은, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것임.

2. 발명이 해결하려고 하는 기술적 과제

본 발명은, 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 함으로써, 사용자에게 기술적인 이질감 없이 좀 더 친숙하고 직관적인 인터페이스를 제공하기 위한, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법을 제공하는데 그 목적이 있음.

3. 발명의 해결 방법의 요지

본 발명은, 통합 메시징 서비스 기능을 가지는 무선통신단말기에 있어서, 무선통신망을 통하여 외부 기기와 메시지를 송/수신하기 위한 무선송수신 수단; 통합 유저 인터페이스를 제공하기 위한 통합 메시징 서비스 프로그램 및 메시지를 저장하기 위한 저장 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 항목 선택 신호를 입력받기 위한 입력 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 구별 정보를 출력하기 위한 표시 수단; 및 상기 통합 메시징 서비스 프로그램을 구동시켜 상기 입력 수단과 상기 표시 수단에 통합 유저 인터페이스를 제공하고, 상기 통합 유저 인터페이스를 통하여 입력받은 송신 메시지의 종류를 판단하여 그에 따른 식별 정보를 포함하는 메시지를 생성하여 송신하고 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 수신한 메시지 종류를 판단하여 상기

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메시지를 메시지 내용과 식별 정보로 분리한 후 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 상기 각 구성 요소를 제어하기 위한 제어 수단을 포함한다.

4. 발명의 중요한 용도

본 발명은 무선통신단말기 등에 이용됨.

【대표도】

도 2

【색인어】

무선통신단말기, 단문 메시지, 멀티미디어 메시지, 메신저, 인터페이스

【명세서】

【발명의 명칭】

통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법{Wireless telecommunication terminal and method for unified messaging service}

【도면의 간단한 설명】

도 1은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에 대한 일실시예 구성도.

도 2는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 대한 일실시예 흐름도.

도 3은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 대한 일실시예 흐름도.

도 4는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 통합 유저 인터페이스에 대한 일실시예 설명도.

* 도면의 주요 부분에 대한 부호의 설명

11 : 무선송수신부 12 : 저장부

13 : 코덱(CODEC) 14 : 제어부

15 : 음성출력부(스피커) 16 : 입력부(키패드)

17 : 표시부(LCD) 18 : 음성입력부(마이크)

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【발명의 상세한 설명】

【발명의 목적】

【발명이 속하는 기술분야 및 그 분야의 종래기술】

<10> 본 발명은, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것으로, 더욱 상세하게는 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지(SMS : Simple Messaging Service) 및 멀티미디어 메시지(MMS : Multimedia Messaging Service) 등과 같은 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신하기 위한, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것이다.

<11> 본 발명에서 무선통신단말기는 이동통신단말기, PCS(Personal Communication Service) 단말기, PDA(Personal Digital Assistant), 스마트폰, 차세대 이동 통신(IMT-2000) 단말기, 무선랜 단말기 등과 같이 무선통신을 이용하여 텍스트, 음성, 이미지, 영상 등 멀티미디어 콘텐츠를 송/수신할 수 있는 휴대 가능한 무선통신단말기를 말한다.

<12> 오늘날, 무선통신단말기는 음성 통화 기능과 단문 메시지 송/수신 기능을 기본적으로 제공하고 있으며, 최근에는 텍스트, 음성, 이미지, 영상 등 멀티미디어 콘텐츠를 포함하는 멀티미디어 메시지 송/수신 기능을 제공하는 경우가 늘고 있다.

<13> 한편, 종래의 무선통신단말기는 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 위한 유저 인터페이스를 각 메시지의 종류별로 구분하여 제공하고 있다.

<14> 따라서, 종래 기술은 다양한 종류의 메시지를 송/수신하기 위하여 메시지의 종류마다 서로 다른 메뉴와 서로 다른 경로를 이용해야 하는 불편함이 있었다.

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<15> 또한, 종래 기술은 사용자 입장에서 두 종류의 메시지가 기술적으로 다른지 알 필요가 없음에도 불구하고, 구분된 인터페이스 및 용어를 사용함으로써 사용자의 메시지 송/수신에 혼란을 초래하고 기술적 이질감을 갖게 하여 해당 서비스의 사용률을 떨어뜨리는 문제점이 있었다.

<16> 또한, 종래의 무선통신단말기는 메시지를 일종의 편지라는 개념으로 파악하여 받은 편지함, 보낸 편지함 등과 같이 송/수신 관리함을 구분하고 있다. 이것은 인터넷 인스턴트 메신저를 이용한 실시간 채팅이 보편화된 상황에 비추어 볼 때, 상대적으로 느린 응답을 받게 하는 문제점이 있었다.

【발명이 이루고자 하는 기술적 과제】

<17> 본 발명은, 상기와 같은 문제점을 해결하기 위하여 제안된 것으로, 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 함으로써, 사용자에게 기술적인 이질감 없이 좀 더 친숙하고 직관적인 인터페이스를 제공하기 위한, 통합 메시징 서비스 기능을 가지는 무선통신단말기 및 그 방법에 관한 것이다.

【발명의 구성 및 작용】

<18> 상기의 목적을 달성하기 위한 본 발명의 장치는, 통합 메시징 서비스 기능을 가지는 무선통신단말기에 있어서, 무선통신망을 통하여 외부 기기와 메시지를 송/수신하기 위한 무선송수신 수단; 통합 유저 인터페이스를 제공하기 위한 통합 메시징 서비스 프로그램 및 메시지를

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저장하기 위한 저장 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 항목 선택 신호를 입력받기 위한 입력 수단; 상기 통합 유저 인터페이스를 통하여 메시지 내용과 구별 정보를 출력하기 위한 표시 수단; 및 상기 통합 메시징 서비스 프로그램을 구동시켜 상기 입력 수단과 상기 표시 수단에 통합 유저 인터페이스를 제공하고, 상기 통합 유저 인터페이스를 통하여 입력받은 송신 메시지의 종류를 판단하여 그에 따른 식별 정보를 포함하는 메시지를 생성하여 송신하고 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 수신한 메시지 종류를 판단하여 상기 메시지를 메시지 내용과 식별 정보로 분리한 후 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 상기 각 구성 요소를 제어하기 위한 제어 수단을 포함한다.

<19> 한편, 본 발명의 송신 방법은, 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 있어서, 통합 유저 인터페이스를 통하여 메시지 내용을 입력받는 입력 단계; 상기 입력받은 메시지 내용의 데이터 종류를 판단하는 메시지 종류 판단 단계; 식별 정보를 포함하는 메시지를 생성하는 메시지 생성 단계; 상기 생성한 메시지를 상대측 무선통신단말기로 송신하는 송신 단계; 및 상기 입력 단계에서 입력받은 메시지 내용을 구별 정보와 함께 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계를 포함한다.

<20> 또한, 본 발명의 수신 방법은, 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 있어서, 상대측 무선통신단말기로부터 수신한 메시지의 종류를 판단하는 메시지 종류 판단 단계; 메시지의 수신을 사용자에게 알리는 알림 단계; 수신 메시지의 출력을 요청받음에 따라 메시지를 식별 정보와 메시지 내용으로 분리하여 통합 유저 인터페이스 출력 양식에 맞게 변환하는 메시지 변환 단계; 및 상기 변환한 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계를 포함한다.

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<21> 상술한 목적, 특징들 및 장점은 첨부된 도면과 관련한 다음의 상세한 설명을 통하여 보다 분명해 질 것이다. 이하, 첨부된 도면을 참조하여 본 발명에 따른 바람직한 일실시예를 상세히 설명한다.

<22> 먼저, 본 발명의 바람직한 일실시예를 설명하기에 앞서, 본 발명의 무선통신단말기는 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 종류의 메시지를 송/수신하는 기능이 지원됨을 미리 밝혀 둔다. 이하의 일실시예에서는 단문 메시지와 멀티미디어 메시지를 예를 들어 설명하기로 한다.

<23> 도 1은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에 대한 일실시예 구성도이다.

<24> 도 1에 도시된 바와 같이, 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기는, 무선통신망을 통하여 상대측 무선통신단말기와 단문 메시지 또는 멀티미디어 메시지의 알림 메시지를 송/수신하고, 멀티미디어 콘텐츠 서버와 멀티미디어 메시지(멀티미디어 파일 포함)를 송/수신하기 위한 무선송수신부(11), 단문 메시지와 멀티미디어 메시지를 메뉴 구분 없이 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 하는 통합 메시징 서비스 프로그램과 상대방의 전화번호와 닉네임 등을 포함하는 전화번호부 그리고 각종 메시지 등을 저장하기 위한 저장부(12), 통합 유저 인터페이스를 통하여 사용자로부터 단문 메시지 또는 멀티미디어 메시지의 메시지 내용과 항목 선택 신호 등을 입력받기 위한 입력부(16), 통합 유저 인터페이스를 통하여 단문 메시지 또는 멀티미디어 메시지의 메시지 내용과 송/수신 구별 정보 및 메시지의 데이터 구별 정보 등을 송/수신한 순서대로 출력하기 위한 표시부(17), 제어부(14)의 제어에 따라 상기 무선송수신부(11)를 통하여 전달받은 음성 신호를 음성으로 변환하여 음성출력부(스피커)(15)로 출력하고, 음성입력부(마이크)(18)로부터 입력받은 음성을 음성 신

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호로 변환하여 상기 제어부(14)로 전달하여 상기 무선송수신부(11)을 통하여 송출되도록 하기 위한 코덱(CODEC)(13), 상기 코덱(13)으로부터 전달받은 음성을 출력하기 위한 음성출력부(스피커)(15), 음성을 입력받아 상기 코덱(13)으로 전달하기 위한 음성입력부(마이크)(18), 상기 저장부(12)에 저장되어 있는 통합 메시징 서비스 프로그램을 구동시켜 상기 입력부(16)와 표시부(17)에 통합 유저 인터페이스를 제공하고, 메시지를 송신하는 경우 통합 유저 인터페이스를 통하여 입력받은 메시지 내용에 멀티미디어 파일의 유무를 기준으로 전송할 메시지 종류를 판단하고 상기 판단 결과에 따라 식별 정보를 포함하는 메시지를 생성하여 송신하며 상기 통합 유저 인터페이스를 통하여 상기 입력받은 메시지 내용과 각종 구별 정보를 출력하고, 메시지를 수신하는 경우 수신한 메시지에 포함된 식별 정보를 이용하여 메시지의 종류를 판단하고 상기 메시지를 식별 정보와 메시지 내용으로 분리하여 통합 유저 인터페이스의 출력 양식에 맞게 변환한 후 통합 유저 인터페이스를 통하여 상기 메시지 내용과 각종 구별 정보를 출력하며, 상기 각 구성 요소를 제어하기 위한 제어부(14)를 포함한다. 그 상세 동작은 도 2 및 도 3을 참조하여 후술하기로 한다.

<25> 도 2는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 대한 일실시예 흐름도이다.

<26> 먼저, 사용자로부터 상대측 무선통신단말기로 송신할 메시지 내용을 통합 유저 인터페이스를 통하여 입력받는다(201). 통합 유저 인터페이스는 무선통신단말기의 메인 메뉴 중 하나이므로, 무선통신단말기의 전원이 켜짐과 동시에 제어부(14)의 제어에 의해 저장부(12)의 통합 메시징 서비스 프로그램이 구동되어 별도의 메신저 구동 요청없이 사용할 수 있다.

<27> 그러면, 제어부(14)는 입력받은 메시지 내용에 멀티미디어 파일이 포함되었는지의 여부를 기준으로 전송할 메시지의 종류를 판단한다(202). 즉, 메시지 내용이 텍스트로 이루어져 있

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으면 단문 메시지로 판단하고, 메시지 내용에 멀티미디어 파일이 포함되어 있으면 멀티미디어 메시지로 판단한다.

<28> 여기서, 멀티미디어 파일이란 텍스트는 물론 이미지, 음성, 영상 등의 멀티미디어 콘텐츠를 포함하는 파일을 말하며, 텍스트와 달리 곧바로 상대측 무선통신단말기로 송신할 수 없고 멀티미디어 콘텐츠 서버를 경유하여 송신한다.

<29> 상기 판단 결과(202), 단문 메시지일 경우에 송신자의 전화 번호, 송신자 이름 등의 송신자 정보와 보낸 시간 등의 시간 정보를 포함하는 단문 메시지의 식별 정보를 생성하고(203), 상기 식별 정보와 입력받은 메시지 내용(텍스트)을 포함하는 단문 메시지를 생성하여(204) 상대측 무선통신단말기로 송신한다(205).

<30> 여기서, 식별 정보란 송신자와 송신 메시지의 종류를 식별하기 위한 정보를 말한다. 단문 메시지와 멀티미디어 메시지는 상대측 무선통신단말기로 최종 전송되어지기까지의 중간 경로가 다르므로 서로 다른 정보를 포함하는 식별 정보를 생성한다.

<31> 그리고, 제어부(14)는 상대측 무선통신단말기로 송신한 메시지 내용(텍스트)을 통합 유저 인터페이스의 출력 양식에 맞게 변환한 후 각종 구별 정보와 함께 통합 유저 인터페이스를 통하여 사용자에게 출력한다(206).

<32> 여기서, 구별 정보란 하나의 인터페이스를 통하여 한 화면 내에 출력되는 다양한 종류의 송/수신 메시지를 서로 구별하기 위한 것으로, 송/수신 메시지를 구별하기 위한 송/수신 구별 정보와 멀티미디어 파일을 포함하는 멀티미디어 메시지의 경우에 이미지, 음성, 영상 등의 메시지의 데이터 종류를 구별하기 위한 데이터 구별 정보로 크게 나누어진다.

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<33> 즉, 송/수신 구별 정보의 경우에 송/수신자의 이름, 전화번호부에 저장된 닉네임 또는 전화번호, 특정 아이콘 등을 송/수신 메시지 내용 옆에 함께 출력함으로써 송/수신 메시지를 서로 구별할 수 있다. 데이터 구별 정보의 경우에 멀티미디어 메시지의 각 데이터의 종류를 표시하는 아이콘이나 미리보기 식의 조그마한 그림, 동영상의 첫 장면의 축소판 등을 이용하여 멀티미디어 파일이 첨부되었음을 표시할 수 있다. 위의 "206" 과정에서의 구별 정보는 송신 여부를 나타내기 위한 송신 구별 정보를 포함한다.

<34> 한편, 상기 판단 결과(202), 멀티미디어 메시지일 경우에 송신자의 전화번호, 송신자 이름 등의 송신자 정보와 보낸 시간 등의 시간 정보 외에 멀티미디어 파일의 위치 정보 및 멀티미디어 파일의 종류 정보(멀티미디어 메시지의 데이터 종류 정보)를 더 포함하는 멀티미디어 메시지의 식별 정보를 생성한다(207).

<35> 그리고, 멀티미디어 파일을 포함하는 멀티미디어 메시지와 상기 멀티미디어 메시지의 알림 메시지를 생성한다(208).

<36> 여기서, 알림 메시지란 상대측 무선통신단말기로 멀티미디어 메시지의 전송 사실을 알려주기 위한 일종의 단문 메시지로서, 멀티미디어 파일을 제외한 텍스트 메시지 내용과 "207" 과정에서 생성한 식별 정보를 포함한다.

<37> 이후, 알림 메시지를 상대측 무선통신단말기로 송신하고(209), 상기 알림 메시지를 수신한 상대측 무선통신단말기가 멀티미디어 콘텐츠 서버에 접속하여 멀티미디어 메시지(멀티미디어 파일 포함)를 수신할 수 있도록 멀티미디어 메시지를 상기 멀티미디어 콘텐츠 서버로 송신한다(210).

<38> 그리고, 제어부(14)는 상대측 무선통신단말기로 송신한 메시지 내용을 통합 유저 인터페이스의 출력 양식에 맞게 변환한 후에 앞서 말한 각종 구별 정보와 함께 통합 유저 인터페이스를 통하여 사용자에게 출력한다(211). 이 경우, 구별 정보는 메시지의 송신 여부를 나타내기 위한 송신 구별 정보와 멀티미디어 메시지가 포함하고 있는 데이터 종류를 나타내기 위한 데이터 구별 정보를 포함한다.

<39> 도 3은 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 대한 일실시예 흐름도이다.

<40> 먼저, 제어부(14)는 상대측 무선통신단말기로부터 수신한 메시지의 종류를 상기 수신한 메시지에 포함된 식별 정보를 이용하여 판단한다(301).

<41> 상기 판단 결과(301), 단문 메시지일 경우에 아이콘, 소리, 진동 등을 이용하여 사용자에게 단문 메시지의 수신을 알린다(302).

<42> 이후, 사용자로부터 입력부(17)를 통하여 단문 메시지의 출력을 요청받음에 따라(303) 제어부(14)는 수신한 단문 메시지를 식별 정보와 메시지 내용(텍스트)으로 분리하여 통합 유저 인터페이스의 출력 양식에 맞게 변환하고(304), 단문 메시지 내용(텍스트)과 메시지의 수신 여부를 나타내기 위한 수신 구별 정보를 통합 유저 인터페이스를 통하여 사용자에게 출력한다(305).

<43> 한편, 상기 판단 결과(301), 멀티미디어 메시지의 알림 메시지일 경우에 아이콘, 소리, 진동 등을 이용하여 사용자에게 멀티미디어 메시지의 알림 메시지 수신을 알린다(306).

<44> 이후, 사용자로부터 입력부(17)를 통하여 알림 메시지의 출력을 요청받음에 따라(307) 제어부(14)는 수신한 알림 메시지를 식별 정보와 메시지 내용(텍스트)으로 분리하여 통합 유저

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인터페이스의 출력 양식에 맞게 변환하고(308), 메시지 내용(텍스트)과 각종 구별 정보를 통합 유저 인터페이스를 통하여 사용자에게 출력한다(309). 이 경우, 구별 정보는 메시지의 수신 여부를 나타내기 위한 수신 구별 정보와 멀티미디어 메시지가 포함하고 있는 데이터 종류를 나타내기 위한 데이터 구별 정보를 포함한다. 여기서, 멀티미디어 메시지가 포함하고 있는 데이터 종류는 알림 메시지의 식별 정보를 이용하여 알 수 있다.

<45> 이후, 사용자로부터 입력부(17)를 통하여 멀티미디어 메시지의 수신을 요청받음에 따라(310) 알림 메시지의 식별 정보에 포함된 멀티미디어 파일의 위치 정보를 이용하여 해당 URL(Uniform Resource Locator)의 멀티미디어 콘텐츠 서버에 접속한 후 멀티미디어 메시지 즉, 멀티미디어 파일의 바이너리 데이터를 수신한다(311).

<46> 그러면, 제어부(14)는 수신한 멀티미디어 메시지를 통합 유저 인터페이스 상에서 기존의 무선통신단말기가 지원하는 편지 형식(전체 화면)의 출력 양식으로 사용자에게 출력하도록 표시부(16)를 제어한다(312).

<47> 지금까지 설명한 송/수신 방법을 좀 더 구체적으로 살펴보면, 처음으로 메시지를 송/수신하는 경우에는 무선통신단말기의 메인 메뉴인 통합 유저 인터페이스를 선택함으로써 메시지를 송/수신할 수 있다. 반면에, 통합 유저 인터페이스를 사용하고 있는 상태에서 새로운 메시지를 송/수신하는 경우에는 인스턴트 메신저의 출력 양식과 같이 오래된 기존 메시지를 더이상 화면에 출력하지 않고 새로운 메시지를 위한 공간을 추가하는 방식을 이용하여 송/수신한 순서대로 상기 송/수신 메시지를 구별하기 위한 구별 정보와 함께 출력하며, 입력부(17)를 통하여 사용자로부터 기존 메시지의 출력을 요청받음에 따라 기존 메시지를 다시 출력할 수 있다.

<48> 도 4는 본 발명에 따른 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 통합 유저 인터페이스에 대한 일실시예 설명도이다.

<49> 도 4는 상대측 무선통신단말기 사용자(A)와 현재 사용자(B) 사이의 송/수신 메시지 내용을 보여준다. 송/수신 메시지를 구별하기 위하여 두 명의 사용자를 나타내는 "A", "B"를 송/수신 구별 정보로 사용하고 있고, 멀티미디어 메시지의 데이터 종류를 구별하기 위하여 "(MMS)"를 데이터 구별 정보로 사용하고 있다.

<50> 도 4a의 "41"을 보면, A가 보낸 단문 메시지와 B가 보낸 단문 메시지 그리고 A가 보낸 멀티미디어 메시지의 알림 메시지가 송/수신된 순서대로 통합 유저 인터페이스를 통하여 출력되었음을 알 수 있다. 통합 유저 인터페이스를 통하여 출력되는 메시지를 기존의 무선통신단말기에서 지원하는 편지 형식으로 출력하기 위하여 커서, 항목 선택 신호 등을 이용하여 각각의 메시지를 선택할 수 있다. 예를 들어, 단문 메시지를 커서로 선택할 경우에 일부만 출력하던 텍스트 메시지 내용을 여러 줄로 늘려 출력하고, 상기 커서로 선택된 단문 메시지를 항목 선택 신호를 이용하여 다시 선택할 경우에 원래의 통합 유저 인터페이스의 출력 양식이 아닌 기존의 무선통신단말기가 지원하는 편지 형식(전체 화면)으로 출력할 수 있다.

<51> 그리고, 도 4a의 "42"를 보면, 항목 선택 신호를 이용하여 "41"의 멀티미디어 메시지의 알림 메시지를 선택한 경우에 알림 메시지에 포함된 식별 정보의 URL을 이용하여 멀티미디어 콘텐츠 서버에 접속한 후에 수신한 멀티미디어 메시지(멀티미디어 파일)를 통합 유저 인터페이스 내에서 기존의 무선통신단말기가 지원하는 편지 형식(전체 화면)의 출력 양식으로 사용자에게 출력하였음을 알 수 있다. 이후, 사용자의 요청에 따라 편지 형식의 출력 양식에서 원래의 통합 유저 인터페이스의 출력 양식으로 변환할 수 있다.

<52> 이처럼, 특정 메시지를 커서 및 항목 선택 신호 등을 이용하여 선택함으로써 통합 유저 인터페이스 내에서 메시지를 늘려 출력할 수 있으며, 기존의 무선통신단말기가 지원하는 편지

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형식으로 변환하여 출력하거나 또는 기존의 무선통신단말기가 지원하는 편지 형식에서 원래의 통합 유저 인터페이스의 출력 양식으로 상호 변환하여 출력하는 것이 가능하다.

<53> 한편, 도 4b의 "43"과 "44"를 보면, B가 통합 유저 인터페이스의 입력창을 통하여 멀티미디어 메시지를 작성하고 있음을 알 수 있다.

<54> 또한, 도 4b의 "44"를 보면, 사용자로부터 입력받는 메시지의 크기가 커짐에 따라 통합 유저 인터페이스의 입력창의 크기가 변화하는 것을 볼 수 있다. 예를 들어, 텍스트 메시지 내용이 길 경우에 입력창의 크기가 커질 수 있고, 멀티미디어 파일을 첨부할 경우에 그 파일을 보여주기 위하여 입력창의 크기가 커질 수 있다. 여기서, 멀티미디어 파일의 첨부를 사용자에게 알리기 위하여 파일 자체를 출력하는 것이 아니라 데이터 구별 정보를 이용할 수도 있다.

<55> 이상에서 알 수 있듯이 본 발명은, 통합 메시징 서비스 프로그램을 이용하여 다양한 종류의 메시지를 하나의 통합 유저 인터페이스를 통하여 송/수신할 수 있도록 하는 통합 유저 인터페이스를 제공한다.

<56> 이상에서 설명한 본 발명은, 본 발명이 속하는 기술분야에서 통상의 지식을 가진 자에 있어 본 발명의 기술적 사상을 벗어나지 않는 범위 내에서 여러 가지 치환, 변형 및 변경이 가능하므로 전술한 실시예 및 첨부된 도면에 의해 한정되는 것이 아니다.

【발명의 효과】

<57> 상기와 같이 본 발명은, 통합 메시징 서비스 프로그램을 이용하여 전송 프로토콜 및 네트웍의 변경 없이 단문 메시지 및 멀티미디어 메시지 등과 같은 다양한 메시지를 하나의 통합

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유저 인터페이스를 통하여 송/수신하도록 함으로써, 사용자에게 기술적인 이질감 없이 좀 더 친숙하고 직관적인 인터페이스를 제공하는 효과가 있다.

<58> 이로써, 본 발명은, 구분된 인터페이스 및 용어의 사용으로 인한 사용자의 혼란과 기술적 차이에 대한 이질감을 감소시켜 해당 서비스의 이용률을 증가시킬 수 있는 효과가 있으며, 사용자 입장에서 단문 메시지 및 멀티미디어 메시지와 같은 다양한 종류의 메시지의 기술적 차이를 알지 못하더라도 자연스럽게 메시징 서비스를 이용할 수 있으므로 사용상 편의성이 증대되고, 종래의 무선통신단말기의 메시징 서비스와 비교할 때 인스턴트 메신저라는 개념을 갖게 되어 상대적으로 빠르게 응답받을 수 있는 효과가 있다.

<59> 또한, 본 발명은, 기존의 전송 프로토콜과 네트웍을 바꾸지 않고서도 메신저 서비스를 구현할 수 있으므로 추가 비용이 들지 않는 장점이 있다.

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【특허청구범위】

【청구항 1】

통합 메시징 서비스 기능을 가지는 무선통신단말기에 있어서,

무선통신망을 통하여 외부 기기와 메시지를 송/수신하기 위한 무선송수신 수단;

통합 유저 인터페이스를 제공하기 위한 통합 메시징 서비스 프로그램 및 메시지를 저장하기 위한 저장 수단;

상기 통합 유저 인터페이스를 통하여 메시지 내용과 항목 선택 신호를 입력받기 위한 입력 수단;

상기 통합 유저 인터페이스를 통하여 메시지 내용과 구별 정보를 출력하기 위한 표시 수단; 및

상기 통합 메시징 서비스 프로그램을 구동시켜 상기 입력 수단과 상기 표시 수단에 통합 유저 인터페이스를 제공하고, 상기 통합 유저 인터페이스를 통하여 입력받은 송신 메시지의 종류를 판단하여 그에 따른 식별 정보를 포함하는 메시지를 생성하여 송신하고 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 수신한 메시지 종류를 판단하여 상기 메시지를 메시지 내용과 식별 정보로 분리한 후 상기 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하며, 상기 각 구성 요소를 제어하기 위한 제어 수단을 포함하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 2】

제 1항에 있어서,

상기 구별 정보는,

메시지의 송/수신 여부를 나타내기 위한 송/수신 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 3】

제 1항에 있어서,

상기 제어 수단은,

상기 송신 메시지가 멀티미디어 메시지임에 따라 멀티미디어 파일을 포함하는 멀티미디어 메시지를 생성한 후에, 상대측 무선통신단말기가 멀티미디어 콘텐츠 서버에 접속하여 상기 생성한 멀티미디어 메시지를 수신할 수 있도록, 상기 생성한 멀티미디어 메시지를 상기 멀티미디어 콘텐츠 서버로 송신하는 기능; 및

상기 상대측 무선통신단말기로부터 수신한 메시지가 멀티미디어 메시지의 알림 메시지임에 따라 상기 알림 메시지에 포함된 식별 정보의 URL(Uniform Resource Locator)을 이용하여 상기 멀티미디어 콘텐츠 서버에 접속한 후 멀티미디어 파일을 포함하는 멀티미디어 메시지를 수신하여 상기 통합 유저 인터페이스를 통하여 출력하는 기능

을 더 수행하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 4】

제 3항에 있어서,

상기 제어 수단의 송/수신 메시지 출력 과정은,

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송/수신 여부를 나타내기 위한 송/수신 구별 정보 및 메시지 내용에 포함된 데이터의 종류를 나타내기 위한 데이터 구별 정보를 함께 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 5】

제 1항 내지 제 4항 중 어느 한 항에 있어서,

상기 제어 수단이 상기 통합 유저 인터페이스를 통하여 메시지를 출력하는 과정은,

상기 입력 수단을 통하여 메시지 출력 양식의 변환을 요청받음에 따라 상기 통합 유저 인터페이스의 메시지 출력 양식을 기존 무선통신단말기의 출력 양식인 편지 형식으로 또는 기존 무선통신단말기의 출력 양식인 편지 형식을 상기 통합 유저 인터페이스의 메시지 출력 양식으로 상호 변환하여 메시지 내용을 상기 표시 수단을 통하여 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기.

【청구항 6】

통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법에 있어서,

통합 유저 인터페이스를 통하여 메시지 내용을 입력받는 입력 단계;

상기 입력받은 메시지 내용의 데이터 종류를 판단하는 메시지 종류 판단 단계;

식별 정보를 포함하는 메시지를 생성하는 메시지 생성 단계;

상기 생성한 메시지를 상대측 무선통신단말기로 송신하는 송신 단계; 및

상기 입력 단계에서 입력받은 메시지 내용을 구별 정보와 함께 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계

를 포함하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법

【청구항 7】

제 6항에 있어서,

상기 구별 정보는,

메시지의 송/수신 여부를 나타내기 위한 송/수신 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 8】

제 6항에 있어서,

상기 입력받은 메시지가 멀티미디어 메시지임에 따라 멀티미디어 파일을 포함하는 멀티미디어 메시지를 생성한 후에, 상기 상대측 무선통신단말기가 멀티미디어 콘텐츠 서버에 접속하여 상기 생성한 멀티미디어 메시지를 수신할 수 있도록, 상기 생성한 멀티미디어 메시지를 상기 멀티미디어 콘텐츠 서버로 송신하는 멀티미디어 메시지 송신 단계

를 더 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

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【청구항 9】

제 8항에 있어서,

상기 구별 정보는,

송/수신 여부를 나타내기 위한 송/수신 구별 정보 및 메시지 내용에 포함된 데이터의 종류를 나타내기 위한 데이터 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 10】

제 6항 내지 제 9항 중 어느 한 항에 있어서,

상기 메시지 출력 단계는,

메시지 출력 양식의 변환을 요청받음에 따라 상기 통합 유저 인터페이스의 메시지 출력 양식을 기존 무선통신단말기의 출력 양식인 편지 형식으로 또는 기존 무선통신단말기의 출력 양식인 편지 형식을 상기 통합 유저 인터페이스의 메시지 출력 양식으로 상호 변환하여 메시지 내용을 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 송신 방법.

【청구항 11】

통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법에 있어서,

상대측 무선통신단말기로부터 수신한 메시지의 종류를 판단하는 메시지 종류 판단 단계

;

메시지의 수신을 사용자에게 알리는 알림 단계;

수신 메시지의 출력을 요청받음에 따라 메시지를 식별 정보와 메시지 내용으로 분리하여 통합 유저 인터페이스 출력 양식에 맞게 변환하는 메시지 변환 단계; 및

상기 변환한 메시지 내용과 구별 정보를 상기 통합 유저 인터페이스를 통하여 출력하는 메시지 출력 단계

를 포함하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법

.

【청구항 12】

제 11항에 있어서,

상기 구별 정보는,

메시지의 송/수신 여부를 나타내기 위한 송/수신 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 13】

제 11항에 있어서,

상기 상대측 무선통신단말기로부터 수신한 메시지가 멀티미디어 메시지의 알림 메시지임에 따라 상기 알림 메시지에 포함된 식별 정보의 URL(Uniform Resource Locator)을 이용하여 상기 멀티미디어 콘텐츠 서버에 접속한 후 멀티미디어 파일을 포함하는 멀티미디어 메시지를 수신하여 상기 통합 유저 인터페이스를 통하여 출력하는 기능

을 더 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 14】

제 13항에 있어서,

상기 구별 정보는,

송/수신 여부를 나타내기 위한 송/수신 구별 정보 및 메시지 내용에 포함된 데이터의 종류를 나타내기 위한 데이터 구별 정보를 포함하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【청구항 15】

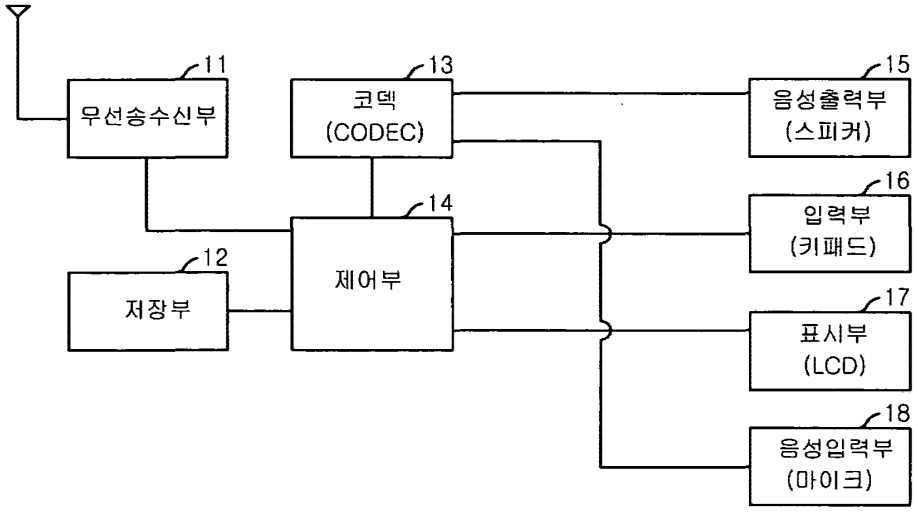
제 11항 내지 제 14항 중 어느 한 항에 있어서,

상기 메시지 출력 단계는,

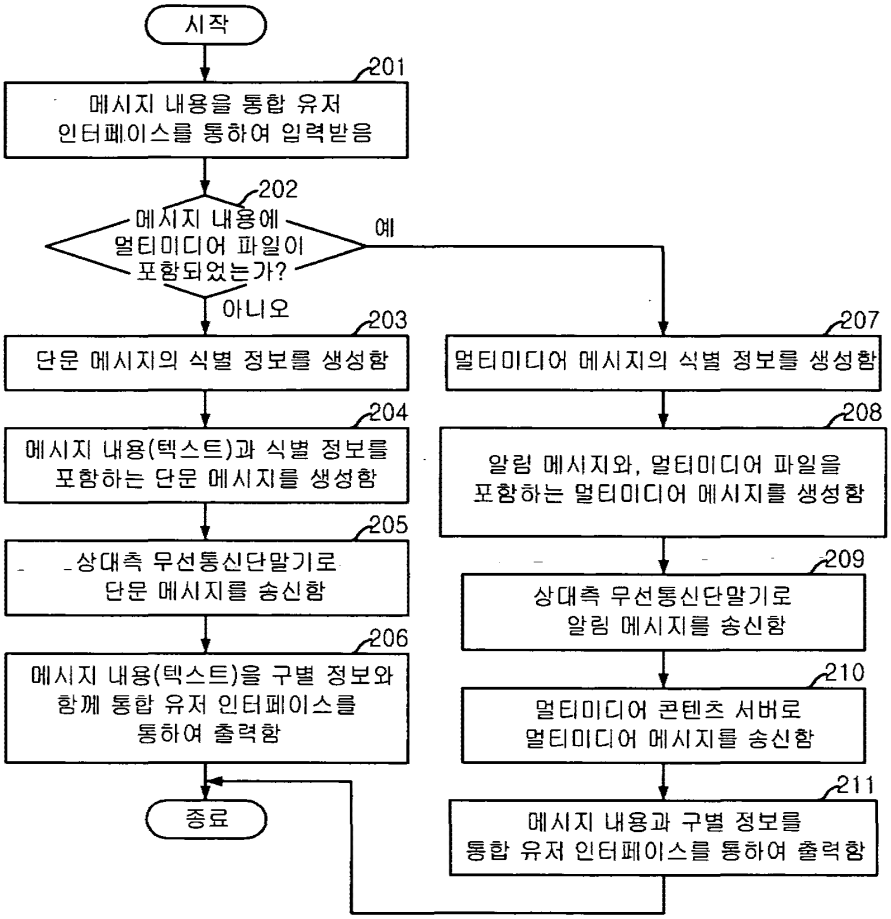
메시지 출력 양식의 변환을 요청받음에 따라 상기 통합 유저 인터페이스의 메시지 출력 양식을 기존 무선통신단말기의 출력 양식인 편지 형식으로 또는 기존 무선통신단말기의 출력 양식인 편지 형식을 상기 통합 유저 인터페이스의 메시지 출력 양식으로 상호 변환하여 메시지 내용을 출력하는 것을 특징으로 하는 통합 메시징 서비스 기능을 가지는 무선통신단말기에서의 메시지 수신 방법.

【도면】

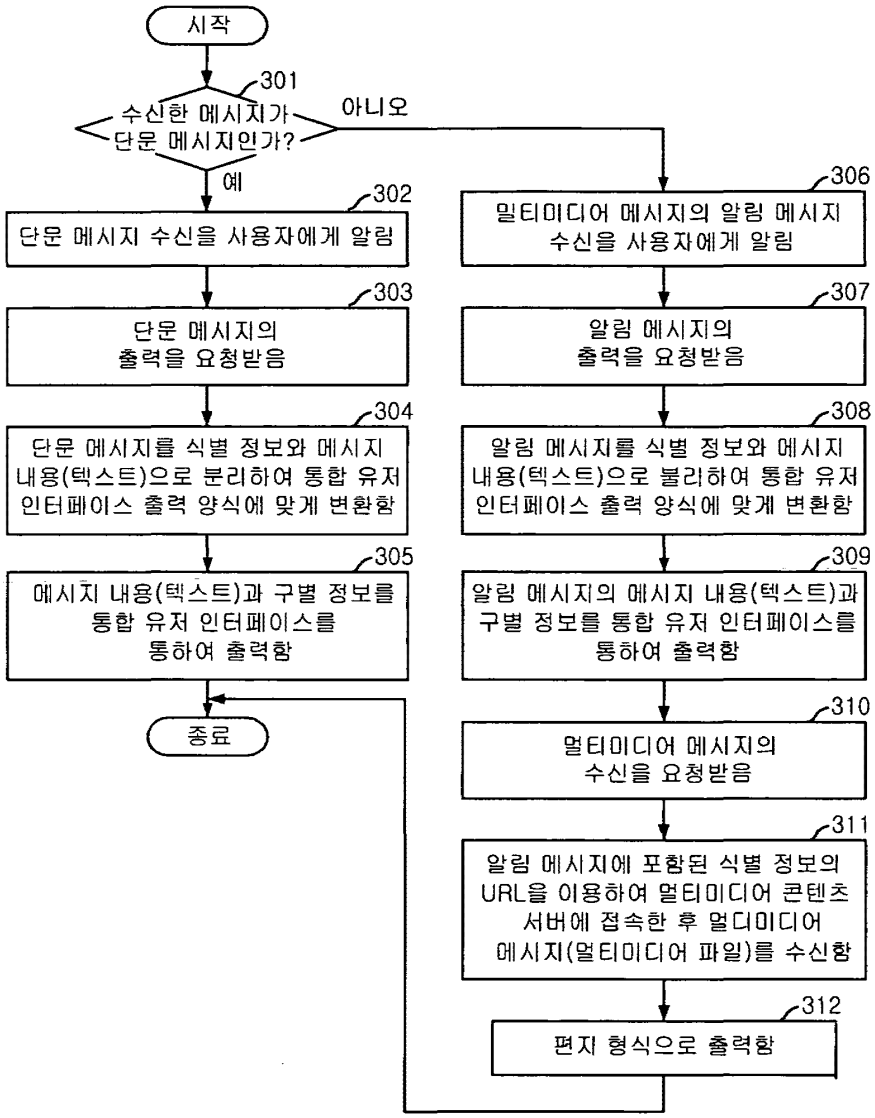
【도 1】


11
무선송수신부
13
코덱
(CODEC)
15
음성출력부
(스피커)
16
입력부
(키패드)
14
제어부
12
저장부
17
표시부
(LCD)
18
음성입력부
(마이크)

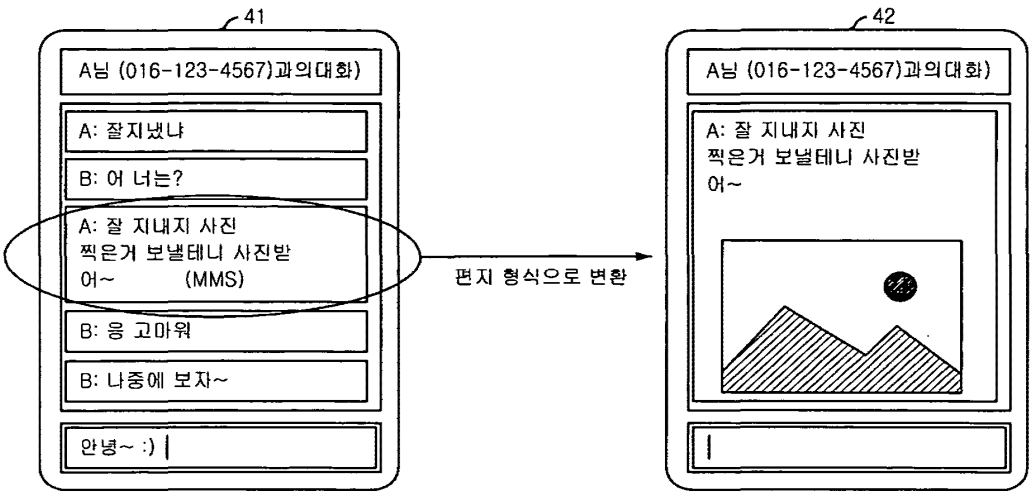
【도 2】


시작
201
메시지 내용을 통합 유저 인터페이스를 통하여 입력받음
202
메시지 내용에 멀티미디어 파일이 포함되었는가?
예
아니오
203
단문 메시지의 식별 정보를 생성함
204
메시지 내용(텍스트)과 식별 정보를 포함하는 단문 메시지를 생성함
205
상대측 무선통신단말기로 단문 메시지를 송신함
206
메시지 내용(텍스트)을 구별 정보와 함께 통합 유저 인터페이스를 통하여 출력함
종료
207
멀티미디어 메시지의 식별 정보를 생성함
208
알림 메시지와, 멀티미디어 파일을 포함하는 멀티미디어 메시지를 생성함
209
상대측 무선통신단말기로 알림 메시지를 송신함
210
멀티미디어 콘텐츠 서버로 멀티미디어 메시지를 송신함
211
메시지 내용과 구별 정보를 통합 유저 인터페이스를 통하여 출력함

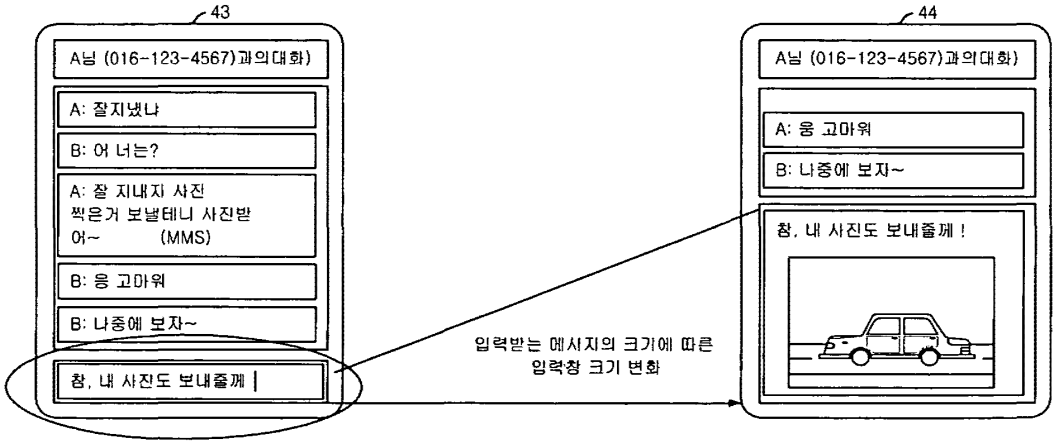
【도 3】


시작
301
수신한 메시지가 단문 메시지인가?
아니오
예
302
단문 메시지 수신을 사용자에게 알림
303
단문 메시지의 출력을 요청받음
304
단문 메시지를 식별 정보와 메시지 내용(텍스트)으로 분리하여 통합 유저 인터페이스 출력 양식에 맞게 변환함
305
메시지 내용(텍스트)과 구별 정보를 통합 유저 인터페이스를 통하여 출력함
종료
306
밀티미디어 메시지의 알림 메시지 수신을 사용자에게 알림
307
알림 메시지의 출력을 요청받음
308
알림 메시지를 식별 정보와 메시지 내용(텍스트)으로 불리하여 통합 유저 인터페이스 출력 양식에 맞게 변환함
309
알림 메시지의 메시지 내용(텍스트)과 구별 정보를 통합 유저 인터페이스를 통하여 출력함
310
멀티미디어 메시지의 수신을 요청받음
311
알림 메시지에 포함된 식별 정보의 URL을 이용하여 멀티미디어 콘텐츠 서버에 접속한 후 멀디미디어 메시지(멀티미디어 파일)를 수신함
312
편지 형식으로 출력함

【도 4a】


41
A님 (016-123-4567)과의대화)
A: 잘지냈냐
B: 어 너는?
A: 잘 지내지 사진
찍은거 보낼테니 사진받
어~ (MMS)
B: 응 고마워
B: 나중에 보자~
안녕~ :)
편지 형식으로 변환
42
A님 (016-123-4567)과의대화)
A: 잘 지내지 사진
찍은거 보낼테니 사진받
어~

【도 4b】


43
A님 (016-123-4567)과의대화)
A: 잘지냈냐
B: 어 너는?
A: 잘 지내지 사진
찍은거 보낼테니 사진받
어~ (MMS)
B: 응 고마워
B: 나중에 보자~
참, 내 사진도 보내줄께
입력받는 메시지의 크기에 따른
입력창 크기 변화
44
A님 (016-123-4567)과의대화)
A: 응 고마워
B: 나중에 보자~
참, 내 사진도 보내줄께 !

041305

16179 U.S. PTO

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	51876P836
First Inventor	JinWoo You, et al.
Title	wireless communicating terminal for providing integrated messaging service and method thereof
Express Mail Label No.	EV339909104US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

ADDRESS TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. ☐ Applicant claims small entity status. See 37 CFR 1.27.
3. ☒ Specification *[Total Pages 25]* *(preferred arrangement set forth below)*
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table, or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
4. ☒ Drawing(s) *(35 U.S.C. 113)* *[Total Sheets 6]*
5. Oath or Declaration *[Total Pages _]*
   a. ☐ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies

112950 U.S. PTO 11/106160

041305

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R. § 3.73(b) Statement *(when there is an assignee)* ☐ Power of Attorney
11. ☐ English Translation Document *(if applicable)*
12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment ☐ Application Amended to Reflect Claim of Priority
14. ☒ Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. ☒ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. ☒ Other: priority request; formal drawings transmittal

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: _____

Prior application Information: Examiner _____ *Group/Art Unit:* _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ *Customer Number* **08791** *or* ☐ *Correspondence address below*

Name	Blakely, Sokoloff, Taylor & Zafman LLP				
Address	12400 Wilshire Boulevard, 7th Floor				
City	Los Angeles	*State*	California	*Zip Code*	90025
Country		*Telephone*	(310) 207-3800	*Fax*	(310) 820-5988

Name (Print/Type)	Eric S. Hyman	*Registration No. (Attorney/Agent)*	30,139
Signature		*Date*	4/13/05

Based on PTO/SB/05 (04-04) as modified by Blakely, Sokoloff, Taylor & Zafman (Wh) 06/04/2004.
SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Effective 12/08/2004
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818)

FEE TRANSMITTAL for FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT	($)	1,000.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	JinWoo You
Examiner Name	
Art Unit	
Attorney Docket No.	51876P836

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20. ☐ Credit any overpayments

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee(s) Paid ($)
Utility	300	150	500	250	200	100	1,000.00
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description

Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent

Each independent claim over 3 or, Reissues, each independent claim more than in the original patent

Multiple independent claims

Total Claims		Extra Claims		Fee ($)		Fee Paid	Multiple Dependent Claims Fee ($)	Multiple Dependent Claims Fee Paid
15	- 20 or HP =	0	X	50.00	=	$0.00		

HP = highest number of total claims paid for, if greater than 20

Indep. Claims		Extra Claims		Fee ($)		Fee Paid
3	- 3 or HP =	0	X	200.00	=	$0.00

HP = highest number of independent claims paid for, if greater than 3

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets of sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
31	- 100 =	-69	/ 50 =	_____ (round up to a whole number)	X	_____	=	_____

4. OTHER FEE(S) **Fees Paid ($)**

Non-English Specification, $130 fee (no small entity discount)

Other: _____

Recording of a patent assignment

5. TOTAL AMOUNT OF PAYMENT ($) 1,000.00

SUBMITTED BY				Complete (if applicable)	
Name (Print/Type)	Eric S. Hyman	Registration No. (Attorney/Agent)	30,139	Telephone	(310) 207-3800
Signature				Date	4/12/05

Based on PTO/SB/17 (10-03) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 02/10/2004.
SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Express Mail No.: EV339909104US
DOCKET NO.: 51876P836

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

JINWOO YOU, ET AL.

Application No.:

Filed:

For: **wireless communicating terminal for providing integrated messaging service and method thereof**

Art Group:

Examiner:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF FORMAL DRAWINGS

Sir:

Enclosed herewith for filing in the above-identified U.S. Patent Application are the formal drawings, 6 sheets including 6 Figures. Please charge any additional fees or credit any overpayment to Deposit Account No. 02-2666. A duplicate copy of the Fee Transmittal is enclosed for this purpose.

Respectfully submitted,
Blakely, Sokoloff, Taylor & Zafman LLP

Dated: 4/19/05

Eric S. Hyman, Reg. No. 30,139

12400 Wilshire Boulevard, 7th Floor
Los Angeles, CA 90025
Telephone: (310) 207-3800

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/106,160	04/13/2005	Jin Woo You	51876P836

CONFIRMATION NO. 4038

08791
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

FORMALITIES LETTER

OC000000016012439

Date Mailed: 05/12/2005

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing. *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(f) of $130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$130** for a Large Entity

- **$130** Late oath or declaration Surcharge.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice <u>MUST</u> be returned with the reply.

Office of Initial Patent Examination (703) 308-1202

PART 3 - OFFICE COPY

IPW/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/106,160	04/13/2005	Jin Woo You	51876P836

CONFIRMATION NO. 4038

FORMALITIES LETTER



08791
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

Date Mailed: 05/12/2005

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing. *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(f) of $130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$130** for a Large Entity

- **$130** Late oath or declaration Surcharge.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

07/15/2005 WASFAW1 00000011 11106160
01 FC:1051 130.00 OP

A copy of this notice <u>MUST</u> be returned with the reply.

Office of Initial Patent Examination (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

OIPE
JUL 14 2005
PATENT & TRADEMARK OFFICE
JCS

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application No.	11/106,160
Filing Date	April 13, 2005
First Named Inventor	JinWoo You
Art Unit	
Examiner Name	
Total Number of Pages in This Submission	9
Attorney Docket Number	51876P836

ENCLOSURES ***(check all that apply)***

- [X] Fee Transmittal Form
  - [X] Fee Attached
- [ ] Amendment / Response
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
  - [ ] PTO/SB/08
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Basic Filing Fee
  - [X] Declaration/POA
- [X] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s)
- [ ] After Allowance Communication to Group
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to Group **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [X] Other Enclosure(s) *(please identify below):*

copy of Notice; return postcard

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Eric S. Hyman, Reg. No. 30,139 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	
Date	7/8/05

CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Typed or printed name	Melissa Stead		
Signature		Date	7-14-05

Based on PTO/SB/21 (04-04) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 06/04/2004.
SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

OIPE
JUL 14 2005
PATENT & TRADEMARK OFFICE

FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT	($)	130.00

Complete if Known	
Application Number	11/106,160
Filing Date	April 13, 2005
First Named Inventor	JinWoo You
Examiner Name	
Art Unit	
Attorney Docket No.	51876P836

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20. ☐ Credit any overpayments

FEE CALCULATION

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	130.00
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
2053	130	2053	130	Non-English specification	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	
1403	1,000	2403	500	Request for oral hearing	
1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1460	130	2460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
1809	790	1809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	

Other fee (specify) _____

SUBTOTAL (2) ($) 130.00

SUBMITTED BY Complete (if applicable)

Name (Print/Type)	Eric S. Hyman	Registration No. (Attorney/Agent)	30,139	Telephone	(310) 207-3800
Signature				Date	7/05

Based on PTO/SB/17 (12-04) as modified by Blakely, Sokoloff, Taylor & Zafman (wtr 12/15/2004.
SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

OIPE
JUL 14 2005
PATENT & TRADEMARK OFFICE
JC8

ATTORNEY DOCKET NO.: 51876P836

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

JINWOO YOU, ET AL.

Application No.: 11/106,160

Filed: April 13, 2005

For: **wireless communicating terminal for providing integrated messaging service and method thereof**

Art Group:

Examiner:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE TO FILE MISSING PARTS

Sir:

In response to the Notice to File Missing Parts mailed May 12, 2005, please find enclosed:

- a duly executed Declaration and Power of Attorney with payment in the amount of $130.00 for the surcharge of 37 CFR § 1.16(e);

and

- copy of the Notice to File Missing Parts of Application.

If any additional fee is required, please charge Deposit Account No. 02-2666. An extra copy of the Fee Transmittal is enclosed for deposit account charging purposes.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 7/8/05

Eric S. Hyman, Reg. No. 30,139

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Melissa Stead 7-11-05

Melissa Stead *Date*

12400 Wilshire Boulevard, 7th Floor
Los Angeles, CA 90025
Telephone: (310) 207-3800

JUL 14 2005 PATENT & TRADEMARK OFFICE

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION (37 CFR 1.63)			Attorney Docket Number	51876.P836
			First Named Inventor	YOU, Jin-Woo
			COMPLETE IF KNOWN	
			Application Number	11/106,160
☒ Declaration Submitted with Initial Filing	OR	☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16(e)) required)	Filing Date	4/13/2005
			Art Unit	
			Examiner Name	

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

WIRELESS COMMUNICATIN TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

the specification of which

☐ is attached hereto.
OR

■ was filed on (if applicable) :
April 13, 2005 as United States Application Number 11/106,160
or _____ PCT International Application Number _____
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 do not know and do not believe that the same was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application.

I do not know and do not believe that the claimed invention was in public use or on sale in the United States of America more than one year prior to this application, nor do I know or believe that the invention has been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35, U. S. C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent or inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?
10-2004-0025882	Republic of Korea	04/14/2004	☐	■ Yes ☐ No
10-2004-0083073	Republic of Korea	10/18/2004	☐	■ Yes ☐ No
			☐	☐ Yes ☐ No

I hereby appoint the practitioners associated with customer Number: **08791** as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith.

Direct all correspondence to Customer Number **08791.**

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 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OF FIRST INVENTOR: ☐ A petition has been filed for this undersigned inventor

Full Name YOU, Jin-Woo
(First, Middle [if any], Family Name (or Surname), and Suffix [if any]

Inventor's Signature You Jin-Woo Date 2005. 7. 8

Residence Seoul, Korea Citizenship REPUBLIC OF KOREA
(City, State, Country) *(Country)*

Mailing Address 3 Peungwha Seocho Bldg., 1451-34, Seocho-dong,
Seocho-gu, Seoul, Republic of Korea

NAME OF SOLE OF SECOND INVENTOR: ☐ A petition has been filed for this undersigned inventor

Full Name SUK, SangWoo
(First, Middle [if any], Family Name (or Surname), and Suffix [if any])

Inventor's Signature SUK, SangWoo Date 2005.7.8

Residence Seoul, Korea Citizenship REPUBLIC OF KOREA
(City, State, Country) *(Country)*

Mailing Address 3 Peungwha Seocho Bldg., 1451-34, Seocho-dong,
Seocho-gu, Seoul, Republic of Korea

OIPE
JUL 06 2006
TRADEMARK OFFICE
1AP35

Docket No.: 7937P017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

JIN-WOO YOU, ET AL.

Application No.: ~~11/103,160~~ 11/106,160

Filed: April 13, 2005

For: **wireless communicating terminal for providing integrated messaging service and method thereof**

Art Group:

Examiner:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In accordance with the duty of disclosure, enclosed is a copy of IDS Citation Form PTO/SB/08 or PTO-1449, together with copies of the documents cited on that form, except for copies not required to be submitted (e.g., copies of U.S. patents and U.S. published patent applications need not be enclosed). This IDS and IDS Citation Form are being submitted before the mailing of a first Office Action. It is respectfully requested that the cited references be considered and that the enclosed copy of PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

It is hereby stated that no item of information contained in the Information Disclosure Statement was cited in a patent office in a counterpart application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual associated with the filing or prosecution of the subject application more than three months prior to the filing of the Information Disclosure Statement.

The references were cited in a Search Report dated March 28, 2006 (copy enclosed herewith) which was forwarded to Applicant's Representative in a communication dated April 4, 2006.

The submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made in the subject application and is not to be construed as an admission that the information cited in this statement is material to patentability.

Please charge any fees due to Deposit Account 02-2666. A duplicate copy of the Fee Transmittal (PTO/SB/17) is enclosed for this purpose.

Date: 6/30/06

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Eric S. Hyman, Reg. No. 30,139

12400 Wilshire Boulevard, 7th Floor
Los Angeles, CA 90025

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Vi Hoang — 6/30/06

Vi Hoang — *Date*

IPR2023-01271 Page 116

OIPE
JUL 0 8 2005
PATENT & TRADEMARK OFFICE

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	1	of	2

Complete if Known	
Application Number	~~11/103,160~~ 11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number - Kind Code[2] *(if known)*	Publication Date or Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-2004/015547 A1	01-22-2004	Griffin, et al.	
		US-			
		US-			
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		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		EP 1 349 407 A2	01-10-2003	Casio Computer Co., Ltd.		
		EP 1 109 415 A2	06-20-2001	Nokia Mobile Phones Ltd.		

Examiner Signature		Date Considered	

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	2	of	2

Complete if Known	
Application Number	~~11/103,160~~ 11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

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Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

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First Named Inventor	Jin-Woo You
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ENCLOSURES *(check all that apply)*

- [X] Fee Transmittal Form
  - [ ] Fee Attached
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European Search Report and Communication; 2 prior art references; return postcard

Remarks

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Firm or Individual name	Eric S. Hyman, Reg. No. 30,139 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
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FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.

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☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

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Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
2053	130	2053	130	Non-English specification	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	
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1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1460	130	2460	130	Petitions to the Commissioner	
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1809	790	1809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	
				Other fee (specify) _____	
				SUBTOTAL (2)	($)

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(54) Data communication apparatus, data communication system, and data communication method

(57) Cellular phones (1a, 1b) adjust the brightness of an image before sending mail with an attached photograph, so that it is possible to visually verify the mail text when the mail text is overlaid over the image, which serves as a background image attached to the mail text at the receiving side, after which the mail is send to a system (in particular, to mail servers (33) and (63)). The color of mail text characters is changed in responsive to the image brightness. When the cellular phones (1a, 1b) receive an e-mail with an attached photograph, they display the mail text overlaid over the image as a background image (which has had its brightness adjusted).

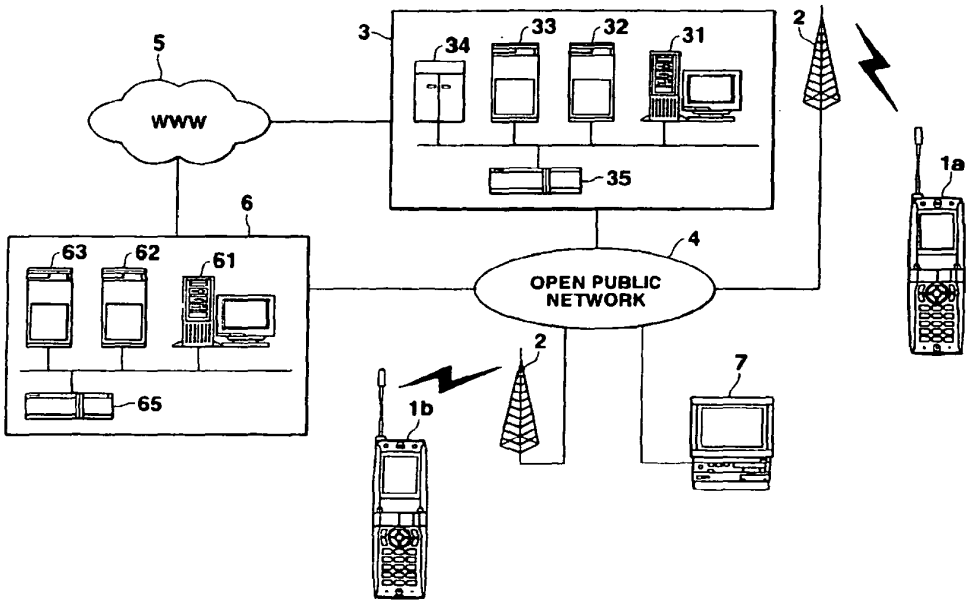


FIG.1

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a data communication apparatus, a data communication system, and a method for data communication.

2. Related Art

[0002] In the past, a system existed for exchanging electronic mail (hereinafter referred to also as e-mail or mail) having various attached files. In recent years, an image capturing function has been added to cellular telephones (hereinafter referred to as cell phones) or the like to enable a captured image to be attached to an e-mail and sent to another wireless communication terminal. In the case in which an image attached to an e-mail is displayed at the receiving-side wireless communication terminal, it is usual to display the image independently of the mail body text, and there are also systems in which the image is displayed at the end of the body text of the e-mail.

[0003] There is also a known service in which a captured (photographed) image is uploaded to an ISP (Internet service provider) with which user registration has already been done, notification being given to the other party's wireless communication terminal of the URL (universal resource locator) of the uploaded image (link data for accessing the image uploaded to the IPS server). In this case, the URL is displayed along with the mail body text at the receiving-side wireless communication terminal that receives the e-mail, and when the user of the other party's wireless communication terminal specifies this URL, the user's wireless communication terminal is connected to the network and downloads and displays the image data from the server (image database).

[0004] In an image display method related to mail service in the past, however, and particularly in the case in of a compact wireless communication terminal, because of problems such as the size of the display screen, it was not possible to display the body text of the mail ad the image simultaneously, and when reading the text of an e-mail, it was extremely difficult to perform simultaneous verification of the image.

[0005] Accordingly, it is an object of the present invention to provide a data communication apparatus, a data communication system, and method for data communication, which are capable of implementing easy creation and sending of mail with simultaneous verification of the body text of the mail and the image, and which, even when an e-mail is received having an attached image, enable easy verification of the original image.

SUMMARY OF THE INVENTION

[0006] In order to achieve the above-noted object, a first aspect of the present invention is a data communication apparatus having means for preparing a document to be sent, means for preparing an image to be sent, means for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document, and means for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image for the document in a case in which the setting means sets display as a background image.

[0007] A second aspect of the present invention for achieving the above-noted object is a data communication apparatus capable of receiving data sent by another data communication apparatus and having means for receiving data, display control means for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

[0008] A third aspect of the present invention for achieving the above-noted object is a data communication system having a first data communication apparatus and a second data communication apparatus, and capable of data communication from the first data communication apparatus to the second data communication apparatus, wherein the first data communication apparatus comprises means for preparing a document to be sent, means for preparing an image to be sent, means for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document and means for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image in a case in which the setting means sets display as a background image, and wherein the second data communication apparatus comprises means for receiving data, display control means for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

[0009] A fourth aspect of the present invention for achieving the above-noted object is a data communication method whereby a document and an image are sent from a first data communication apparatus to a second communication apparatus and the image is displayed on a display of the second data communication apparatus as a background image for the document, and which having a step in the first data communication apparatus

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of preparing a document to be sent and an image to be used as a background image for the document, a step in the first data communication apparatus of sending the document the image and information that indicates the display of the image as a background image for the document, a step in the second data communication apparatus of receiving data sent from the first data communication apparatus, and a step in the second data communication apparatus of displaying the image as the background image for the document in a case in which the received data included the document, the image and the indicating information.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

Fig. 1 is a block diagram showing the configuration of a mail sending/receiving system according to a first embodiment of the present invention.

Fig. 2 shows a cell phone 1a, 1b in the opened condition. Fig. 2 (a) showing the front of the cell phone 1a and 1b and Fig. 2 (b) showing the rear of the cell phone 1a, 1b.

Fig. 3 is a block diagram showing the circuit configuration of the cell phone 1a, 1b.

Fig. 4 is a conceptual representation of the configuration of the memory areas of a ROM 24.

Fig. 5 is a conceptual representation of the configuration of the memory areas of a RAM 29.

Fig. 6 is a conceptual representation of the configuration of a mail data storage area 292.

Fig. 7 through Fig. 9 are collectively a flowchart illustrating the mail creation processing in the first embodiment of the present invention.

Fig. 10 is a conceptual representation of the image brightness, illustrating adjustment of the brightness of the image.

Fig. 11 is a schematic representation of an image with the image brightness of the intermediate value M a brightness between the intermediate value M and the threshold value TH1 (70% brightness) after the adjustment of the brightness of the image, and an example of a display with the adjusted-brightness image overlaid by a mail text.

Fig. 12 is a schematic representation of an image with the image brightness of the intermediate value M a brightness between the intermediate value M and the threshold value TH2 (30% brightness) after the adjustment of the brightness of the image, and an example of a display with the adjusted-brightness image overlaid by a mail text.

Fig. 13 is a flowchart illustrating the received mail display processing in the first embodiment of the present invention.

Fig. 14 is a schematic representation showing an example of a display of a received list presented on the display 13.

Fig. 15 is a conceptual representation of the configuration of the memory areas of the ROM 24 in a second embodiment of the present invention.

Fig. 16 is a conceptual representation illustrating the overlaying processing of the image with a template file.

Fig. 17 is a conceptual representation of the configuration of a mail data storage area 292 within the RAM 29.

Fig. 18 and Fig. 19 are flowcharts illustrating the mail creation processing in the second embodiment of the present invention.

Fig. 20 is a conceptual representation of the configuration of the memory areas of the ROM 24 of a cell phone in a third embodiment of the present invention.

Fig. 21 is a conceptual representation of the configuration of the memory areas of the RAM 29 of a cell phone in the third embodiment of the present invention.

Fig. 22 is a flowchart illustrating the mail creation processing in the third embodiment of the present invention.

Fig. 23 is a conceptual representation of another example of the configuration of the memory areas of the ROM 24 in the third embodiment of the present invention.

Fig. 24 is a flowchart illustrating the mail creation processing in a fourth embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] Embodiments of the present invention are described below in detail, with references made to relevant accompanying drawings.

[0012] Fig. 1 is a block diagram showing the configuration of a mail sending/receiving system according to the first embodiment of the present invention. In this drawing, cell phones (wireless communication terminals/data communication apparatuses) 1a and 1b have photographing apparatuses and image memories capable of storing a plurality of images (photographs) photographed by the photographing apparatuses, in addition to a function of sending a mail to which is attached an image (photograph) stored in the image memory, and a function of receiving a mail to which an image is attached. The cell phones 1a and 1b also have functions such as a function of displaying an image attached to an e-mail or displaying an embodiment with an image attached thereto as a background, and a function of sending an e-mail that includes information that instructs a receiving-side terminal (receiving-side cell phone) to display an attached image as the background image of the mail text. Thus, the cell phones 1a and 1b not only have the conventional function of being able to send and receive images as attached files, but also a

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mail function that enables the sending and receiving of e-mail with having a background image that is the attached image file displayed as the background. Additionally, the cell phones 1a and 1b have a function of correcting or adjusting the brightness of the background image

[0013] The cell phones 1a and 1b, before sending an e-mail having a background image, for example, can correct the brightness of the image attached to the e-mail as a background image, so that when the image is displayed as a background image overlaid with the body text of the e-mail, the body text is displayed clearly. Stated in different terms, when an e-mail having a background image is received at the receiving side, with the attached file as a background, the body text of the e-mail is displayed overlaid on the image.

[0014] The wireless base stations 2, via the open public network 4 (more precisely, a cellular phone network provided by a communications service provider to the users of the cell phones 1a and 1b and having the open public network as part of its configuration), make connection with a center apparatus (including an Internet provider) of the communication service provider.

[0015] The center apparatus (including an Internet provider) 3 of the communication service provider has, in addition to an exchange, which is necessary for the cell phone service provided as a main service, a system for connection to WWW5, which is described later (Web server 32 and router 35), and a mail system (mail server 33). The wireless station 2 has a function for connecting the cell phones 1a and 1b to the WWW5 as an access point.

[0016] The open public network 4 includes a cell phone network of another communication service provider, and analog or digital telephone networks. WWW5 is the so-called Internet.

[0017] An Internet service provider (hereinafter abbreviated to ISP) 6, with the exception of the exchange, has the same configuration as the center apparatus 3 of the communication service provider, and has a system for connection to WWW5 (referred to herein as Web server 62 and router 65 as a convenience), and a mail system (mail server 63). A personal computer 7 makes connection to WWW5 via a open public circuit 4 and the ISP 6.

[0018] In an embodiment of the present invention, the cell phones 1a and 1b have a mail function of sending and receiving mail having a background image, that is, a mail software program for performing display processing to display an image attached to an e-mail as a background image to the body text of the e-mail, an the case in which an e-mail having a background image is sent and received between the cell phones 1a and 1b, the cell phone that receives the e-mail having the background image attached thereto displays the image in the background, and displays the body text of the associated e-mail laid thereover (details described below). In the case of a communication apparatus having only the conventional mail function of the functions of the cell phones 1a and 1b, for example in the case in which an e-mail with a background image is sent to the personal computer 7, at the personal computer 7 the image attached to the received e-mail as the background image is treated as the usual attached file. Thus, the "mail software program for performing processing of an e-mail with a background image" has compatibility with a generally known mail software program.

[0019] Fig. 2 (a) and Fig. 2 (b) show outer views of the cell phones 1a and 1b. The cell phones 1a and 1b in this embodiment of the present invention have a folding construction formed by a cover part and a main part. Fig. 2 (a) showing the front view of the cell phones 1a and 1b and the Fig. 2 (b) showing the rear view of the cell phones 1a and 1b, both in the opened condition. An antenna 11 is provided at the rear of the cover part and is freely extendible and retractable. A speaker 12 is provided at the rear surface of the cover part, and provides audio output. A display (main display) 13 is a color LCD (liquid-crystal display) having a dot configuration of 120 dots (width) by 160 dots (height). The main display 13 is capable of simultaneously displaying the image (photograph) an the body text of an e-mail having an image (background image)

[0020] A key operation section 14 is formed by such parts as a mail key 141, an address key 142, a camera key 143, a sub-menu key 144, a cross key (four-direction cursor key) 145, a center key (entry key) 146, an off-hook key 147, an on-hook key 148, and a numerical keys 149. The mail key 141 launches a mail function, and is used to display a mail menu. The address key 142 is used to open an address book when selecting the mail address of another party or selecting a telephone number to be called. The camera key 143 launches a camera function, and is used to display a camera menu. This camera key 143 functions as a display switching function, which, when in the mail creation mode or in the mail display mode when a mail body text is displayed overlaid onto a background image, selects display of the mail text only or the background image only. The sub-menu key 144 is used to display sub-menus for various functions. The cross key 145 is used to select a desired item from menus displayed for various functions, and for shifting the inputting position when making data input using the numerical keys 149. The center key (entry key) 146 is used to establish or select menu items selected by operation of the cross key 145. The off-hook key 147 is used to start a call, and the on-hook key 148 is used to end a call. The numerical keys 149 are used when inputting a telephone number or characters.

[0021] A microphone 15 is provided at the bottom part of the main part, and is used for voice input.

[0022] A sub-display 16 is provided at the rear panel of the cover part. The rear panel key 17 is made of a transparent or translucent material, and has a built-in LED 171 that lights when a call is received. A photographic lens 18 is provided on the rear surface of the

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cover part 2, below the sub-display 16. A notification speaker 19 is provided to make notification of a received call or the like, and is disposed on the rear surface of the main part, so that it is possible to hear a notification sound even when the cover is closed onto the main part.

[0023] Fig. 3 is a block diagram showing the circuit configuration of the cell phones 1a and 1b. An RF transceiver section 20 sends and receives voice and data (mail data) via the antenna 11. The RF signal processor 21 performs RF signal processing necessary to demodulate the voice and data (mail data) received by the RF transceiver section 20, or modulate voice or data that is to be sent to the RF transceiver section 20. A controller 22 controls various operations and overall operation.

[0024] An image memory 23 is a memory for storing a compressed encrypted file made by a program stored in the image processing program area 2413 that processes an image obtained by the camera module 181 and the DSP 182, and image files downloaded via the WWW5. A ROM 24 is configured as a flash ROM, and is used to store various programs that are features of the present invention.

[0025] A driver 25 drives the main display 13. A driver 26 drives the sub-display 16. A subscriber data memory 27 stores a telephone number for calling the cell phone 1, ID and the like of operators (subscribers), and profile data. A ROM 28 stored various programs and the like that control the controller 18. A RAM 29 stores various data required for operation as a wireless communication terminal, as well as data required for operation of the controller 25 and mail data.

[0026] An audio signal processor 200 performs encoding of an audio signal input from the microphone 15 and outputting thereof to the RF signal processor 21, as well as decoding of a voice signal from the other party input from the RF signal processor 21 and drive of the speaker 21 so as to make an audio output. The camera module 181 is formed by a CCD or a CMOS device, and captures a color image. The DSP 182 performs encoding of an image captured by the camera module 181. The notification driver 192 is a driver for driving the notification speaker 19, a vibrator 191, and an LED 171.

[0027] Fig. 4 is a conceptual representation of the configuration of the memory areas of the ROM 24. The ROM 24 stores software programs that are a feature of this embodiment of the present invention. The ROM 24 is formed by a mail software program area 241, an image processing program area 2413, and an other program area 2414.

[0028] The mail software program area 241 is separated into a mail software program area, into which is stored a known general mail software program, and a background image display handling mail software program area 2412 having a program that performs display processing of an image to be attached to a mail or an image attached to a mail as a background image. The background image display handling mail software program can be downloaded from WWW5 via the ISP 6.

[0029] The image processing program area has stored in it an image processing program for compression processing of a digitally encoded image according to the JPEG standard, the PNG standard, or the GIF standard. In the first embodiment, this image processing program distinguishes the average brightness of the overall image and performs processing so as to increase or decrease the brightness. The other program area 2414 has stored in it application programs other than the above.

[0030] Fig. 5 is a conceptual representation of the configuration of the memory areas of the RAM 29. The RAM 29 is separated into an address book data storage area 291, a mail data storage area 292, a file attachment storage area 293, and an other working memory 294. The address book data storage area is used to store names, telephone numbers, e-mail addresses and the like as grouped records. The mail data storage area 292 stores mail data created by mail software, sent mail data, and received mail data. The file attachment storage area 293 stores file attachments when they are attached to files. The other working memory 294 is used as an additional working memory to store various data.

[0031] Fig. 6 is a conceptual representation of the configuration of the mail data storage area 292. The mail data storage area 292 is separated into a working area 2921 into which is stored mail data currently being worked on, an area 2922 that stores a plurality of already sent e-mails or e-mails to be sent (send folder), and an area 2923 that stores a plurality of received mail data. The working area 2921 for storing mail data being worked on has areas for storing such things as data representing mail destinations (mail address or the like), mail subjects, mail body texts, addresses (file attachment addresses) indicating at what address in the file attachment storage area 293 or in another file storage area a file attachment is stored when a file is attached to an e-mail, and identification information (such as a mail type identification flag MTF) that indicates whether an e-mail is a conventional type or a type with a background image. The send folder 2922 has areas for storing such things as destinations, subjects, mail texts, file attachment addresses, mail type flags MTF, date and time mail was sent, and identification information indicating whether or not the mail has already been sent (mail sent flag MSF). The receive folder 2923 has areas for storing such things as data indicating the sending (mail addresses and the like), subjects, mail texts, file attachment addresses, mail type identification flags MTF, date and time mail was received, and identification information indicating whether or not the mail has already been verified as received (mail read flag MRF).

[0032] The operation of the first embodiment of the present invention is described below, taking first the processing performed to create an e-mail.

[0033] Fig. 7 through Fig. 9 present a flowchart illustrating the mail creation processing in the first embodiment. If the mail key 141 is pressed from the waiting

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condition, the mail mode is launched, and the mail menu items "Create New", "Receive Folder", "Send Folder" and the like appear on the main display 13. The "Create New" item is a menu item selected to create a new e-mail, the "Receive Folder" item is a menu item selected to check received mail, and the "Send Folder" item is a menu item selected to check already sent mail and mail that has not yet been sent. The flowchart starting in Fig. 7 starts from the condition in which the mail menu is being displayed.

[0034] First, a judgment is made as to whether or not an instruction has been given from the mail menu to create a new e-mail (step S10). In the case in which there was no instruction to create a new e-mail, the flow transitions to other processing (step S12). If there was an instruction to create a new e-mail, however, a menu screen for creating an e-mail is displayed (step S14). This menu screen is used to select either creation of an e-mail using the conventional mail software program or creation of an e-mail using the background image display handling mail software program. Next, a judgment is made as to whether or not selection has been made to create e-mail with a background image (step S16). If creation of an e-mail with a background image is not selected, flow proceeds to the conventional e-mail creation processing (step S18).

[0035] If creation of an e-mail with a background image is selected, however, information indicating mail with a background image is set into the mail type flag MTF by setting the flag, an the mail creation screen is displayed on the display 13 (step S20). From this creation screen, items essential to creating an e-mail, these being destination, subject and body text and the like, are displayed. Net, when each of the items is selected and corresponding data is input, the data for each of the input items is stored into corresponding item areas in the working area 2921, and the input data for each of the items is displayed on the display 13 (step S22). Next, a judgment is made as to whether an enter (verify) operation has been made for the input data (step S24). If an entry operation had not been made, return is made to step S22, and input is continued.

[0036] If an entry (verification) operation had been made, however, a search is made of whether there is an image file stored in the image memory 23 that can be attached to the e-mail (step S26). A check is also made as to whether or not an image file is stored (step S28). In the case in which there is no image file stored, this is indicated to the user by an error display (step S30). This error display is continued until the user makes a verifying operation, for example by pressing any key, and when a key operation is detected at step S32, return is made to step S14.

[0037] If there was an image file, an album of all the image files is displayed (step S34). A judgment is then made to determined whether or not a file to be attached has been selected (step S36), and if a file has not been selected, return is made to step S34, the album display continuing. The selection of an image file to be attached, that is, the image to be used as the background image for a mail text, is performed by the user, who uses the cross (cursor) key 145 an the center key 146

[0038] If a file to be attached to an e-mail has been selected from the album display, the address indicating the location in which the selected image file is stored is stored into the file attachment address storage area of the working area 2921, and the brightness of the image is judged based on the selected image file (step S38). A judgment is then made as to whether or not the brightness of the image is an intermediate value M (step S40). If the brightness of the image is the intermediate value M, brightness of the image is increased by a prescribed amount (step S46), after which the image is displayed overlaid over the body text created at step S22 (step S54). That is, a preview display is presented of the condition in which the display of the e-mail will be viewed at the receiving-side cell phone.

[0039] If the brightness of the image was not the intermediate value M, a judgment is made as to whether or not the image is brighter than the intermediate value M (step S42). If the image is brighter than the intermediate value M, a further judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH1 (where intermediate value M < threshold value TH1) (step S44). If the brightness of the image is between the intermediate value M and the threshold value TH1, after increasing the brightness of the image by a prescribed amount at step S46, flow proceeds to step S54, at which a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover. If the brightness of the image is greater than threshold value TH1, however, rather than adjusting the brightness of the image flow proceeds as is to step S54, at which a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover.

[0040] If the brightness of the image is darker than the intermediate value M, however, a judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH2 (where intermediate value M > threshold value TH2) (step S48). If the brightness of the image is between the intermediate value M and the threshold value. TH2, the brightness of the image is decreased by a prescribed amount (step S50) and the color of displayed characters (in the e-mail text) is set to white (step S52). After this, a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover (step S54). In the case in which the brightness of the image is darker than the intermediate value TH2, without adjusting the brightness of the image, the color of the displayed characters (in the e-mail text) is set to white (step S52), after which a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover (step S54).

[0041] As described above, at the preview display

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made at step S54, after adjusting the brightness of the image that will be attached to the e-mail to the sent, the mail body text is displayed with an overlay of this image on the display 13.

[0042] In the first embodiment of the present invention, by judging the brightness of the image (which is to be attached to e-mail as a background image) in this manner, the brightness of the image to be displayed as a background for the e-mail is adjusted. Fig. 10 is a conceptual representation showing the image brightness for the purpose of illustrating the image brightness adjustment. Fig. 11 is a schematic representation of an image with the image brightness of the intermediate value M a brightness between the intermediate value M and the threshold value TH1 (70% brightness) after the adjustment of the brightness of the image, and an example of a display with the adjusted-brightness image overlaid by a mail text.

[0043] When the brightness of the image is the intermediate value M or between the intermediate value M and the threshold value TH1 (70% brightness) indicated in Fig. 10, processing is performed so as to increase the brightness (refer to the above-described step S46). Fig. 11 (a) shows the original image, and Fig. 11 (b) shows the processed image. The e-mail body text created at step S22 is laid over the image of Fig. 11 (b) to create the preview display shown in Fig. 11 (c) (refer to the above-described step S54).

[0044] If the brightness of the image is less than the intermediate value M shown in Fig. 10 and between the intermediate value M and the threshold value TH2 (30% brightness), processing is performed so as to decrease the brightness of the image (refer to the above-described step S50). Fig. 12 is a schematic representation showing the original image, an image resulting from adjusting the brightness of an image having a brightness less than the intermediate value M and between the intermediate value M and the threshold value TH2 (30% brightness), and the brightness-adjusted image with the e-mail laid thereover. Fig. 12 (a) shows the original image, and Fig. 12 (b) shows the processed image. The e-mail body text created at step S22 is laid over the image of Fig. 12 (b) to create the preview display shown in Fig. 12 (c) (refer to the above-described step S54).

[0045] In the case in which the user is satisfied with the preview display made at step S54, the user makes the entry (verification) operation (performs an operation which finalizes the content of the mail), but if the user is not satisfied with the preview display, the user can give an instruction to manually adjust the brightness of the image, or give instructions to change the locations of line breaks in the mail text or display position of the mail text.

[0046] Therefore, the controller 22 next makes a judgment as to whether or not a user-made entry operation has been detected (step S56). If a user-made entry operation has been detected, the created mail data is stored in the send folder of the mail data storage area 292 (step S58), after which a send instruction is given or a transition is made the send wait condition (step S60).

[0047] In this embodiment, the processed image is stored in association with the mail text in the file attachment storage area 293. Therefore, at the storage processing of step S58, of the mail data being currently worked on stored in the working area 2921, data other than the file attachment addresses, that is, destinations, subjects, mail body texts, and mail type flags (contents of the identification MTF flags) is stored in areas corresponding to the send folder 2922. In the file attachment address storage area of the send folder 2922 are stored addresses in the file attachment storage area 293 in which processed files are stored. The MTF identification flags in the send folder 2922 are set to the condition that indicates unsent mail ("0").

[0048] Mail data stored in the send folder 2922 (subjects and mail texts), when in the waiting condition of step S60 or thereafter when an instruction is given to send mail and this mail data is read out from the send folder, is sent to the specified destination along with an image specified by the file attachment address and the mail type flag MTF. When this is done, the time sent is stored in the sent date and time storage area of the send folder 2922, and the identification flag MSF is set to the condition indicating the sent condition ("1").

[0049] A cell phone having received this e-mail stores the received mail data in an area corresponding to the receive folder 2923, and stores the time of receipt in the date/time received storage area. When this is done, the MRF identification flag in the receive folder 2923 is set to the condition indicating not display (not verified) ("0"). In this case, because the MTF mail type flag of the received mail indicates that the e-mail has an image (background image), when it is read out of the receive folder 2923 and displayed, the image attached to the mail is displayed as a background image, with the mail body text overlaid thereover.

[0050] In the case in which at step S56 there was no entry operation detected, the detection is made of whether or not an instruction has been given for a manual adjustment (step S62), as well as detection of whether or not an instruction is given to correct the mail body text (step S80). If an instruction to make manual adjustment of the brightness of the image is detected, the image brightness is manually adjusted (step S64). A judgment is again made to see whether or not a user-made entry operation has occurred (step S66). If the entry operation has not been made, return is made to step S64, and manual adjustment continues.

[0051] If an entry operation has made after manual adjustment, judgment is made of the brightness of the image after adjustment (step S68), and a judgment is made as to whether or not the image brightness is the intermediate value M (step S70). In the case in which the image brightness is not the intermediate value M, a further judgment is made as to whether or not the image

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brightness is greater than the intermediate value M (step S72). If the image brightness after adjustment is greater than the intermediate value M at step S47 the color of the displayed characters (of the mail text) is set to black and then return is made to the above-described step S47 at which a preview display is made of the body text overlaid on the image.

[0052] In the case in which the brightness of the image after manual adjustment is the intermediate value M, at step S74 the color of displayed characters (of the mail text) is set to black, and then return is made to the above-described step S54, at which a preview display is made of the image with the body text overlaid thereover.

[0053] If the image brightness after manual adjustment is darker than the intermediate value M, at step S76 the color of displayed characters of the body text of the mail is set to white, after which return is made to the above-described step S54, at which an overlaid preview display is made of the mail text and the image.

[0054] By manual adjustment of the image brightness if the image brightness crosses over the intermediate value M by the change, the color of the characters in the mail text is changed. If the user makes an entry operation (thereby finalizing the content of the mail), as described above mail data undergoing work is stored in the send folder 2922 of the mail data storage area 292 (step S56).

[0055] At step S78, in the case in which an instruction to correct (edit) the mail text is detected, keeping the display of the background image unchanged, correction of the position of carriage returns in the mail text or correction of the display position of the mail text, or correction of the mail text itself is performed (step S80). The position of a carriage return in the mail text is corrected, by inserting or deleting a carriage return in the mail text. The display position of the mail text is corrected by inserting a carriage return code or a space code at the head of the mail text. Another detection is made of whether or not the user has made an entry operation (step S82). If the entry operation had not been made, return is made to step S80, and mail text editing continues.

[0056] In the case in which, at step S78, there is no detection of an instruction to edit the mail text, and in the case in which, at step S82, an entry operation is detected, return is made to the above-described step S54, at which an overlaid preview display is made of the mail text and the image.

[0057] Fig. 13 is a flowchart illustrating the received mail display processing in the first embodiment of the present invention. Received mail display processing comes under the category of "other processing" as noted at step S12 in the flowchart of Fig. 7, and the flowchart shown in Fig. 13 is the branch from the "NO" result at step S10 in Fig. 7.

[0058] In the case in which a selection is made other than to create a new e-mail, a judgment is made as to whether or not the receive folder is selected (step S90), and if the receive folder is not selected, flow proceeds to other processing (step S92). In the case in which the receive folder is selected, however, the received list is displayed so as to display a list of received e-mail (step S94).

[0059] Fig. 14 is a schematic representation of an example of a received list (In Box) display on the main display 13. The icon 1301 represents the amount of battery charge, and the icon 1302 represents the radio receiving condition. In the received list, the icons 1303 to 1306 provide a view of read/unread statuses of each e-mail. More specifically, the icon 1303 is an icon that is displayed when the identification flag MTF is "0" and also the identification flag MRF is "0", meaning that the e-mail is unread e-mail. The icon 1304 is displayed when the receive folder 2923 identification flag MTF is "1" and also the identification flag MRF is "0", meaning that the e-mail is an unread e-mail with a background image. The icon 1305 is an icon that is displayed when the receive folder 2923 identification flag MTF is "0" and also the identification flag MRF is "1", meaning that the e-mail has been read. The icon 1306 is an icon that is displayed when the receive folder 2923 identification flag MTF is "1" and also the identification flat MRF is "1", meaning that the e-mail is an embodiment with a background image that has already been read.

[0060] From this display, the user performs a selection operation to make a selection from the list of an e-mail to be displayed. The controller 22, based on the identification flag MTF (contents) of the selected embodiment, whether or not a mail with a background image has been selected (step S96). If an e-mail with a background image has not been selected, flow proceeds to normal mail processing (step S98).

[0061] In the case in which the selected e-mail has a background image, the mail text thereof is displayed with the attached image as the background on the main display 13 (step S100). Next, a judgment is made as to whether or not a cancel operation has be detected (step S102), and if a cancel operation has been detected, return is made to step S94, thereby transitioning to the received list display.

[0062] In the case in which a cancel operation has not been detected, a check is made to see whether or not an ending operation has been detected (step S104) and if the ending operation has been detected, return is made to the main menu.

[0063] If an ending operation was not detected, a check is made as to whether or not a key 143 operation has been made, which is a judgment as to whether or not a display instruction has been given for a background image (step S106). If a key 143 operation was not made, return is made to step S100, and the display of the image with the superimposed mail text is continued.

[0064] In the case in which the key 143 operation was made, the mail text display is gradually removed, until

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the display is that of only the background image as shown in Fig. 10 (b) (step S108). Next, a check of whether or not the key 143 operation was made is done once again (step S110). In the case in which a key 143 was made, return is made to step S108, and the image display is continued. If a key 143 operation is made while the image is being displayed, however, return is made to step S100, at which the mail text slowly appears in the display, after which the display has the mail text overlaid over the background image.

[0065] That is, each time the key 143 operation is made, an alternating switched display is made of the image with the mail text overlaid (refer to Fig. 10 (c)) and the image (Fig. 10 (b)).

[0066] In the case in which at step S106 there is no detection of a key 143 operation, rather than directly returning to step S108, it is possible to provide a step that detects an operation of another prescribed key, in which case if operation of that key is detected, the display of the background image is gradually removed, so that display is mad of only the mail text. In this case as well, return to step S100 is made when detection is made of another operation of the other prescribed key. If this is done, not only is there switching between the display of the image overlaid with the mail text (refer to Fig. 10 (c)) and the display of the image (Fig. 10 (b)), but it is also possible to make switching between a display of the image overlaid with the mail text (refer to Fig. 19 (c)) and the display of the mail text only, thereby enabling certain visual verification, as required, of either the background image or the mail text.

[0067] A second embodiment of the present invention is described below. In this second embodiment, because the system configuration, outer appearance of the cell phone, and major aspects of the cell phone configuration are similar to the first embodiment, there descriptions will be omitted herein.

[0068] Fig. 15 is a conceptual representation of the configuration of the memory areas in the ROM 24 of a cell phone in the second embodiment of the present invention. Elements corresponding to elements in Fig. 4 are assigned the same reference numerals as in Fig. 4, and are not described herein. ROM 24 is formed by a mail software program area 241, an image processing program area 2416, a template file storage areas 2417, and an other program area 2414.

[0069] The mail software program area 241 is separated into a mail software program area 2411 into which is stored a known general mail software program, and a background image display handling mail software program area 2412 into which is stored a background image display handling mail software program. The background image display handling mail software program can also be downloaded from WWW5.

[0070] The template file storage area 2417 is an area into which is stored a template file (filtering function file) required to add special effects (such as changing the image brightness, soft focus, and changing the image color to sepia) based on an image processing program at the time of displaying an image. The template file storage area 2417 in the second embodiment is used to store at least a plurality of template files having different brightnesses. In the second embodiment, rather than performing processing of the brightness of an attached image itself, a filtering function (template file) that changes the brightness is displayed is overlaid in the display region in which the mail text, thereby changing the brightness of the background image. More specifically, based on brightness correction data established by each template file, correction is done of the brightness of the background image displayed in the display region for displaying the mail text.

[0071] Fig. 16 is a conceptual representation illustrating the overlaying processing of the image and the template file in the second embodiment. In the case in which the brightness of the image a is greater than the threshold value TH1, a transparent background template file (character color: black) e, that is, a template file having a brightness correction value of 0 and also setting the character display color to black is overlaid.

[0072] In the case in which the brightness of image b is greater than the intermediate value M and less than the threshold value TH1, or is the intermediate value M, a increased brightness template file (character color: black) f, this being a template file having a positive brightness correction value and also setting the character display color for the mail text to black is overlaid.

[0073] In the case in which the brightness of the image c is less than the intermediate value M and greater than the threshold value TH2, a decreased brightness template file (character color: white) g, this being a template file having a negative brightness correction value and also setting the character display color for mail text for white is overlaid.

[0074] In the case in which the brightness of image d is less than the threshold value TH2, a transparent background template file (character color: white) h, this being a template file with a bright correction value of 0 and which also sets the character display color for mail text to white is overlaid.

[0075] Essentially, in the second embodiment of the present invention, rather than processing so as to change the brightness of the image itself, correction is done of the displayed brightness of an image, based on brightness correction data established by each template file. In the second embodiment, therefore, it is possible to attach the original image to the e-mail as is. In this case, it is necessary to add to the mail information specifying the template file, this specifically being the addition of the template file number. Because of this, the second embodiment of the present invention is provided with a template number storage area in the mail data storage area 292.

[0076] Fig. 17 is a conceptual representation of the configuration of the mail data storage area in this embodiment. Comparing the configuration of the mail data

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storage area 292 in this embodiment with the configuration of the mail data storage area in the first embodiment shown in Fig. 6. the mail data storage area 292 in the second embodiment is the same as the mail data storage area 292 of the first embodiment, with the exception of the addition of the template number storage area.

[0077] Because whether or not a received e-mail has a background image attached can be judged by whether or not a template number has been added to the mail the signal configuration of an e-mail with a background image can be made a signal configuration to which mail type identification information is not added. In this case, the region shown in Fig. 17 for storing the mail type identification information provided in the mail data storage area 292 is not absolutely needed.

[0078] The operation of the second embodiment is described below. In this description Fig. 18 and Fig. 19 collectively form a flowchart illustrating the mail creation processing in the second embodiment. Because the processing prior to the flowchart shown in Fig. 18 and Fig. 19 (creation and image selection) is the same as in steps S10 to S36 of Fig. 7 and Fig. 8, these are not described herein.

[0079] In performing mail creation processing, at step S36 of Fig. 8 when an image to attach to an e-mail is selected from the album display, the brightness of the selected image is distinguished (step S120). Then a judgment is made as to whether or not the image brightness is the intermediate value M (step S122). If the image brightness is the intermediate value M, the increased-brightness filter template file (character color: black) is read out (step S128). The display brightness of the image is corrected based on the read out template file, and an overlaid display (preview display) is made (step S128) of the brightness-corrected image with the mail text created at step S22 laid thereover.

[0080] If the image brightness is not the intermediate value M, a judgment is made as to whether or not the image brightness is greater than the intermediate value M (step S124 and, if it is greater than the intermediate value M, a further judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH1 (where intermediate value M < threshold value TH1) (step S126). If the image brightness is between the intermediate value M and the threshold value TH1, an increased-brightness filter template file (character color: black) is read out (step S128) the same as is done in the case in which the image brightness is the intermediate value M, the image display brightness is corrected based on the read out template file, and an overlaid preview display is made (step S128) of the brightness-corrected image with the mail text created at step S22 laid thereover. If the image brightness is not between the intermediate value M and the threshold value TH1, that is, if it is brighter than the threshold value TH1, a transparent background template file (character color: black) is read out (step S130). Because this template has a brightness correction value of 0, without performing correction of the image brightness the overlaid preview display is made (step S128) of the uncorrected image with the mail text created at step S22 laid thereover.

[0081] If the image brightness is less than the intermediate value M, however a judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH2 (where intermediate value M > threshold value TH2) (step S132). If the image brightness is between the intermediate value M and the threshold value TH2, a reduced-brightness filter template file (character color: white) is read out (step S134). The display brightness of the image is corrected based on the read-out template file and the mail text character color is set to white, after which an overlaid preview display is made (step S128) of the brightness-corrected image with the mail text created at step S22 laid thereover. If the image brightness is not between the intermediate value M and the threshold value TH2, that is, if the image brightness is darker than the threshold value TH2, a transparent background template file (character color: white) is read out (step S136). Because the brightness correction value of this template is 0, without performing correction of the display brightness of the image, the mail text display character color is set to white, after which an overlaid preview display is made (step S138) of the brightness-corrected image with the mail text created at step S22 laid thereover.

[0082] As described above, in the preview display made at step S138 a template file for overlay is selected by means of distinguishing the brightness of the original image, and the brightness correction and setting of the displayed character color are done based on the selected template, after which an overlaid preview is made on the display 13 with the image and mail text overlaid.

[0083] Next, a judgment is made as to whether or not a user entry instruction (instruction to finalize the mail content) has been detected (step S140). If the user entry instruction is detected, the mail data currently being worked on is stored in the send folder 2922 of the mail data storage area 292 (step S142), after which transition is made to the send wait condition or a wait for an end instruction (step S144).

[0084] In this embodiment of the present invention, the configuration is such that the original image itself and the template number are added to the mail text and sent, the original image being stored in association with the mail text into the file attachment storage area 293.

[0085] Therefore, at the storage processing of step S142 of the mail data being created and stored in the working area 2921, data other than the file attachment addresses, that is, destinations, subjects, mail body texts, and MTF mail type flags, and template numbers is stored in areas corresponding to the send folder 2922. In the file attachment address storage area of the send folder 2922 are stored addresses in the file attachment storage area 293 in which the above-described original

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images are stored. The MSF identification flags in the send folder 2922 are set to the condition that indicates unsent mail ("0").

[0086] Mail data stored in the send folder 2922 (subjects and mail texts), when in the waiting condition of step S144 or thereafter when an instruction is given to send mail and this mail data is read out from the send folder 2922, is sent to the specified destination along with an image specified by the file attachment address and the mail type flag MTF. When this is done, the time sent is stored in the sent date and time storage area of the send folder 2922, and the identification flag MSF is set to the condition indicating the sent condition ("1").

[0087] A cell phone having received this e-mail stores the received mail data in an area corresponding to the receive folder 2923, and stores the time of receipt in the date/time received storage area. When this is done, the MRF identification flag in the receive folder 2923 is set to the condition indicating not display (not verified) ("0"). In this case, because the mail type flag of the received mail indicates that the e-mail has an image (background image), when the mail is read out of the receive folder 2923 and displayed, the image attached to the mail is displayed as a background image after compensation based on the template number, and the mail text is displayed thereover in a color specified by the template number.

[0088] The signal configuration of an e-mail with a background image is one in which mail type identification information is not added, and in the case in which no area is provided in the receive folder 2923 for storing the mail type identification flag MTF, based on whether or not there is data in a template number storage area a judgment is made as to whether or not the mail is a mail with an attached background image, processing being performed as to whether or not to use the image attached thereto as a background image.

[0089] In the case in which at step S140 an entry instruction is not detected, detection is performed as to whether or not an instruction is given to correct the image brightness (step S146). If an instruction to correct the image brightness is detected, template switching processing is performed manually (step S148). Then an judgment is made once again as to whether or not an entry instruction is detected (step S150). If an entry instruction is detected, return is made to step S148, and the template switching processing is continued. If an entry instruction is detected, return is made to step S138, and after setting the image brightness and mail text character display color based on the step S148 selected template, an overlaid preview display is made of the mail text and the image.

[0090] In the case in which at step S146 it was not possible to detect an instruction for image brightness correction, detection is performed of whether or not an instruction is made to edit the mail text (step S152). At step S152 if an instruction to edit the mail text is detected, with the background image display remaining as is, correction of carriage return positions in the mail text and display positions, or editing of the mail text itself is done (step S154). Then once again a judgment is made as to whether or not an entry instruction is detected is made (step S156). If no instruction is given, return is made to step S154, and the mail text editing continues.

[0091] In the case in which an entry instruction is detected a step S156, return is made to the above-described step S138, at which an overlaid preview display is made of the mail text and the image.

[0092] In the case in which an instruction to edit the mail text is detected at step S152, a judgment is made as to whether or not a key 143 operation is made, that is, whether an instruction to display the background image has been made (step S158). In the case in which a key 143 operation was not made, return is made to step S138, and the preview display is continued.

[0093] If a key 143 operation is made, however, the original image shown in Fig. 11 (a) is displayed. Next, a judgment is made again as to whether or not a key 143 operation is made (step S162), In the case in which a key 143 operation is not made, return is made to step S160, and the preview display is continued. If a key 143 operation is made with the original image displayed, however, return is made to step S138, at which the preview display is made.

[0094] That is, when making the preview display it is possible to adjust the brightness of the background image, or to edit the mail text and verify the original image or the like.

[0095] Although this embodiment is described for an example in which there are 3 original image brightness judgment levels and in which 4 types of templates are used, it will be understood that it is possible in the present invention to use a larger number of original image brightness judgment levels or a greater number of types of template files. If this is done, it is possible to make the image brightness after correction using a template come close to a desired brightness (for example, the threshold values TH1 or TH2 shown in Fig. 10).

[0096] The processing for displaying received mail in the second embodiment is described below. Since this processing is substantially the same as the processing for displaying received mail in the first embodiment shown in Fig. 12, the description will be made with reference to Fig. 13.

[0097] The processing for displaying received mail in the second embodiment, in the same manner as the received mail display processing in the first embodiment, is done by selecting the receive folder from the mail menu display condition so as to display a list of received mail (step S90 to step S94).

[0098] When the user selects a mail to be displayed from the received mail list, the controller 22 makes a judgment, based on the value of the MTF identification flag of the selected mail as to whether or not a mail with a background image has been selected (step S96). In the case in which an MTF mail identification flag storage

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area is not provided in the receive folder 2923. a judgment is made as to whether or not an e-mail with a background file attached is selected based on number data in the template number storage area of the selected mail.

[0099] In the case in which a mail with a background image is not selected, flow proceeds to normal mail processing (step S98). but in the case in which mail with a background image is selected, flow proceeds to processing that sets the attached image as the background and displays the mail text on the display 13 (step S100). In this display processing, the brightness of the image to be displayed as the background is corrected and the color of the characters displayed are set based on the template specified by the number of the template attached to the mail.

[0100] Next, a judgment is made as to whether or not a cancel operation has been made by the user (step S102), a judgment is made as to whether and ending operation has been made (step S104), and a judgment is made as to whether or not a key 143 operation has been made, these judgments being made in this sequence, and if none of these operations has been made, return is made to step S100, and the display of the image with the mail text overlaid thereover is continued.

[0101] In the case in which, at step S102, the cancel operation is detected, return is made to step S94, and in the case in which an ending operation is detected at step S104, return is made to the mail menu display. If the key 143 operation is made at step S106, transition is made to display of only the background image at step S108. Whereas in the first embodiment, because an image attached to an e-mail for use as a background image is a brightness-adjusted image, at the image display at step S108 is a brightness-adjusted image, such as shown in Fig. 10 (b), in the second embodiment because the original image is itself attached to the e-mail, the original image is displayed, as shown in Fig. 10 (a). That is, in the in which there is an operation of the key 143, the mail text display is gradually removed, defocused, or faded out, and a gradual transition is made from the brightness-adjusted image shown in Fig. 10 (b) to the original image as shown in Fig. 10 (a), by having the brightness of the displayed image approach the brightness of the original image.

[0102] Next, a judgment is made as to whether or not a key 143 operation is made (step S110) and, if a key 143 operation is not made, return is made to step S108, and the image display is continued. If a key 143 operation is made with the image displayed, however. return is made to step S100, the brightness of the displayed image being gradually changed to the brightness specified by the template, and the mail text being gradually displayed or faded-in. so that an overlaid display of the mail text on the image is made.

[0103] Thus. each time the key 143 operation is made, an alternating display is made so that there is gradual switching between a display onto which the mail text is overlaid (refer to Fig. 10 (c)) and the original image (Fig. 10 (a)).

[0104] In the second embodiment as well in the case in which a key 143 operation is not detected at step S106. rather than returning directly to step S108 a step that detects the operation of another prescribed key can be provided. and if that other key operation occurs. the original image display is removed. so that only the mail text is displayed. In this case as well the return to step S100 is made when the additional operation of the prescribed other key is detected. By doing this. because not only is it possible to make a switched display between the image with the overlaid mail text (refer to Fig. 10 (c)) and the display of the original image (Fig. 10 (a)), but it is also possible to make a switched display between the image with the overlaid mail text (refer to Fig. 10 ((c)) and the display of the mail text only, it is possible as required to make certain visual verification of either the background image or the mail text.

[0105] A third embodiment of the present invention is described below.

[0106] The third embodiment of the present invention is a method for sending an original image itself in the case in which an image is attached to a mail text, and also a method for sending. attached to the mail text, information (flag information) that gives an instruction to display the attached image as a background image of a mail text and brightness correction data for use when displaying the attached image as a background image in the case in which an attached image is displayed as a background image of a mail text on the receiving-side display. By doing this, in the case of making a setting at the receiving side that uses an attached file as a background image, the brightness of the attached image is corrected in accordance with the attached brightness correction data and used as the background image for the mail text.

[0107] In this third embodiment, because the system configuration, outer appearance of the cell phone, and major aspects of the cell phone configuration are similar to the first embodiment, there descriptions will be omitted herein.

[0108] The configuration of the third embodiment will now be described. Fig. 20 is a conceptual representation of the configuration of the memory areas of the ROM 24 of a cell phone according to the third embodiment. Elements corresponding to elements in Fig. 4 are assigned the same reference numerals as in Fig. 4, and are not described herein. ROM 24 is formed by a mail software program area 2411, an image processing program area 2416, and an other program area 2414. Thus. whereas the first embodiment and the second embodiment have configurations in which two types of mail software programs (that is, a normal mail software program and a background image display handling mail software program), in the third embodiment there is only one time of mail software program.

[0109] Fig. 21 is a conceptual representation of the

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configuration of the mail data storage area 292 in this embodiment. Comparing the configuration of the mail data storage area 292 in this embodiment with the configuration of the mail data storage area in the first embodiment shown in Fig. 6, the mail data storage area 292 in the third embodiment is the same as the mail data storage area 292 of the first embodiment, with the exceptions that in the mail data storage area 292 of the third embodiment, in place of the area for storage of the mail type identification information MTF, and area is provided for storage of a BDF identification flag, which indicates whether or not an image attached to an e-mail is to be displayed as the background image of the mail, and also that there is provided an area for storage of a correction value for correcting the brightness of the image when displaying an image attached to an e-mail as the background image for the mail.

[0110] The operation of the third embodiment of the present invention is described below, taking the operation when creating an e-mail first.

[0111] Fig. 22 is a flowchart illustrating the mail creation processing in the third embodiment. The flowchart of Fig. 22 starts from the condition in which the mail menu is being displayed.

[0112] First, a judgment is made as to whether or not an instruction has been given from the mail menu to create a new e-mail (step S170) In the case in which an instruction to create a new e-mail is not detected, the flow transitions to other processing (step S172).

[0113] If an instruction to create a new e-mail is detected, however, a menu screen for creating an e-mail is displayed on the display 13 (step S174). This menu screen displays data that must be input to create an e-mail, such as the destination, the subject, the mail text, and a file attachment and the like.

[0114] Next, when data is input for selected items or a file to be attached is selected, the data for each of the input items is stored in an area corresponding to the items in the working area 2921, and the input data (data of each item) is displayed on the display 13 (step S176).

[0115] At this stage, the user can either select the sending of the file selected as a file attachment at the step S176 as a normal file attachment or select the sending of the file attachment as a background image for the mail text. In the case in which the user wishes to send the image file as a normal file attachment, an entry (verification) instruction is given, and if the user wishes to sent the image file as the background image of the mail text, the user performs an instruction for an background image.

[0116] Therefore, the controller 22 makes a judgment as to whether or not an entry (verification) instruction has been given for the input data (step S178). In the case in which the entry instruction is given, the mail data currently being worked with is stored into the send folder 2922 of the mail data storage area 292 (step S180), after which a wait is made for either a send instruction or an ending instruction (step S182).

[0117] In the third embodiment, as described above, in the case in which an image is attached to an e-mail, the method used is that of attaching the original image itself, and also sending information (flag information) that indicates that an attached image is to be used as the background image for the mail text and brightness correction data for display of the attached image as the background image.

[0118] In the storage processing at step S180, therefore, of the mail data currently being worked on stored in the working area 2921, data other than the file attachment address, this being the destination, the subject, the mail text, the BDF background image display identification flag, and image brightness correction value, is stored in corresponding areas in the send folder 2922. The address in the file storage area 293 into which the original image is stored is stored in the file attachment address storage area of the send folder 2922. At this stage, however, even if there is an image attached to the mail, the setting of this image as a background image for the mail text has not yet been made, the information of BDF background image display identification flag of the working area 2921 is information (the value 0) that indicates that a background image display is not to be made, and the image brightness correction value has not been set. Therefore, information is set into the BDF background image display identification flag (the value 0) indicates that a background image display is not to be made, and the image brightness correction value remains unset. The MSF identification flag of the send folder 2922 is set to the unsent condition (0).

[0119] In the case, however, in which at step S178 there is no detection of an entry (verification) operation in the input data, detection is made of whether or not a background image display instruction has been made (step S184). In the case in which a background image display instruction is not detected, return is made to step S176. If a background image display instruction is detected, however, detection is made as to whether or not an image file was attached at step S176 (step S186). In the case in which an image file had not been attached, an error display is made (step S188), this error display being maintained until the user makes a verification operation at step S190, and when the user-made verification operation is detected, return is made to step S176.

[0120] When the presence of an attached image file is detected at step S186, the attached image file is displayed on the display 13 and user adjustment of the image brightness is permitted (step S192). When the user adjusts the brightness of the displayed image, the adjustment value (correction value with respect to the brightness of the original image) is stored in the correction value storage area of the working area 2921. The display brightness correction of the image is continued until the user indicates the end of adjustments, at which point the correction value stored in the correction value storage area of the working area 2921 is also updated. When the user indicates the end of adjustments, an

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overlaid display of the mail text with the display brightness corrected image is made (preview display) (step S194).

[0121] If the user views the preview display at step S194 and is satisfied with the display, the user makes an entry (verification) operation. If the user is not satisfied with the displayed preview, however, the user can re-adjust the displayed brightness of the background image, adjust the mail text or cancel the background image display

[0122] In the condition with the preview display shown on the screen, the controller 22 performs a detection of whether or not a re-adjustment instruction is given (step S196), a detection of whether or not a text edit instruction is given (step S198), a detection of whether or not a cancel instruction is given (step S200), and a detection of whether or not an entry instruction is given (step S202).

[0123] If at the step S196 a re-adjustment instruction is detected, return is made to the display bright adjustment processing of step S192. If a text edit instruction is detected at step S198, the same text editing processing is performed as at step S80 in Fig. 9 (step S204), after which return is made to the preview display of step S194.

[0124] If a cancel instruction is detected at step S200, the correction value stored in the correction value storage area of the working area 2921 is cleared, and return is made to the item data input and display processing of step S176.

[0125] If an entry instruction is detected at step S202, the BDF background image display identification flag is set to "1" (step S206), after which the storage processing of step S180 is executed. After the processing of step S206, at the storage processing of step S180, because the information of the BDF background image identification flag in the working area 2921 is information indicating the making of a background image display ("1"), of the mail data currently being worked on in the working area 2921, all data with the exception of the attached file address is stored in the corresponding areas of the send folder 2922. Into the file attachment address storage area of the send folder 2922 is stored the address in the file attachment storage area 293 in which the above-noted original image is stored.

[0126] If an instruction to send occurs in the waiting condition of step S182 or thereafter in the condition in which mail data is read out from the send folder 2922, the mail data (subject and mail text) stored in the send folder 2922 is sent to the specified destination, along with the image brightness correction value and the BDF background image display identification flag. When this is done, the time sent is stored into the date and time sent storage area of the send folder 2922, and the SDF identification flag is set to "1" to indicate the sent condition.

[0127] The cell phone that receives the above-noted mail stores the received mail data in a corresponding area of its receive folder, and records the time of receipt in the received date and time storage area. When this is done, the MRF identification flag is set to "0" to indicate that the mail has not yet been read. In this case, if the BDF background image identification flag of the received mail is "1", because this indicates the attached image is to be displayed as a background to the mail text, when the mail is read from the receive folder 2923 and displayed, the brightness of the attached to the mail is first adjusted in accordance with the brightness of the attached image and then displayed as the background image, over which the mail text is displayed.

[0128] The signal configuration of an e-mail with a background image is one in which background image display identification flag information is not added, and in the case in which no area is provided in the receive folder 2923 for storing the BDS background image display identification flag, based on whether or not there is data in an image brightness correction value storage area, a judgment is made as to whether or not the mail is a mail with an attached background image, processing being performed as to whether or not to use the image attached thereto as a background image.

[0129] Although this embodiment of the present invention is for the case in which the mail text is superimposed over the image after processing to adjust the brightness of an image has been completed so as to make a preview display, it will be understood that it is alternatively possible to display the mail text on the background image at the time of display brightness adjustment processing of the image at step S192, in which case it is not necessary to make the preview display at step S194, and an instruction by the user to end the adjustment is detected as an entry instruction at the step S196.

[0130] Next, the mail receiving processing in the third embodiment will be described. Mail receiving processing in the third embodiment is substantially the same as in the first and second embodiments of the present invention. The receiving processing in the third embodiment is different from the mail receiving processing of the first and second embodiments in that the detection processing to determine whether or not a mail with a background image is selected at step S96 of the flowchart of Fig. 13 is done by either by the information (value) of the BDF identification flag of the selected mail, or by whether or not there is a brightness correction value, in that an image that has a brightness corrected based on an image brightness correction value attached to the mail is used as the background image in the mail text display at step S100, and in that in the image display at step S108 the image attached to the mail itself is displayed.

[0131] Additionally, although in this embodiment, the display of the background image of the mail text is done by performing correction in accordance with the brightness of the original image, it is alternatively possible to adopt a system of using a template, as in the case in the

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second embodiment, in which case the ROM 24 of the cell phone can be provided with a template file storage area, such as shown in Fig. 23, selection processing to select a template for use in display brightness adjustment of the image being performed at step S192 of the mail creation processing, and in mail sending processing the number of the template selected being sent in place of the image brightness correction value.

[0132] A fourth embodiment of the present invention is described below.

[0133] In contrast to the first to third embodiments of the present invention, in which, after launching the mail mode by a mail key operation from the wait condition the new mail creation mode is selected from the mail menu, after which selection is made of a background image from the new mail creation mode, or an attached image is specified as the background image, after which sending was done, in the fourth embodiment of the present invention, when an image photographed by the camera module is being displayed, or when an image is read out from an image file, selection is made of sending from a sub-menu of this mode, or the mail key is operated to enter the mail creation mode, and specify and send a displayed image as the background image for the mail text.

[0134] In the fourth embodiment, similar to the case of the third embodiment, the system used is one of sending the original image itself as a file attachment to the mail text, and one in which, in addition to attaching an image that had been displayed to an e-mail, information (flag information) indicating that the attached image is to be used as the background image for the mail text and brightness correction data for display of the attached image as a background image are attached to the mail before sending the mail. By doing this, the brightness of the attached image is corrected at the receiving side based on attached brightness correction data and the corrected image used as the background image for the body text. Because the system configuration, outer appearance of the cell phones, and general configuration of the cell phones are the same as in the first embodiment, they are not described herein.

[0135] The configuration of the fourth embodiment in terms of the ROM 24 and the mail data storage area 292 and the like can be the same as that of the third embodiment.

[0136] The operation of the fourth embodiment of the present invention is described below, taking first the case of mail creation processing.

[0137] Fig. 24 is a flowchart illustrating the processing of mail creation in the fourth embodiment. This flowchart starts from the condition in which a screen that displays an image captured by the camera module or read in from an image file is displayed by the display 13.

[0138] In this display condition, a judgment is made as to whether or not an instruction is made to send (step S210). More specifically, this judgment is a judgment as to whether or not sending has been selected from a sub-menu of the image mode, or a judgment as to whether or not a mail key 141 operation is made in the image mode

[0139] If the send instruction is detected, the mail creation screen is displayed on the display 13 (step S212) and if a different instruction is detected, flow proceeds to the other processing (step S214). At the creation screen of step S212, items that must be input to create an e-mail, such as the destination, the subject, the mail text, and a file attachment and the like.

[0140] Next, when data is input for selected items or a file to be attached is selected, the data for each of the input items is stored in an area corresponding to the items in the working area 2921, and the input data (data of each item) is displayed on the display 13 (step S176). The image displayed before the send instruction is automatically set as one of the file attachments at step S216.

[0141] At this stage, the user can send an image (image that is displayed at the time of the start) that was automatically set as a file attachment at the processing of step S216 as a normal file attachment, or can select the sending of the image as a file attachment for use as the background image for the mail text. In the case in which the user sends the image file as a normal file attachment, the entry instruction is given, and in the case in which the image file is to be sent as a file attachment for use as a background image for the mail text, a background image display instruction is given.

[0142] Therefore, the controller 22 makes a judgment as to whether or not an entry (verification) instruction has been given for the input data (step S218). In the case in which the entry (verification) instruction is given, the mail data currently being worked with is stored into the send folder 2922 of the mail data storage area 292 (step S220), after which a wait is made for either a send instruction or an ending instruction (step S222).

[0143] In the above-described fourth embodiment, similar to the case of the third embodiment, in the case in which an image is attached to an e-mail, the method used is that of attaching the original image itself, and also sending information (flag information) that indicates that an attached image is to be used as the background image for the mail text and brightness correction data for display of the attached image as the background image.

[0144] In the storage processing at step S220, therefore, of the mail data currently being worked on stored in the working area 2921, data other than the file attachment address, this being the destination, the subject, the mail text, the BDF background image display identification flag, and image brightness correction value, is stored in corresponding areas in the send folder 2922. The address in the file storage area 293 into which the original image is stored is stored in the file attachment address storage area of the send folder 2922.

[0145] At this stage, however, even if there is an image attached to the mail, the setting of this image as a

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background image for the mail text has not yet been made, the information of BDF background image display identification flag of the working area 2921 is information, (the value 0) that indicates that a background image display is not to be made, and the image bright ness correction value has not been set. Therefore information is set into the BDF background image display identification flag (the value 0) indicates that a background image display is not to be made, and the image brightness correction value remains unset. The MSF identification flag of the send folder 2922 is set to the unsent condition (0).

[0146] In the case, however, in which at step S218 there is no detection of an entry (verification) operation in the input data, detection is made of whether or not a background image display instruction has been made (step S224). In the case in which a background image display instruction is not detected, return is made to step S216. If a background image display instruction is detected, however, the image automatically set as the file attachment by the processing of step S216 (image displayed the time of the start) is displayed on the display 13, and the user can adjust the displayed brightness of the image (step S226). When the user adjusts the brightness of the displayed image, the adjustment value (correction value with respect to the brightness of the original image) is stored in the correction value storage area of the working area 2921. The display brightness correction of the image is continued until the user indicates the end of the adjustment, at which point the correction value stored in the correction value storage area of the working area 2921 is also updated. When the user indicates the end of adjustments, an overlaid display of the mail text with the display brightness corrected image is made (preview display) (step S228).

[0147] If the user views the preview display at step S228 and is satisfied with the display, the user makes an entry (verification) operation. If the user is not satisfied with the displayed preview, however, the user can re-adjust the displayed brightness of the background image, adjust the mail text, or cancel the background image display.

[0148] In the condition with the preview display shown on the screen, the controller 22 performs a detection of whether or not a re-adjustment instruction is given (step S230), a detection of whether or not a text edit instruction is given (step S232), a detection of whether or not a cancel instruction is given (step S234), and a detection of whether or not an entry instruction is given (step S236).

[0149] If at the step S230 a re-adjustment instruction is detected, return is made to the display bright adjustment processing of step S226. If a text edit instruction is detected at step S232, the same text editing processing is performed as at step S80 in Fig. 9 and step S2020 in Fig. 22 (step S238), after which return is made to the preview display of step S228.

[0150] If a cancel instruction is detected at step S234, the correction value stored in the correction value storage area of the working area 2921 is cleared and return is made to the item data input and display processing of step S216.

[0151] If an entry instruction is detected at step S236, the BDF background image display identification flag is set to "1" (step S240), after which the storage processing of step S220 is executed. After the processing of step S206, at the storage processing of step S220, because the information of the BDF background image identification flag in the working area 2921 is information indicating the making of a background image display ("1"), of the mail data currently being worked on in the working area 2921, all data with the exception of the attached file address is stored in the corresponding areas of the send folder 2922. Into the file attachment address storage area of the send folder 2922 is stored the address in the file attachment storage area 293 in which the above-noted original image is stored.

[0152] If an instruction to send occurs in the waiting condition of step S182 or thereafter in the condition in which mail data is read out from the send folder 2922, the mail data (subject and mail text) stored in the send folder 2922 is sent to the specified destination, along with the image brightness correction value and the BDF background image display identification flag. When this is done, the time sent is stored into the date and time sent storage area of the send folder 2922, and the SDF identification flag is set to "1" to indicate the sent condition.

[0153] As noted above, in the fourth embodiment of the present invention, if a send instruction is given in the condition in which an image is displayed, the new mail creation mode is selected, and with the exception of the fact that the image that had been displayed being automatically set as the file attachment, the fourth embodiment is the same as the third embodiment. Therefore, although the partial variations in the mail creation processing and received mail display processing were described above, items that were described above with regard to the third embodiment have not been repeated where they are the same as in the fourth embodiment.

[0154] It will be understood that the foregoing embodiments are presented as exemplary and do not restrict the present invention, which can be embodied in other forms and manners that are encompassed by the spirit of the present invention as recited in the attached claims.

Claims

1. A data communication apparatus comprising:

   means (149, steps S22, S176 and S216) for preparing a document to be sent;
   means (145, step S36) for preparing an image to be sent;

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means (steps S16, S202 and S236) for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document; and

means (11, 20, 21) for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image for the document in a case in which the setting means sets display as a background image.

2. The data communication apparatus according to claim 1, comprising means (13, steps S54, S138, S194 and S228) for displaying the document with the image as a background image before sending the data.

3. The data communication apparatus according to claim 1, comprising means (steps S46~S50 and S64, steps S122~S134 and S148, step S192, step S226) for processing the image so that both the document and the image are visually verifiable when the image is displayed as a background image for the document.

4. The data communication apparatus according to claim 3, wherein the processing means is a means (steps S46~S50 and S64) for correcting a brightness of the image, and

wherein the sending means sends a brightness-corrected image.

5. The data communication apparatus according to claim 3, wherein the processing means is a means (steps S192 and S226) for correcting a brightness of the image,

wherein the sending means sends an image and brightness correction data.

6. The data communication apparatus according to claim 3, wherein the processing means is a means (steps S122~S134 and S148) for selecting and overlaying the image with templates having different brightness filter functions, and

wherein the sending means sends an image and data specifying a template.

7. The data communication apparatus according to claim 6, wherein the processing means comprises a means (steps S120~S134) that distinguishes a brightness of the image and selects a template having a filtering function responsive to the brightness.

8. The data communication apparatus according to claim 1, comprising means (step S52) for changing a color of characters of the document, based on a brightness of the image.

9. The data communication apparatus according to claim 1, further comprising means (181) for photographing an object, and wherein the image comprises an object image photographed by the photographing means.

10. The data communication apparatus according to claim 1, comprising:

means (11, 20, 21) for receiving data;

display control means (step S100) for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

11. A data communication apparatus capable of receiving data sent by another data communication apparatus, comprising:

means (11, 20, 21) for receiving data;

display control means (step S100) for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

12. The data communication apparatus according to claim 11, wherein

the information that can distinguish is information indicating an instruction to display the image as a background image for the document and/or brightness-correction data of the image, and wherein

the display control means, in a case in which data received by the receiving means include brightness-correction data, corrects the brightness of the background image based on the brightness-correction data.

13. The data communication apparatus according to claim 11, wherein

the information that can distinguish is information indicating an instruction to display the image as a background image for the document and/or data specifying a template, the data communication apparatus comprises templates having different brightness filer functions, and

wherein the display control means selects and overlays the image with one of templates based on specification data, in a case in which the data received by the receiving means includes template specification data.

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14. The data communication apparatus according to claim 11, further comprising.

a display switching means (143, step S106) for switching from a condition in which the image is displayed as a background image for the document to a display of either the image only or the document only.

15. A data communication system comprising a first data communication apparatus (1a) and a second data communication apparatus (1b), and capable of data communication from the first data communication apparatus to the second data communication apparatus, wherein

the first data communication apparatus comprises:

means (149, steps S22, S176 and S216) for preparing a document to be sent;
means (145, step S36) for preparing an image to be sent;
means (steps S16, S202 and S236) for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document; and
means (11, 20, 21) for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image in a case in which the setting means sets display as a background image, and wherein
the second data communication apparatus comprises:

means (11, 20, 21) for receiving data;
display control means (step S100) for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

16. A data communication method whereby a document and an image are sent from a first data communication apparatus to a second communication apparatus and the image is displayed on a display of the second data communication apparatus as a background image for the document, comprising:

a step (steps S22, S36, S176 and S216) in the first data communication apparatus of preparing a document to be sent and an image to be used as a background image for the document;
a step (steps S60, S144, S182 and S222) in the first data communication apparatus of sending the document, the image and information that indicates the display of the image as a background image for the document;
a step in the second data communication apparatus of receiving data sent from the first data communication apparatus; and
a step (step S100) in the second data communication apparatus of displaying the image as the background image for the document in a case in which the received data included the document, the image and the indicating information.

17. A data communication method according to claim 16, further comprising:

a step (one of steps S54, S138, S194 or S228) of displaying the image as a background image before sending the data.

18. A data communication method according to claim 16, further comprising:

a step (steps S46~S50 and S64, steps S122~S134 and S148, step S192 or step S226) of processing the image so that both the document and the image are visually verifiable when the image is displayed as a background image for the document.

19. A data communication method according to claim 18, wherein

the image processing step is a step (step S64) of correcting a brightness of the image, and

wherein the data sending step sends brightness-correction data along with the image.

20. A data communication method according to claim 18, wherein

the image processing step is a step (steps S122~S134) of selecting and overlaying the image with templates having different brightness filter functions and

wherein the data sending step sends an image and data specifying a template.

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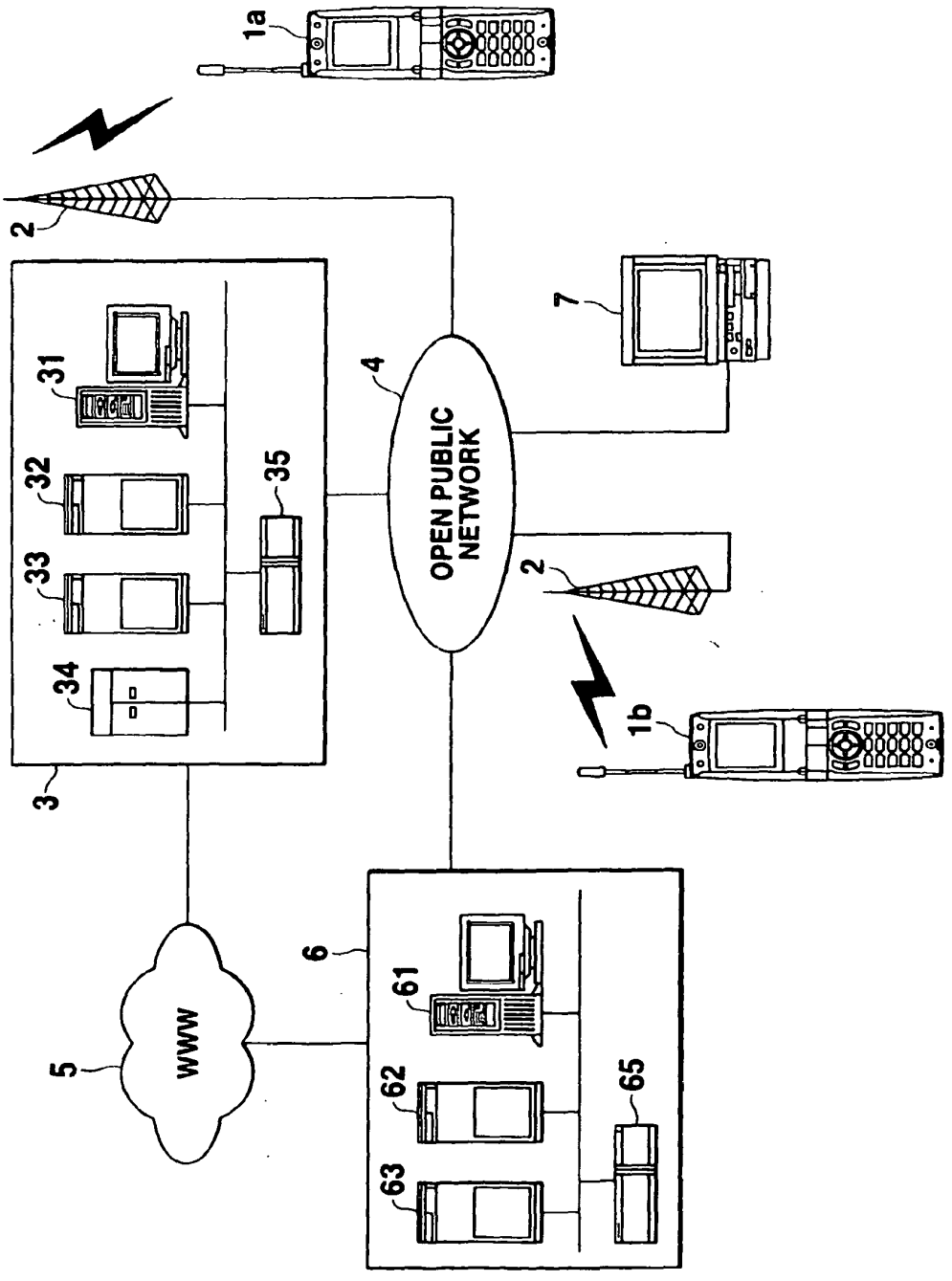


FIG.1

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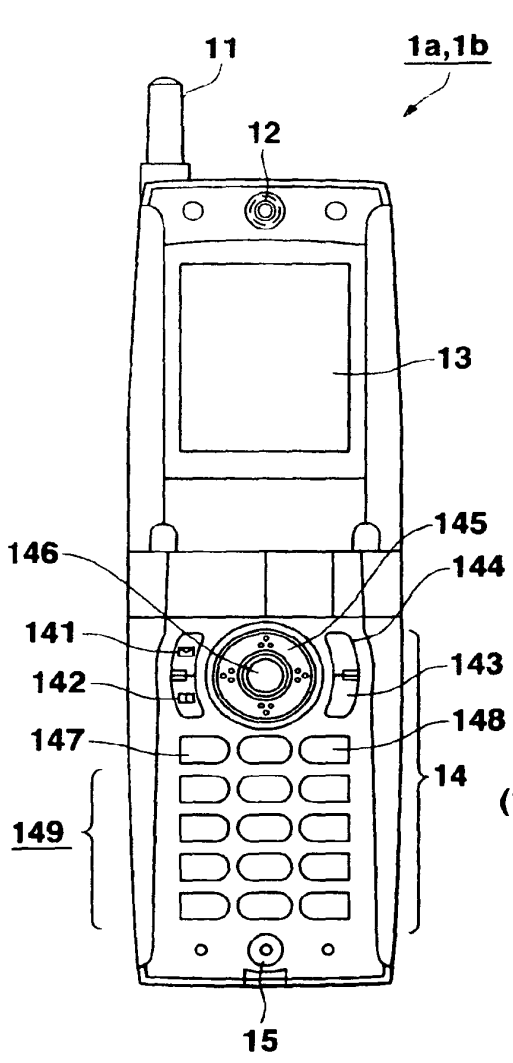


FIG.2A

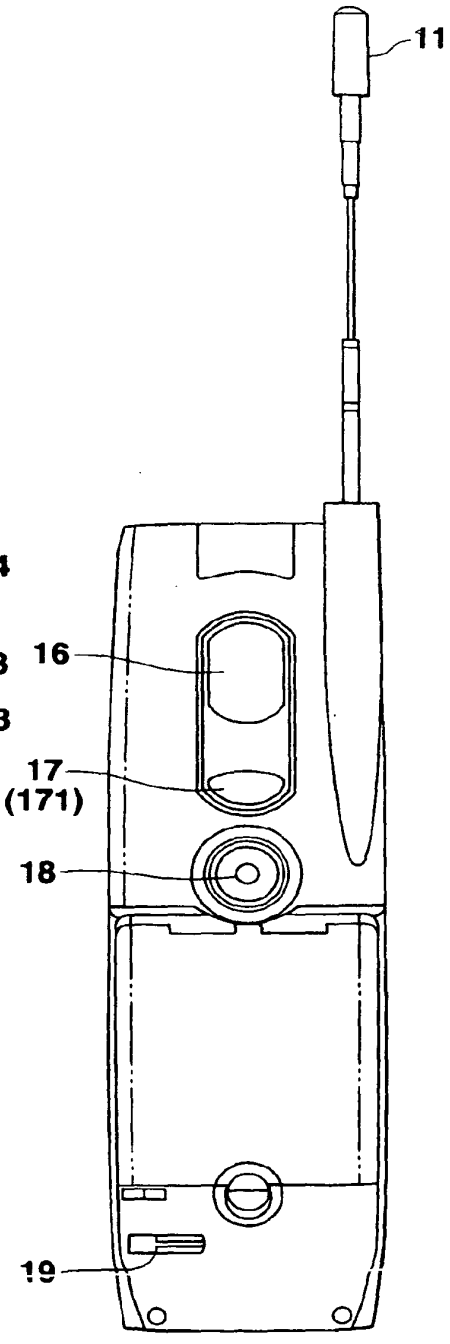


FIG.2B

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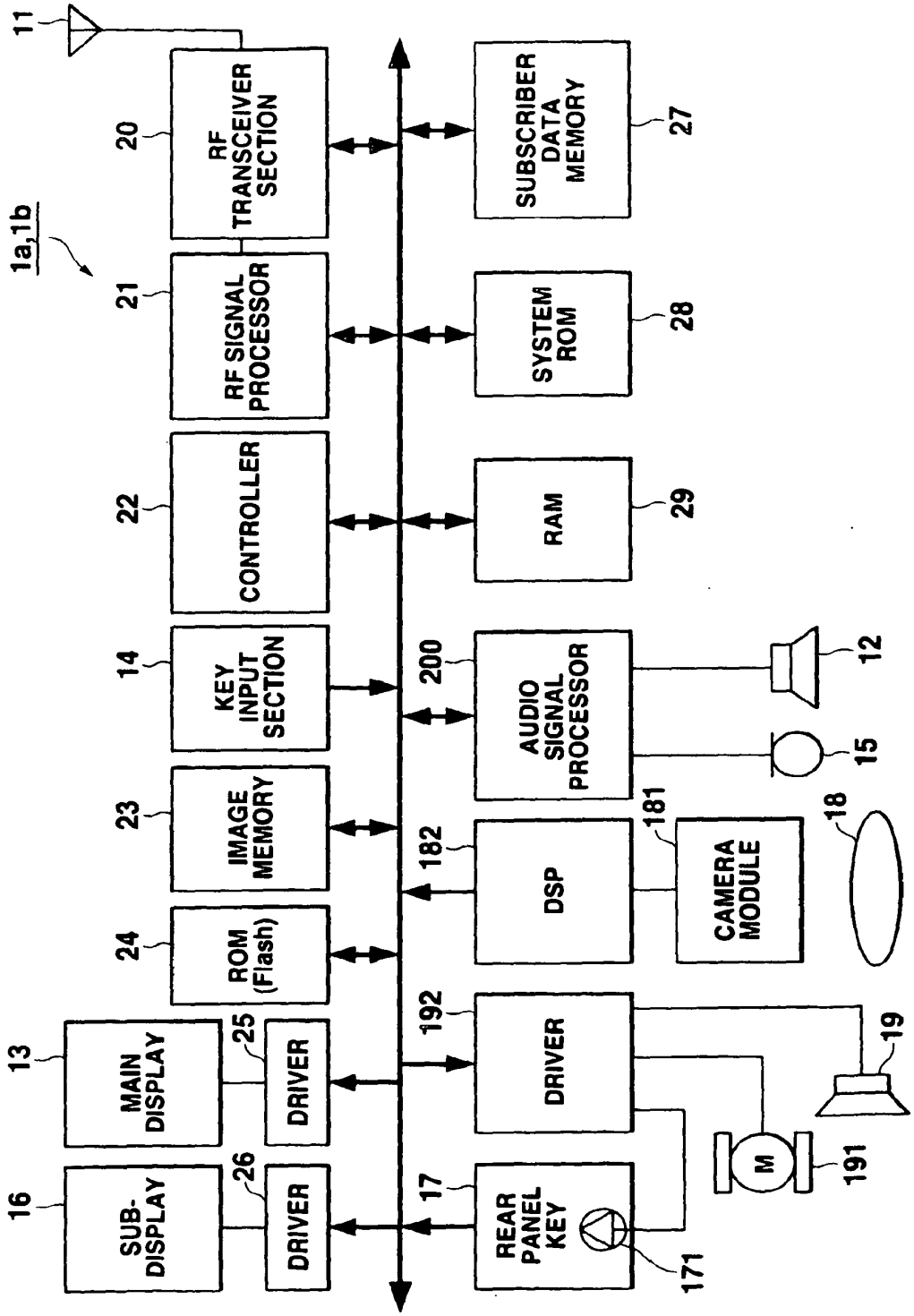


FIG.3

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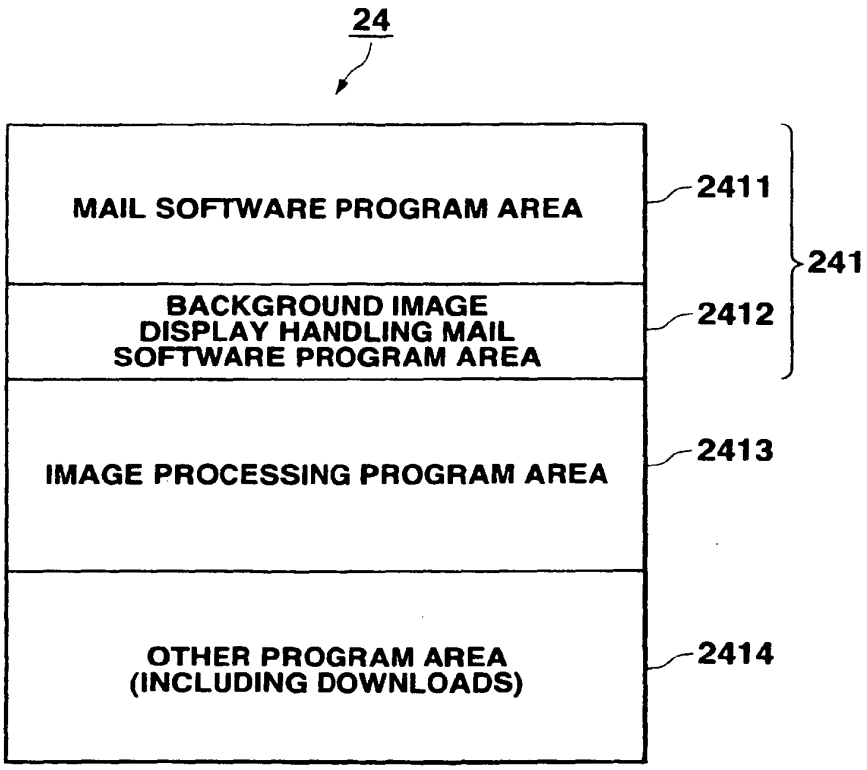


FIG.4

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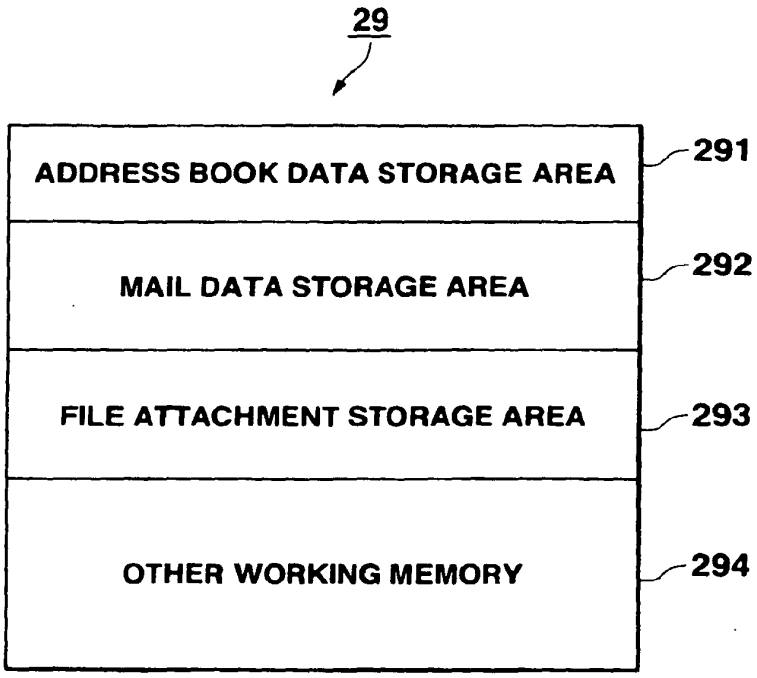


FIG.5

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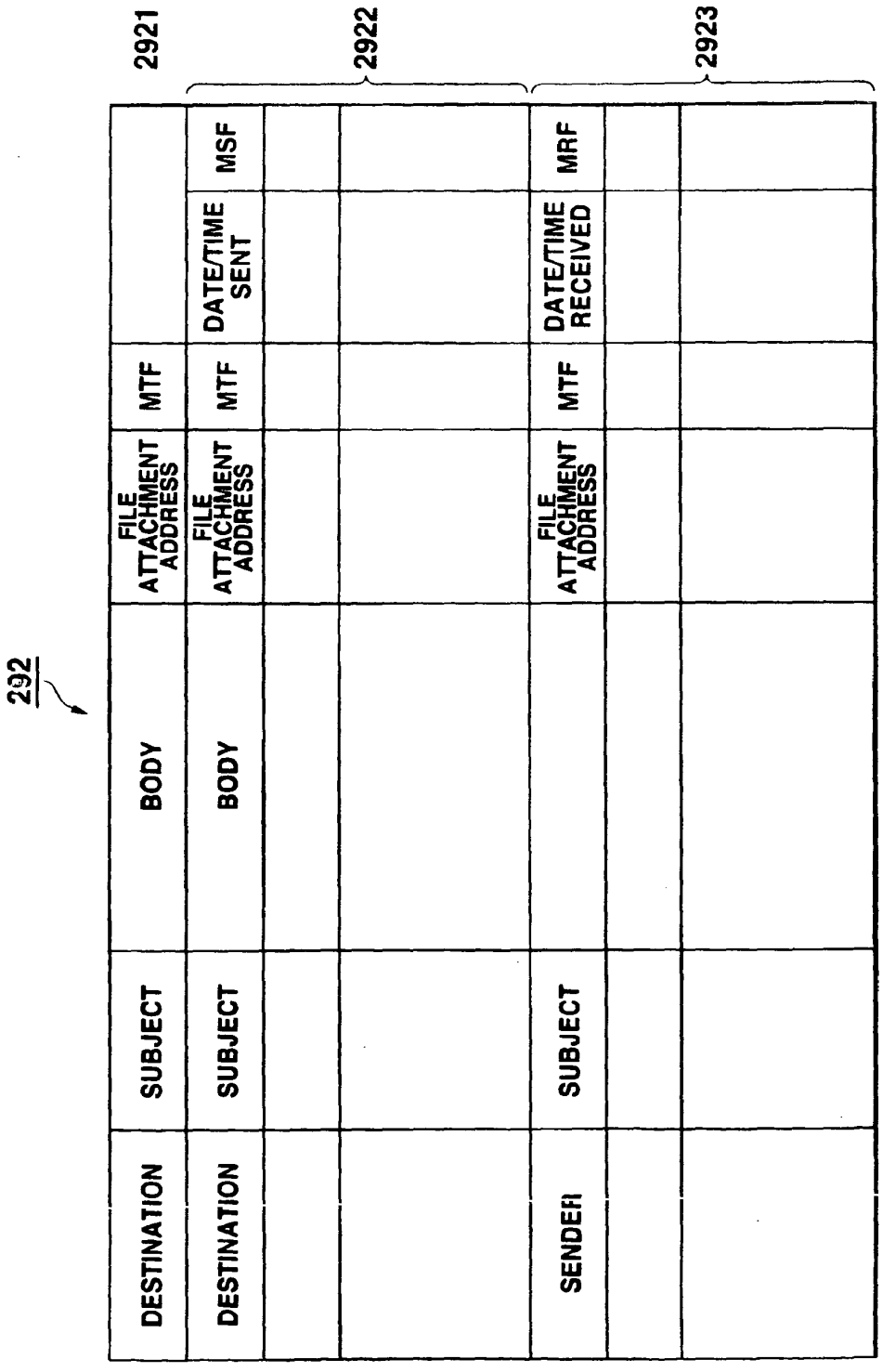


FIG.6

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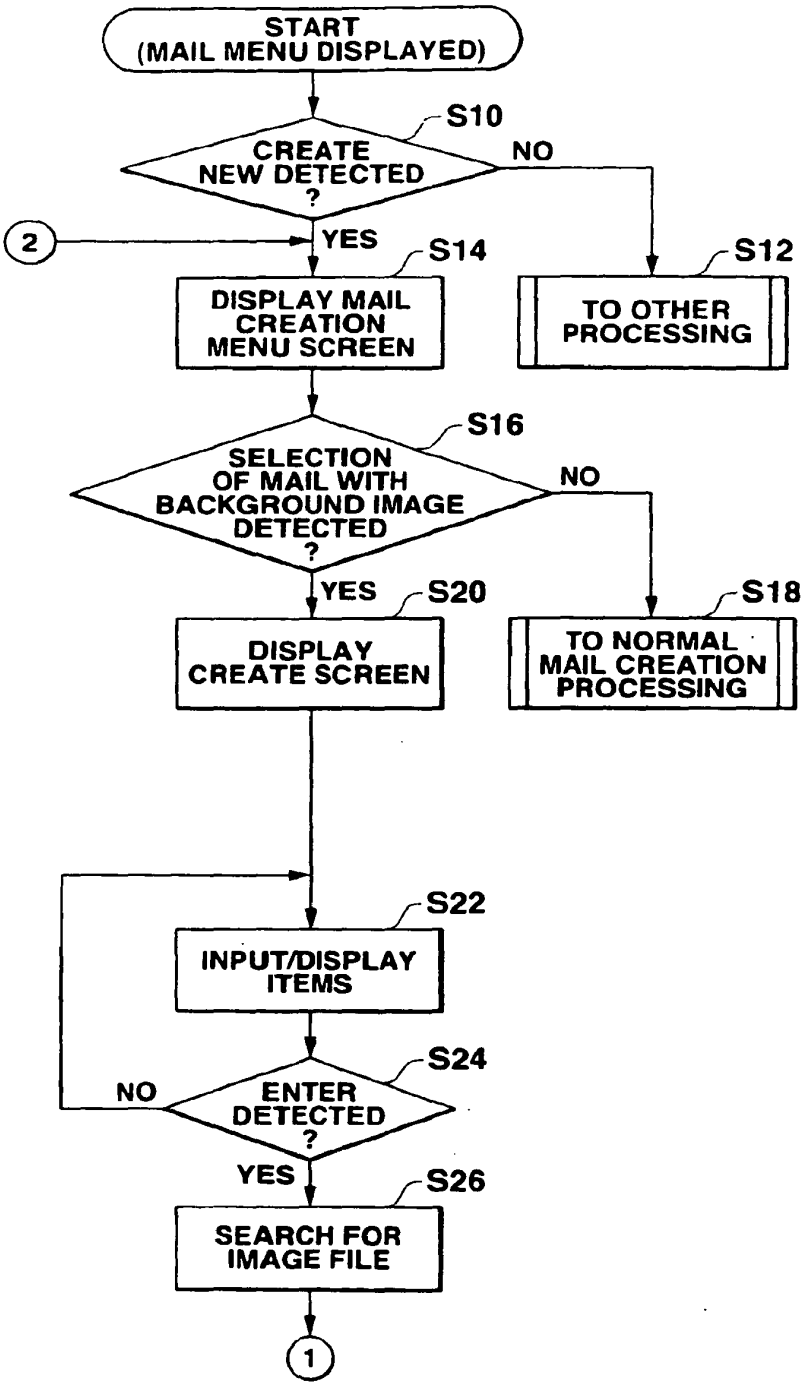


FIG.7

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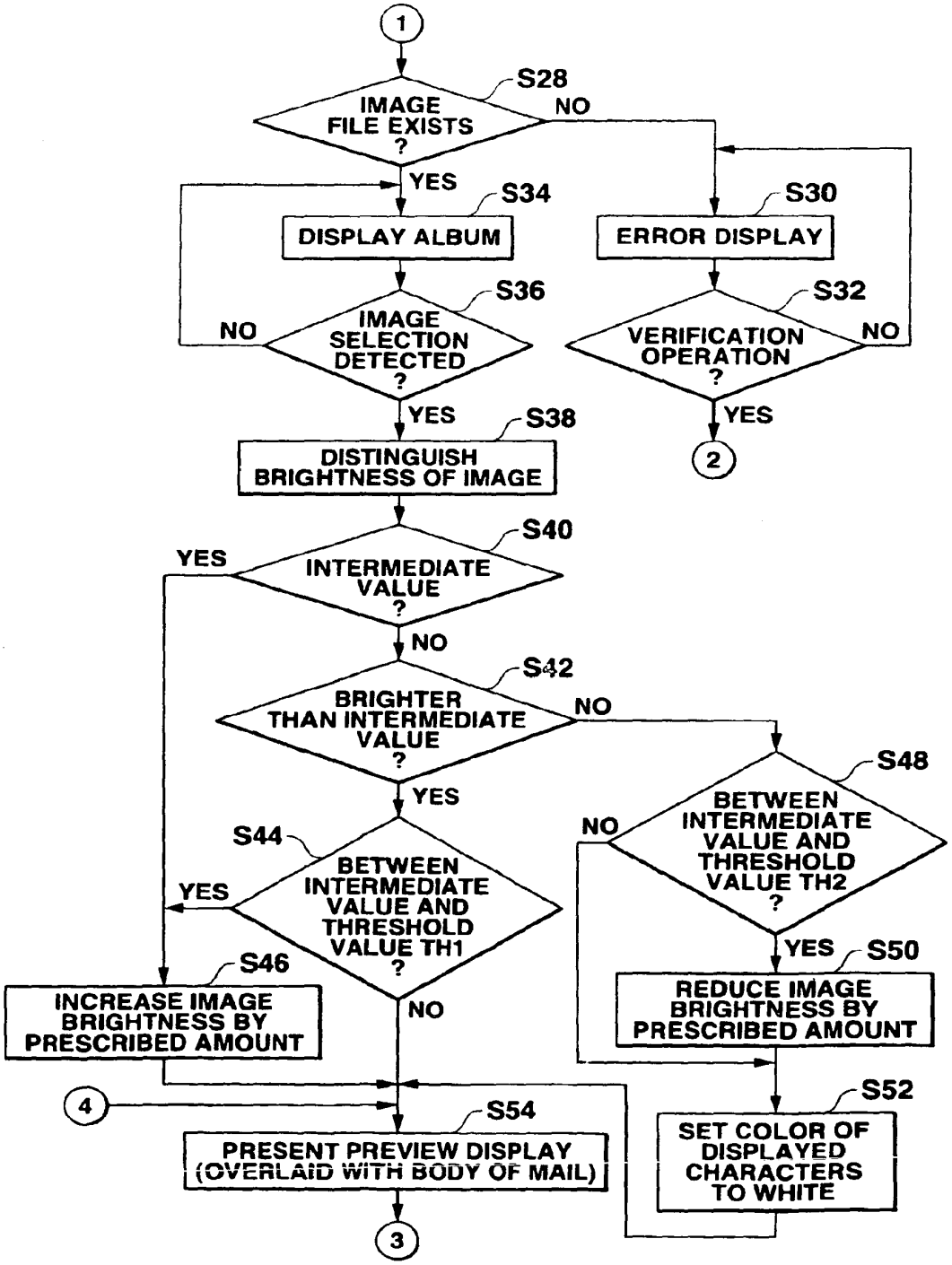


FIG.8

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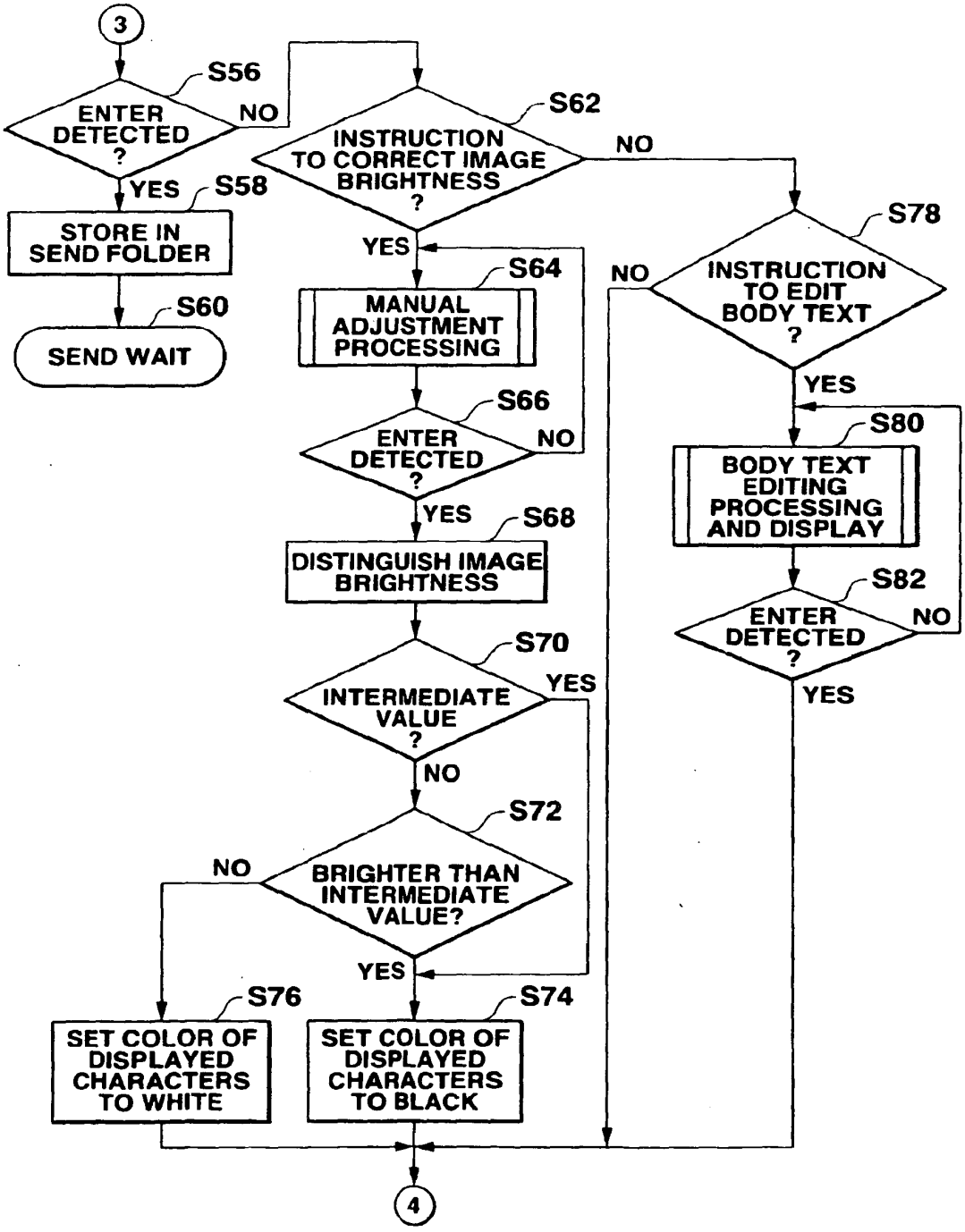


FIG.9

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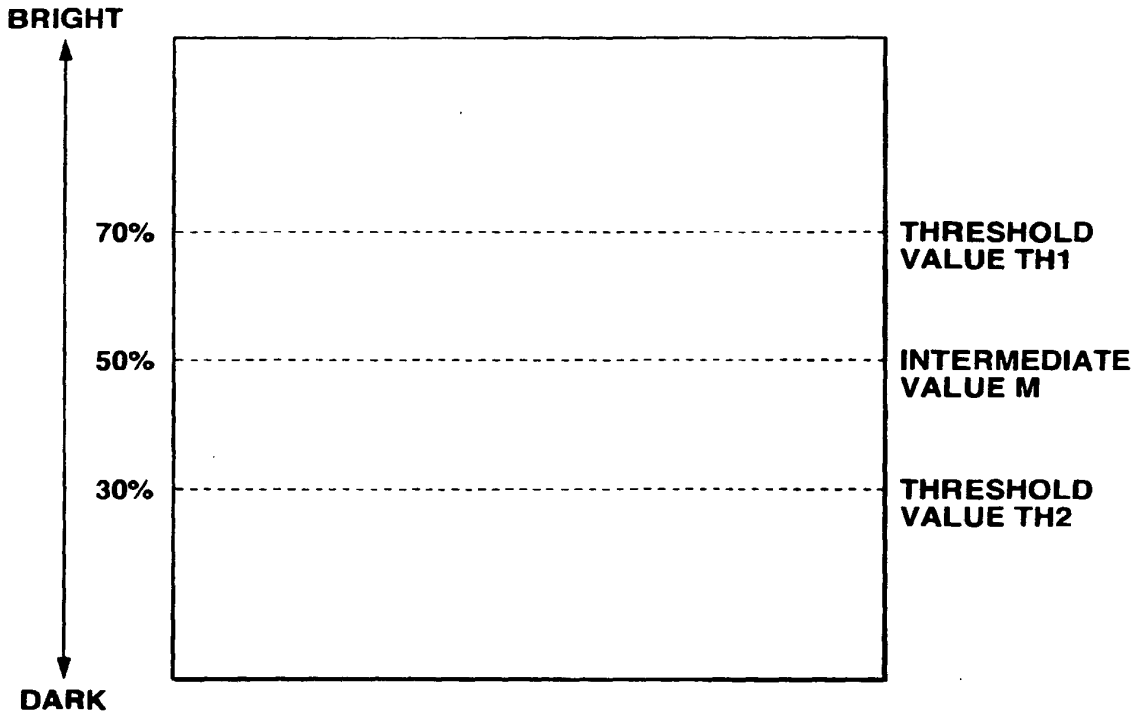


FIG.10

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FIG.11A

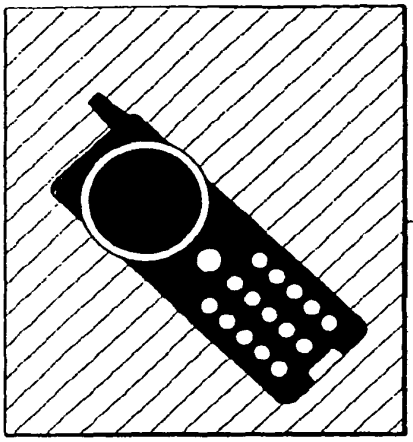


FIG.11B

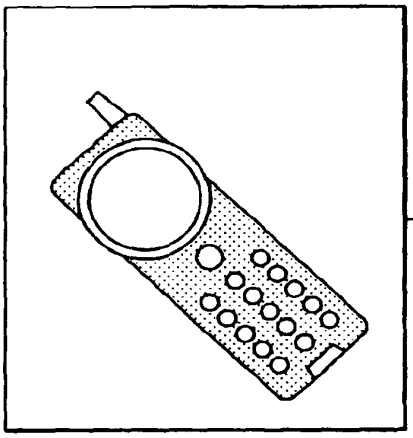
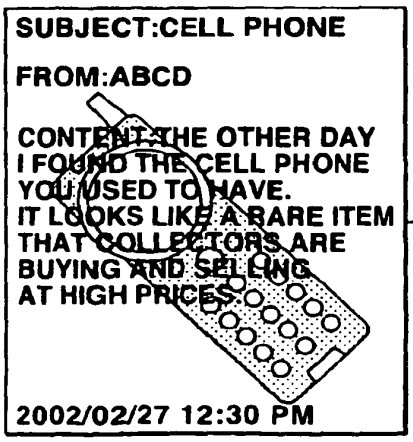


FIG.11C



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FIG.12A

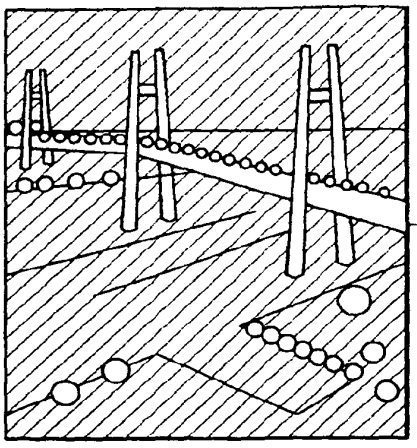


FIG.12B

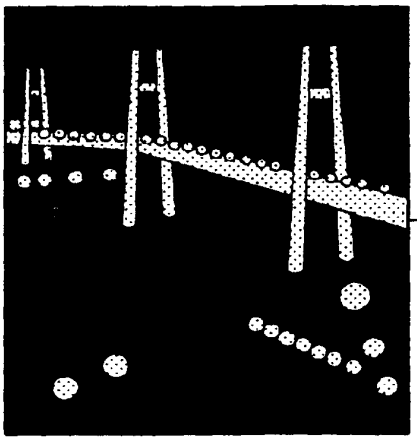
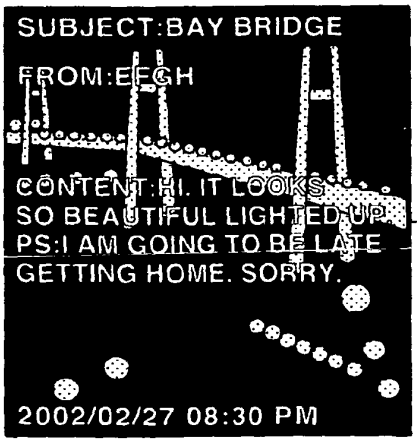


FIG.12C



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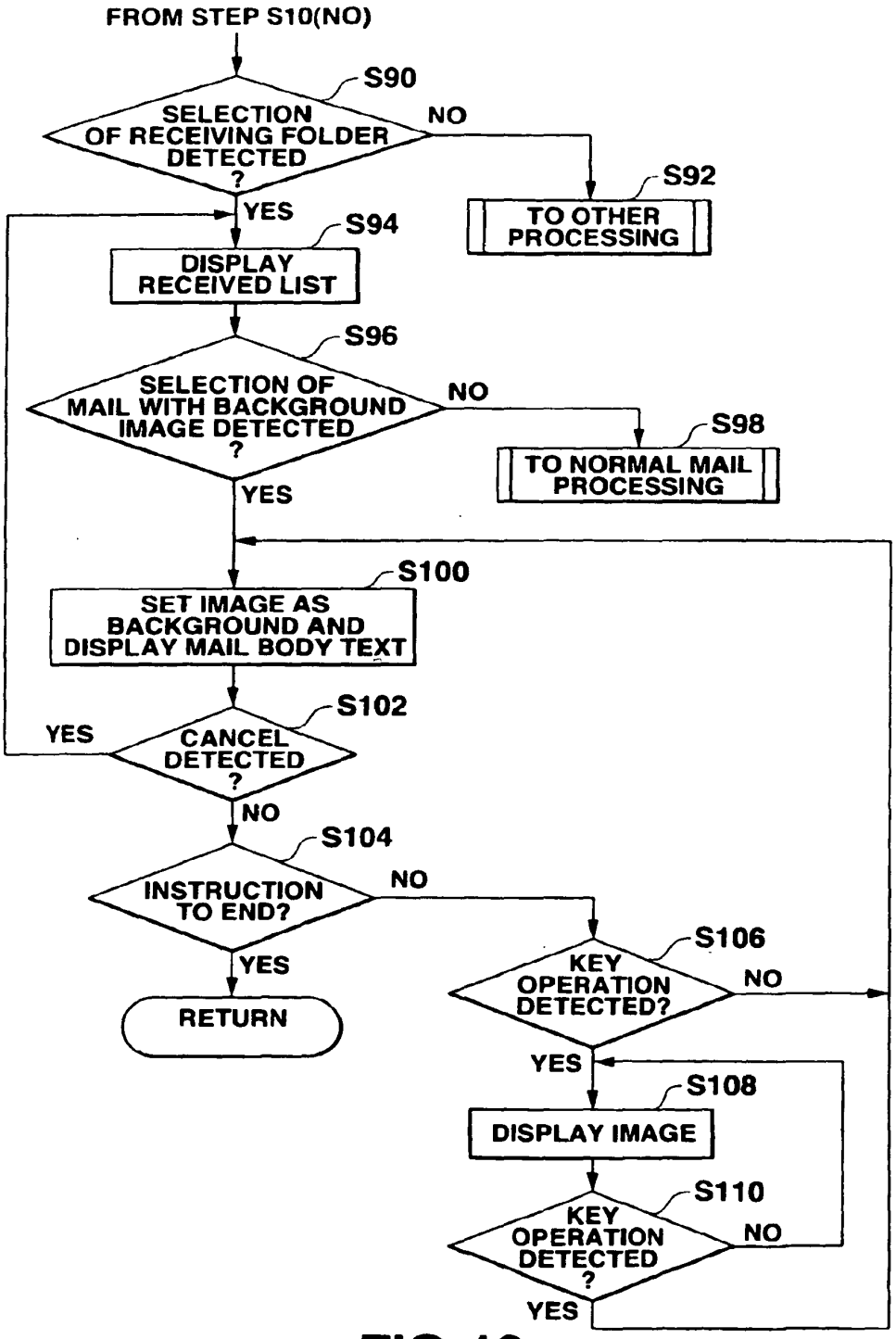


FIG.13

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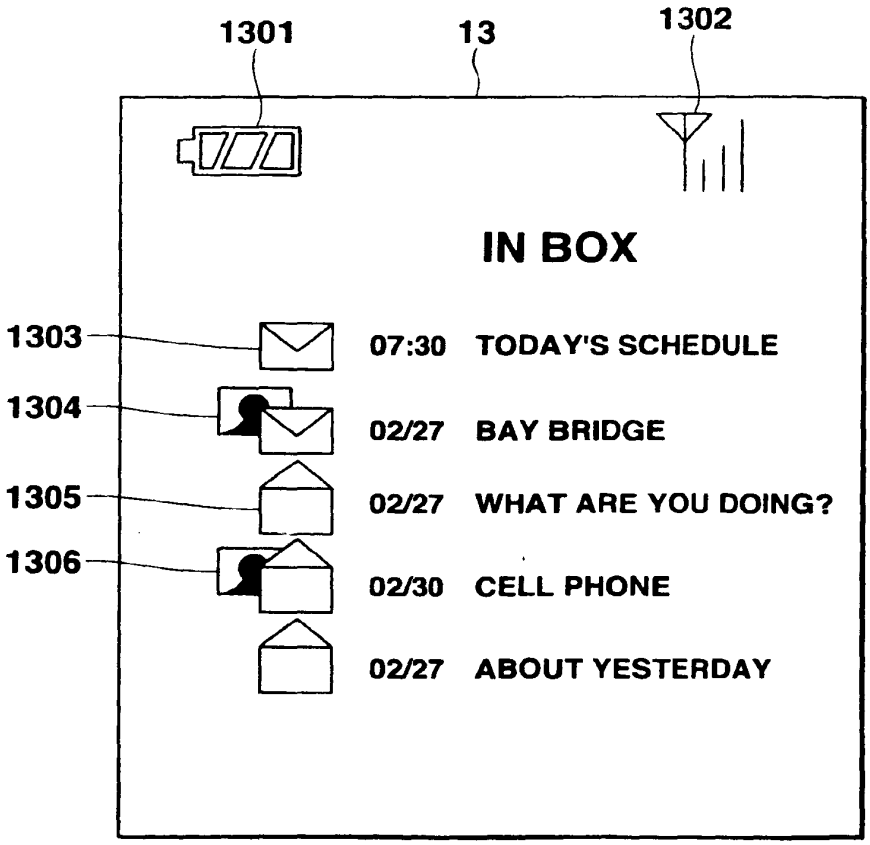


FIG.14

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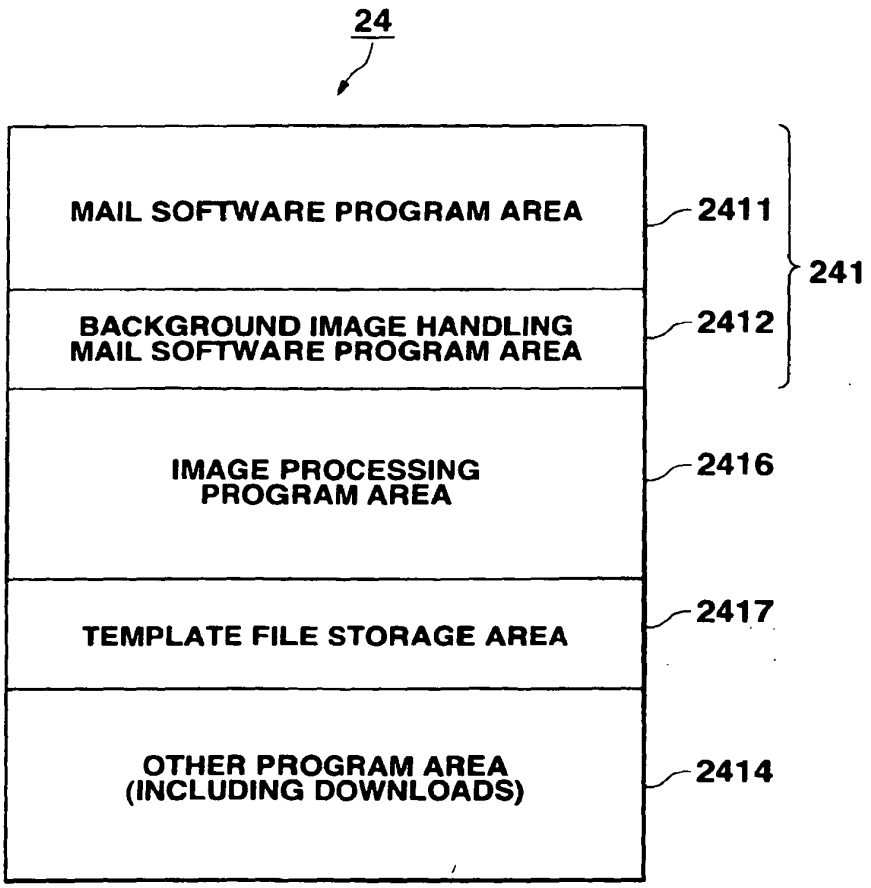


FIG.15

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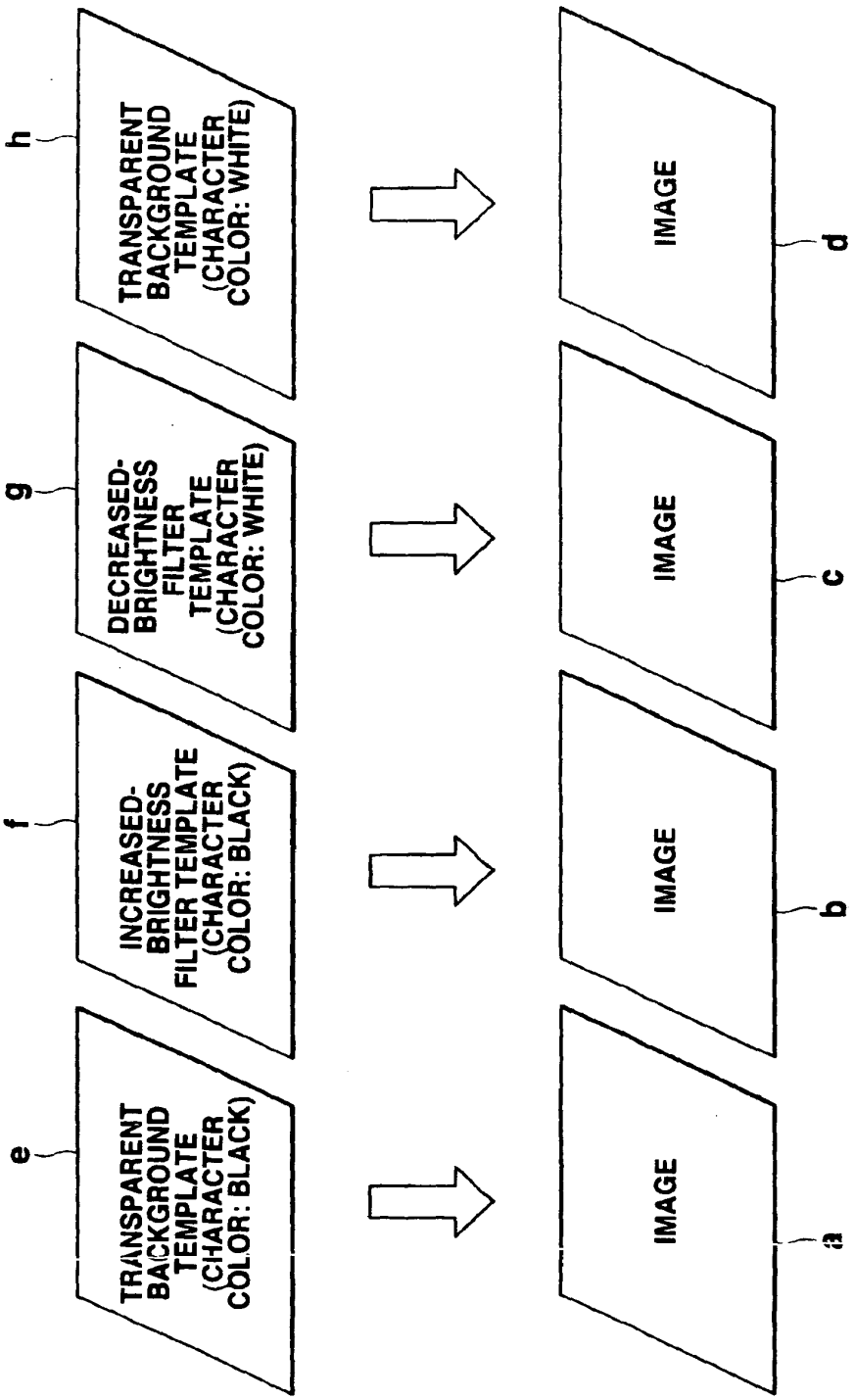


FIG.16

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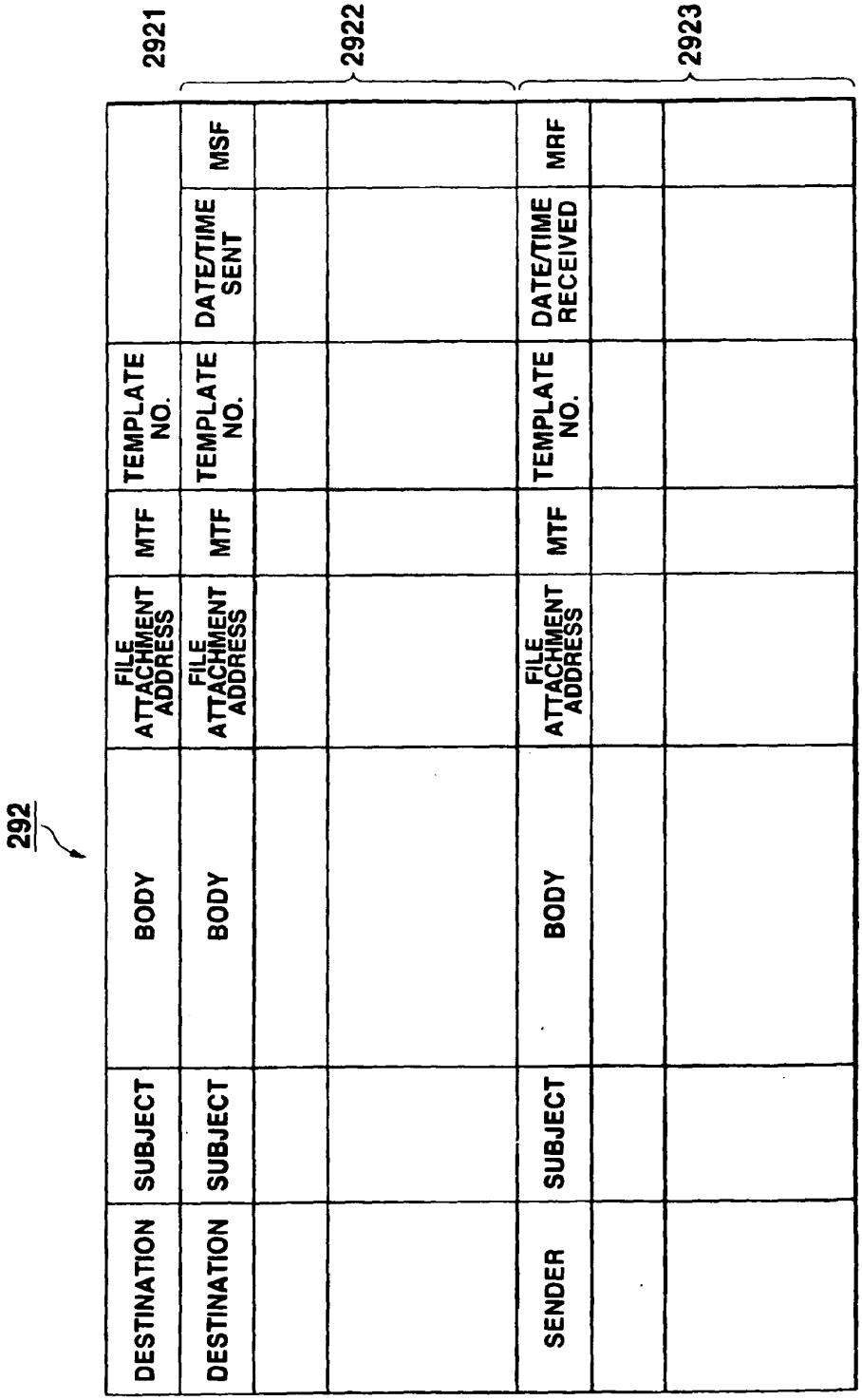


FIG.17

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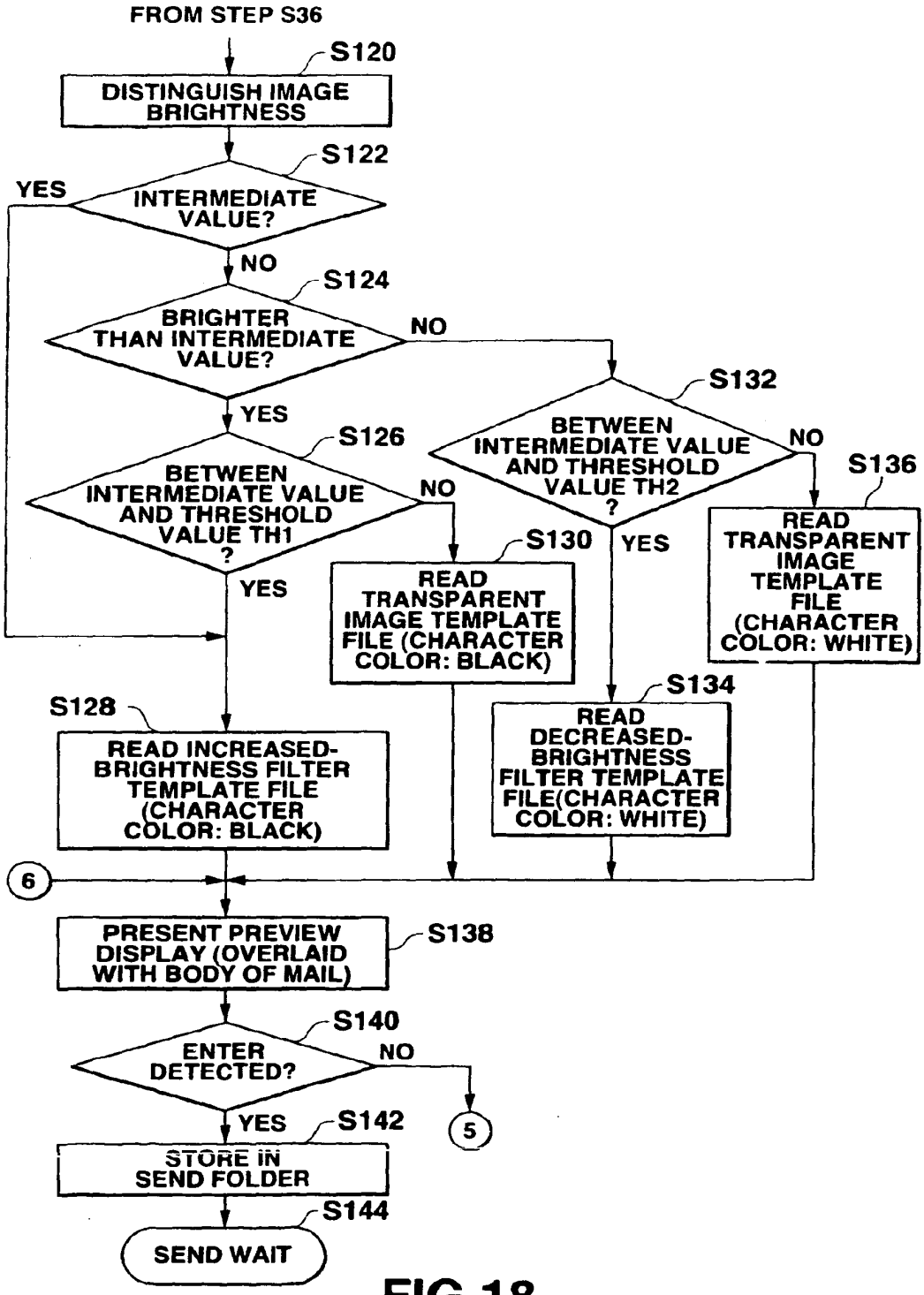


FIG.18

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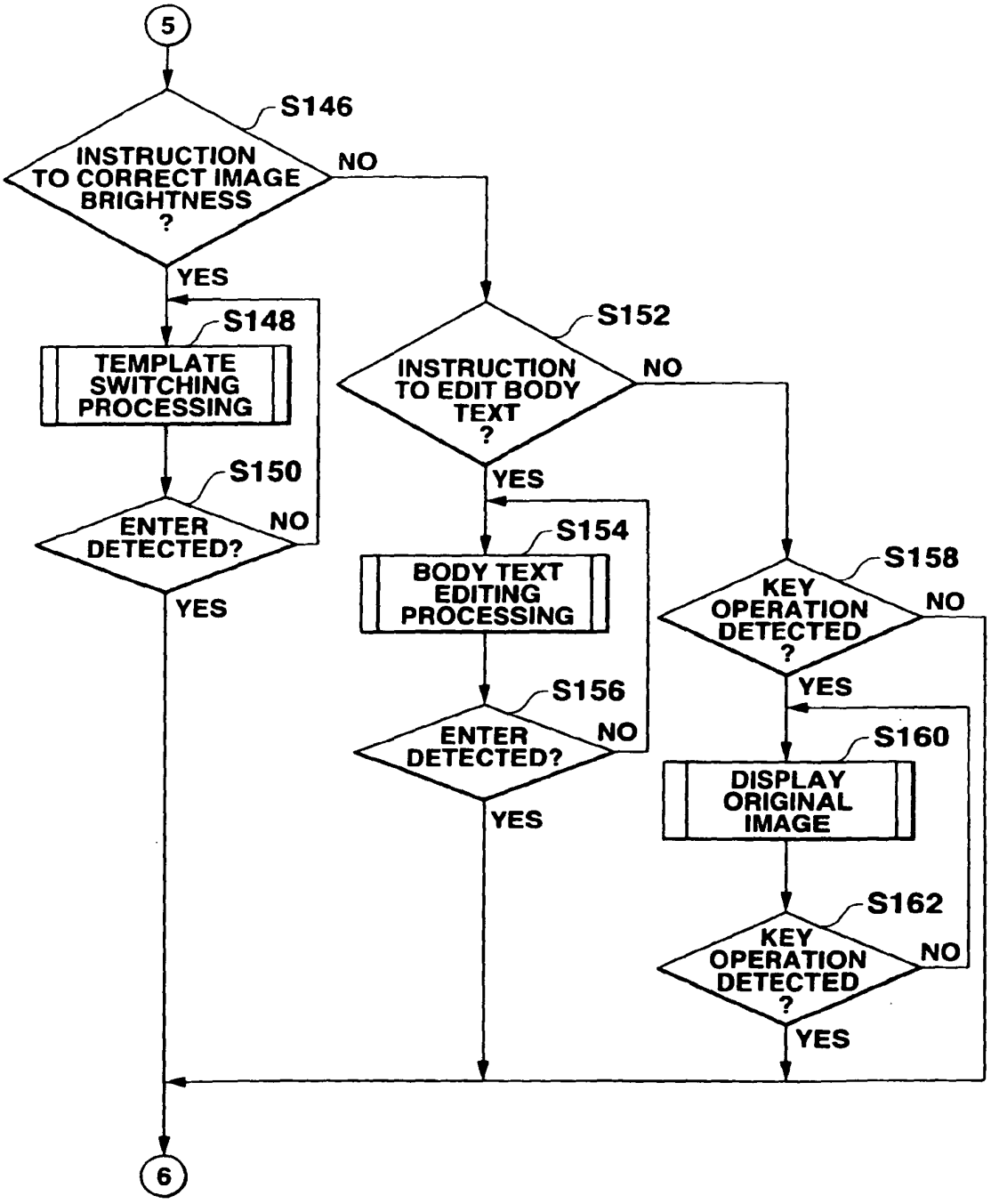


FIG.19

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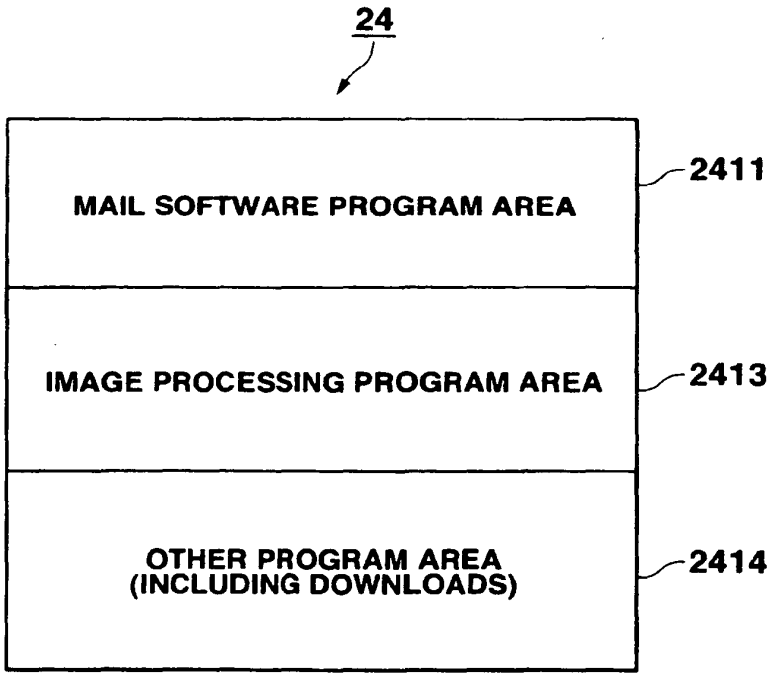


FIG.20

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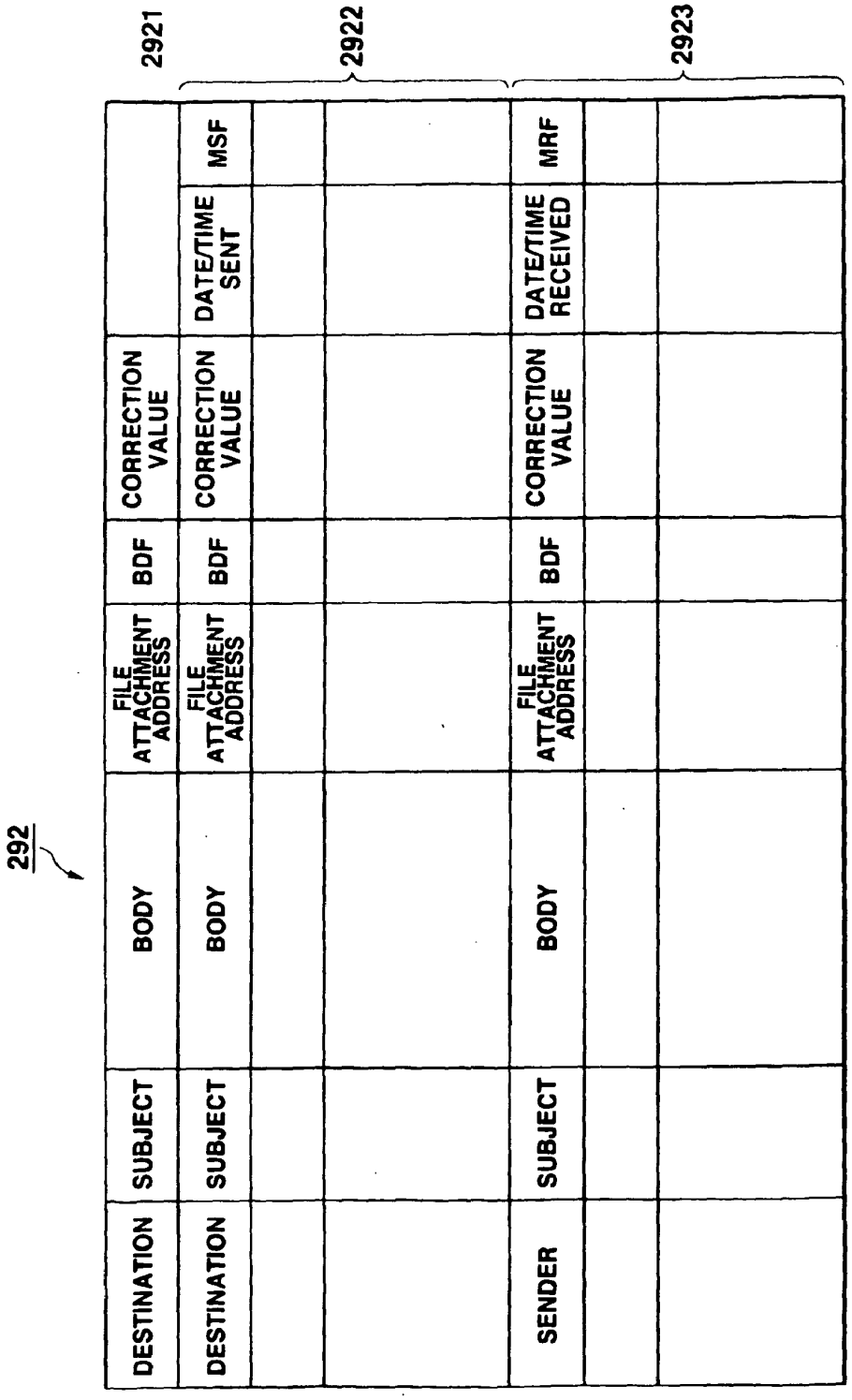


FIG.21

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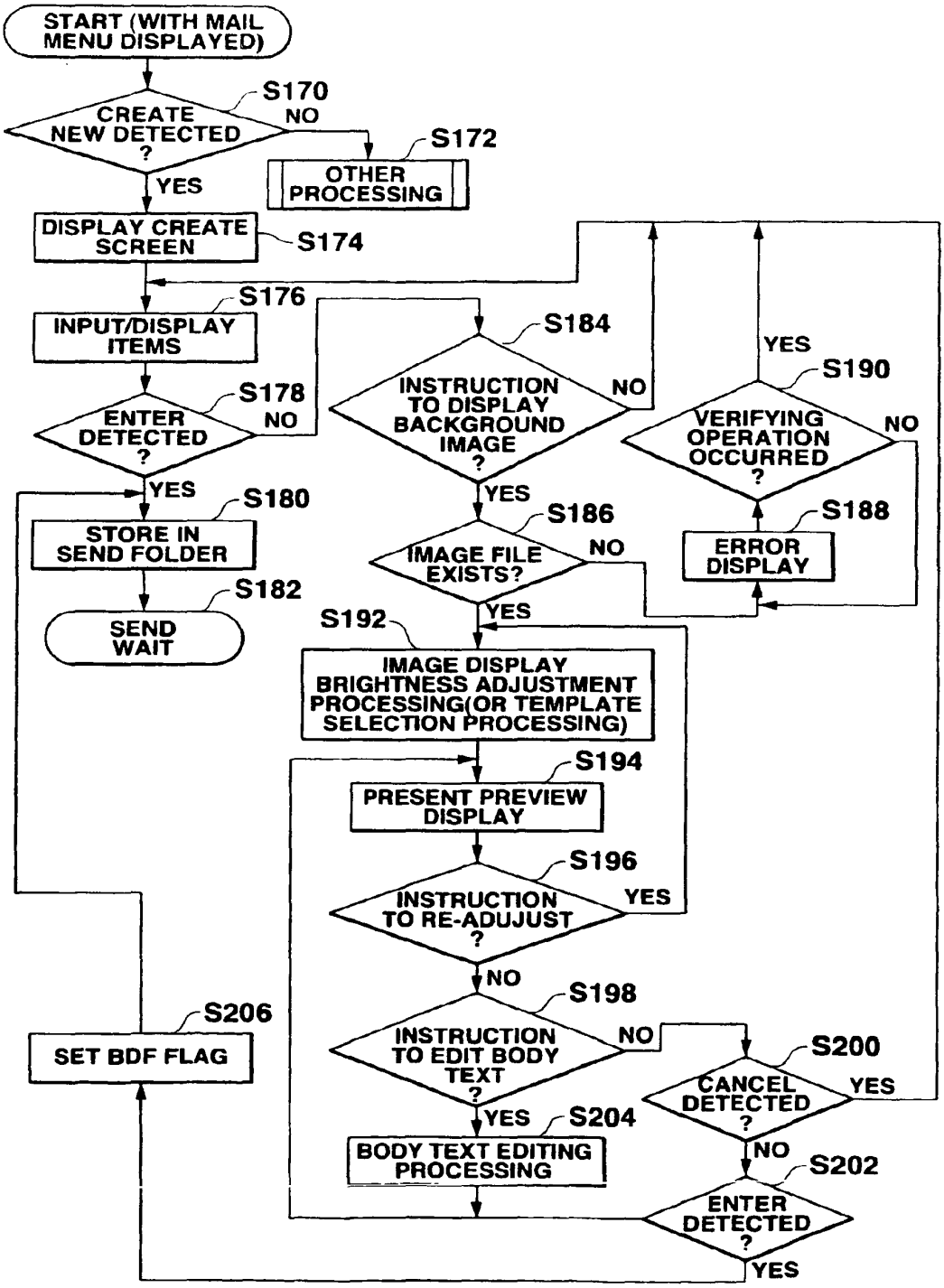


FIG.22

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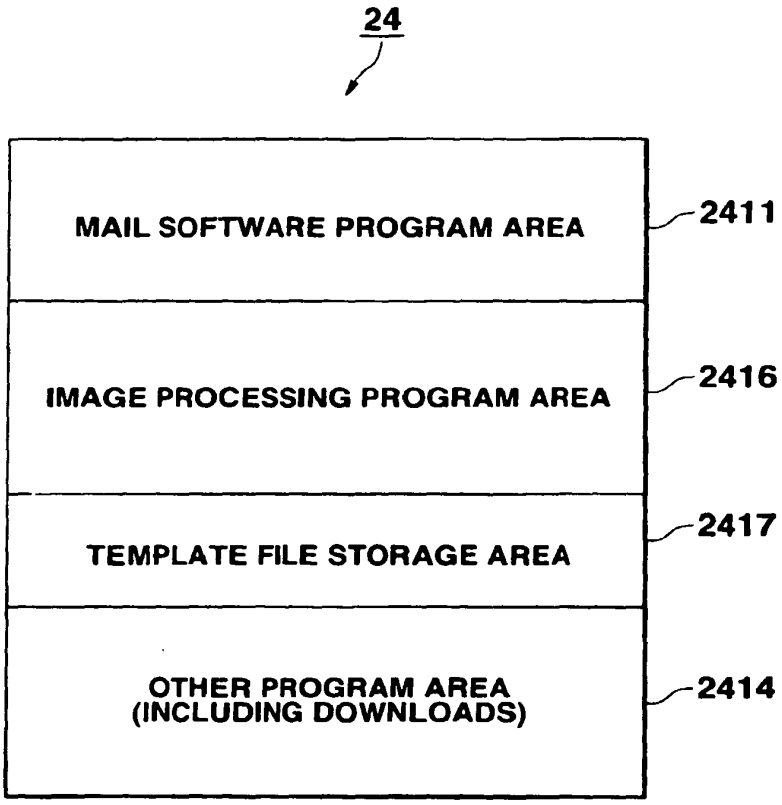


FIG.23

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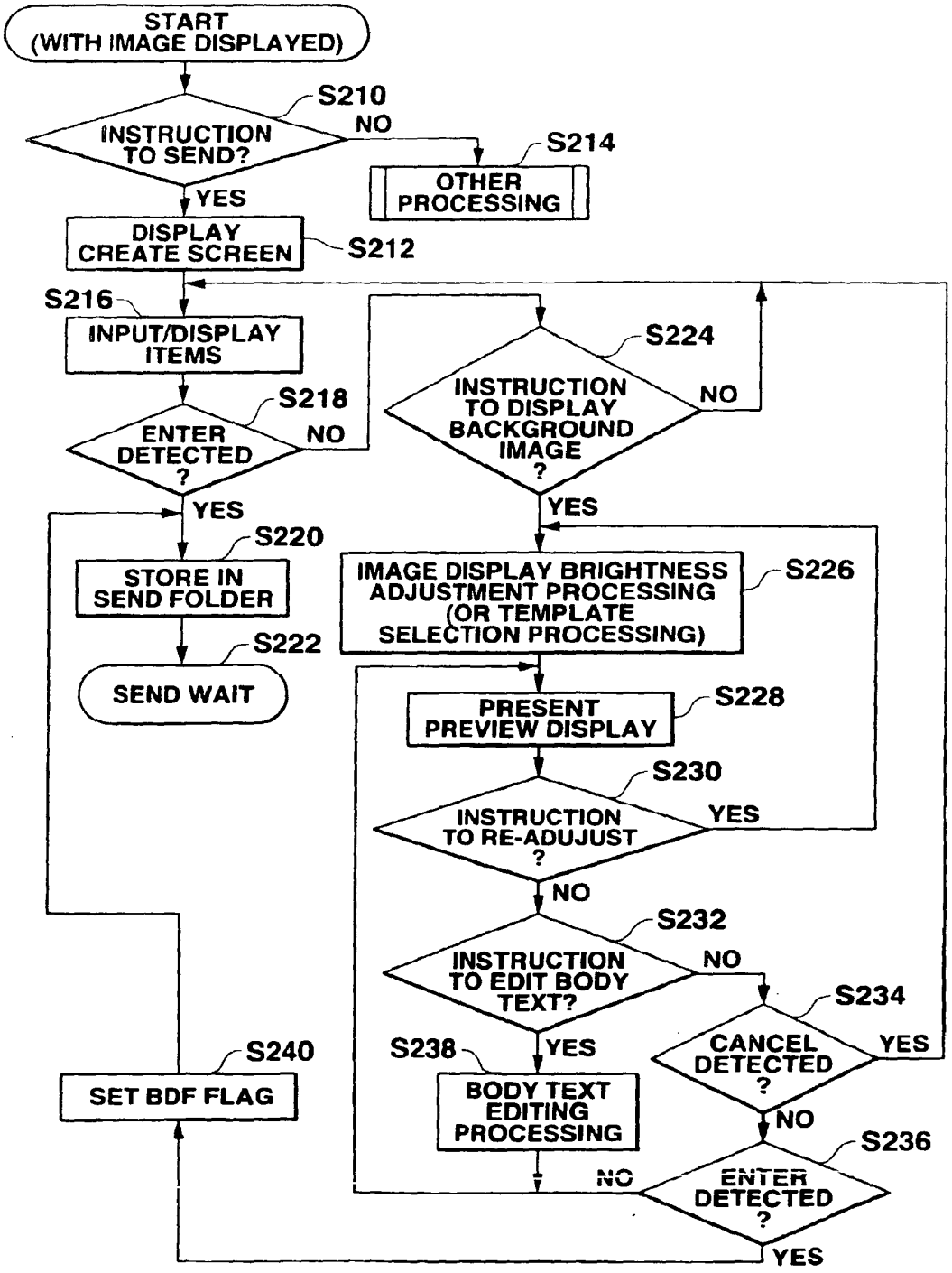


FIG.24

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(54) Message exchanging handling concept

(57) A message exchange session between wireless communication terminals via a wireless network is initiated from one of the terminals. The user of the initiating terminal invites at least one other communication terminal to participate in the message exchange session. This is done by forwarding a message text to said at least one other communication terminal. The user of the other terminal responds to received message by inputting a message text for replying to the received message. Then the responding terminal automatically adds the inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history, and the aggregate message text is then transmitted to the other communication terminals being party to the message exchange session.

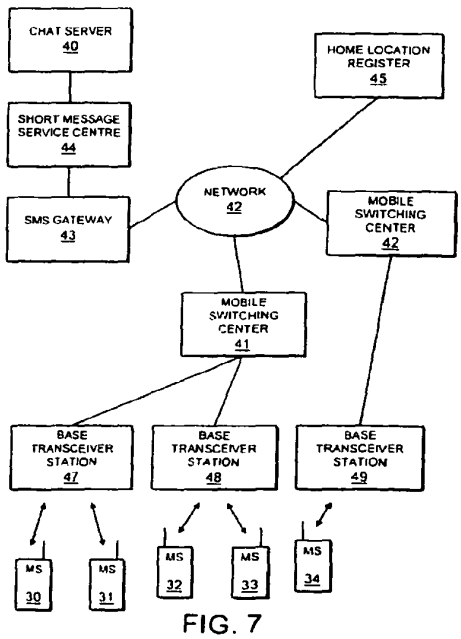


FIG. 7

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Description

[0001] The invention relates to handling of messages between wireless communication terminals in a communication network

[0002] Communication terminals for use in cellular communication networks are basically designed for voice communication. In the GSM system text messages may be sent via a point-to point short message service provided by the network. New phones having improved text editors have made it more popular to use short message services and recently it has been observed by some operators that the use of short message services correponds to 10 percent of the network traffic. Many operators see a significantly lower message percentage of the network traffic. However there is an indication saying that the message based traffic will rise in the coming years. Now it is possible to send a message from one terminal to another and to send a reply the opposite way.

[0003] Therefore there will be a need for providing an improved message exchange handling concept.

[0004] According to a first aspect of the invention there is provided a method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of initiating a message exchange session by identifying in a first communication terminal at least one other communication terminal be invited to participate in the message exchange session, inputting a message text, and transmitting said message text to said at least one other communication terminal. The received message is responded by inputting a message text for replying to the received message, adding said inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history, and transmitting said aggregate message text to the other communication terminal being parties in the message exchange session.

[0005] Hereby it is possible to transmit the message history, or at least the newest part of it, between the terminals during the session. The users will have a possibility to just scroll a few lines to see the background for a recently received message.

[0006] This is an extremely important feature as long as the major part of the mobile phones only shows 3-5 lines in the display. Advantageously the originator of each input in the history is identified with a chat name or the like.

[0007] The first aspect of the invention is also related to a wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system. This terminal comprises a software application having means for initiating a message exchange session, said initiating means includes means for identifying at least one other communication terminal to be invited to participate in the message exchange session and means for entering a text input as a message text. Furthermore the terminal comprises a transmitter for transmitting said message text to said at least one other communication terminal, and a receiver for receiving a reply from said at least one other communication terminal. The software application furthermore having means for replying to a message during a message exchange session, and the replying means includes means for entering a text input, and means for adding said text input to the received message text for generating an aggregate text message being replied by means of the transmitter.

[0008] A computer program product stored on a computer readable storage medium, comprises according to the first aspect of the invention computer readable program code means for replying to a message during a message exchange session in a wireless communication system, said computer readable program code means provides a message exchange session handling application in a wireless communication terminal, and said computer readable program code means handles a text input entered by the user, and adds said text input to the received message text for generating an aggregate message text for replying. Such a computer program product may be flashed into the terminal at a service office or via the data port of the terminal e.g. via a Personal Computer e.g. having Internet access.

[0009] According to a second aspect of the invention there is provided a method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of sending from a wireless communication terminal by means of a point-to point short message service in the wireless network a message containing a request for participating in a message exchange session, routing the request message from the wireless communication terminal to a message exchange session handling server via the wireless network, connecting in the message exchange session handling server the requesting wireless communication terminal to a group of communication terminals, handling a message text in said message exchange session handling server by succesively adding received message text from group of communication terminals to the message text in order to update the message text, and transmitting the updated message text to the group of communication terminals participating in the message exchange session.

[0010] Hereby it is possible for an operator to set up a message exchange session between several phones. The participants do not know each other and the chat session will be anonymous.

[0011] The second aspect of the invention is also related to a system for handling a message exchange session between wireless communication terminals via a wireless network. The system includes means for handling a point-to point short message service in the wireless network, a message exchange session handling server, and a group of wireless communication termi-

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nals accessing said message exchange session handling server via said point-to point short message service. The wireless communication terminals are adapted to send a request for participating in a message exchange session by means of point-to point short message service to said message exchange session handling server. The message exchange session handling server has a message text for the group of wireless communication terminals, and the server updates the message text by succesively adding received message text from members of the group of communication terminals, and transmits the updated message text to the group of communication terminals participating in the message exchange session.

[0012] According to a third aspect of the invention there is provided a method for handling a message exchange session between wireless communication terminals including steps of generating a list of communication terminals invited to participate in the message exchange session, inputting a message text, transmitting said message text to the communication terminals listed on said list, receiving a reply from one of the communication terminals listed on said list, and transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

[0013] Hereby it is possible for a phone user to set up a message exchange session between several terminals where his terminal acts as server for the session. This kind of session may be regarded as a conference chat. The initiating user controls the participants of the session and he is able to set up a distribution list for this purpose.

[0014] The third aspect of the invention is also related to a wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises means for generating a list of communication terminals invited to participate in the message exchange session, means for inputting a message text, means for transmitting said message text to the communication terminals listed on said list, means for receiving a reply from one of the communication terminals listed on said list, and means for transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

[0015] For a better understanding of the present invention and to understand how the same may be brought into effect reference will now be made by way of example only to the accompanying drawings in which:

Fig. 1 illustrates a preferred embodiment of a hand portable phone according to the invention.

Fig. 2 schematically shows the essential parts of a telephone for communication with a cellular network.

Fig. 3 shows a display sequence illustrating the initiation of a chat session according to the preferred embodiment of the invention.

Fig. 4 shows a display sequence illustrating the message response in the chat session according to the preferred embodiment of the invention.

Fig. 5 shows a display sequence illustrating a later stage in the chat session according to the preferred embodiment of the invention.

Fig. 6 shows a flow chart illustrating the steps of the message handling application according to the preferred embodiment of the invention.

Fig. 7 shows an example of the interaction between the mobile terminals and a chat server in a chat session based on a chat server in a network according to a second embodiment of the invention.

Fig. 8 shows a display sequence illustrating a chat session based on distribution lists according to a third embodiment of the invention.

Fig. 9 illustrates the message handling according to a third embodiment of the invention.

[0016] Fig. 1 shows a preferred embodiment of a phone according to the invention, and it will be seen that the phone, which is generally designated by 1, comprises a user interface having a keypad 2, a display 3, an on/off button 4, a speaker 5 (only openings are visable in the present view), and a microphone 6 (openings in bottom not visable in the present view). The phone 1 according to the preferred embodiment is adapted for communication via a cellular network.

[0017] According to the first embodiment shown in fig. 1, the keypad 2 has a first group 7 of keys including twelve alphanumeric keys. In addition to this the keypad 2 has one soft keys 8, a scroll key 10 for navigating the cursor in the display 3, a "clear key" 9 for clearing one or more letters from the display. The calls are handled by means of the soft keys 8, the scroll key 10 and the "clear key" 9. The present functionality of the soft key 8 is shown in a field in the display 3 just above the soft key 8. A phone having a single soft key is described in two pending US patent applications 08/975,126 and 08/975,232 filed by the applicant.

[0018] Fig. 2 schematically shows the most important parts of a preferred embodiment of the phone, said parts being essential to the understanding of the invention. The preferred embodiment of the phone of the invention is adapted for use in connection with the GSM 900MHz and GSM 1800 MHz network, but, of course, the invention may also be applied in connection with other cellular phone networks or cordless networks. A processor 18 controls the communication with the network via a trans-

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mitter/receiver circuit 19 and an antenna 20.

[0019] The microphone 6 transforms the user's speech into analog signals, and the analog signals formed thereby are A/D converted in an A/D converter (not shown) before the speech encoding in an audio part 14. The encoded speech signal is transferred to the processor 18, which i.a. supports the GSM terminal software. The audio part 14 decodes the audio signal, which is transferred to the earpiece 5 via a D/A converter (not shown).

[0020] The processor 18 also forms the interface to the peripheral units of the apparatus, including a RAM memory 17a and a Flash ROM memory 17b, a SIM card 16, the display 3 and the keypad 2.

[0021] Message handling according to the preferred embodiment of the invention is based on using a standard wireless messaging concept, e.g. the Short Messaging Service (SMS) well known from the GSM specification. The user sends an SMS message whenever he wants to contribute to the chatting, and he will receive a short message whenever another user has typed a new text. The chatting does not necessarily have to be based on the use of SMS messages but could also include E-mail being converted to SMS messages at the chat server and forwarded to the chat participants as an ordinary chat message. Hereby the chat participants may be identified by phone number or E-mail address or the like. Furthermore messages for communication specifications other than GSM could be used.

First embodiment - point to point chat.

[0022] According to the preferred embodiment the user is able to chat with another user, basically by allowing an easy swapping between message writing and message viewing. The user has to set up e.g. a phone number identifying one other specific other user for point to point chatting. With reference to fig. 3, a chat display sequence is shown for a Nokia phone having a single soft key 8 as shown in fig. 1 will be shown.

[0023] The first display 100 in fig. 3 is a chat entry display in the main menu (or inside the messages menu) of the phone, and in the preferred embodiment it includes a text label 101 defining the present functionality "select" of the soft key 8, a menu status bar 102 informing the user about the present position (menu level 5) in the menu structure and an animating icon 103 presenting the application for the user in a way so he can recognize it.

[0024] Selecting "chat" allows the user to define what number to chat with (point-to-point chatting) In the second display 104 the user is invited to enter a very short chat name -preferably only one or two characters - in a text box 104 and a marking bar 105 indicates the position of the next entered character. When the user has entered the chat name he presses the soft key 8 having the present functionality "OK" as shown by the text label 101.

[0025] Empty names could also be accepted as chat names, and preferably the name used last time is displayed as default, whereby the user only has to accept the name if he will not make amendments. When the user accepts the chat name he is (in the third display) asked for the number - either a single user or a server - for the chatting.

[0026] When user has entered a chat number or fetched a chat number from the phonebook memory of the phone, he will immediately enter the "normal" SMS editor for a GSM phone, as shown in the fourth display. Here the marking bar 105 indicates the position of the character to be entered, and digit 106 the maximum number of characters that can still be entered into the message.

[0027] By selecting "Send" the phone will immediately send the written text 107 to the number specified for chatting and this will be indicated by an animation 108 shown in the sixth display. If the user presses the scroll key 10 he will get access to the alternative options available in the soft key 8. These options may include e.g. "T9 options", "Save" and "Insert template". The phone will now re-enter the text editor as shown in the seventh display of fig. 3. The other user receives the chat message as a normal message (normal SMS).

[0028] Fig. 4 refers to the situation where a reply has been received from the other chatter, and this message will be received as a standard SMS. This is illustrated in the first display in fig. 4. If the user wants to read the received message he presses the soft key 8 having the present functionality "read" as shown by the text label 101. The message "Hi Jacob" is displayed in the second display and the soft key 8 now has the functionality "options" as shown by the text label 101.

[0029] When the user selects the "options" functionality a list 110 of options appears on the display as shown in the third display with one of the options 111 ("chat") highlighted (or reversed in colours). The "reply" and the "erase" functionalities are standard short message operations, and if one of these is selected the message will be handled as such. However if the user selects "chat" the text entry display shown as the fourth display will appear.

[0030] User enters text entry display or the chat editor and can send directly (several times) to the sender of the original message. The text entry display will look like the "normal" SMS editor for a GSM phone and will include the marking bar 105 indicating the position of the character to be entered, and the digit 106 that indicates the maximum number of characters that can still be entered into the message.

[0031] By selecting "Send" the phone will immediately send the written text 107 to the number specified for chatting and this will be indicated by an animation 108 shown in the sixth display. If the user presses the scroll key 10 he will get access to the alternative options available in the soft key 8. These options may include e.g. "T9 options", "Save" and "Insert template". The phone

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will now re-enter the text editor as shown in the seventh display of fig. 3.

[0032] Fig. 5 shows how the user can easily receive chat messages in idle mode as well as in the chatting editor, as shown in the first display. When a message in an ongoing chat session is received, the processor 18 allows this message from the other person to directly pop-up in the editor.

[0033] Therefore the received message will be displayed immediately to the user - even if the user is in the middle of writing. As seen in the second display of the chat display displays simultaneously several (here four) individual chat messages. Each of these messages starts with a short chat name 112 identifying the person who sent the message. The chat name 112 was explained in fig. 3 and according to the present invention Christian uses the chatname "C" and Jacob the chat name "J". The chat name 112 is followed by a by a simicolon as spacing sign 113 and then the message text 114.

[0034] The text message may be divided into several lines and according to the preferred embodiment the text message is terminated with a line break. The newest input is automatically put on top of the older input when displayed. When pressing the "OK" soft key 8 the phone will bring the user back to the chat editor (as shown in the third display of fig. 5) to e.g. reply immediately.

[0035] When the user has entered the text to be sent, the processor 18 when sending automatically simply adding the "old" text after the new text to be sent. Hereby the full chat history is included in the displayed text.

[0036] According to the preferred embodiment only messages received from a chatter will be displayed this way. Chat messages will not be stored on the SIM card as normal messages do. When the user writes a second text or a response, and selects the "Send" option for the soft key, the phone will now do as follows:

- Take the last received chat message and add the new text entered by the user to the beginning of the message - always on a new line.
- Maximum one SMS is used. When the message is "full" (a SMS may contain 160 charcters as a default standard), the text is removed line wise from the end of the message.

[0037] Since all chat messages are sent as standard SMS (including the initial chat message), the person receiving an initial chat message will receive it as a standard SMS message. The reception of a message is shown as the first display of fig. 4.

[0038] The embodiment explained above may be implemented as a new software application handling the messages. It is the user who determines who to invite to participate in the chat session. This is basically explained below with reference to fig. 6.

[0039] From idle mode (step 200) the user initiates the chat session by selecting chat from the menu (step 201) Then the user is requested to input a chat name (step 202) if a chat name is not stored as a default name. The user is then requested to input a chat number (step 203), and when this is done the user enters the chat editor (step 210). When the user wants to exit the chat editor, but does not want to the send the message he exits at step 214, where he e.g. may save the written text for later use or simply wants to quit without saving.

[0040] If he at step 211 indicates that he wants to send the chat message the chat history or at least a part of it is added at step 212, and the message is sent at step 213. Hereafter the phone goes back to idle mode at step 200.

[0041] In idle mode (step 200) when a message is received in step 204 and the user is offered the option to read the message in step 205. If the user does not want to read the message the phone goes back to idle mode (step 200), otherwise the received message is displayed at step 206, and the user is asked whether he wants to reply the message as chat in step 207. If he does not want to reply to the message the chat the message is handled as an ordinary message at step 215. If he does want to reply to the message as the chat the message it is checked at step 208 whether a chat name has been entered. If not the chat name may be entered at 209 and the phone enters the chat editor at step 210.

Chat based on a chat server.

[0042] According to this embodiment the user is still allowed to easily swap between message writing and message viewing. The user sets up a phone number to a chat server 40 in the Short Message Service Center 44 as indicated in fig. 5. The chat service is provided by the network, and may include a server containing chat rooms etc. When the user uses the chat room phone number the server 40 allows the requesting terminal to access an ongoing chat handled by the server. The chatting does not necessarily have to based on the use of SMS messages but could also include E-mail being converted to SMS messages at the chat server and forwarded to the chat participants as an ordinary chat message. Hereby the chat participants may be identified by phone number or E-mail address or the like.

[0043] A preferred embodiment of the system architecture for managing the credit system is shown in fig. 7. A Home Location Register 45 (HLR) contains a database including relevant subscriber information for the provision of the telecommunication service. A CCITT specified network 42 interconnects the individual parts of the system. An SMS gateway & SMS interworking Mobile Switching Center (MSC) 43 is a switching unit routing a message or a call to a Mobile Station 30-34 (the phone 1). A Short Message Service Center 44 (SMSC) and the SMS gateway & SMS interworking Mobile Switching Center (MSC) 43 handles and routes the SMS's between the Short Message Service Center 44

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and the Network 42. From the Network 42 the messages are routed to the Mobile Station 30-34 via a Mobile Switching Center (MSC) 41-42. Base Transceiver Station (BTS) 47-49 establish the air connection to the Mobile Stations 30-34

[0044] According to a second embodiment of the invention a network operator or other third party company handling a chat server 40 could offer a chat function between persons not knowing each other. For example a network operator may have a chat server 40 supporting a feature where the user may send a chat request from his mobile station 30-34 to the server 40 by means of a short message using a special phone number. This server 40 automatically places people sending a similar request message to the server 40 into "chat groups" or "chat rooms". Whenever a user being part of such a group 30-34, sends a message to the server 40, the server 40 adds the text from the message on top of the previous communication in the chat group and forwards the up-dated communication in a message to all the other persons in the group 30-34. The chat server 40 is responsible for the distribution of the text messages and the distribution lists.

[0045] When using gateways in the network the user will be allowed to specify an E-mail address for the chat server, and not just a phone number. The user should furthermore be allowed to specify two phone numbers/ E-mail addresses; one to which chat message is sent and one from which the server messages are received.

Chat based on distribution lists.

[0046] According to a third embodiment of the invention the initiating user first has to select a distribution list to chat with. The initiating user will according to the present charging concept have to pay for a substatial part of the messages, because all messages will go though him. However there will be a market for this concept because it may be regarded as a "conference chat" similar to a conference call having multiple participants invited by an initiating user.

[0047] This third embodiment will be illustrated with reference to fig. 8. In the first display 100 (similar to the first display of fig. 3) is a chat entry display in the main menu of the phone, and as in the first embodiment this display includes a text label 101 defining the present functionality of the soft key 8, a menu status bar 102 and an animating icon 103.

[0048] By selecting "chat" the phone allows the user to define what number to chat with. By selecting "Enter Number" or "Phonebook" in the second display the user is allowed to target a phone number for his chatting request - either point-to-point chatting with another phone user as explained with reference to the first embodiment or a chat server based multi user chat session as explained with reference to the second embodiment. The third embodiment does allow the user to initiate a conference chat session where the participants are invited by the initiating user. The user has to move the hight lighting cursor 115 to the "Distribution list" by using the scroll key 10 and selecting the operation by pressing the selection key 8

[0049] In the third embodiment the "Chat menu" has the sub menus "Enter number" for manually inputting the chat phone number, "Phonebook" for picking the chat phone number up from the phonebook (this is the same way as getting a phone number from the phonebook for an SMS message), and "Distribution list". The "Distribution list" submenus inlcudes:

1. "Existing lists" - each including a number of already appointed participants for conference chat. These lists have names the which the user may scroll when he has selected the item;
2. "Add new list" - by means of which the user may name the distribution list, appoint members for a distribution list and add the distribution list to the "Existing lists" list; and
3. "Edit list" - here the user is allowed to select a distribution list from "Existing lists" and edit the distribution list name and add/delete/rename one or more of the appointed members of the distribution list.

[0050] If the user selects "Distribution list" in the second display he is allowed to invite users included in user-defined distribution lists "Erfa-group", "Sales" and "My group" to participate in a conference chat. When the user has selected one distribution list in the third display, e.g. the highlighted one 115, he may enter a message as indicated in the fourth and fifth display of fig. 8.

[0051] When the initiating user 300 (see fig. 9) finalizes the message and presses the "Send" softkey 8 the phone starts successively sending this first message to each of the conference chat participants 310 listed on the selected distribution list (this includes N individuals 311-313). When one of the other conference chat participants 312 replies (second input 315) to this first message, the reply includes the reply message on top of the original message, and the reply message is transmitted to the initiating user alone. The initiating user retransmits 316 the reply message to all the conference chat participants listed on the selected distribution list - advantageously to all except the replying one.

[0052] The initiating user may of course add his comments prior to the re-transmission. The initiating user may select whether his phone automatically re-transmits this reply message or whether he should accept the re-transmission. The phone of the initiating user acts as chat server and the other parties will see this chat as a point-to-point chat with the initiating user, however they will see the texts (and chat names) of the entire conversation.

[0053] However if the phone retransmits the reply automatically the phone will have to distribute a third input 317 if the initiating user wants to make comments to the

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reply. Later on the N'th participant 313 makes an input 318 and this input is transmitted to the initiating user 300 who automatically re-transmits this input to all the conference chat participants listed on the selected distribution list - advantageously to all except from the replying one.

Three party chat concept

[0054] In order to reduce the cost for the master (the initiating phone) of a e.g. three-point chat session, and if all the involved parties have a phone capable of doing a three-point chat , a setting to switch off the auto-forwarding of received short messages during the chatting could be offered.

[0055] This would make sense for e.g. "broadcasting" messages, then they can start by exchanging their phone numbers, and afterwards they can all enter three-point chatting (with the auto-forward switched off), and hereby each of the involved parties will send to both of the other chatters whenever they send a message; this will reduce the total amount of sent messages, and distribute the costs more evenly (the user will only have to pay for outgoing messages).

[0056] The suggested three-person chat in this document is actually not limited to three-person chatting. If several of the persons in the three-person chat have phones supporting three-party chat, one (or both) of the other chatters may also initiate three-person chat (and hence include a fourth, fifth etc person to the chatting). All users will - due to the auto-forwarding - receive all chat messages sent by all chatters.

Chat based on distributed distribution lists.

[0057] The third embodiment is based on the existing GSM specification that does not allow use of distribution lists for SMS message sending. However if the specification in the future allows use of distribution lists for SMS messages the initial message could as a fourth embodiment contain all phone numbers of the conference chat participants listed on the selected distribution list, and these numbers are then sent to all chatters - the other chatters can then use the numbers inside the message to reply to the chat message. All participants will then send messages using this "distribution list".

Chat useability improvements

[0058] A further embodiment of the invention includes a further improvement of the invention. The chat application will here has a history display in addition to the chat editor window. When entering the chat menu the user has to select between a new chat session (and the editor where the user may enter targets for the chat session, chat name and text occurs), or chat histories (where the user may select between the histories stored in the phone and identifyed by a label automatically generated based on the name of the originator of chat session and/or the time. This label may be renamable. When the user views the chat history (older messages send in the chat session), pressing the clear-key will bring the user back to the chat editor where he can enter new text. A further press of the clear-key will cause the phone to jump out of the chat application. The user may according to this embodiment be offered an option to save the chat history as a text string so the text string may be used in another application, and e.g. forward it to a third person.

[0059] This concept is based on offering the user an additional option in the SMS based chat editor, called "Save History". This option is according to the described embodiment available only from the chat editor and not from the history viewing (since here we only have "OK" on the soft-key - for simplicity). The "Save History" option will simply save the history as a concatenated message in the normal SMS Outbox.

[0060] If the history is longer than supported, the history is truncated from the end (oldest) before saved. When the "Save History" function is selected, the user will get a confirmation note showing that the "history is stored" or that the "history is stored to the Outbox" (so that user can find it afterwards). After a timeout, the phone returns to the Chat editor.

[0061] If the user - in the same chat session - chooses to save the history, there will be stored several messages in the Outbox (no overwriting). If the Outbox memory is full, user will get an error note, and the saving is discarded.

Claims

1. A method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of:

   - initiating a message exchange session by:
     - identifying in a first communication terminal at least one other communication terminal to be invited to participate in the message exchange session,
     - inputting a message text,
     - transmitting said message text to said at least one other communication terminal; and
   - responding to received message by:
     - inputting a message text for replying to the received message,
     - adding said inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history,

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- transmitting said aggregate message text to the other communication terminal being party to the message exchange session.

2. A method according to claim 1, wherein a point-to point short message service in the wireless network is used as message exchange session.

3. A wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises:

- a software application having means for initiating a message exchange session, said initiating means includes:
  - means for identifying at least one other communication terminal to be invited to participate in the message exchange session,
  - means for entering a text input as a message text,
- a transmitter for transmitting said message text to said at least one other communication terminal; and
- a receiver for receiving a reply from said at least one other communication terminal,
- said software application furthermore having means for replying to a message during a message exchange session, said replying means includes:
  - means for entering a text input,
  - means for adding said text input to the received message text for generating an aggregate message text for replying by means of the transmitter.

4. A wireless communication terminal according to claim 3, wherein the transmitter transmits the message text by means of a point-to point short message service in the wireless network.

5. A wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises:

- said software application furthermore having means for replying to a message during a message exchange session, said replying means includes:
  - means for entering a text input,
  - means for adding said text input to the received message text for generating an aggregate message text for replying.

6. A computer program product stored on a computer readable storage medium, comprising:

- computer readable program code means for replying to a message during a message exchange session in a wireless communication system, said computer readable program code means provides a message exchange session handling application in a wireless communication terminal; and said computer readable program code means
- handles a text input entered by the user; and
- adds said text input to the received message text for generating an aggregate message text for replying.

7. A method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of:

- sending from a wireless communication terminal by means of a point-to point short message service in the wireless network a message containing a request for participating in a message exchange session;
- routing the request message from the wireless communication terminal to a message exchange session handling server via the wireless network;
- connecting in the message exchange session handling server the requesting wireless communication terminal to a group of communication terminals;
- handling a message text in said message exchange session handling server by successively adding received message text from group of communication terminals to the message text in order to update the message text; and
- transmitting the updated message text to the group of communication terminals participating in the message exchange session.

8. A system for handling a message exchange session between wireless communication terminals via a wireless network, said system includes

- means for handling point-to point short message service in the wireless network;
- a message exchange session handling server; and
- a group of wireless communication terminals accessing said message exchange session handling server via said point-to point short message service;

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- said wireless communication terminals are adapted to send a request for participating in a message exchange session by means of point-to point short message service to said message exchange session handling server.
- said message exchange session handling server has a message text for the group of wireless communication terminals, and the server updates the message text by successively adding received message text from members of the group of communication terminals. and transmits the updated message text to the group of communication terminals participating in the message exchange session.

9. A method for handling a message exchange session between wireless communication terminals including steps of

- generating a list of communication terminals to be invited to participate in the message exchange session,
- inputting a message text,
- transmitting said message text to the communication terminals listed on said list,
- receiving a reply from one of the communication terminals listed on said list,
- transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

10. A method according to claim 9 wherein said message text is successively transmitted to each of said communication terminals listed on said list.

11. A method according to claims 9 or 10 wherein said reply is successively retransmitted to each of said communication terminals listed on said list apart from the replying one.

12. A method according to claim 9 wherein the reply message text is automatically added above the previous message text prior to the re-transmission of the reply from said one of the communication terminals to the communication terminals listed on said list.

13. A wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises:

- means for generating a list of communication terminals to be invited to participate in the message exchange session,
- means for inputting a message text,
- means for transmitting said message text to the communication terminals listed on said list,
- means for receiving a reply from one of the communication terminals listed on said list,
- means for transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

14. A wireless communication terminal according to claim 13 wherein the transmission means successively transmits said message text to each of said communication terminals listed on said list.

15. A wireless communication terminal according to claims 13 or 14 wherein the transmission means successively re-transmits said reply to each of said communication terminals listed on said list apart from the replying one.

16. A wireless communication terminal according to claim 13 wherein the terminal includes means for adding the reply message text above the previous message text prior to the re-transmission of the reply from said one of the communication terminals to the communication terminals listed on said list.

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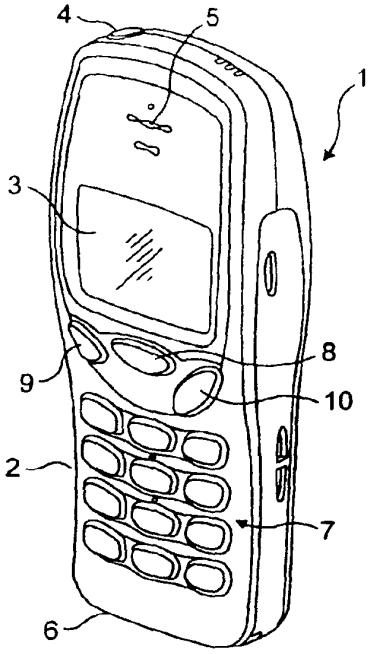


FIG. 1

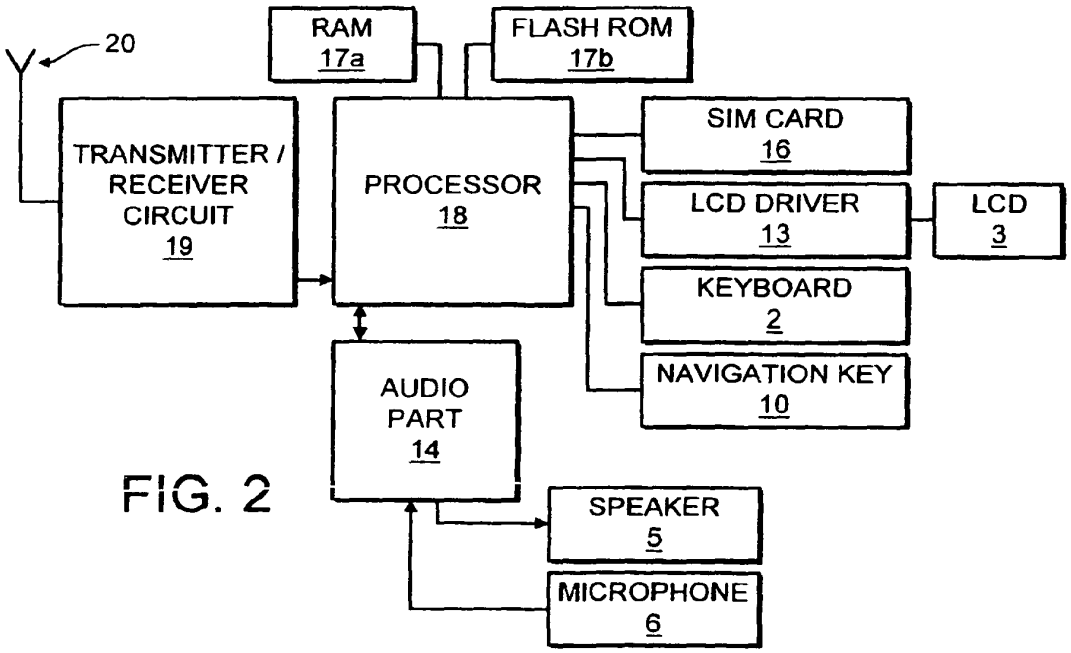


FIG. 2

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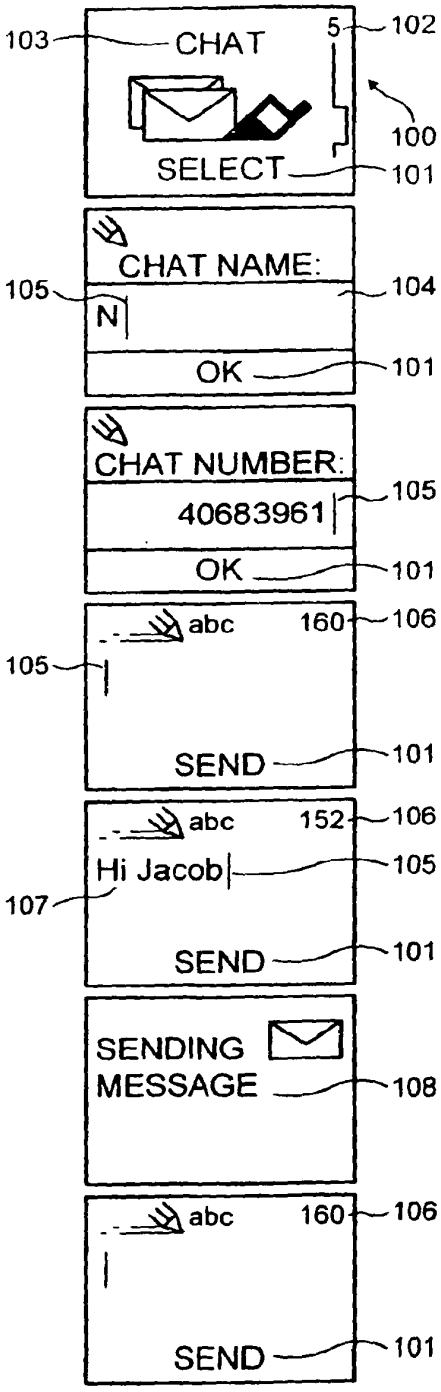


FIG. 3

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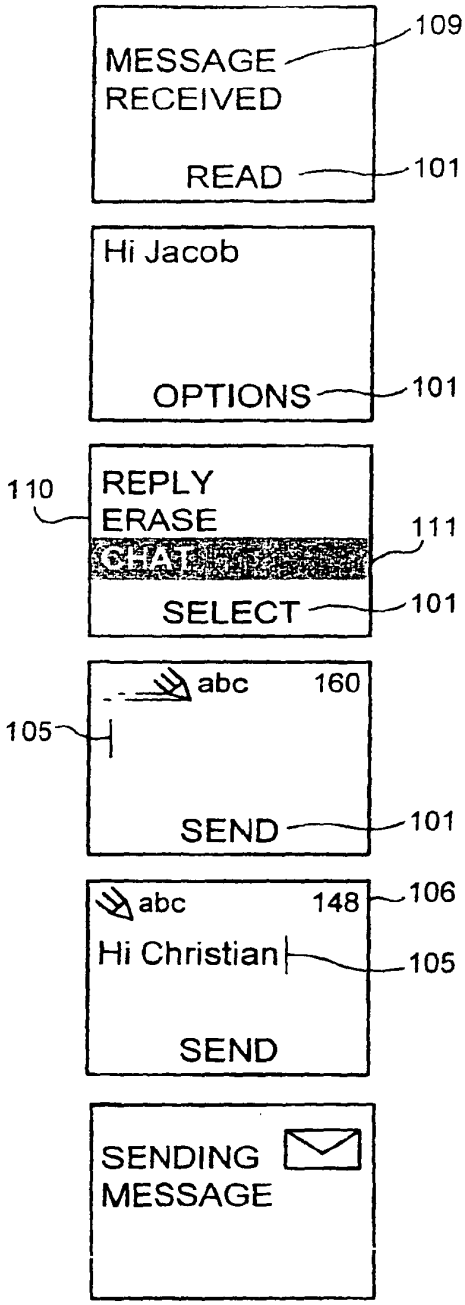


FIG. 4

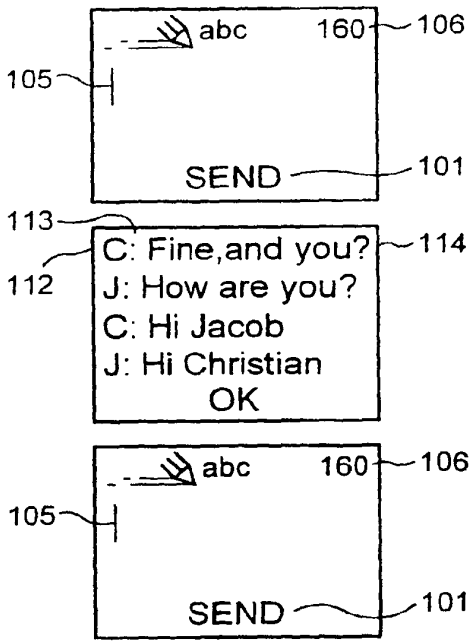


FIG. 5

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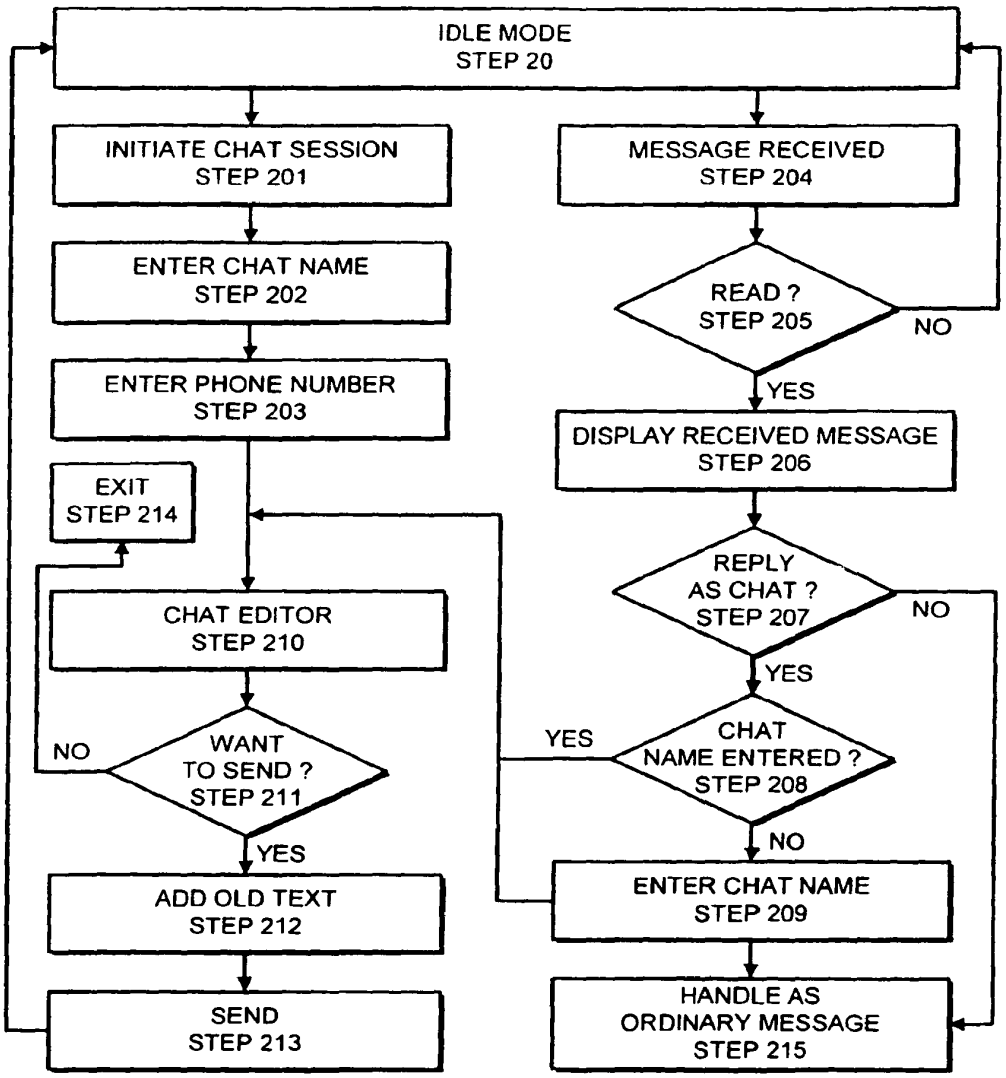


FIG. 6

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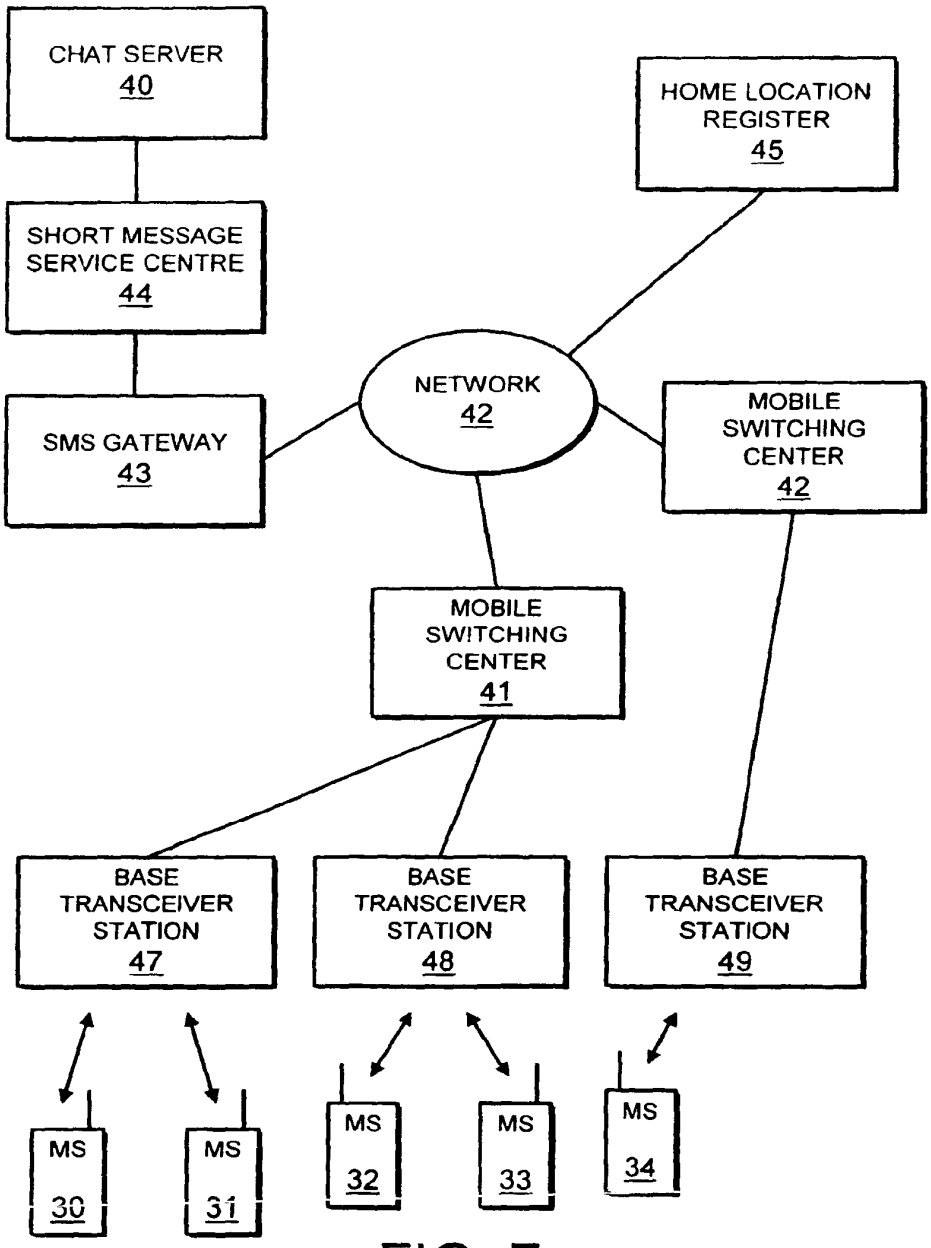


FIG. 7

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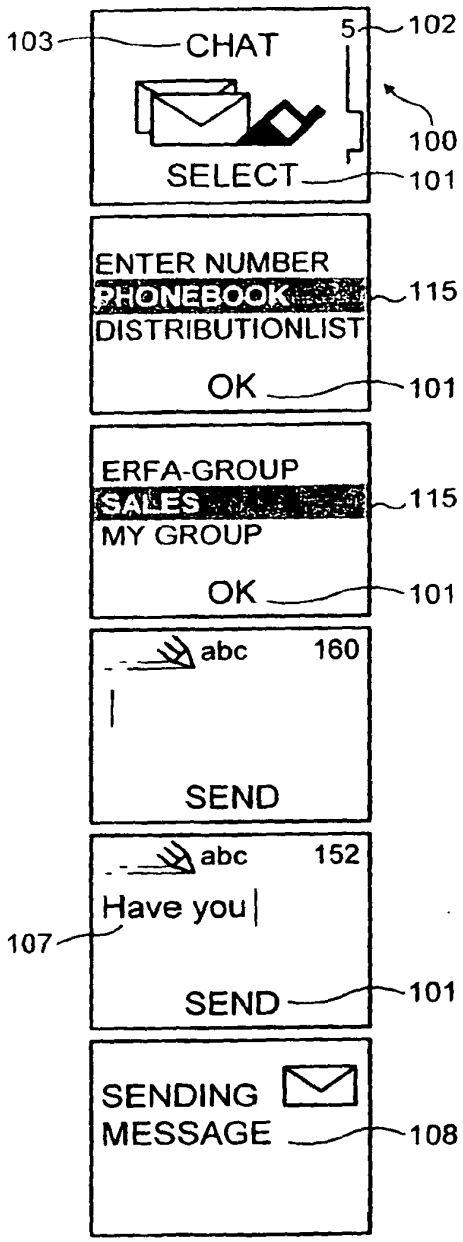


FIG. 8

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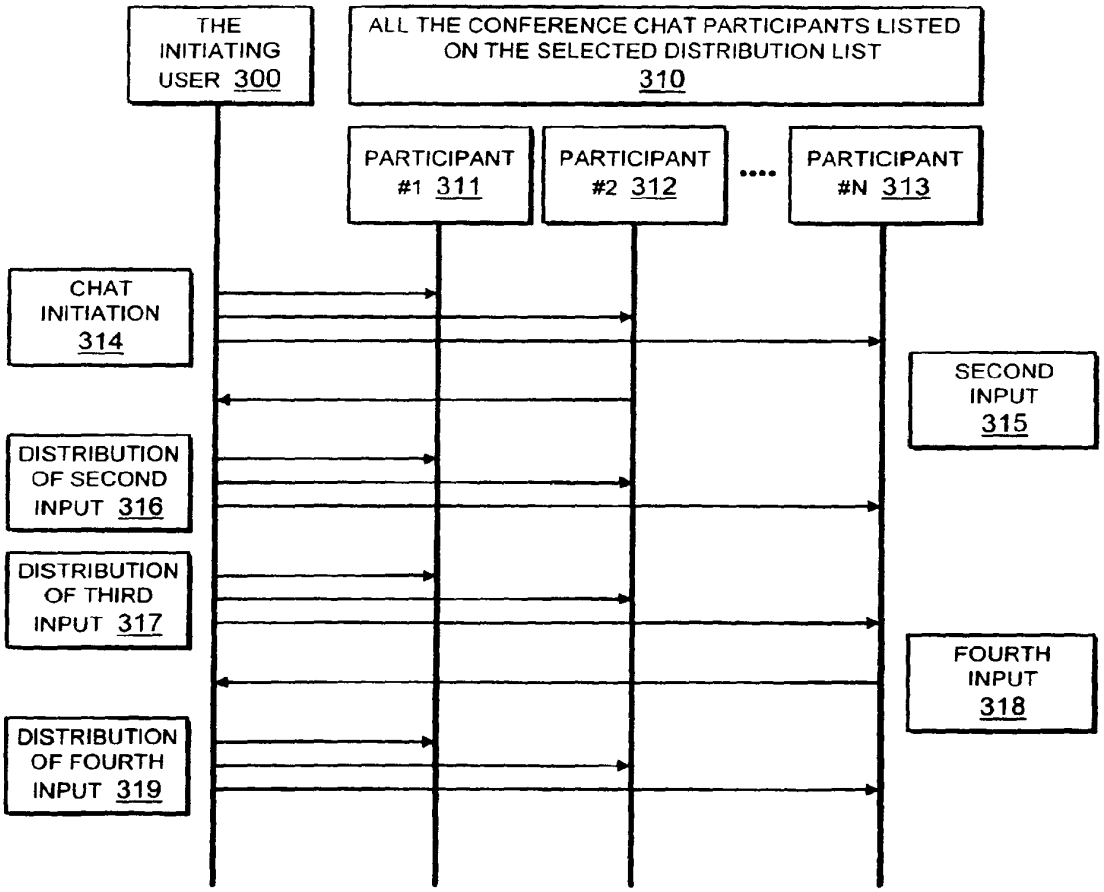


FIG. 9

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(54) Message exchanging handling concept

(57) A message exchange session between wireless communication terminals via a wireless network is initiated from one of the terminals. The user of the initiating terminal invites at least one other communication terminal to participate in the message exchange session. This is done by forwarding a message text to said at least one other communication terminal. The user of the other terminal responds to received message by inputting a message text for replying to the received message. Then the responding terminal automatically adds the inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history, and the aggregate message text is then transmitted to the other communication terminals being party to the message exchange session.

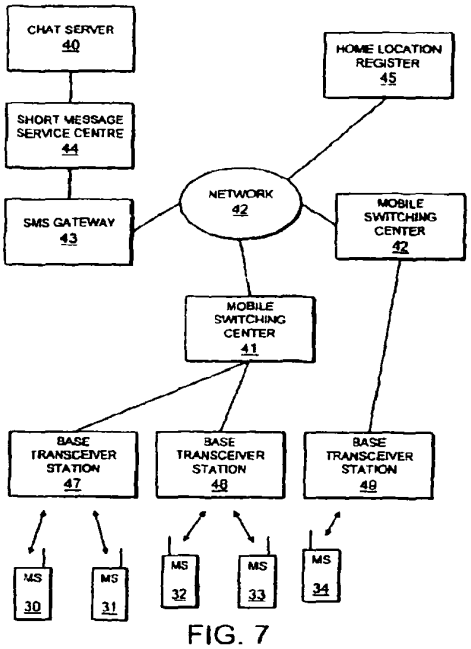


FIG. 7

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EUROPEAN SEARCH REPORT

Application Number
EP 00 31 0988

DOCUMENTS CONSIDERED TO BE RELEVANT

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A	WO 99 63729 A (NET 2 INTERAKTIV AS ;LAURITZEN FREDDY (NO)) 9 December 1999 (1999-12-09) -----		TECHNICAL FIELDS SEARCHED (Int.Cl.7) H04Q H04M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	31 October 2001	Psatha, H

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 31 0988

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31-10-2001

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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17/45

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application No.	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Total Number of Pages in This Submission	10
Attorney Docket Number	7937P017

ENCLOSURES ***(check all that apply)***

- ☒ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Response
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  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
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- ☒ Information Disclosure Statement
  - ☒ PTO/SB/08
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
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- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) *(please identify below):*

European Search Report and Communication; 2 prior art references; return postcard

Remarks

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Firm or Individual name	Eric S. Hyman, Reg. No. 30,139 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
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Date	8/21/06

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FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT ($)

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Application Number	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
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METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
2053	130	2053	130	Non-English specification	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	
1403	1,000	2403	500	Request for oral hearing	
1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1460	130	2460	130	Petitions to the Commissioner	
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1806	180	1806	180	Submission of Information Disclosure Stmt	
1809	790	1809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	
				Other fee (specify) _____	
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SUBMITTED BY Complete (if applicable)

Name (Print/Type)	Eric S. Hyman	Registration No. (Attorney/Agent)	30,139	Telephone	3102073800
Signature				Date	8/21/06

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

JIN-WOO YOU, ET AL.

Application No.: 11/106,160

Filed: April 13, 2005

For: **wireless communicating terminal for providing integrated messaging service and method thereof**

Art Group:

Examiner:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97

Commissioner for Patents
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In accordance with the duty of disclosure, enclosed is a copy of IDS Citation Form PTO/SB/08 or PTO-1449, together with copies of the documents cited on that form, except for copies not required to be submitted (e.g., copies of U.S. patents and U.S. published patent applications need not be enclosed). This IDS and IDS Citation Form are being submitted before the mailing of a first Office Action. It is respectfully requested that the cited references be considered and that the enclosed copy of PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

The references were cited in a Search Report dated March 28, 2006 (copy enclosed herewith) which was forwarded to Applicant's Representative in a communication dated April 4, 2006.

The submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made in the subject application and is not to be construed as an admission that the information cited in this statement is material to patentability.

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Respectfully submitted,

Date: 8/21/06

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Eric S. Hyman, Reg. No. 30,139

12400 Wilshire Boulevard, 7th Floor
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 2

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Application Number	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number - Kind Code[2] *(if known)*	Publication Date or Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-2004/015547 A1	01-22-2004	Griffin, et al.	
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		EP 1 349 407 A2	01-10-2003	Casio Computer Co., Ltd.		
		EP 1 109 415 A2	06-20-2001	Nokia Mobile Phones Ltd.		

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Sheet	2	of	2

Complete if Known	
Application Number	11/106,160
Filing Date	April 13, 2005
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Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

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(54) Data communication apparatus, data communication system, and data communication method

(57) Cellular phones (1a, 1b) adjust the brightness of an image before sending mail with an attached photograph, so that it is possible to visually verify the mail text when the mail text is overlaid over the image, which serves as a background image attached to the mail text at the receiving side, after which the mail is send to a system (in particular, to mail servers (33) and (63)). The color of mail text characters is changed in responsive to the image brightness. When the cellular phones (1a, 1b) receive an e-mail with an attached photograph, they display the mail text overlaid over the image as a background image (which has had its brightness adjusted).

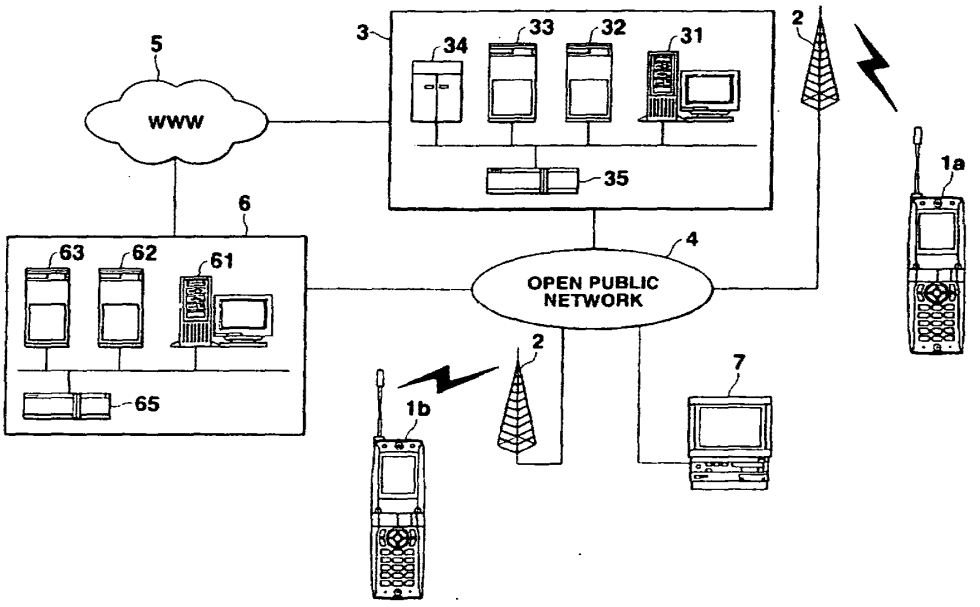


FIG.1

EP 1 349 407 A2

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Description

BACKGROUND OF THE INVENTION

1 Field of the invention

[0001] The present invention relates to a data communication apparatus, a data communication system, and a method for data communication

2 Related Art

[0002] In the past, a system existed for exchanging electronic mail (hereinafter referred to also as e-mail or mail) having various attached files. In recent years, an image capturing function has been added to cellular telephones (hereinafter referred to as cell phones) or the like to enable a captured image to be attached to an e-mail and sent to another wireless communication terminal. In the case in which an image attached to an e-mail is displayed at the receiving-side wireless communication terminal, it is usual to display the image independently of the mail body text, and there are also systems in which the image is displayed at the end of the body text of the e-mail.

[0003] There is also a known service in which a captured (photographed) image is uploaded to an ISP (Internet service provider) with which user registration has already been done, notification being given to the other party's wireless communication terminal of the URL (universal resource locator) of the uploaded image (link data for accessing the image uploaded to the IPS server). In this case, the URL is displayed along with the mail body text at the receiving-side wireless communication terminal that receives the e-mail, and when the user of the other party's wireless communication terminal specifies this URL, the user's wireless communication terminal is connected to the network and downloads and displays the image data from the server (image database).

[0004] In an image display method related to mail service in the past, however, and particularly in the case in of a compact wireless communication terminal, because of problems such as the size of the display screen, it was not possible to display the body text of the mail ad the image simultaneously, and when reading the text of an e-mail, it was extremely difficult to perform simultaneous verification of the image.

[0005] Accordingly, it is an object of the present invention to provide a data communication apparatus, a data communication system, and method for data communication, which are capable of implementing easy creation and sending of mail with simultaneous verification of the body text of the mail and the image, and which, even when an e-mail is received having an attached image, enable easy verification of the original image.

SUMMARY OF THE INVENTION

[0006] In order to achieve the above-noted object, a first aspect of the present invention is a data communication apparatus having means for preparing a document to be sent, means for preparing an image to be sent, means for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document, and means for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image for the document in a case in which the setting means sets display as a background image

[0007] A second aspect of the present invention for achieving the above-noted object is a data communication apparatus capable of receiving data sent by another data communication apparatus and having means for receiving data, display control means for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

[0008] A third aspect of the present invention for achieving the above-noted object is a data communication system having a first data communication apparatus and a second data communication apparatus, and capable of data communication from the first data communication apparatus to the second data communication apparatus, wherein the first data communication apparatus comprises means for preparing a document to be sent, means for preparing an image to be sent, means for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document and means for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image in a case in which the setting means sets display as a background image, and wherein the second data communication apparatus comprises means for receiving data, display control means for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

[0009] A fourth aspect of the present invention for achieving the above-noted object is a data communication method whereby a document and an image are sent from a first data communication apparatus to a second communication apparatus and the image is displayed on a display of the second data communication apparatus as a background image for the document, and which having a step in the first data communication apparatus

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of preparing a document to be sent and an image to be used as a background image for the document, a step in the first data communication apparatus of sending the document, the image and information that indicates the display of the image as a background image for the document, a step in the second data communication apparatus of receiving data sent from the first data communication apparatus, and a step in the second data communication apparatus of displaying the image as the background image for the document in a case in which the received data included the document, the image and the indicating information.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

Fig. 1 is a block diagram showing the configuration of a mail sending/receiving system according to a first embodiment of the present invention.

Fig. 2 shows a cell phone 1a, 1b in the opened condition, Fig. 2 (a) showing the front of the cell phone 1a and 1b and Fig. 2 (b) showing the rear of the cell phone 1a, 1b.

Fig. 3 is a block diagram showing the circuit configuration of the cell phone 1a, 1b.

Fig. 4 is a conceptual representation of the configuration of the memory areas of a ROM 24.

Fig. 5 is a conceptual representation of the configuration of the memory areas of a RAM 29.

Fig. 6 is a conceptual representation of the configuration of a mail data storage area 292.

Fig. 7 through Fig. 9 are collectively a flowchart illustrating the mail creation processing in the first embodiment of the present invention.

Fig. 10 is a conceptual representation of the image brightness, illustrating adjustment of the brightness of the image.

Fig. 11 is a schematic representation of an image with the image brightness of the intermediate value M a brightness between the intermediate value M and the threshold value TH1 (70% brightness) after the adjustment of the brightness of the image, and an example of a display with the adjusted-brightness image overlaid by a mail text.

Fig. 12 is a schematic representation of an image with the image brightness of the intermediate value M a brightness between the intermediate value M and the threshold value TH2 (30% brightness) after the adjustment of the brightness of the image, and an example of a display with the adjusted-brightness image overlaid by a mail text.

Fig. 13 is a flowchart illustrating the received mail display processing in the first embodiment of the present invention.

Fig. 14 is a schematic representation showing an example of a display of a received list presented on the display 13.

Fig. 15 is a conceptual representation of the configuration of the memory areas of the ROM 24 in a second embodiment of the present invention.

Fig. 16 is a conceptual representation illustrating the overlaying processing of the image with a template file.

Fig. 17 is a conceptual representation of the configuration of a mail data storage area 292 within the RAM 29.

Fig. 18 and Fig. 19 are flowcharts illustrating the mail creation processing in the second embodiment of the present invention.

Fig. 20 is a conceptual representation of the configuration of the memory areas of the ROM 24 of a cell phone in a third embodiment of the present invention.

Fig. 21 is a conceptual representation of the configuration of the memory areas of the RAM 29 of a cell phone in the third embodiment of the present invention.

Fig. 22 is a flowchart illustrating the mail creation processing in the third embodiment of the present invention.

Fig. 23 is a conceptual representation of another example of the configuration of the memory areas of the ROM 24 in the third embodiment of the present invention.

Fig. 24 is a flowchart illustrating the mail creation processing in a fourth embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] Embodiments of the present invention are described below in detail, with references made to relevant accompanying drawings.

[0012] Fig. 1 is a block diagram showing the configuration of a mail sending/receiving system according to the first embodiment of the present invention. In this drawing, cell phones (wireless communication terminals/data communication apparatuses) 1a and 1b have photographing apparatuses and image memories capable of storing a plurality of images (photographs) photographed by the photographing apparatuses, in addition to a function of sending a mail to which is attached an image (photograph) stored in the image memory, and a function of receiving a mail to which an image is attached. The cell phones 1a and 1b also have functions such as a function of displaying an image attached to an e-mail or displaying an embodiment with an image attached thereto as a background, and a function of sending an e-mail that includes information that instructs a receiving-side terminal (receiving-side cell phone) to display an attached image as the background image of the mail text. Thus, the cell phones 1a and 1b not only have the conventional function of being able to send and receive images as attached files, but also a

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mail function that enables the sending and receiving of e-mail with having a background image that is the attached image file displayed as the background. Additionally, the cell phones 1a and 1b have a function of correcting or adjusting the brightness of the background image.

[0013] The cell phones 1a and 1b, before sending an e-mail having a background image, for example, can correct the brightness of the image attached to the e-mail as a background image so that when the image is displayed as a background image overlaid with the body text of the e-mail, the body text is displayed clearly. Stated in different terms, when an e-mail having a background image is received at the receiving side, with the attached file as a background, the body text of the e-mail is displayed overlaid on the image.

[0014] The wireless base stations 2, via the open public network 4 (more precisely, a cellular phone network provided by a communications service provider to the users of the cell phones 1a and 1b and having the open public network as part of its configuration), make connection with a center apparatus (including an Internet provider) of the communication service provider.

[0015] The center apparatus (including an Internet provider) 3 of the communication service provider has, in addition to an exchange, which is necessary for the cell phone service provided as a main service, a system for connection to WWW5, which is described later (Web server 32 and router 35), and a mail system (mail server 33). The wireless station 2 has a function for connecting the cell phones 1a and 1b to the WWW5 as an access point.

[0016] The open public network 4 includes a cell phone network of another communication service provider, and analog or digital telephone networks. WWW5 is the so-called Internet.

[0017] An Internet service provider (hereinafter abbreviated to ISP) 6, with the exception of the exchange, has the same configuration as the center apparatus 3 of the communication service provider, and has a system for connection to WWW5 (referred to herein as Web server 62 and router 65 as a convenience), and a mail system (mail server 63). A personal computer 7 makes connection to WWW5 via a open public circuit 4 and the ISP 6.

[0018] In an embodiment of the present invention, the cell phones 1a and 1b have a mail function of sending and receiving mail having a background image, that is, a mail software program for performing display processing to display an image attached to an e-mail as a background image to the body text of the e-mail, an the case in which an e-mail having a background image is sent and received between the cell phones 1a and 1b, the cell phone that receives the e-mail having the background image attached thereto displays the image in the background, and displays the body text of the associated e-mail laid thereover (details described below). In the case of a communication apparatus having only the conventional mail function of the functions of the cell phones 1a and 1b, for example in the case in which an e-mail with a background image is sent to the personal computer 7 at the personal computer 7 the image attached to the received e-mail as the background image is treated as the usual attached file. Thus, the "mail software program for performing processing of an e-mail with a background image" has compatibility with a generally known mail software program.

[0019] Fig. 2 (a) and Fig. 2 (b) show outer views of the cell phones 1a and 1b. The cell phones 1a and 1b in this embodiment of the present invention have a folding construction formed by a cover part and a main part. Fig. 2 (a) showing the front view of the cell phones 1a and 1b and the Fig. 2 (b) showing the rear view of the cell phones 1a and 1b, both in the opened condition. An antenna 11 is provided at the rear of the cover part and is freely extendible and retractable. A speaker 12 is provided at the rear surface of the cover part, and provides audio output. A display (main display) 13 is a color LCD (liquid-crystal display) having a dot configuration of 120 dots (width) by 160 dots (height). The main display 13 is capable of simultaneously displaying the image (photograph) an the body text of an e-mail having an image (background image)

[0020] A key operation section 14 is formed by such parts as a mail key 141, an address key 142, a camera key 143, a sub-menu key 144, a cross key (four-direction cursor key) 145, a center key (entry key) 146, an off-hook key 147, an on-hook key 148, and a numerical keys 149. The mail key 141 launches a mail function, and is used to display a mail menu. The address key 142 is used to open an address book when selecting the mail address of another party or selecting a telephone number to be called. The camera key 143 launches a camera function, and is used to display a camera menu. This camera key 143 functions as a display switching function, which, when in the mail creation mode or in the mail display mode when a mail body text is displayed overlaid onto a background image, selects display of the mail text only or the background image only. The sub-menu key 144 is used to display sub-menus for various functions. The cross key 145 is used to select a desired item from menus displayed for various functions, and for shifting the inputting position when making data input using the numerical keys 149. The center key (entry key) 146 is used to establish or select menu items selected by operation of the cross key 145. The off-hook key 147 is used to start a call, and the on-hook key 148 is used to end a call. The numerical keys 149 are used when inputting a telephone number or characters.

[0021] A microphone 15 is provided at the bottom part of the main part, and is used for voice input.

[0022] A sub-display 16 is provided at the rear panel of the cover part. The rear panel key 17 is made of a transparent or translucent material, and has a built-in LED 171 that lights when a call is received. A photographic lens 18 is provided on the rear surface of the

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cover part 2, below the sub-display 16. A notification speaker 19 is provided to make notification of a received call or the like, and is disposed on the rear surface of the main part, so that it is possible to hear a notification sound even when the cover is closed onto the main part.

[0023] Fig. 3 is a block diagram showing the circuit configuration of the cell phones 1a and 1b. An RF transceiver section 20 sends and receives voice and data (mail data) via the antenna 11. The RF signal processor 21 performs RF signal processing necessary to demodulate the voice and data (mail data) received by the RF transceiver section 20, or modulate voice or data that is to be sent to the RF transceiver section 20. A controller 22 controls various operations and overall operation.

[0024] An image memory 23 is a memory for storing a compressed encrypted file made by a program stored in the image processing program area 2413 that processes an image obtained by the camera module 181 and the DSP 182, and image files downloaded via the WWW5. A ROM 24 is configured as a flash ROM, and is used to store various programs that are features of the present invention.

[0025] A driver 25 drives the main display 13. A driver 26 drives the sub-display 16. A subscriber data memory 27 stores a telephone number for calling the cell phone 1, ID and the like of operators (subscribers), and profile data. A ROM 28 stored various programs and the like that control the controller 18. A RAM 29 stores various data required for operation as a wireless communication terminal, as well as data required for operation of the controller 25 and mail data.

[0026] An audio signal processor 200 performs encoding of an audio signal input from the microphone 15 and outputting thereof to the RF signal processor 21, as well as decoding of a voice signal from the other party input from the RF signal processor 21 and drive of the speaker 21 so as to make an audio output. The camera module 181 is formed by a CCD or a CMOS device, and captures a color image. The DSP 182 performs encoding of an image captured by the camera module 181. The notification driver 192 is a driver for driving the notification speaker 19, a vibrator 191, and an LED 171.

[0027] Fig. 4 is a conceptual representation of the configuration of the memory areas of the ROM 24. The ROM 24 stores software programs that are a feature of this embodiment of the present invention. The ROM 24 is formed by a mail software program area 241, an image processing program area 2413, and an other program area 2414.

[0028] The mail software program area 241 is separated into a mail software program area, into which is stored a known general mail software program, and a background image display handling mail software program area 2412 having a program that performs display processing of an image to be attached to a mail or an image attached to a mail as a background image. The background image display handling mail software program can be downloaded from WWW5 via the ISP 6.

[0029] The image processing program area has stored in it an image processing program for compression processing of a digitally encoded image according to the JPEG standard, the PNG standard, or the GIF standard. In the first embodiment, this image processing program distinguishes the average brightness of the overall image and performs processing so as to increase or decrease the brightness. The other program area 2414 has stored in it application programs other than the above.

[0030] Fig. 5 is a conceptual representation of the configuration of the memory areas of the RAM 29. The RAM 29 is separated into an address book data storage area 291, a mail data storage area 292, a file attachment storage area 293, and an other working memory 294. The address book data storage area is used to store names, telephone numbers, e-mail addresses and the like as grouped records. The mail data storage area 292 stores mail data created by mail software, sent mail data, and received mail data. The file attachment storage area 293 stores file attachments when they are attached to files. The other working memory 294 is used as an additional working memory to store various data.

[0031] Fig. 6 is a conceptual representation of the configuration of the mail data storage area 292. The mail data storage area 292 is separated into a working area 2921 into which is stored mail data currently being worked on, an area 2922 that stores a plurality of already sent e-mails or e-mails to be sent (send folder), and an area 2923 that stores a plurality of received mail data. The working area 2921 for storing mail data being worked on has areas for storing such things as data representing mail destinations (mail address or the like), mail subjects, mail body texts, addresses (file attachment addresses) indicating at what address in the file attachment storage area 293 or in another file storage area a file attachment is stored when a file is attached to an e-mail, and identification information (such as a mail type identification flag MTF) that indicates whether an e-mail is a conventional type or a type with a background image. The send folder 2922 has areas for storing such things as destinations, subjects, mail texts, file attachment addresses, mail type flags MTF, date and time mail was sent, and identification information indicating whether or not the mail has already been sent (mail sent flag MSF). The receive folder 2923 has areas for storing such things as data indicating the sending (mail addresses and the like), subjects, mail texts, file attachment addresses, mail type identification flags MTF, date and time mail was received, and identification information indicating whether or not the mail has already been verified as received (mail read flag MRF).

[0032] The operation of the first embodiment of the present invention is described below, taking first the processing performed to create an e-mail.

[0033] Fig. 7 through Fig. 9 present a flowchart illustrating the mail creation processing in the first embodiment. If the mail key 141 is pressed from the waiting

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condition, the mail mode is launched, and the mail menu items "Create New", "Receive Folder", "Send Folder", and the like appear on the main display 13. The "Create New" item is a menu item selected to create a new e-mail, the "Receive Folder" item is a menu item selected to check received mail, and the "Send Folder" item is a menu item selected to check already sent mail and mail that has not yet been sent. The flowchart starting in Fig. 7 starts from the condition in which the mail menu is being displayed.

[0034] First, a judgment is made as to whether or not an instruction has been given from the mail menu to create a new e-mail (step S10). In the case in which there was no instruction to create a new e-mail, the flow transitions to other processing (step S12). If there was an instruction to create a new e-mail, however, a menu screen for creating an e-mail is displayed (step S14). This menu screen is used to select either creation of an e-mail using the conventional mail software program or creation of an e-mail using the background image display handling mail software program. Next, a judgment is made as to whether or not selection has been made to create e-mail with a background image (step S16). If creation of an e-mail with a background image is not selected, flow proceeds to the conventional e-mail creation processing (step S18).

[0035] If creation of an e-mail with a background image is selected, however, information indicating mail with a background image is set into the mail type flag MTF by setting the flag, an the inail creation screen is displayed on the display 13 (step S20). From this creation screen, items essential to creating an e-mail, these being destination, subject and body text and the like, are displayed. Net, when each of the items is selected and corresponding data is input, the data for each of the input items is stored into corresponding item areas in the working area 2921, and the input data for each of the items is displayed on the display 13 (step S22). Next, a judgment is made as to whether an enter (verify) operation has been made for the input data (step S24). If an entry operation had not been made, return is made to step S22, and input is continued.

[0036] If an entry (verification) operation had been made, however, a search is made of whether there is an image file stored in the image memory 23 that can be attached to the e-mail (step S26). A check is also made as to whether or not an image file is stored (step S28). In the case in which there is no image file stored, this is indicated to the user by an error display (step S30). This error display is continued until the user makes a verifying operation, for example by pressing any key, and when a key operation is detected at step S32, return is made to step S14.

[0037] If there was an image file, an album of all the image files is displayed (step S34). A judgment is then made to determined whether or not a file to be attached has been selected (step S36), and if a file has not been selected, return is made to step S34, the album display continuing. The selection of an image file to be attached, that is, the image to be used as the background image for a mail text, is performed by the user, who uses the cross (cursor) key 145 an the center key 146.

[0038] If a file to be attached to an e-mail has been selected from the album display, the address indicating the location in which the selected image file is stored is stored into the file attachment address storage area of the working area 2921, and the brightness of the image is judged based on the selected image file (step S38). A judgment is then made as to whether or not the brightness of the image is an intermediate value M (step S40) If the brightness of the image is the intermediate value M, brightness of the image is increased by a prescribed amount (step S46), after which the image is displayed overlaid over the body text created at step S22 (step S54). That is, a preview display is presented of the condition in which the display of the e-mail will be viewed at the receiving-side cell phone.

[0039] If the brightness of the image was not the intermediate value M, a judgment is made as to whether or not the image is brighter than the intermediate value M (step S42). If the image is brighter than the intermediate value M, a further judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH1 (where intermediate value M < threshold value TH1) (step S44). If the brightness of the image is between the intermediate value M and the threshold value TH1, after increasing the brightness of the image by a prescribed amount at step S46, flow proceeds to step S54, at which a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover. If the brightness of the image is greater than threshold value TH1, however, rather than adjusting the brightness of the image flow proceeds as is to step S54, at which a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover.

[0040] If the brightness of the image is darker than the intermediate value M, however, a judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH2 (where intermediate value M > threshold value TH2) (step S48). If the brightness of the image is between the intermediate value M and the threshold value. TH2, the brightness of the image is decreased by a prescribed amount (step S50) and the color of displayed characters (in the e-mail text) is set to white (step S52). After this, a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover (step S54). In the case in which the brightness of the image is darker than the intermediate value TH2, without adjusting the brightness of the image, the color of the displayed characters (in the e-mail text) is set to white (step S52), after which a preview display is made of the body text of the e-mail created at step S22 with this image overlaid thereover (step S54).

[0041] As described above, at the preview display

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made at step S54, after adjusting the brightness of the image that will be attached to the e-mail to the sent, the mail body text is displayed with an overlay of this image on the display 13.

[0042] In the first embodiment of the present invention, by judging the brightness of the image (which is to be attached to e-mail as a background image) in this manner, the brightness of the image to be displayed as a background for the e-mail is adjusted. Fig. 10 is a conceptual representation showing the image brightness for the purpose of illustrating the image brightness adjustment. Fig. 11 is a schematic representation of an image with the image brightness of the intermediate value M a brightness between the intermediate value M and the threshold value TH1 (70% brightness) after the adjustment of the brightness of the image, and an example of a display with the adjusted-brightness image overlaid by a mail text.

[0043] When the brightness of the image is the intermediate value M or between the intermediate value M and the threshold value TH1 (70% brightness) indicated in Fig. 10, processing is performed so as to increase the brightness (refer to the above-described step S46). Fig. 11 (a) shows the original image, and Fig. 11 (b) shows the processed image. The e-mail body text created at step S22 is laid over the image of Fig. 11 (b) to create the preview display shown in Fig. 11 (c) (refer to the above-described step S54).

[0044] If the brightness of the image is less than the intermediate value M shown in Fig. 10 and between the intermediate value M and the threshold value TH2 (30% brightness), processing is performed so as to decrease the brightness of the image (refer to the above-described step S50). Fig. 12 is a schematic representation showing the original image, an image resulting from adjusting the brightness of an image having a brightness less than the intermediate value M and between the intermediate value M and the threshold value TH2 (30% brightness), and the brightness-adjusted image with the e-mail laid thereover. Fig. 12 (a) shows the original image, and Fig. 12 (b) shows the processed image. The e-mail body text created at step S22 is laid over the image of Fig. 12 (b) to create the preview display shown in Fig. 12 (c) (refer to the above-described step S54).

[0045] In the case in which the user is satisfied with the preview display made at step S54, the user makes the entry (verification) operation (performs an operation which finalizes the content of the mail), but if the user is not satisfied with the preview display, the user can give an instruction to manually adjust the brightness of the image, or give instructions to change the locations of line breaks in the mail text or display position of the mail text.

[0046] Therefore, the controller 22 next makes a judgment as to whether or not a user-made entry operation has been detected (step S56). If a user-made entry operation has been detected, the created mail data is stored in the send folder of the mail data storage area 292 (step S58), after which a send instruction is given or a transition is made the send wait condition (step S60).

[0047] In this embodiment, the processed image is stored in association with the mail text in the file attachment storage area 293. Therefore, at the storage processing of step S58, of the mail data being currently worked on stored in the working area 2921, data other than the file attachment addresses, that is, destinations, subjects, mail body texts, and mail type flags (contents of the identification MTF flags) is stored in areas corresponding to the send folder 2922. In the file attachment address storage area of the send folder 2922 are stored addresses in the file attachment storage area 293 in which processed files are stored. The MTF identification flags in the send folder 2922 are set to the condition that indicates unsent mail ("0").

[0048] Mail data stored in the send folder 2922 (subjects and mail texts), when in the waiting condition of step S60 or thereafter when an instruction is given to send mail and this mail data is read out from the send folder, is sent to the specified destination along with an image specified by the file attachment address and the mail type flag MTF. When this is done, the time sent is stored in the sent date and time storage area of the send folder 2922, and the identification flag MSF is set to the condition indicating the sent condition ("1").

[0049] A cell phone having received this e-mail stores the received mail data in an area corresponding to the receive folder 2923, and stores the time of receipt in the date/time received storage area. When this is done, the MRF identification flag in the receive folder 2923 is set to the condition indicating not display (not verified) ("0"). In this case, because the MTF mail type flag of the received mail indicates that the e-mail has an image (background image), when it is read out of the receive folder 2923 and displayed, the image attached to the mail is displayed as a background image, with the mail body text overlaid thereover.

[0050] In the case in which at step S56 there was no entry operation detected, the detection is made of whether or not an instruction has been given for a manual adjustment (step S62), as well as detection of whether or not an instruction is given to correct the mail body text (step S80). If an instruction to make manual adjustment of the brightness of the image is detected, the image brightness is manually adjusted (step S64). A judgment is again made to see whether or not a user-made entry operation has occurred (step S66). If the entry operation has not been made, return is made to step S64, and manual adjustment continues.

[0051] If an entry operation has made after manual adjustment, judgment is made of the brightness of the image after adjustment (step S68), and a judgment is made as to whether or not the image brightness is the intermediate value M (step S70). In the case in which the image brightness is not the intermediate value M, a further judgment is made as to whether or not the image

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brightness is greater than the intermediate value M (step S72). If the image brightness after adjustment is greater than the intermediate value M, at step S47 the color of the displayed characters (of the mail text) is set to black, and then return is made to the above-described step S47, at which a preview display is made of the body text overlaid on the image.

[0052] In the case in which the brightness of the image after manual adjustment is the intermediate value M, at step S74 the color of displayed characters (of the mail text) is set to black, and then return is made to the above-described step S54, at which a preview display is made of the image with the body text overlaid thereover.

[0053] If the image brightness after manual adjustment is darker than the intermediate value M, at step S76 the color of displayed characters of the body text of the mail is set to white, after which return is made to the above-described step S54, at which an overlaid preview display is made of the mail text and the image.

[0054] By manual adjustment of the image brightness if the image brightness crosses over the intermediate value M by the change, the color of the characters in the mail text is changed. If the user makes an entry operation (thereby finalizing the content of the mail), as described above mail data undergoing work is stored in the send folder 2922 of the mail data storage area 292 (step S56).

[0055] At step S78, in the case in which an instruction to correct (edit) the mail text is detected, keeping the display of the background image unchanged, correction of the position of carriage returns in the mail text or correction of the display position of the mail text, or correction of the mail text itself is performed (step S80). The position of a carriage return in the mail text is corrected, by inserting or deleting a carriage return in the mail text. The display position of the mail text is corrected by inserting a carriage return code or a space code at the head of the mail text. Another detection is made of whether or not the user has made an entry operation (step S82). If the entry operation had not been made, return is made to step S80, and mail text editing continues.

[0056] In the case in which, at step S78, there is no detection of an instruction to edit the mail text, and in the case in which, at step S82, an entry operation is detected, return is made to the above-described step S54, at which an overlaid preview display is made of the mail text and the image.

[0057] Fig. 13 is a flowchart illustrating the received mail display processing in the first embodiment of the present invention. Received mail display processing comes under the category of "other processing" as noted at step S12 in the flowchart of Fig. 7, and the flowchart shown in Fig. 13 is the branch from the "NO" result at step S10 in Fig. 7.

[0058] In the case in which a selection is made other than to create a new e-mail, a judgment is made as to whether or not the receive folder is selected (step S90), and if the receive folder is not selected, flow proceeds to other processing (step S92). In the case in which the receive folder is selected, however, the received list is displayed so as to display a list of received e-mail (step S94).

[0059] Fig. 14 is a schematic representation of an example of a received list (In Box) display on the main display 13. The icon 1301 represents the amount of battery charge, and the icon 1302 represents the radio receiving condition. In the received list, the icons 1303 to 1306 provide a view of read/unread statuses of each e-mail. More specifically, the icon 1303 is an icon that is displayed when the identification flag MTF is "0" and also the identification flag MRF is "0", meaning that the e-mail is unread e-mail. The icon 1304 is displayed when the receive folder 2923 identification flag MTF is "1" and also the identification flag MRF is "0", meaning that the e-mail is an unread e-mail with a background image. The icon 1305 is an icon that is displayed when the receive folder 2923 identification flag MTF is "0" and also the identification flag MRF is "1", meaning that the e-mail has been read. The icon 1306 is an icon that is displayed when the receive folder 2923 identification flag MTF is "1" and also the identification flat MRF is "1", meaning that the e-mail is an embodiment with a background image that has already been read.

[0060] From this display, the user performs a selection operation to make a selection from the list of an e-mail to be displayed. The controller 22, based on the identification flag MTF (contents) of the selected embodiment, whether or not a mail with a background image has been selected (step S96). If an e-mail with a background image has not been selected, flow proceeds to normal mail processing (step S98).

[0061] In the case in which the selected e-mail has a background image, the mail text thereof is displayed with the attached image as the background on the main display 13 (step S100). Next, a judgment is made as to whether or not a cancel operation has be detected (step S102), and if a cancel operation has been detected, return is made to step S94, thereby transitioning to the received list display.

[0062] In the case in which a cancel operation has not been detected, a check is made to see whether or not an ending operation has been detected (step S104) and if the ending operation has been detected, return is made to the main menu.

[0063] If an ending operation was not detected, a check is made as to whether or not a key 143 operation has been made, which is a judgment as to whether or not a display instruction has been given for a background image (step S106). If a key 143 operation was not made, return is made to step S100, and the display of the image with the superimposed mail text is continued.

[0064] In the case in which the key 143 operation was made, the mail text display is gradually removed, until

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the display is that of only the background image as shown in Fig. 10 (b) (step S108) Next, a check of whether or not the key 143 operation was made is done once again (step S110). In the case in which a key 143 was made, return is made to step S108, and the image display is continued. If a key 143 operation is made while the image is being displayed, however, return is made to step S100, at which the mail text slowly appears in the display, after which the display has the mail text overlaid over the background image.

[0065] That is, each time the key 143 operation is made, an alternating switched display is made of the image with the mail text overlaid (refer to Fig. 10 (c)) and the image (Fig. 10 (b)).

[0066] In the case in which at step S106 there is no detection of a key 143 operation, rather than directly returning to step S108, it is possible to provide a step that detects an operation of another prescribed key, in which case if operation of that key is detected, the display of the background image is gradually removed, so that display is mad of only the mail text. In this case as well, return to step S100 is made when detection is made of another operation of the other prescribed key. If this is done, not only is there switching between the display of the image overlaid with the mail text (refer to Fig. 10 (c)) and the display of the image (Fig. 10 (b)), but it is also possible to make switching between a display of the image overlaid with the mail text (refer to Fig. 19 (c)) and the display of the mail text only, thereby enabling certain visual verification, as required, of either the background image or the mail text.

[0067] A second embodiment of the present invention is described below. In this second embodiment, because the system configuration, outer appearance of the cell phone, and major aspects of the cell phone configuration are similar to the first embodiment, there descriptions will be omitted herein.

[0068] Fig. 15 is a conceptual representation of the configuration of the memory areas in the ROM 24 of a cell phone in the second embodiment of the present invention. Elements corresponding to elements in Fig. 4 are assigned the same reference numerals as in Fig. 4, and are not described herein. ROM 24 is formed by a mail software program area 241, an image processing program area 2416, a template file storage areas 2417, and an other program area 2414.

[0069] The mail software program area 241 is separated into a mail software program area 2411 into which is stored a known general mail software program, and a background image display handling mail software program area 2412 into which is stored a background image display handling mail software program. The background image display handling mail software program can also be downloaded from WWW5.

[0070] The template file storage area 2417 is an area into which is stored a template file (filtering function file) required to add special effects (such as changing the image brightness, soft focus, and changing the image color to sepia) based on an image processing program at the time of displaying an image. The template file storage area 2417 in the second embodiment is used to store at least a plurality of template files having different brightnesses. In the second embodiment, rather than performing processing of the brightness of an attached image itself, a filtering function (template file) that changes the brightness is displayed is overlaid in the display region in which the mail text, thereby changing the brightness of the background image. More specifically, based on brightness correction data established by each template file, correction is done of the brightness of the background image displayed in the display region for displaying the mail text.

[0071] Fig. 16 is a conceptual representation illustrating the overlaying processing of the image and the template file in the second embodiment. In the case in which the brightness of the image a is greater than the threshold value TH1, a transparent background template file (character color: black) e, that is, a template file having a brightness correction value of 0 and also setting the character display color to black is overlaid.

[0072] In the case in which the brightness of image b is greater than the intermediate value M and less than the threshold value TH1, or is the intermediate value M, a increased brightness template file (character color: black) f, this being a template file having a positive brightness correction value and also setting the character display color for the mail text to black is overlaid.

[0073] In the case in which the brightness of the image c is less than the intermediate value M and greater than the threshold value TH2, a decreased brightness template file (character color: white) g, this being a template file having a negative brightness correction value and also setting the character display color for mail text for white is overlaid.

[0074] In the case in which the brightness of image d is less than the threshold value TH2, a transparent background template file (character color: white) h, this being a template file with a bright correction value of 0 and which also sets the character display color for mail text to white is overlaid.

[0075] Essentially, in the second embodiment of the present invention, rather than processing so as to change the brightness of the image itself, correction is done of the displayed brightness of an image, based on brightness correction data established by each template file. In the second embodiment, therefore, it is possible to attach the original image to the e-mail as is. In this case, it is necessary to add to the mail information specifying the template file, this specifically being the addition of the template file number. Because of this, the second embodiment of the present invention is provided with a template number storage area in the mail data storage area 292.

[0076] Fig. 17 is a conceptual representation of the configuration of the mail data storage area in this embodiment. Comparing the configuration of the mail data

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storage area 292 in this embodiment with the configuration of the mail data storage area in the first embodiment shown in Fig. 6, the mail data storage area 292 in the second embodiment is the same as the mail data storage area 292 of the first embodiment, with the exception of the addition of the template number storage area.

[0077] Because whether or not a received e-mail has a background image attached can be judged by whether or not a template number has been added to the mail, the signal configuration of an e-mail with a background image can be made a signal configuration to which mail type identification information is not added. In this case, the region shown in Fig. 17 for storing the mail type identification information provided in the mail data storage area 292 is not absolutely needed.

[0078] The operation of the second embodiment is described below. In this description Fig. 18 and Fig. 19 collectively form a flowchart illustrating the mail creation processing in the second embodiment. Because the processing prior to the flowchart shown in Fig. 18 and Fig. 19 (creation and image selection) is the same as in steps S10 to S36 of Fig. 7 and Fig. 8, these are not described herein.

[0079] In performing mail creation processing, at step S36 of Fig. 8 when an image to attach to an e-mail is selected from the album display, the brightness of the selected image is distinguished (step S120). Then a judgment is made as to whether or not the image brightness is the intermediate value M (step S122). If the image brightness is the intermediate value M, the increased-brightness filter template file (character color: black) is read out (step S128). The display brightness of the image is corrected based on the read out template file, and an overlaid display (preview display) is made (step S128) of the brightness-corrected image with the mail text created at step S22 laid thereover.

[0080] If the image brightness is not the intermediate value M, a judgment is made as to whether or not the image brightness is greater than the intermediate value M (step S124 and, if it is greater than the intermediate value M, a further judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH1 (where intermediate value M < threshold value TH1) (step S126). If the image brightness is between the intermediate value M and the threshold value TH1, an increased-brightness filter template file (character color: black) is read out (step S128) the same as is done in the case in which the image brightness is the intermediate value M, the image display brightness is corrected based on the read out template file, and an overlaid preview display is made (step S128) of the brightness-corrected image with the mail text created at step S22 laid thereover. If the image brightness is not between the intermediate value M and the threshold value TH1, that is, if it is brighter than the threshold value TH1, a transparent background template file (character color: black) is read out (step S130). Because this template has a brightness correction value of 0, without performing correction of the image brightness, the overlaid preview display is made (step S128) of the uncorrected image with the mail text created at step S22 laid thereover.

[0081] If the image brightness is less than the intermediate value M, however, a judgment is made as to whether or not the image brightness is between the intermediate value M and the threshold value TH2 (where intermediate value M > threshold value TH2) (step S132). If the image brightness is between the intermediate value M and the threshold value TH2, a reduced-brightness filter template file (character color: white) is read out (step S134). The display brightness of the image is corrected based on the read-out template file and the mail text character color is set to white, after which an overlaid preview display is made (step S128) of the brightness-corrected image with the mail text created at step S22 laid thereover. If the image brightness is not between the intermediate value M and the threshold value TH2, that is, if the image brightness is darker than the threshold value TH2, a transparent background template file (character color: white) is read out (step S136). Because the brightness correction value of this template is 0, without performing correction of the display brightness of the image, the mail text display character color is set to white, after which an overlaid preview display is made (step S138) of the brightness-corrected image with the mail text created at step S22 laid thereover.

[0082] As described above, in the preview display made at step S138 a template file for overlay is selected by means of distinguishing the brightness of the original image, and the brightness correction and setting of the displayed character color are done based on the selected template, after which an overlaid preview is made on the display 13 with the image and mail text overlaid.

[0083] Next, a judgment is made as to whether or not a user entry instruction (instruction to finalize the mail content) has been detected (step S140). If the user entry instruction is detected, the mail data currently being worked on is stored in the send folder 2922 of the mail data storage area 292 (step S142), after which transition is made to the send wait condition or a wait for an end instruction (step S144).

[0084] In this embodiment of the present invention, the configuration is such that the original image itself and the template number are added to the mail text and sent, the original image being stored in association with the mail text into the file attachment storage area 293.

[0085] Therefore, at the storage processing of step S142 of the mail data being created and stored in the working area 2921, data other than the file attachment addresses, that is, destinations, subjects, mail body texts, and MTF mail type flags, and template numbers is stored in areas corresponding to the send folder 2922. In the file attachment address storage area of the send folder 2922 are stored addresses in the file attachment storage area 293 in which the above-described original

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images are stored. The MSF identification flags in the send folder 2922 are set to the condition that indicates unsent mail ("0").

[0086] Mail data stored in the send folder 2922 (subjects and mail texts), when in the waiting condition of step S144 or thereafter when an instruction is given to send mail and this mail data is read out from the send folder 2922, is sent to the specified destination along with an image specified by the file attachment address and the mail type flag MTF. When this is done, the time sent is stored in the sent date and time storage area of the send folder 2922, and the identification flag MSF is set to the condition indicating the sent condition ("1").

[0087] A cell phone having received this e-mail stores the received mail data in an area corresponding to the receive folder 2923, and stores the time of receipt in the date/time received storage area. When this is done, the MRF identification flag in the receive folder 2923 is set to the condition indicating not display (not verified) ("0"). In this case, because the mail type flag of the received mail indicates that the e-mail has an image (background image), when the mail is read out of the receive folder 2923 and displayed, the image attached to the mail is displayed as a background image after compensation based on the template number, and the mail text is displayed thereover in a color specified by the template number.

[0088] The signal configuration of an e-mail with a background image is one in which mail type identification information is not added, and in the case in which no area is provided in the receive folder 2923 for storing the mail type identification flag MTF, based on whether or not there is data in a template number storage area a judgment is made as to whether or not the mail is a mail with an attached background image, processing being performed as to whether or not to use the image attached thereto as a background image.

[0089] In the case in which at step S140 an entry instruction is not detected, detection is performed as to whether or not an instruction is given to correct the image brightness (step S146). If an instruction to correct the image brightness is detected, template switching processing is performed manually (step S148). Then an judgment is made once again as to whether or not an entry instruction is detected (step S150). If an entry instruction is detected, return is made to step S148, and the template switching processing is continued. If an entry instruction is detected, return is made to step S138, and after setting the image brightness and mail text character display color based on the step S148 selected template, an overlaid preview display is made of the mail text and the image.

[0090] In the case in which at step S146 it was not possible to detect an instruction for image brightness correction, detection is performed of whether or not an instruction is made to edit the mail text (step S152). At step S152 if an instruction to edit the mail text is detected, with the background image display remaining as is, correction of carriage return positions in the mail text and display positions, or editing of the mail text itself is done (step S154). Then once again a judgment is made as to whether or not an entry instruction is detected is made (step S156). If no instruction is given, return is made to step S154, and the mail text editing continues.

[0091] In the case in which an entry instruction is detected a step S156, return is made to the above-described step S138, at which an overlaid preview display is made of the mail text and the image.

[0092] In the case in which an instruction to edit the mail text is detected at step S152, a judgment is made as to whether or not a key 143 operation is made, that is, whether an instruction to display the background image has been made (step S158). In the case in which a key 143 operation was not made, return is made to step S138, and the preview display is continued.

[0093] If a key 143 operation is made, however, the original image shown in Fig. 11 (a) is displayed. Next, a judgment is made again as to whether or not a key 143 operation is made (step S162), In the case in which a key 143 operation is not made, return is made to step S160, and the preview display is continued. If a key 143 operation is made with the original image displayed, however, return is made to step S138, at which the preview display is made.

[0094] That is, when making the preview display it is possible to adjust the brightness of the background image, or to edit the mail text and verify the original image or the like.

[0095] Although this embodiment is described for an example in which there are 3 original image brightness judgment levels and in which 4 types of templates are used, it will be understood that it is possible in the present invention to use a larger number of original image brightness judgment levels or a greater number of types of template files. If this is done, it is possible to make the image brightness after correction using a template come close to a desired brightness (for example, the threshold values TH1 or TH2 shown in Fig. 10).

[0096] The processing for displaying received mail in the second embodiment is described below. Since this processing is substantially the same as the processing for displaying received mail in the first embodiment shown in Fig. 12, the description will be made with reference to Fig. 13.

[0097] The processing for displaying received mail in the second embodiment, in the same manner as the received mail display processing in the first embodiment, is done by selecting the receive folder from the mail menu display condition so as to display a list of received mail (step S90 to step S94).

[0098] When the user selects a mail to be displayed from the received mail list, the controller 22 makes a judgment, based on the value of the MTF identification flag of the selected mail as to whether or not a mail with a background image has been selected (step S96). In the case in which an MTF mail identification flag storage

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area is not provided in the receive folder 2923, a judgment is made as to whether or not an e-mail with a background file attached is selected, based on number data in the template number storage area of the selected mail.

[0099] In the case in which a mail with a background image is not selected, flow proceeds to normal mail processing (step S98), but in the case in which mail with a background image is selected, flow proceeds to processing that sets the attached image as the background and displays the mail text on the display 13 (step S100). In this display processing, the brightness of the image to be displayed as the background is corrected and the color of the characters displayed are set based on the template specified by the number of the template attached to the mail.

[0100] Next, a judgment is made as to whether or not a cancel operation has been made by the user (step S102), a judgment is made as to whether and ending operation has been made (step S104), and a judgment is made as to whether or not a key 143 operation has been made, these judgments being made in this sequence, and if none of these operations has been made, return is made to step S100, and the display of the image with the mail text overlaid thereover is continued.

[0101] In the case in which, at step S102, the cancel operation is detected, return is made to step S94, and in the case in which an ending operation is detected at step S104, return is made to the mail menu display. If the key 143 operation is made at step S106, transition is made to display of only the background image at step S108. Whereas in the first embodiment, because an image attached to an e-mail for use as a background image is a brightness-adjusted image, at the image display at step S108 is a brightness-adjusted image, such as shown in Fig. 10 (b), in the second embodiment because the original image is itself attached to the e-mail, the original image is displayed, as shown in Fig. 10 (a). That is, in the in which there is an operation of the key 143, the mail text display is gradually removed, defocused, or faded out, and a gradual transition is made from the brightness-adjusted image shown in Fig. 10 (b) to the original image as shown in Fig. 10 (a), by having the brightness of the displayed image approach the brightness of the original image.

[0102] Next, a judgment is made as to whether or not a key 143 operation is made (step S110) and, if a key 143 operation is not made, return is made to step S108, and the image display is continued. If a key 143 operation is made with the image displayed, however, return is made to step S100, the brightness of the displayed image being gradually changed to the brightness specified by the template, and the mail text being gradually displayed or faded-in, so that an overlaid display of the mail text on the image is made.

[0103] Thus, each time the key 143 operation is made, an alternating display is made so that there is gradual switching between a display onto which the mail text is overlaid (refer to Fig. 10 (c)) and the original image (Fig. 10 (a))

[0104] In the second embodiment as well, in the case in which a key 143 operation is not detected at step S106, rather than returning directly to step S108 a step that detects the operation of another prescribed key can be provided, and if that other key operation occurs, the original image display is removed, so that only the mail text is displayed. In this case as well, the return to step S100 is made when the additional operation of the prescribed other key is detected. By doing this, because not only is it possible to make a switched display between the image with the overlaid mail text (refer to Fig. 10 (c)) and the display of the original image (Fig. 10 (a)), but it is also possible to make a switched display between the image with the overlaid mail text (refer to Fig. 10 ((c)) and the display of the mail text only, it is possible as required to make certain visual verification of either the background image or the mail text.

[0105] A third embodiment of the present invention is described below.

[0106] The third embodiment of the present invention is a method for sending an original image itself in the case in which an image is attached to a mail text, and also a method for sending, attached to the mail text, information (flag information) that gives an instruction to display the attached image as a background image of a mail text and brightness correction data for use when displaying the attached image as a background image in the case in which an attached image is displayed as a background image of a mail text on the receiving-side display. By doing this, in the case of making a setting at the receiving side that uses an attached file as a background image, the brightness of the attached image is corrected in accordance with the attached brightness correction data and used as the background image for the mail text.

[0107] In this third embodiment, because the system configuration, outer appearance of the cell phone, and major aspects of the cell phone configuration are similar to the first embodiment, there descriptions will be omitted herein.

[0108] The configuration of the third embodiment will now be described. Fig. 20 is a conceptual representation of the configuration of the memory areas of the ROM 24 of a cell phone according to the third embodiment. Elements corresponding to elements in Fig. 4 are assigned the same reference numerals as in Fig. 4, and are not described herein. ROM 24 is formed by a mail software program area 2411, an image processing program area 2416, and an other program area 2414. Thus, whereas the first embodiment and the second embodiment have configurations in which two types of mail software programs (that is, a normal mail software program and a background image display handling mail software program), in the third embodiment there is only one time of mail software program.

[0109] Fig. 21 is a conceptual representation of the

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configuration of the mail data storage area 292 in this embodiment. Comparing the configuration of the mail data storage area 292 in this embodiment with the configuration of the mail data storage area in the first embodiment shown in Fig. 6, the mail data storage area 292 in the third embodiment is the same as the mail data storage area 292 of the first embodiment, with the exceptions that in the mail data storage area 292 of the third embodiment, in place of the area for storage of the mail type identification information MTF, and area is provided for storage of a BDF identification flag, which indicates whether or not an image attached to an e-mail is to be displayed as the background image of the mail, and also that there is provided an area for storage of a correction value for correcting the brightness of the image when displaying an image attached to an e-mail as the background image for the mail.

[0110] The operation of the third embodiment of the present invention is described below, taking the operation when creating an e-mail first.

[0111] Fig. 22 is a flowchart illustrating the mail creation processing in the third embodiment. The flowchart of Fig. 22 starts from the condition in which the mail menu is being displayed.

[0112] First, a judgment is made as to whether or not an instruction has been given from the mail menu to create a new e-mail (step S170) In the case in which an instruction to create a new e-mail is not detected, the flow transitions to other processing (step S172).

[0113] If an instruction to create a new e-mail is detected, however, a menu screen for creating an e-mail is displayed on the display 13 (step S174). This menu screen displays data that must be input to create an e-mail, such as the destination, the subject, the mail text, and a file attachment and the like.

[0114] Next, when data is input for selected items or a file to be attached is selected, the data for each of the input items is stored in an area corresponding to the items in the working area 2921, and the input data (data of each item) is displayed on the display 13 (step S176).

[0115] At this stage, the user can either select the sending of the file selected as a file attachment at the step S176 as a normal file attachment or select the sending of the file attachment as a background image for the mail text. In the case in which the user wishes to send the image file as a normal file attachment, an entry (verification) instruction is given, and if the user wishes to sent the image file as the background image of the mail text, the user performs an instruction for an background image.

[0116] Therefore, the controller 22 makes a judgment as to whether or not an entry (verification) instruction has been given for the input data (step S178). In the case in which the entry instruction is given, the mail data currently being worked with is stored into the send folder 2922 of the mail data storage area 292 (step S180), after which a wait is made for either a send instruction or an ending instruction (step S182).

[0117] In the third embodiment, as described above, in the case in which an image is attached to an e-mail, the method used is that of attaching the original image itself, and also sending information (flag information) that indicates that an attached image is to be used as the background image for the mail text and brightness correction data for display of the attached image as the background image.

[0118] In the storage processing at step S180, therefore, of the mail data currently being worked on stored in the working area 2921, data other than the file attachment address, this being the destination, the subject, the mail text, the BDF background image display identification flag, and image brightness correction value, is stored in corresponding areas in the send folder 2922. The address in the file storage area 293 into which the original image is stored is stored in the file attachment address storage area of the send folder 2922. At this stage, however, even if there is an image attached to the mail, the setting of this image as a background image for the mail text has not yet been made, the information of BDF background image display identification flag of the working area 2921 is information (the value 0) that indicates that a background image display is not to be made, and the image brightness correction value has not been set. Therefore, information is set into the BDF background image display identification flag (the value 0) indicates that a background image display is not to be made, and the image brightness correction value remains unset. The MSF identification flag of the send folder 2922 is set to the unsent condition (0).

[0119] In the case, however, in which at step S178 there is no detection of an entry (verification) operation in the input data, detection is made of whether or not a background image display instruction has been made (step S184). In the case in which a background image display instruction is not detected, return is made to step S176. If a background image display instruction is detected, however, detection is made as to whether or not an image file was attached at step S176 (step S186). In the case in which an image file had not been attached, an error display is made (step S188), this error display being maintained until the user makes a verification operation at step S190, and when the user-made verification operation is detected, return is made to step S176.

[0120] When the presence of an attached image file is detected at step S186, the attached image file is displayed on the display 13 and user adjustment of the image brightness is permitted (step S192). When the user adjusts the brightness of the displayed image, the adjustment value (correction value with respect to the brightness of the original image) is stored in the correction value storage area of the working area 2921. The display brightness correction of the image is continued until the user indicates the end of adjustments, at which point the correction value stored in the correction value storage area of the working area 2921 is also updated. When the user indicates the end of adjustments, an

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overlaid display of the mail text with the display brightness corrected image is made (preview display) (step S194).

[0121] If the user views the preview display at step S194 and is satisfied with the display, the user makes an entry (verification) operation. If the user is not satisfied with the displayed preview, however, the user can re-adjust the displayed brightness of the background image, adjust the mail text, or cancel the background image display.

[0122] In the condition with the preview display shown on the screen, the controller 22 performs a detection of whether or not a re-adjustment instruction is given (step S196), a detection of whether or not a text edit instruction is given (step S198), a detection of whether or not a cancel instruction is given (step S200), and a detection of whether or not an entry instruction is given (step S202).

[0123] If at the step S196 a re-adjustment instruction is detected, return is made to the display bright adjustment processing of step S192. If a text edit instruction is detected at step S198, the same text editing processing is performed as at step S80 in Fig. 9 (step S204), after which return is made to the preview display of step S194.

[0124] If a cancel instruction is detected at step S200, the correction value stored in the correction value storage area of the working area 2921 is cleared, and return is made to the item data input and display processing of step S176.

[0125] If an entry instruction is detected at step S202, the BDF background image display identification flag is set to "1" (step S206), after which the storage processing of step S180 is executed. After the processing of step S206, at the storage processing of step S180, because the information of the BDF background image identification flag in the working area 2921 is information indicating the making of a background image display ("1"), of the mail data currently being worked on in the working area 2921, all data with the exception of the attached file address is stored in the corresponding areas of the send folder 2922. Into the file attachment address storage area of the send folder 2922 is stored the address in the file attachment storage area 293 in which the above-noted original image is stored.

[0126] If an instruction to send occurs in the waiting condition of step S182 or thereafter in the condition in which mail data is read out from the send folder 2922, the mail data (subject and mail text) stored in the send folder 2922 is sent to the specified destination, along with the image brightness correction value and the BDF background image display identification flag. When this is done, the time sent is stored into the date and time sent storage area of the send folder 2922, and the SDF identification flag is set to "1" to indicate the sent condition.

[0127] The cell phone that receives the above-noted mail stores the received mail data in a corresponding area of its receive folder, and records the time of receipt in the received date and time storage area. When this is done, the MRF identification flag is set to "0" to indicate that the mail has not yet been read. In this case, if the BDF background image identification flag of the received mail is "1", because this indicates the attached image is to be displayed as a background to the mail text, when the mail is read from the receive folder 2923 and displayed, the brightness of the attached to the mail is first adjusted in accordance with the brightness of the attached image and then displayed as the background image, over which the mail text is displayed.

[0128] The signal configuration of an e-mail with a background image is one in which background image display identification flag information is not added, and in the case in which no area is provided in the receive folder 2923 for storing the BDS background image display identification flag, based on whether or not there is data in an image brightness correction value storage area, a judgment is made as to whether or not the mail is a mail with an attached background image, processing being performed as to whether or not to use the image attached thereto as a background image.

[0129] Although this embodiment of the present invention is for the case in which the mail text is superimposed over the image after processing to adjust the brightness of an image has been completed so as to make a preview display, it will be understood that it is alternatively possible to display the mail text on the background image at the time of display brightness adjustment processing of the image at step S192, in which case it is not necessary to make the preview display at step S194, and an instruction by the user to end the adjustment is detected as an entry instruction at the step S196.

[0130] Next, the mail receiving processing in the third embodiment will be described. Mail receiving processing in the third embodiment is substantially the same as in the first and second embodiments of the present invention. The receiving processing in the third embodiment is different from the mail receiving processing of the first and second embodiments in that the detection processing to determine whether or not a mail with a background image is selected at step S96 of the flowchart of Fig. 13 is done by either by the information (value) of the BDF identification flag of the selected mail, or by whether or not there is a brightness correction value, in that an image that has a brightness corrected based on an image brightness correction value attached to the mail is used as the background image in the mail text display at step S100, and in that in the image display at step S108 the image attached to the mail itself is displayed.

[0131] Additionally, although in this embodiment, the display of the background image of the mail text is done by performing correction in accordance with the brightness of the original image, it is alternatively possible to adopt a system of using a template, as in the case in the

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second embodiment, in which case the ROM 24 of the cell phone can be provided with a template file storage area, such as shown in Fig. 23, selection processing to select a template for use in display brightness adjustment of the image being performed at step S192 of the mail creation processing, and in mail sending processing the number of the template selected being sent in place of the image brightness correction value.

[0132] A fourth embodiment of the present invention is described below.

[0133] In contrast to the first to third embodiments of the present invention, in which, after launching the mail mode by a mail key operation from the wait condition the new mail creation mode is selected from the mail menu, after which selection is made of a background image from the new mail creation mode, or an attached image is specified as the background image, after which sending was done, in the fourth embodiment of the present invention, when an image photographed by the camera module is being displayed, or when an image is read out from an image file, selection is made of sending from a sub-menu of this mode, or the mail key is operated to enter the mail creation mode, and specify and send a displayed image as the background image for the mail text.

[0134] In the fourth embodiment, similar to the case of the third embodiment, the system used is one of sending the original image itself as a file attachment to the mail text, and one in which, in addition to attaching an image that had been displayed to an e-mail, information (flag information) indicating that the attached image is to be used as the background image for the mail text and brightness correction data for display of the attached image as a background image are attached to the mail before sending the mail. By doing this, the brightness of the attached image is corrected at the receiving side based on attached brightness correction data and the corrected image used as the background image for the body text. Because the system configuration, outer appearance of the cell phones, and general configuration of the cell phones are the same as in the first embodiment, they are not described herein.

[0135] The configuration of the fourth embodiment in terms of the ROM 24 and the mail data storage area 292 and the like can be the same as that of the third embodiment.

[0136] The operation of the fourth embodiment of the present invention is described below, taking first the case of mail creation processing.

[0137] Fig. 24 is a flowchart illustrating the processing of mail creation in the fourth embodiment. This flowchart starts from the condition in which a screen that displays an image captured by the camera module or read in from an image file is displayed by the display 13.

[0138] In this display condition, a judgment is made as to whether or not an instruction is made to send (step S210). More specifically, this judgment is a judgment as to whether or not sending has been selected from a sub-menu of the image mode, or a judgment as to whether or not a mail key 141 operation is made in the image mode.

[0139] If the send instruction is detected, the mail creation screen is displayed on the display 13 (step S212) and if a different instruction is detected, flow proceeds to the other processing (step S214). At the creation screen of step S212, items that must be input to create an e-mail, such as the destination, the subject, the mail text, and a file attachment and the like.

[0140] Next, when data is input for selected items or a file to be attached is selected, the data for each of the input items is stored in an area corresponding to the items in the working area 2921, and the input data (data of each item) is displayed on the display 13 (step S176). The image displayed before the send instruction is automatically set as one of the file attachments at step S216.

[0141] At this stage, the user can send an image (image that is displayed at the time of the start) that was automatically set as a file attachment at the processing of step S216 as a normal file attachment, or can select the sending of the image as a file attachment for use as the background image for the mail text. In the case in which the user sends the image file as a normal file attachment, the entry instruction is given, and in the case in which the image file is to be sent as a file attachment for use as a background image for the mail text, a background image display instruction is given.

[0142] Therefore, the controller 22 makes a judgment as to whether or not an entry (verification) instruction has been given for the input data (step S218). In the case in which the entry (verification) instruction is given, the mail data currently being worked with is stored into the send folder 2922 of the mail data storage area 292 (step S220), after which a wait is made for either a send instruction or an ending instruction (step S222).

[0143] In the above-described fourth embodiment, similar to the case of the third embodiment, in the case in which an image is attached to an e-mail, the method used is that of attaching the original image itself, and also sending information (flag information) that indicates that an attached image is to be used as the background image for the mail text and brightness correction data for display of the attached image as the background image.

[0144] In the storage processing at step S220, therefore, of the mail data currently being worked on stored in the working area 2921, data other than the file attachment address, this being the destination, the subject, the mail text, the BDF background image display identification flag, and image brightness correction value, is stored in corresponding areas in the send folder 2922. The address in the file storage area 293 into which the original image is stored is stored in the file attachment address storage area of the send folder 2922.

[0145] At this stage, however, even if there is an image attached to the mail, the setting of this image as a

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background image for the mail text has not yet been made, the information of BDF background image display identification flag of the working area 2921 is information, (the value 0) that indicates that a background image display is not to be made, and the image brightness correction value has not been set. Therefore information is set into the BDF background image display identification flag (the value 0) indicates that a background image display is not to be made, and the image brightness correction value remains unset. The MSF identification flag of the send folder 2922 is set to the unsent condition (0).

[0146] In the case, however, in which at step S218 there is no detection of an entry (verification) operation in the input data, detection is made of whether or not a background image display instruction has been made (step S224). In the case in which a background image display instruction is not detected, return is made to step S216. If a background image display instruction is detected, however, the image automatically set as the file attachment by the processing of step S216 (image displayed the time of the start) is displayed on the display 13, and the user can adjust the displayed brightness of the image (step S226). When the user adjusts the brightness of the displayed image, the adjustment value (correction value with respect to the brightness of the original image) is stored in the correction value storage area of the working area 2921. The display brightness correction of the image is continued until the user indicates the end of the adjustment, at which point the correction value stored in the correction value storage area of the working area 2921 is also updated. When the user indicates the end of adjustments, an overlaid display of the mail text with the display brightness corrected image is made (preview display) (step S228).

[0147] If the user views the preview display at step S228 and is satisfied with the display, the user makes an entry (verification) operation. If the user is not satisfied with the displayed preview, however, the user can re-adjust the displayed brightness of the background image, adjust the mail text, or cancel the background image display.

[0148] In the condition with the preview display shown on the screen, the controller 22 performs a detection of whether or not a re-adjustment instruction is given (step S230), a detection of whether or not a text edit instruction is given (step S232), a detection of whether or not a cancel instruction is given (step S234), and a detection of whether or not an entry instruction is given (step S236).

[0149] If at the step S230 a re-adjustment instruction is detected, return is made to the display bright adjustment processing of step S226. If a text edit instruction is detected at step S232, the same text editing processing is performed as at step S80 in Fig. 9 and step S2020 in Fig. 22 (step S238), after which return is made to the preview display of step S228.

[0150] If a cancel instruction is detected at step S234, the correction value stored in the correction value storage area of the working area 2921 is cleared, and return is made to the item data input and display processing of step S216.

[0151] If an entry instruction is detected at step S236, the BDF background image display identification flag is set to "1" (step S240), after which the storage processing of step S220 is executed. After the processing of step S206, at the storage processing of step S220, because the information of the BDF background image identification flag in the working area 2921 is information indicating the making of a background image display ("1"), of the mail data currently being worked on in the working area 2921, all data with the exception of the attached file address is stored in the corresponding areas of the send folder 2922. Into the file attachment address storage area of the send folder 2922 is stored the address in the file attachment storage area 293 in which the above-noted original image is stored.

[0152] If an instruction to send occurs in the waiting condition of step S182 or thereafter in the condition in which mail data is read out from the send folder 2922, the mail data (subject and mail text) stored in the send folder 2922 is sent to the specified destination, along with the image brightness correction value and the BDF background image display identification flag. When this is done, the time sent is stored into the date and time sent storage area of the send folder 2922, and the SDF identification flag is set to "1" to indicate the sent condition.

[0153] As noted above, in the fourth embodiment of the present invention, if a send instruction is given in the condition in which an image is displayed, the new mail creation mode is selected, and with the exception of the fact that the image that had been displayed being automatically set as the file attachment, the fourth embodiment is the same as the third embodiment. Therefore, although the partial variations in the mail creation processing and received mail display processing were described above, items that were described above with regard to the third embodiment have not been repeated where they are the same as in the fourth embodiment.

[0154] It will be understood that the foregoing embodiments are presented as exemplary and do not restrict the present invention, which can be embodied in other forms and manners that are encompassed by the spirit of the present invention as recited in the attached claims.

Claims

1. A data communication apparatus comprising:

   means (149, steps S22, S176 and S216) for preparing a document to be sent;
   means (145, step S36) for preparing an image to be sent;

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means (steps S16, S202 and S236) for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document, and

means (11, 20, 21) for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image for the document in a case in which the setting means sets display as a background image.

2. The data communication apparatus according to claim 1, comprising means (13, steps S54, S138, S194 and S228) for displaying the document with the image as a background image before sending the data.

3. The data communication apparatus according to claim 1, comprising means (steps S46~S50 and S64, steps S122~S134 and S148, step S192, step S226) for processing the image so that both the document and the image are visually verifiable when the image is displayed as a background image for the document.

4. The data communication apparatus according to claim 3, wherein the processing means is a means (steps S46~S50 and S64) for correcting a brightness of the image, and

wherein the sending means sends a brightness-corrected image.

5. The data communication apparatus according to claim 3, wherein the processing means is a means (steps S192 and S226) for correcting a brightness of the image,

wherein the sending means sends an image and brightness correction data.

6. The data communication apparatus according to claim 3, wherein the processing means is a means (steps S122~S134 and S148) for selecting and overlaying the image with templates having different brightness filter functions, and

wherein the sending means sends an image and data specifying a template.

7. The data communication apparatus according to claim 6, wherein the processing means comprises a means (steps S120~S134) that distinguishes a brightness of the image and selects a template having a filtering function responsive to the brightness.

8. The data communication apparatus according to claim 1, comprising means (step S52) for changing a color of characters of the document, based on a brightness of the image.

9. The data communication apparatus according to claim 1, further comprising means (181) for photographing an object, and wherein the image comprises an object image photographed by the photographing means.

10. The data communication apparatus according to claim 1, comprising:

means (11, 20, 21) for receiving data;

display control means (step S100) for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

11. A data communication apparatus capable of receiving data sent by another data communication apparatus, comprising:

means (11, 20, 21) for receiving data;

display control means (step S100) for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

12. The data communication apparatus according to claim 11, wherein

the information that can distinguish is information indicating an instruction to display the image as a background image for the document and/or brightness-correction data of the image, and wherein

the display control means, in a case in which data received by the receiving means include brightness-correction data, corrects the brightness of the background image based on the brightness-correction data.

13. The data communication apparatus according to claim 11, wherein

the information that can distinguish is information indicating an instruction to display the image as a background image for the document and/or data specifying a template, the data communication apparatus comprises templates having different brightness filer functions, and

wherein the display control means selects and overlays the image with one of templates based on specification data, in a case in which the data received by the receiving means includes template specification data.

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14. The data communication apparatus according to claim 11, further comprising:

a display switching means (143 step S106) for switching from a condition in which the image is displayed as a background image for the document to a display of either the image only or the document only.

15. A data communication system comprising a first data communication apparatus (1a) and a second data communication apparatus (1b), and capable of data communication from the first data communication apparatus to the second data communication apparatus, wherein

the first data communication apparatus comprises:

means (149, steps S22, S176 and S216) for preparing a document to be sent;
means (145, step S36) for preparing an image to be sent;
means (steps S16, S202 and S236) for setting whether or not the image is to be displayed as a background image for the document on the display of a receiving-side communication apparatus receiving the document; and
means (11, 20, 21) for sending, as one set of data, the document, the image and information capable of distinguishing that the image is to be displayed as a background image in a case in which the setting means sets display as a background image, and wherein
the second data communication apparatus comprises:

means (11, 20, 21) for receiving data;
display control means (step S100) for displaying the image as a background image for the document in a case in which data received by the receiving means includes a document, an image and information that can distinguish that an instruction is given to display the image as a background image for the document.

16. A data communication method whereby a document and an image are sent from a first data communication apparatus to a second communication apparatus and the image is displayed on a display of the second data communication apparatus as a background image for the document, comprising:

a step (steps S22, S36, S176 and S216) in the first data communication apparatus of preparing a document to be sent and an image to be used as a background image for the document;
a step (steps S60, S144, S182 and S222) in the first data communication apparatus of sending the document, the image and information that indicates the display of the image as a background image for the document;
a step in the second data communication apparatus of receiving data sent from the first data communication apparatus; and
a step (step S100) in the second data communication apparatus of displaying the image as the background image for the document in a case in which the received data included the document, the image and the indicating information.

17. A data communication method according to claim 16, further comprising:

a step (one of steps S54, S138, S194 or S228) of displaying the image as a background image before sending the data.

18. A data communication method according to claim 16, further comprising:

a step (steps S46~S50 and S64, steps S122~S134 and S148, step S192 or step S226) of processing the image so that both the document and the image are visually verifiable when the image is displayed as a background image for the document.

19. A data communication method according to claim 18, wherein

the image processing step is a step (step S64) of correcting a brightness of the image, and

wherein the data sending step sends brightness-correction data along with the image.

20. A data communication method according to claim 18, wherein

the image processing step is a step (steps S122~S134) of selecting and overlaying the image with templates having different brightness filter functions and

wherein the data sending step sends an image and data specifying a template.

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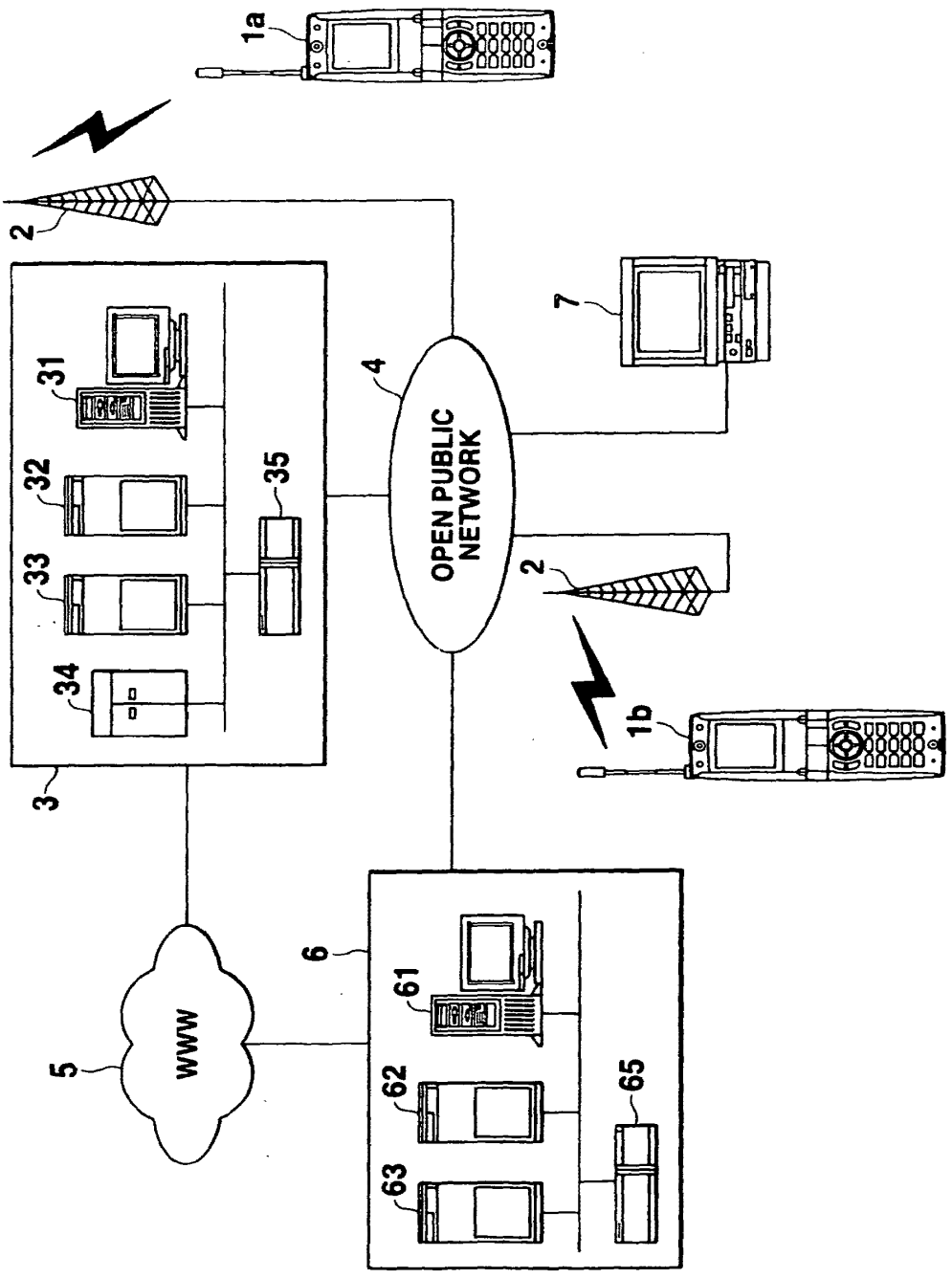


FIG.1

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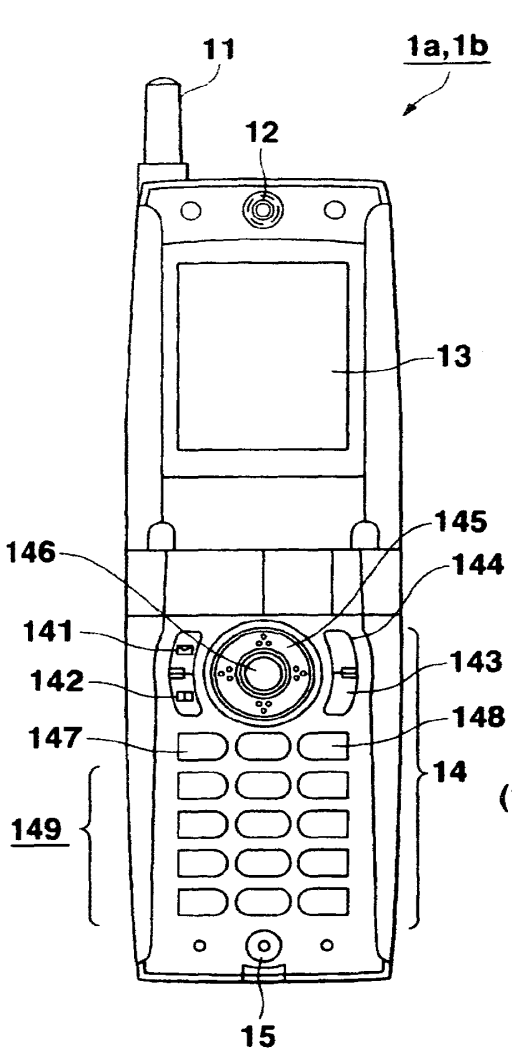


FIG.2A

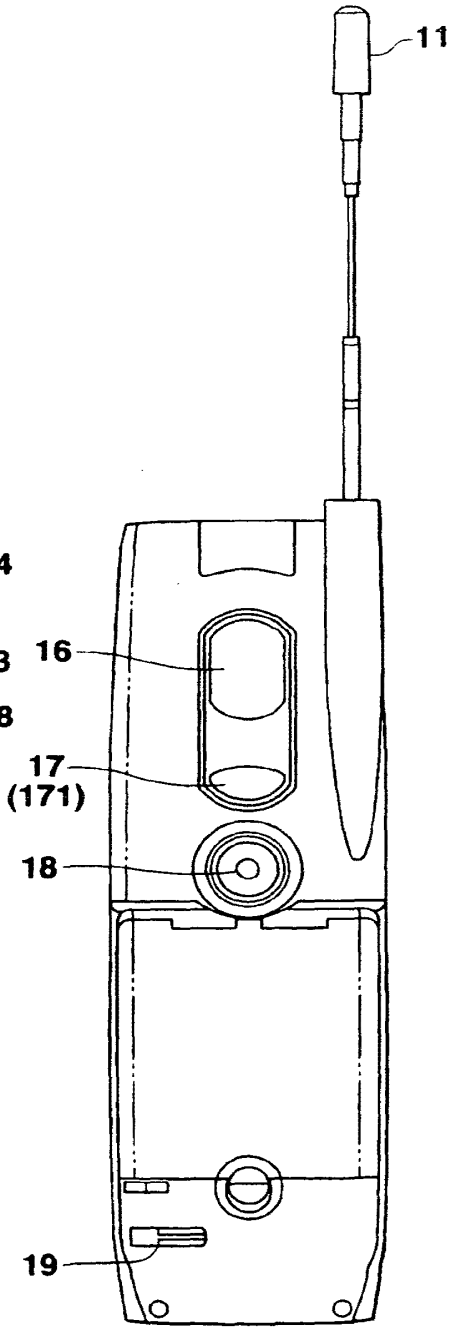


FIG.2B

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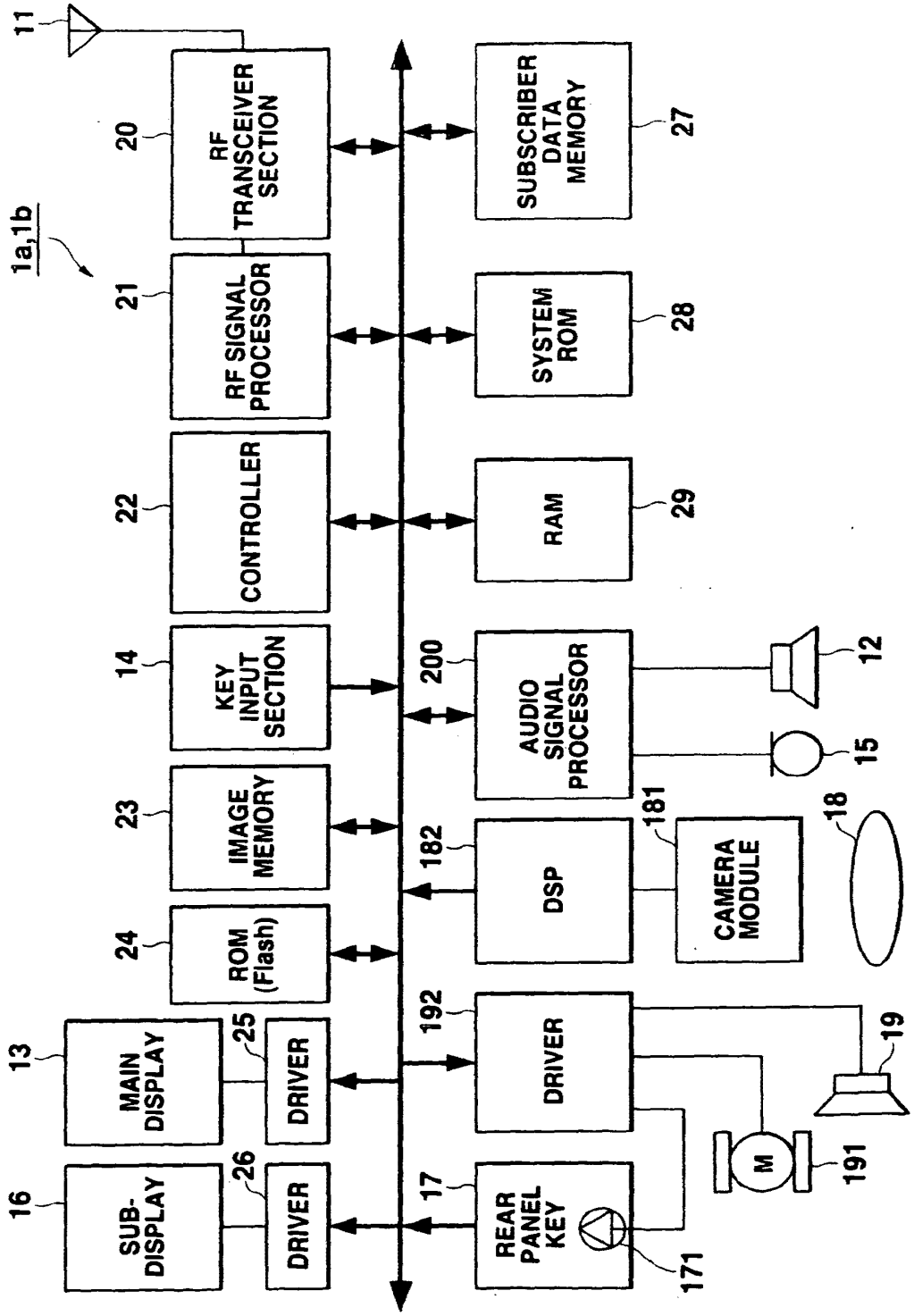


FIG.3

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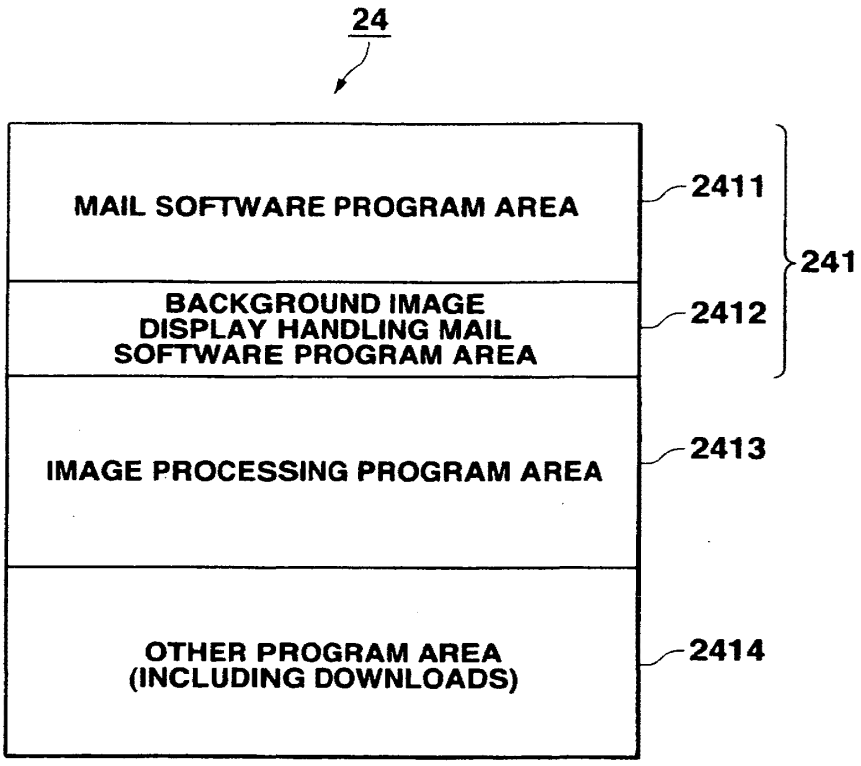


FIG.4

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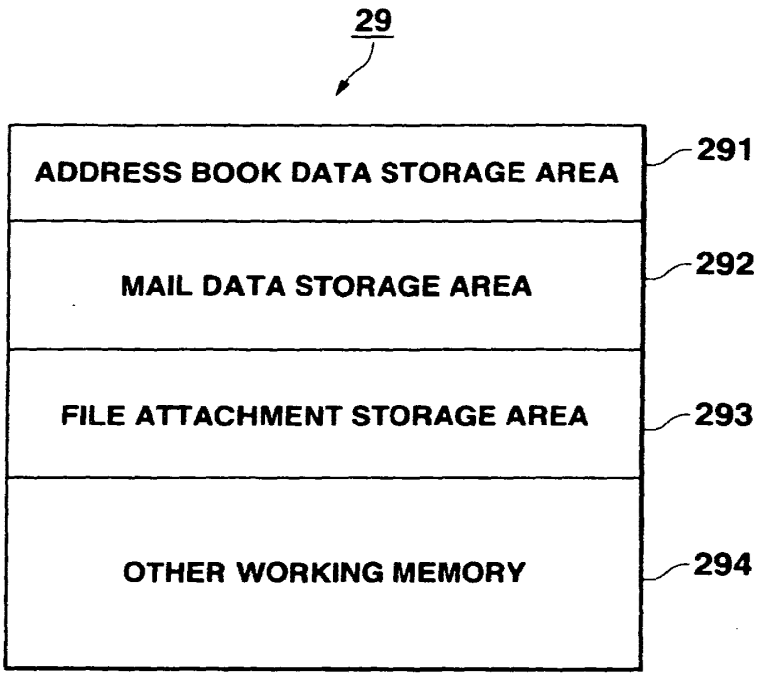


FIG.5

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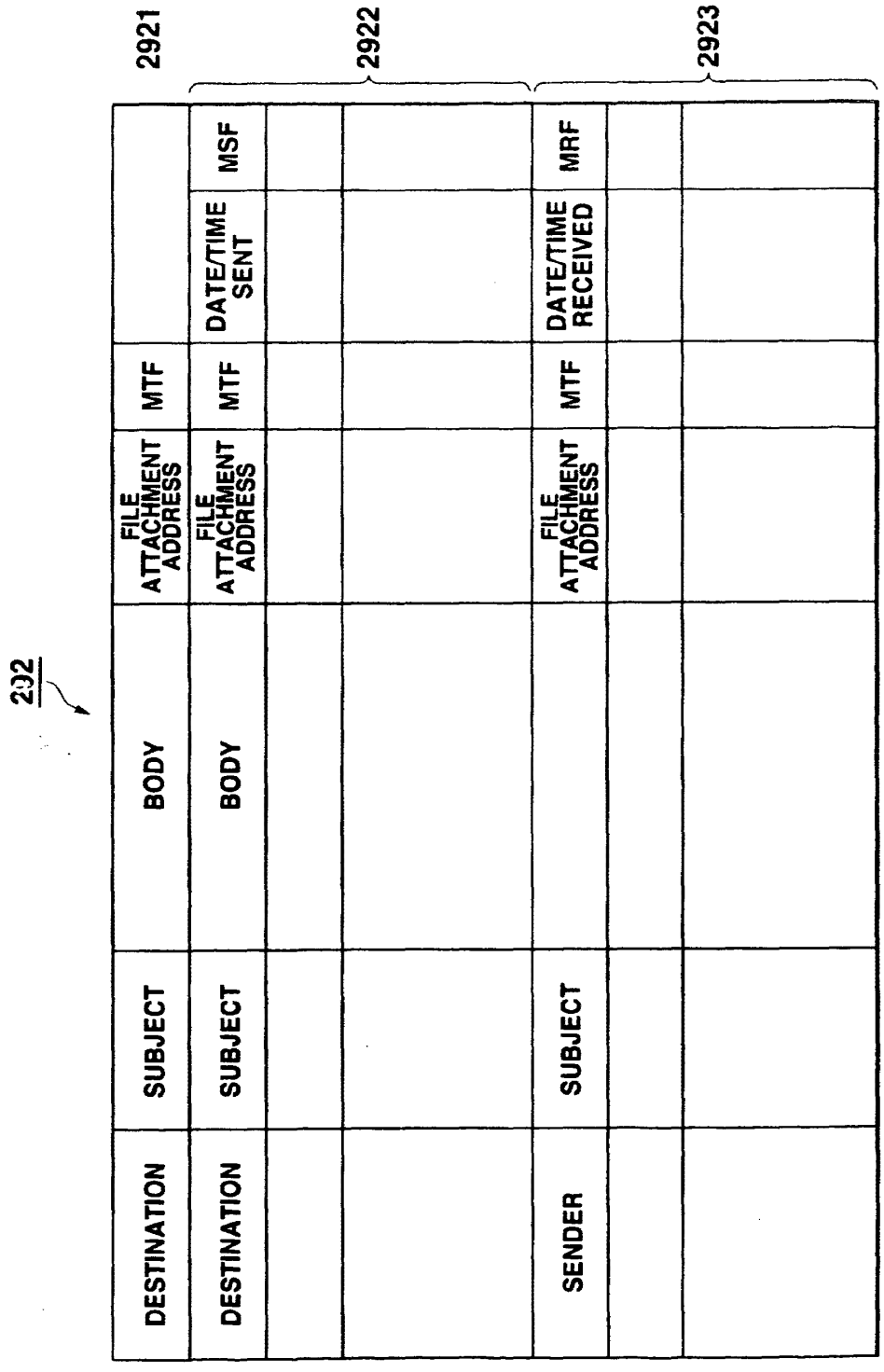


FIG.6

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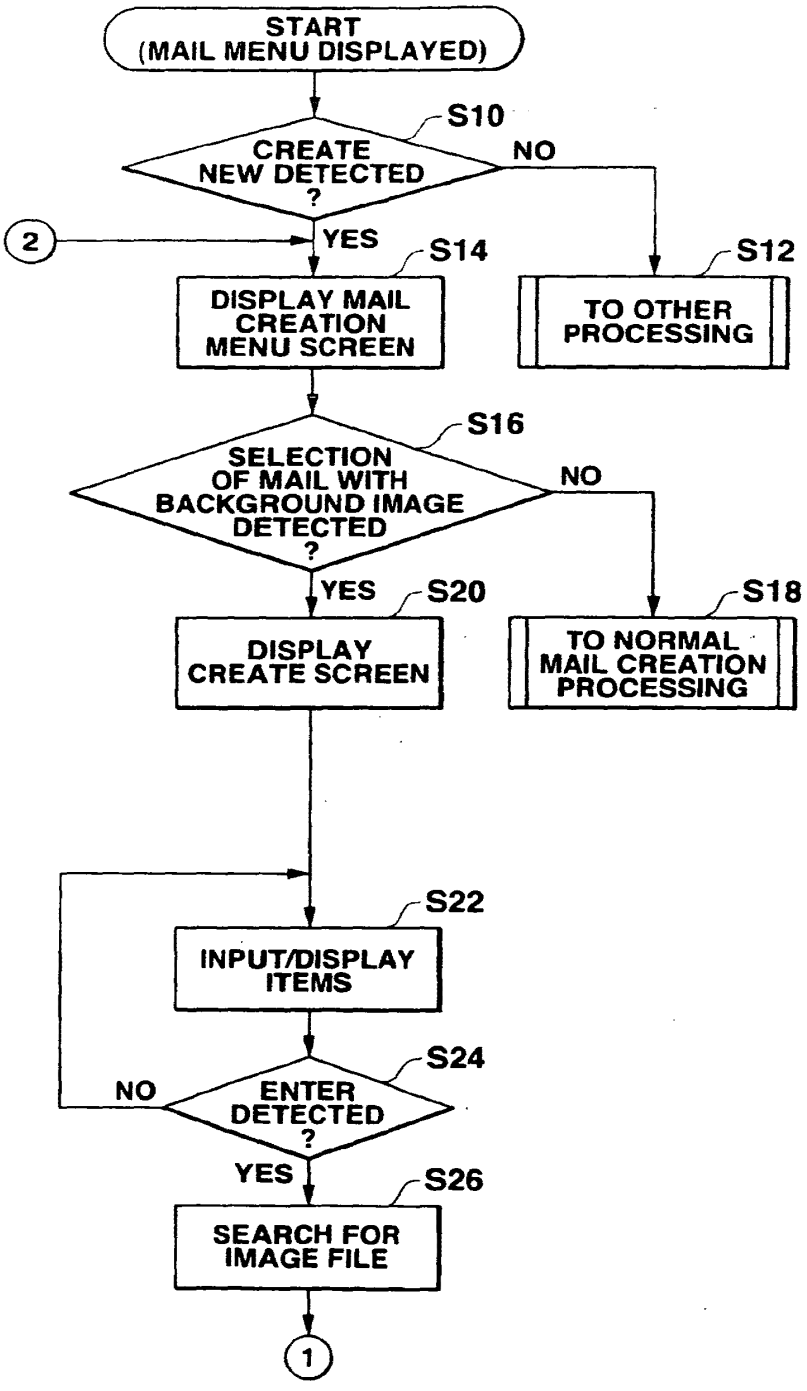


FIG.7

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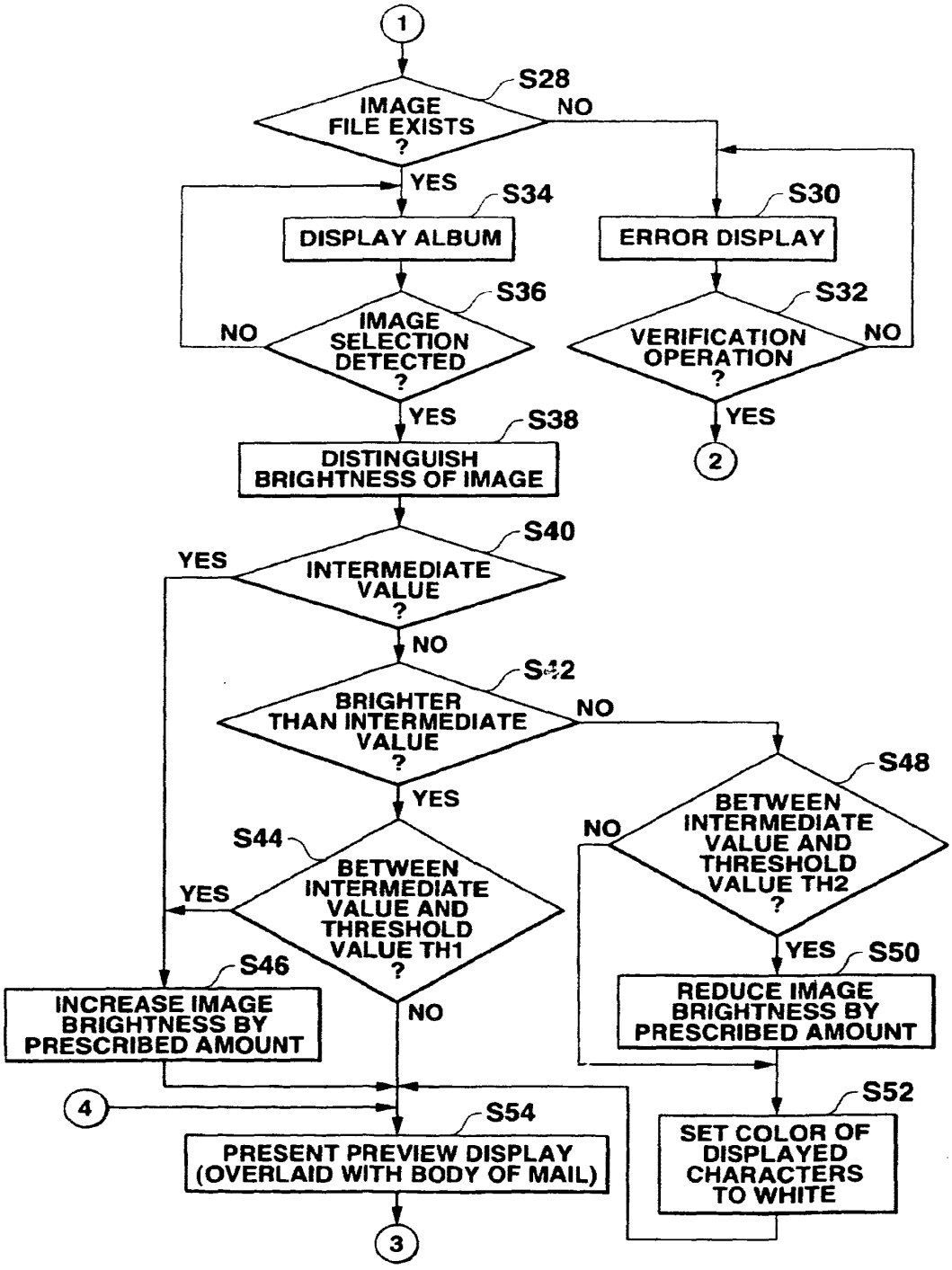


FIG.8

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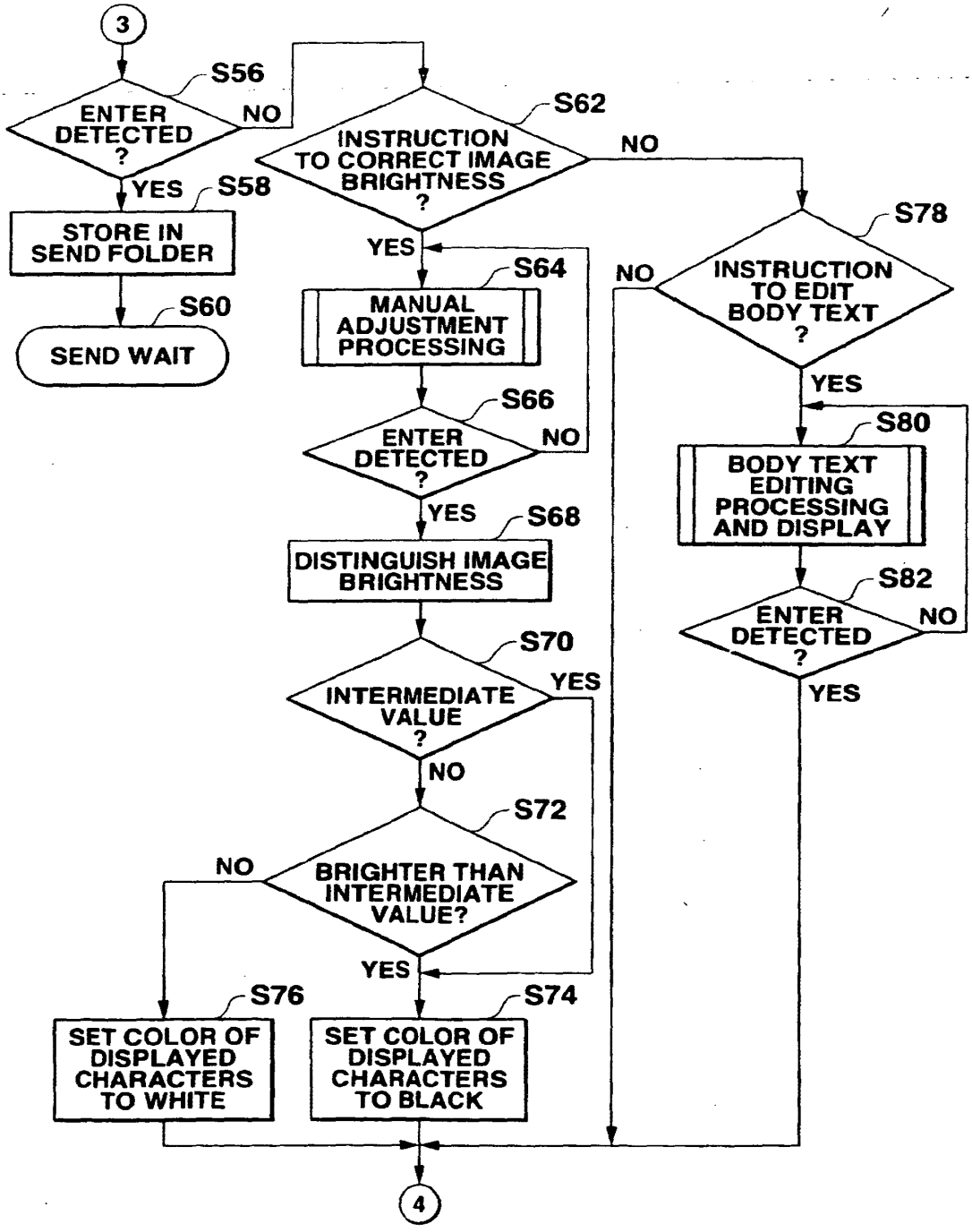


FIG.9

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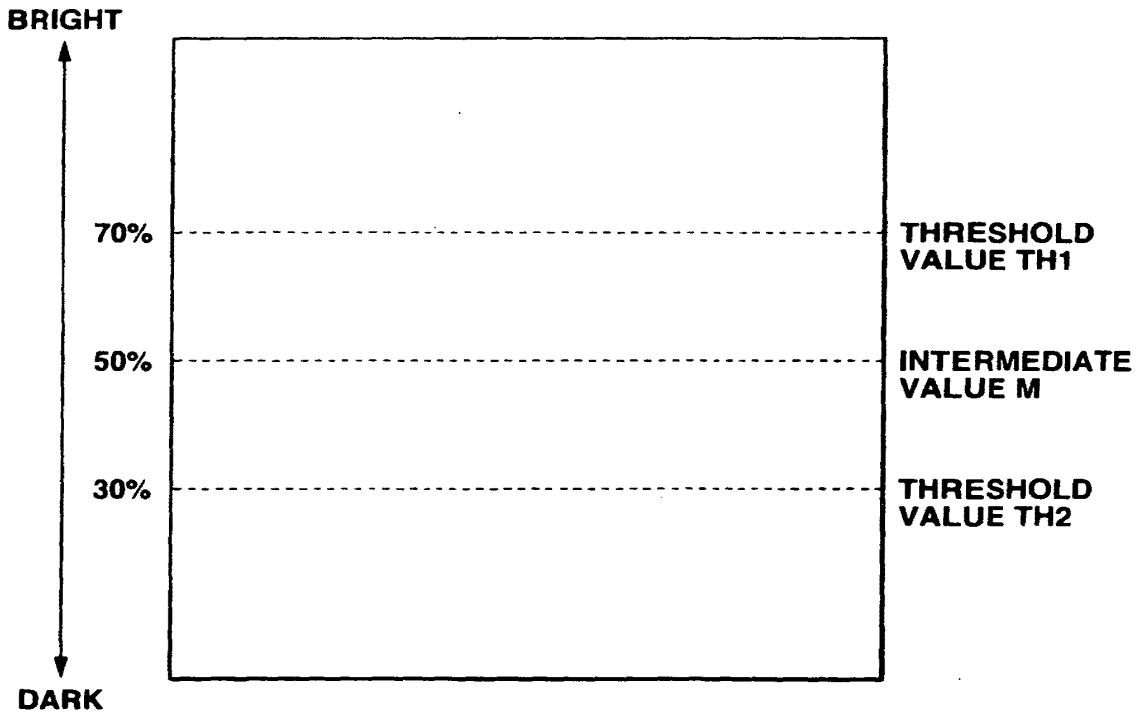


FIG.10

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FIG.11A

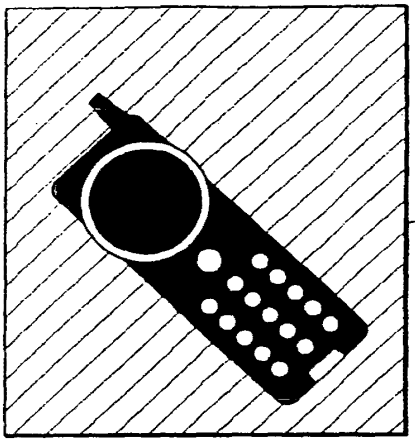


FIG.11B

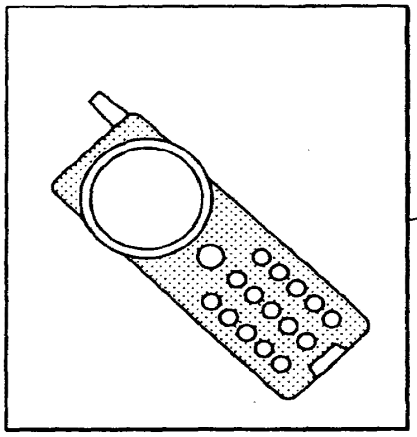
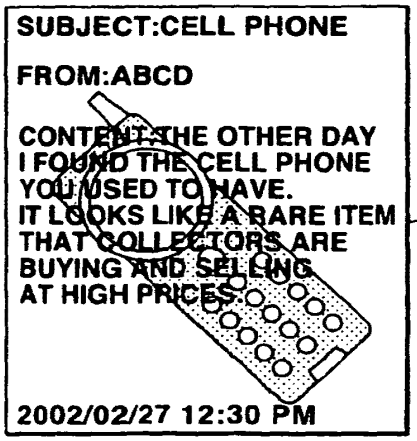


FIG.11C



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FIG.12A

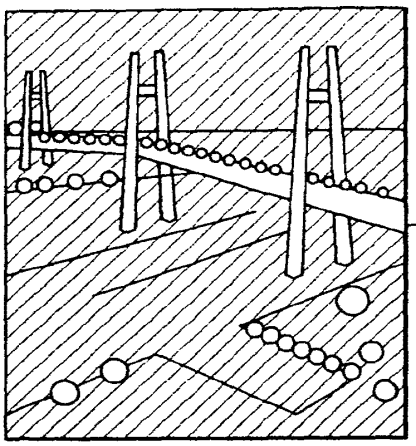


FIG.12B

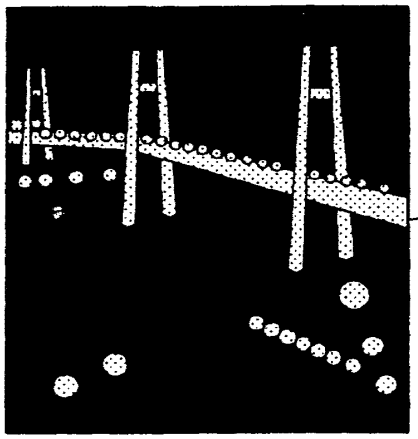
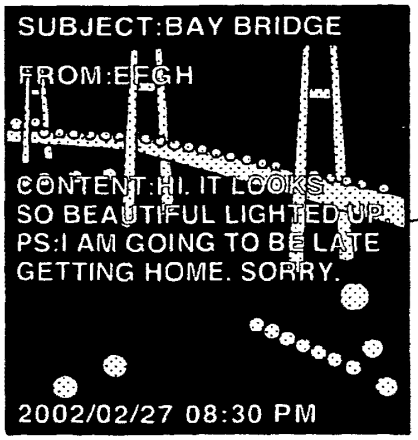


FIG.12C



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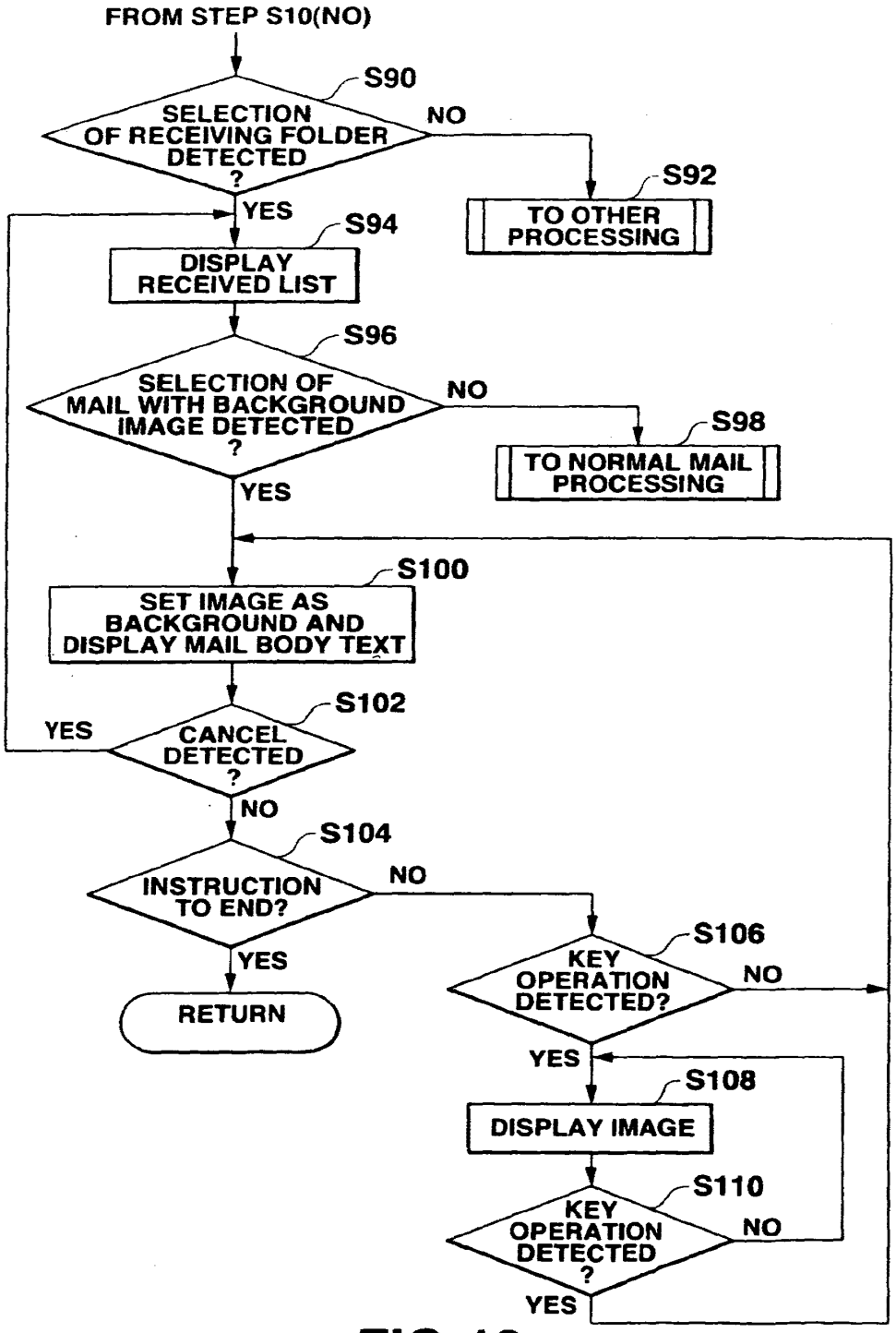


FIG.13

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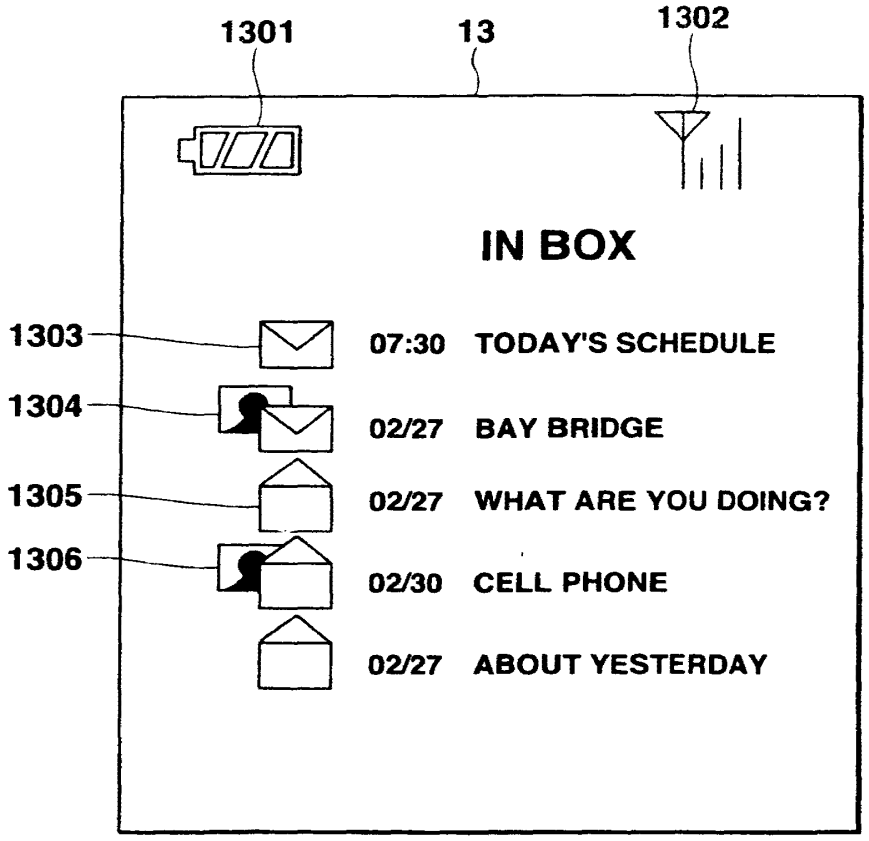


FIG.14

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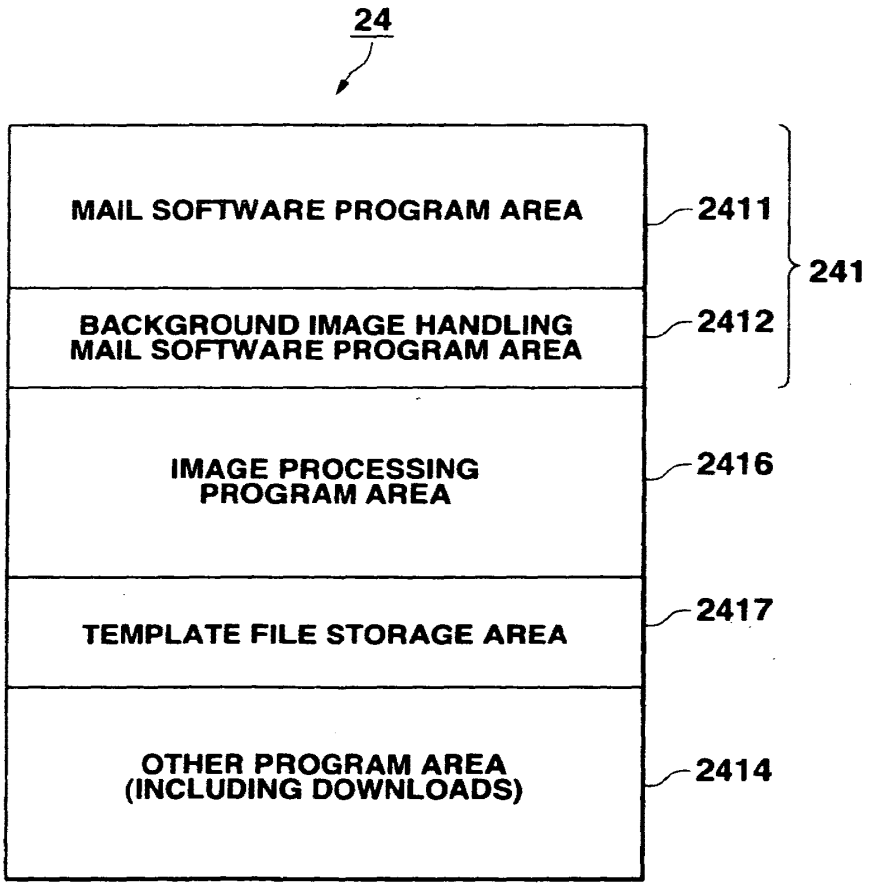


FIG.15

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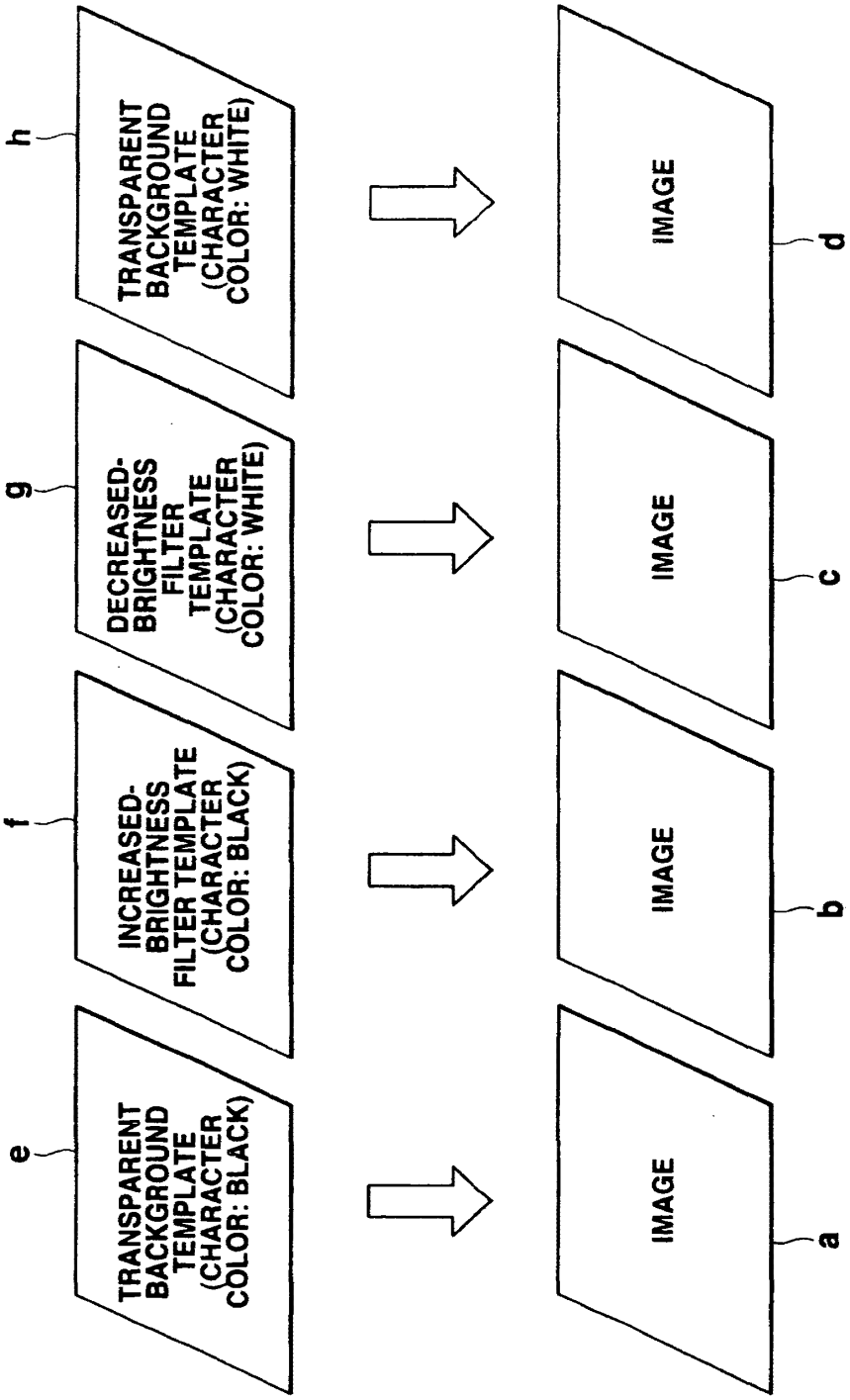

e
TRANSPARENT BACKGROUND TEMPLATE (CHARACTER COLOR: BLACK)
f
INCREASED-BRIGHTNESS FILTER TEMPLATE (CHARACTER COLOR: BLACK)
g
DECREASED-BRIGHTNESS FILTER TEMPLATE (CHARACTER COLOR: WHITE)
h
TRANSPARENT BACKGROUND TEMPLATE (CHARACTER COLOR: WHITE)
IMAGE
a
IMAGE
b
IMAGE
c
IMAGE
d

FIG.16

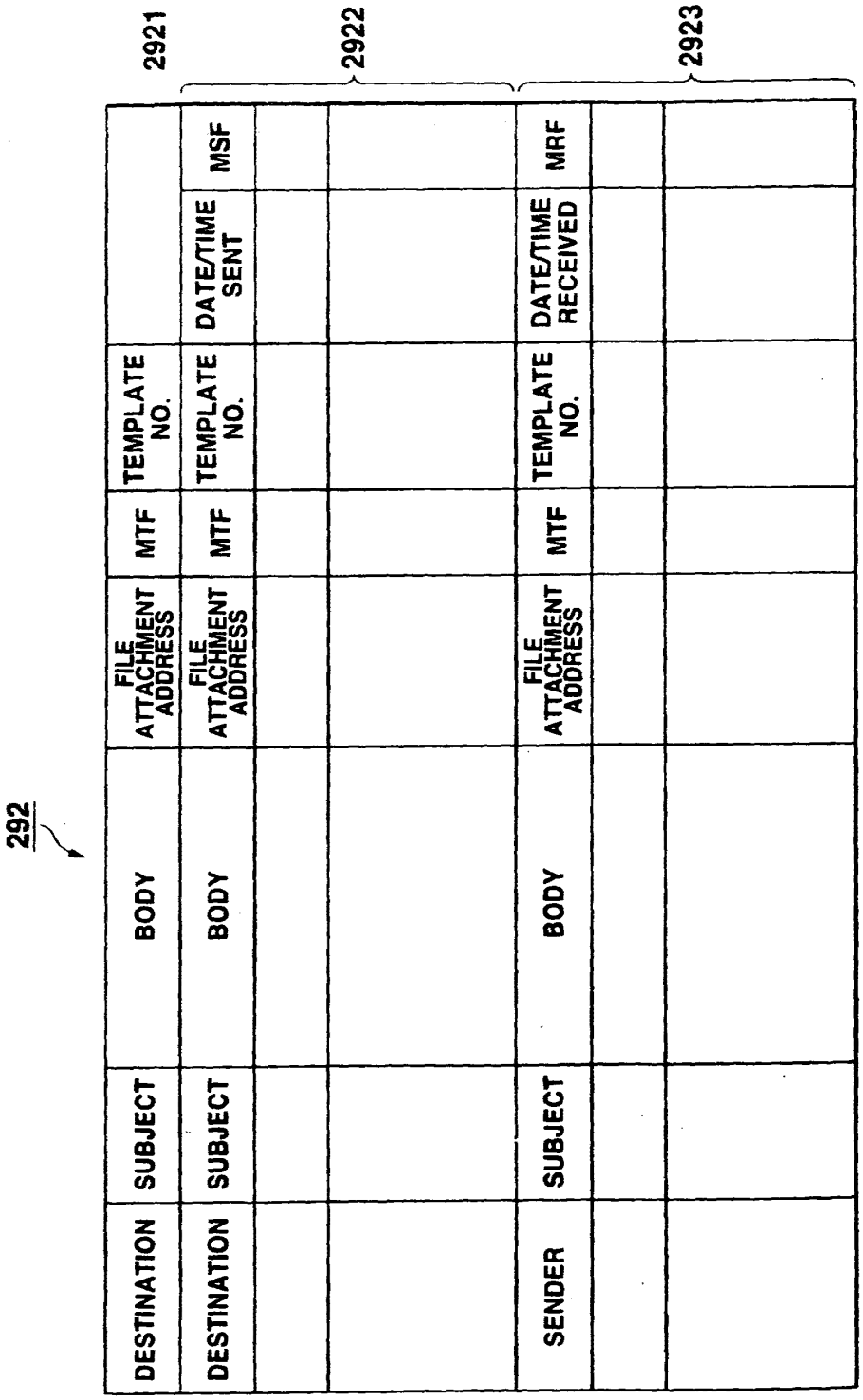


FIG.17

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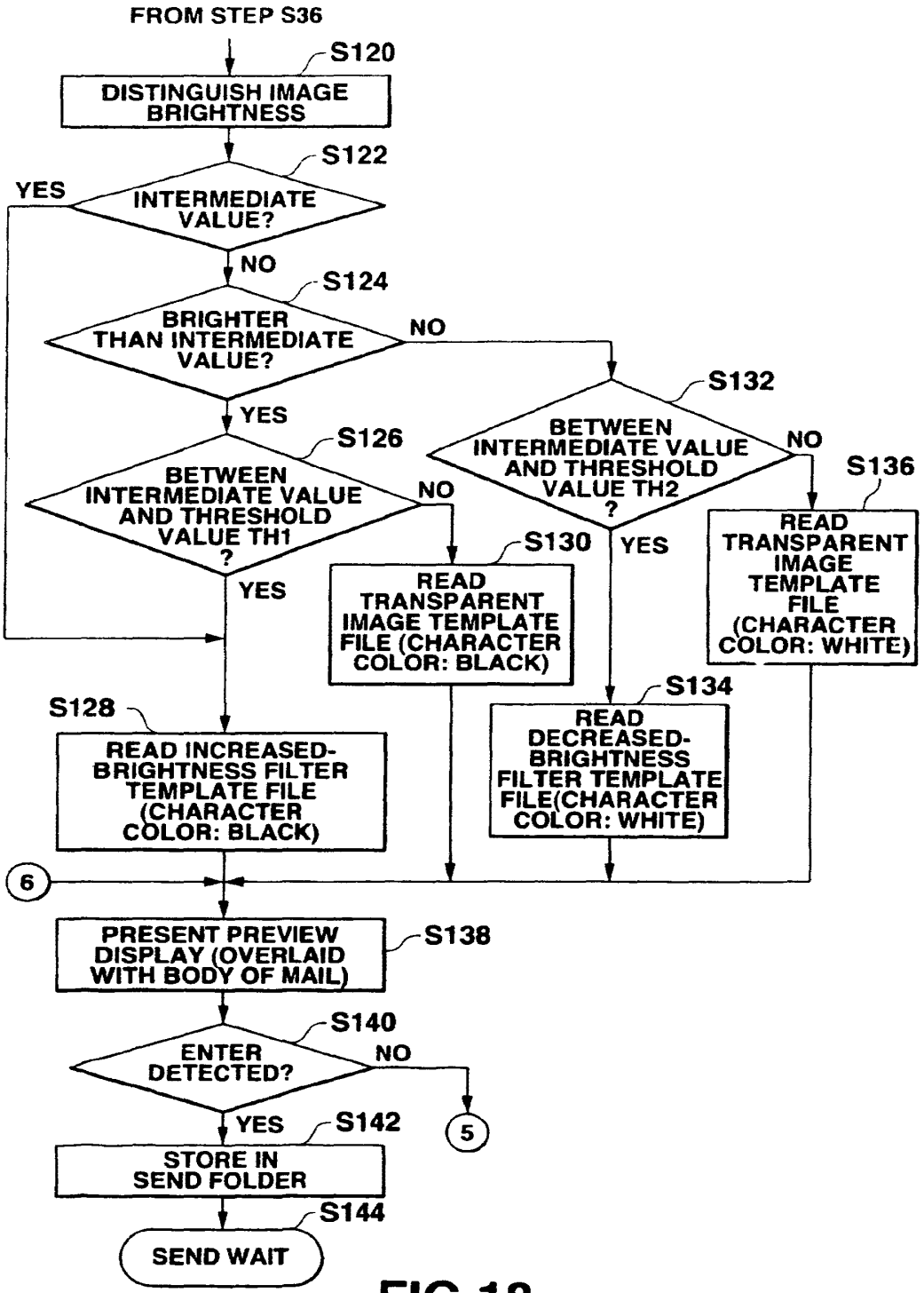

FROM STEP S36
S120
DISTINGUISH IMAGE BRIGHTNESS
S122
INTERMEDIATE VALUE?
YES
NO
S124
BRIGHTER THAN INTERMEDIATE VALUE?
NO
YES
S126
BETWEEN INTERMEDIATE VALUE AND THRESHOLD VALUE TH1 ?
NO
YES
S132
BETWEEN INTERMEDIATE VALUE AND THRESHOLD VALUE TH2 ?
NO
YES
S136
READ TRANSPARENT IMAGE TEMPLATE FILE (CHARACTER COLOR: WHITE)
S130
READ TRANSPARENT IMAGE TEMPLATE FILE (CHARACTER COLOR: BLACK)
S134
READ DECREASED-BRIGHTNESS FILTER TEMPLATE FILE(CHARACTER COLOR: WHITE)
S128
READ INCREASED-BRIGHTNESS FILTER TEMPLATE FILE (CHARACTER COLOR: BLACK)
6
PRESENT PREVIEW DISPLAY (OVERLAID WITH BODY OF MAIL)
S138
S140
ENTER DETECTED?
NO
YES
S142
5
STORE IN SEND FOLDER
S144
SEND WAIT

FIG.18

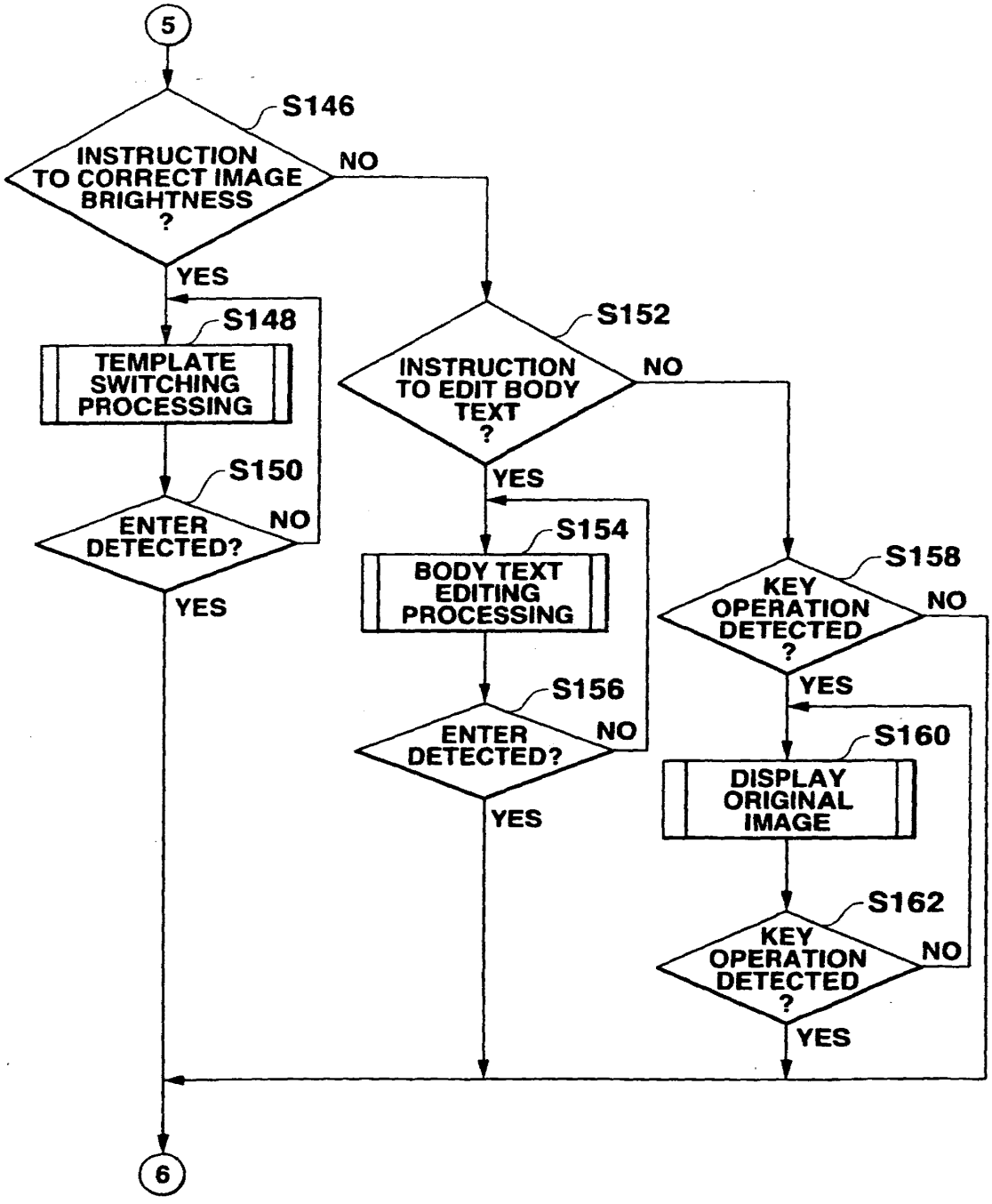


FIG.19

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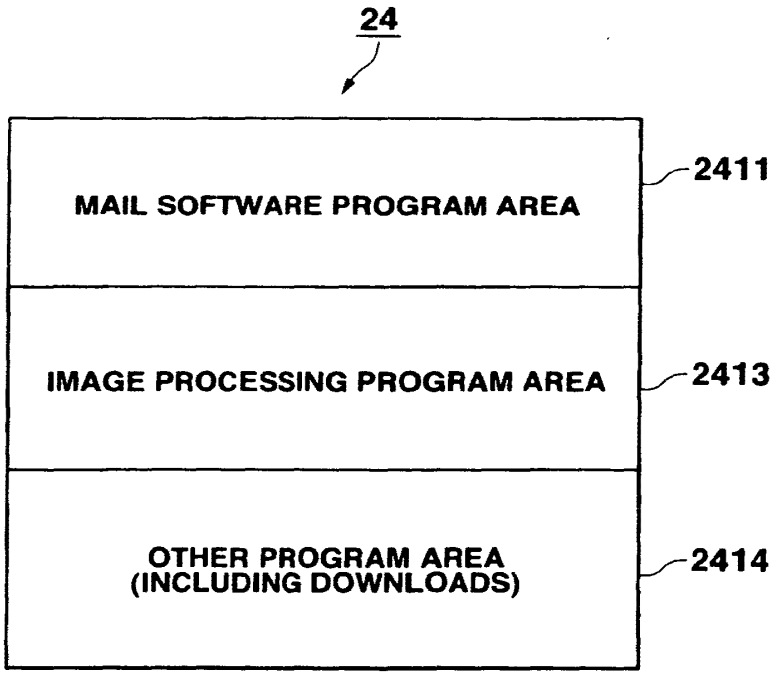


FIG.20

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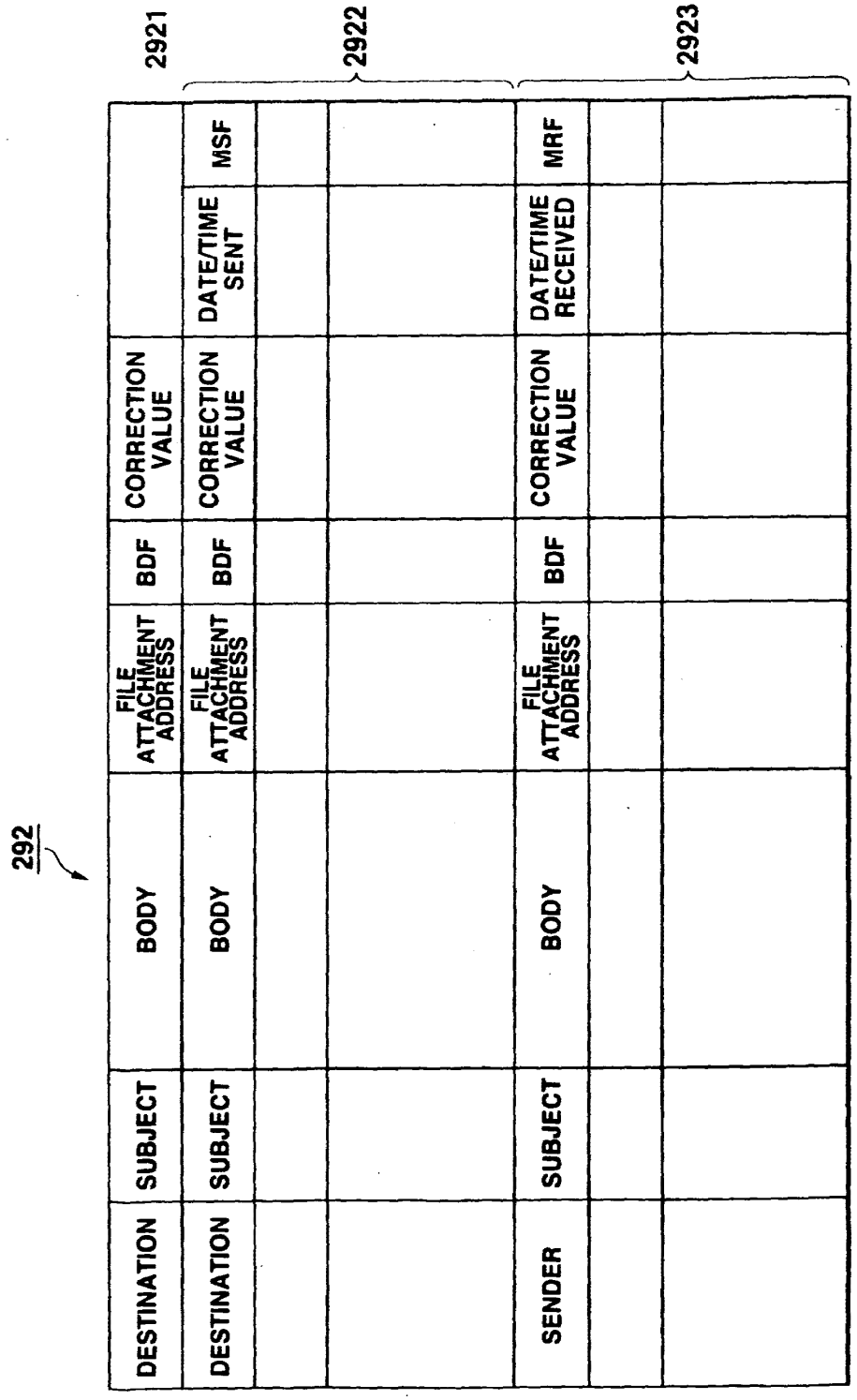


FIG.21

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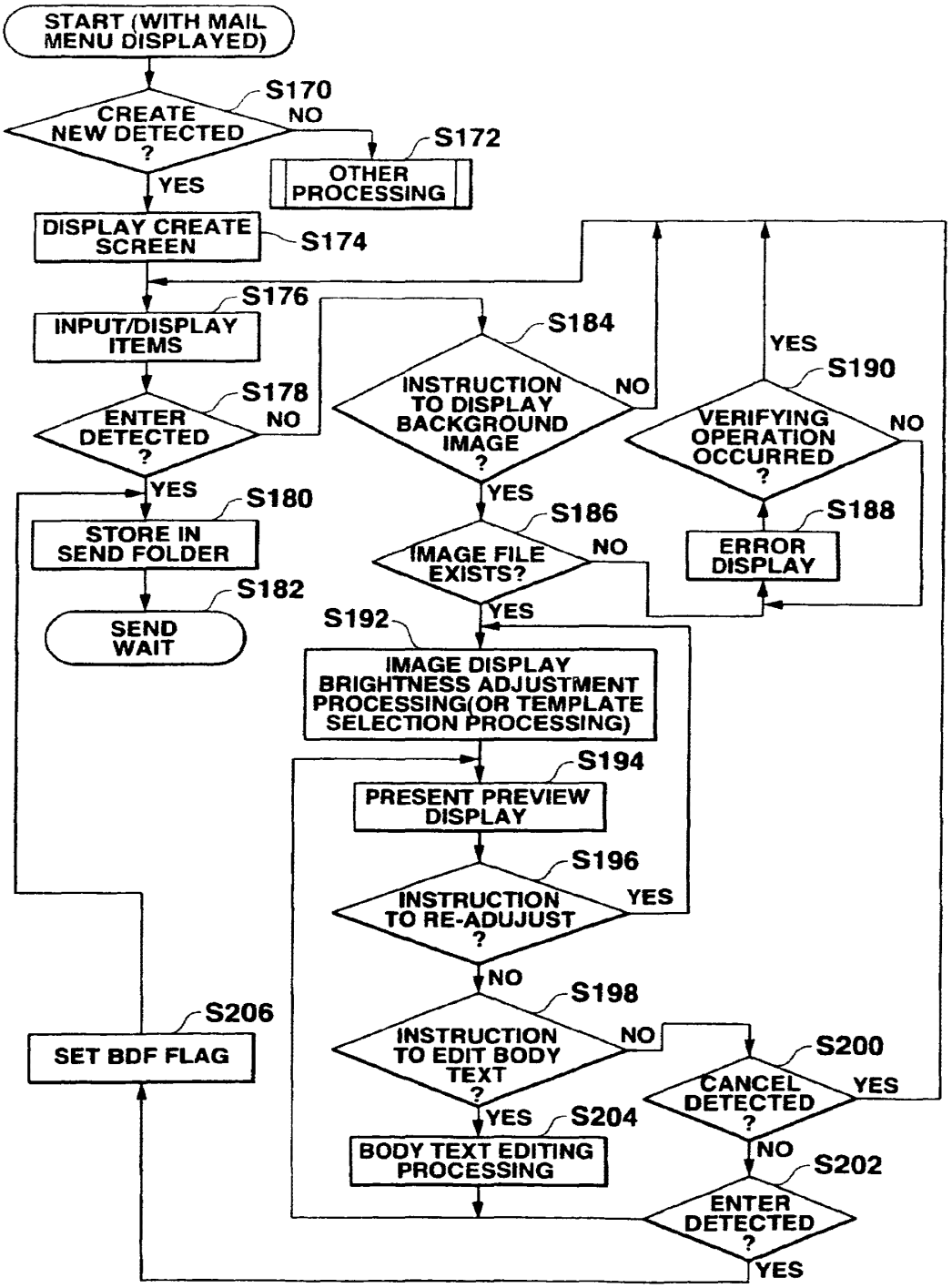


FIG.22

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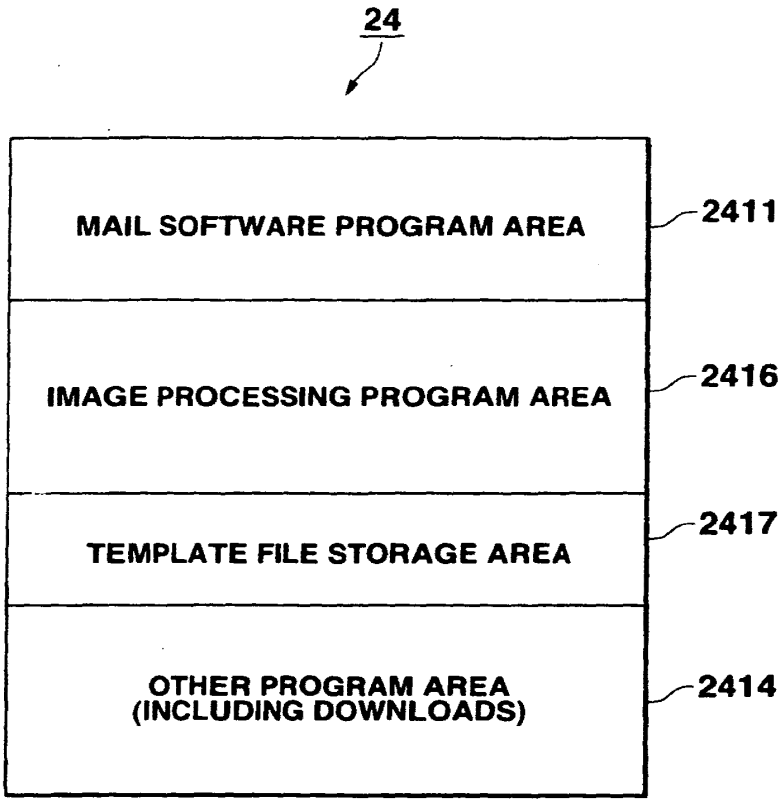


FIG.23

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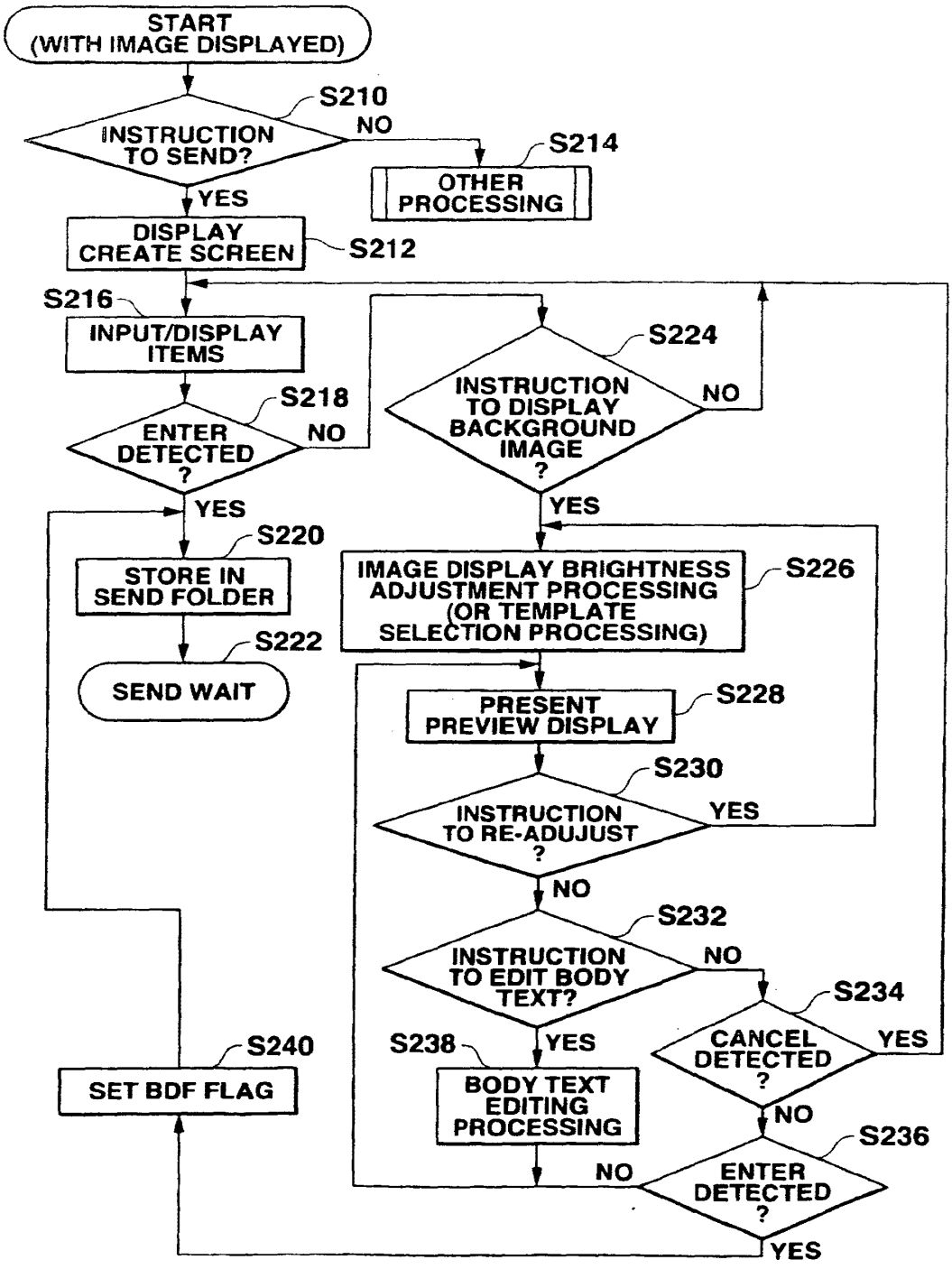


FIG.24

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(54) Message exchanging handling concept

(57) A message exchange session between wireless communication terminals via a wireless network is initiated from one of the terminals. The user of the initiating terminal invites at least one other communication terminal to participate in the message exchange session. This is done by forwarding a message text to said at least one other communication terminal. The user of the other terminal responds to received message by inputting a message text for replying to the received message. Then the responding terminal automatically adds the inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history, and the aggregate message text is then transmitted to the other communication terminals being party to the message exchange session.

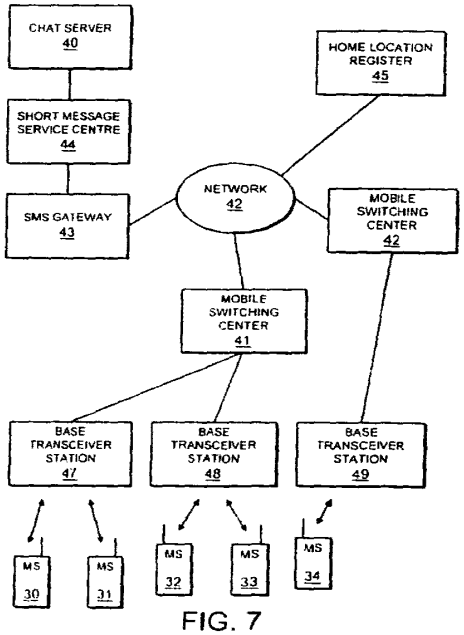


FIG. 7

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Description

[0001] The invention relates to handling of messages between wireless communication terminals in a communication network

[0002] Communication terminals for use in cellular communication networks are basically designed for voice communication. In the GSM system text messages may be sent via a point-to point short message service provided by the network. New phones having improved text editors have made it more popular to use short message services and recently it has been observed by some operators that the use of short message services correponds to 10 percent of the network traffic. Many operators see a significantly lower message percentage of the network traffic. However there is an indication saying that the message based traffic will rise in the coming years. Now it is possible to send a message from one terminal to another and to send a reply the opposite way.

[0003] Therefore there will be a need for providing an improved message exchange handling concept.

[0004] According to a first aspect of the invention there is provided a method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of initiating a message exchange session by identifying in a first communication terminal at least one other communication terminal be invited to participate in the message exchange session, inputting a message text, and transmitting said message text to said at least one other communication terminal. The received message is responded by inputting a message text for replying to the received message, adding said inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history, and transmitting said aggregate message text to the other communication terminal being parties in the message exchange session.

[0005] Hereby it is possible to transmit the message history, or at least the newest part of it, between the terminals during the session. The users will have a possibility to just scroll a few lines to see the background for a recently received message.

[0006] This is an extremely important feature as long as the major part of the mobile phones only shows 3-5 lines in the display. Advantageously the originator of each input in the history is identified with a chat name or the like.

[0007] The first aspect of the invention is also related to a wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system. This terminal comprises a software application having means for initiating a message exchange session, said initiating means includes means for identifying at least one other communication terminal to be invited to participate in the message exchange session and means for entering a text input as a message text. Furthermore the terminal comprises a transmitter for transmitting said message text to said at least one other communication terminal, and a receiver for receiving a reply from said at least one other communication terminal. The software application furthermore having means for replying to a message during a message exchange session, and the replying means includes means for entering a text input, and means for adding said text input to the received message text for generating an aggregate text message being replied by means of the transmitter.

[0008] A computer program product stored on a computer readable storage medium, comprises according to the first aspect of the invention computer readable program code means for replying to a message during a message exchange session in a wireless communication system, said computer readable program code means provides a message exchange session handling application in a wireless communication terminal, and said computer readable program code means handles a text input entered by the user, and adds said text input to the received message text for generating an aggregate message text for replying. Such a computer program product may be flashed into the terminal at a service office or via the data port of the terminal e.g. via a Personal Computer e.g. having Internet access.

[0009] According to a second aspect of the invention there is provided a method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of sending from a wireless communication terminal by means of a point-to point short message service in the wireless network a message containing a request for participating in a message exchange session, routing the request message from the wireless communication terminal to a message exchange session handling server via the wireless network, connecting in the message exchange session handling server the requesting wireless communication terminal to a group of communication terminals, handling a message text in said message exchange session handling server by succesively adding received message text from group of communication terminals to the message text in order to update the message text, and transmitting the updated message text to the group of communication terminals participating in the message exchange session.

[0010] Hereby it is possible for an operator to set up a message exchange session between several phones. The participants do not know each other and the chat session will be anonymous.

[0011] The second aspect of the invention is also related to a system for handling a message exchange session between wireless communication terminals via a wireless network. The system includes means for handling a point-to point short message service in the wireless network, a message exchange session handling server, and a group of wireless communication termi-

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nals accessing said message exchange session handling server via said point-to point short message service. The wireless communication terminals are adapted to send a request for participating in a message exchange session by means of point-to point short message service to said message exchange session handling server. The message exchange session handling server has a message text for the group of wireless communication terminals, and the server updates the message text by succesively adding received message text from members of the group of communication terminals, and transmits the updated message text to the group of communication terminals participating in the message exchange session.

[0012] According to a third aspect of the invention there is provided a method for handling a message exchange session between wireless communication terminals including steps of generating a list of communication terminals invited to participate in the message exchange session, inputting a message text, transmitting said message text to the communication terminals listed on said list, receiving a reply from one of the communication terminals listed on said list, and transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

[0013] Hereby it is possible for a phone user to set up a message exchange session between several terminals where his terminal acts as server for the session. This kind of session may be regarded as a conference chat. The initiating user controls the participants of the session and he is able to set up a distribution list for this purpose.

[0014] The third aspect of the invention is also related to a wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises means for generating a list of communication terminals invited to participate in the message exchange session, means for inputting a message text, means for transmitting said message text to the communication terminals listed on said list, means for receiving a reply from one of the communication terminals listed on said list, and means for transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

[0015] For a better understanding of the present invention and to understand how the same may be brought into effect reference will now be made by way of example only to the accompanying drawings in which:

Fig. 1 illustrates a preferred embodiment of a hand portable phone according to the invention.

Fig. 2 schematically shows the essential parts of a telephone for communication with a cellular network.

Fig. 3 shows a display sequence illustrating the initiation of a chat session according to the preferred embodiment of the invention.

Fig. 4 shows a display sequence illustrating the message response in the chat session according to the preferred embodiment of the invention.

Fig. 5 shows a display sequence illustrating a later stage in the chat session according to the preferred embodiment of the invention.

Fig. 6 shows a flow chart illustrating the steps of the message handling application according to the preferred embodiment of the invention.

Fig. 7 shows an example of the interaction between the mobile terminals and a chat server in a chat session based on a chat server in a network according to a second embodiment of the invention.

Fig. 8 shows a display sequence illustrating a chat session based on distribution lists according to a third embodiment of the invention.

Fig. 9 illustrates the message handling according to a third embodiment of the invention.

[0016] Fig. 1 shows a preferred embodiment of a phone according to the invention, and it will be seen that the phone, which is generally designated by 1, comprises a user interface having a keypad 2, a display 3, an on/off button 4, a speaker 5 (only openings are visable in the present view), and a microphone 6 (openings in bottom not visable in the present view). The phone 1 according to the preferred embodiment is adapted for communication via a cellular network.

[0017] According to the first embodiment shown in fig. 1, the keypad 2 has a first group 7 of keys including twelve alphanumeric keys. In addition to this the keypad 2 has one soft keys 8, a scroll key 10 for navigating the cursor in the display 3, a "clear key" 9 for clearing one or more letters from the display. The calls are handled by means of the soft keys 8, the scroll key 10 and the "clear key" 9. The present functionality of the soft key 8 is shown in a field in the display 3 just above the soft key 8. A phone having a single soft key is described in two pending US patent applications 08/975,126 and 08/975,232 filed by the applicant.

[0018] Fig. 2 schematically shows the most important parts of a preferred embodiment of the phone, said parts being essential to the understanding of the invention. The preferred embodiment of the phone of the invention is adapted for use in connection with the GSM 900MHz and GSM 1800 MHz network, but, of course, the invention may also be applied in connection with other cellular phone networks or cordless networks. A processor 18 controls the communication with the network via a trans-

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mitter/receiver circuit 19 and an antenna 20.

[0019] The microphone 6 transforms the user's speech into analog signals, and the analog signals formed thereby are A/D converted in an A/D converter (not shown) before the speech encoding in an audio part 14. The encoded speech signal is transferred to the processor 18, which i a. supports the GSM terminal software. The audio part 14 decodes the audio signal, which is transferred to the earpiece 5 via a D/A converter (not shown).

[0020] The processor 18 also forms the interface to the peripheral units of the apparatus, including a RAM memory 17a and a Flash ROM memory 17b, a SIM card 16, the display 3 and the keypad 2.

[0021] Message handling according to the preferred embodiment of the invention is based on using a standard wireless messaging concept, e.g. the Short Messaging Service (SMS) well known from the GSM specification. The user sends an SMS message whenever he wants to contribute to the chatting, and he will receive a short message whenever another user has typed a new text. The chatting does not necessarily have to be based on the use of SMS messages but could also include E-mail being converted to SMS messages at the chat server and forwarded to the chat participants as an ordinary chat message. Hereby the chat participants may be identified by phone number or E-mail address or the like. Furthermore messages for communication specifications other than GSM could be used.

First embodiment - point to point chat.

[0022] According to the preferred embodiment the user is able to chat with another user, basically by allowing an easy swapping between message writing and message viewing. The user has to set up e.g. a phone number identifying one other specific other user for point to point chatting. With reference to fig. 3, a chat display sequence is shown for a Nokia phone having a single soft key 8 as shown in fig. 1 will be shown.

[0023] The first display 100 in fig. 3 is a chat entry display in the main menu (or inside the messages menu) of the phone, and in the preferred embodiment it includes a text label 101 defining the present functionality "select" of the soft key 8, a menu status bar 102 informing the user about the present position (menu level 5) in the menu structure and an animating icon 103 presenting the application for the user in a way so he can recognize it.

[0024] Selecting "chat" allows the user to define what number to chat with (point-to-point chatting). In the second display 104 the user is invited to enter a very short chat name -preferably only one or two characters - in a text box 104 and a marking bar 105 indicates the position of the next entered character. When the user has entered the chat name he presses the soft key 8 having the present functionality "OK" as shown by the text label 101.

[0025] Empty names could also be accepted as chat names, and preferably the name used last time is displayed as default, whereby the user only has to accept the name if he will not make amendments. When the user accepts the chat name he is (in the third display) asked for the number - either a single user or a server - for the chatting.

[0026] When user has entered a chat number or fetched a chat number from the phonebook memory of the phone, he will immediately enter the "normal" SMS editor for a GSM phone, as shown in the fourth display. Here the marking bar 105 indicates the position of the character to be entered, and digit 106 the maximum number of characters that can still be entered into the message.

[0027] By selecting "Send" the phone will immediately send the written text 107 to the number specified for chatting and this will be indicated by an animation 108 shown in the sixth display. If the user presses the scroll key 10 he will get access to the alternative options available in the soft key 8. These options may include e.g. "T9 options", "Save" and "Insert template". The phone will now re-enter the text editor as shown in the seventh display of fig. 3. The other user receives the chat message as a normal message (normal SMS).

[0028] Fig. 4 refers to the situation where a reply has been received from the other chatter, and this message will be received as a standard SMS. This is illustrated in the first display in fig. 4. If the user wants to read the received message he presses the soft key 8 having the present functionality "read" as shown by the text label 101. The message "Hi Jacob" is displayed in the second display and the soft key 8 now has the functionality "options" as shown by the text label 101.

[0029] When the user selects the "options" functionality a list 110 of options appears on the display as shown in the third display with one of the options 111 ("chat") highlighted (or reversed in colours). The "reply" and the "erase" functionalities are standard short message operations, and if one of these is selected the message will be handled as such. However if the user selects "chat" the text entry display shown as the fourth display will appear.

[0030] User enters text entry display or the chat editor and can send directly (several times) to the sender of the original message. The text entry display will look like the "normal" SMS editor for a GSM phone and will include the marking bar 105 indicating the position of the character to be entered, and the digit 106 that indicates the maximum number of characters that can still be entered into the message.

[0031] By selecting "Send" the phone will immediately send the written text 107 to the number specified for chatting and this will be indicated by an animation 108 shown in the sixth display. If the user presses the scroll key 10 he will get access to the alternative options available in the soft key 8. These options may include e.g. "T9 options", "Save" and "Insert template". The phone

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will now re-enter the text editor as shown in the seventh display of fig. 3.

[0032] Fig. 5 shows how the user can easily receive chat messages in idle mode as well as in the chatting editor, as shown in the first display. When a message in an ongoing chat session is received, the processor 18 allows this message from the other person to directly pop-up in the editor.

[0033] Therefore the received message will be displayed immediately to the user - even if the user is in the middle of writing. As seen in the second display of the chat display displays simultaneously several (here four) individual chat messages. Each of these messages starts with a short chat name 112 identifying the person who sent the message. The chat name 112 was explained in fig. 3 and according to the present invention Christian uses the chatname "C" and Jacob the chat name "J". The chat name 112 is followed by a by a simicolon as spacing sign 113 and then the message text 114.

[0034] The text message may be divided into several lines and according to the preferred embodiment the text message is terminated with a line break. The newest input is automatically put on top of the older input when displayed. When pressing the "OK" soft key 8 the phone will bring the user back to the chat editor (as shown in the third display of fig. 5) to e.g. reply immediately.

[0035] When the user has entered the text to be sent, the processor 18 when sending automatically simply adding the "old" text after the new text to be sent. Hereby the full chat history is included in the displayed text

[0036] According to the preferred embodiment only messages received from a chatter will be displayed this way. Chat messages will not be stored on the SIM card as normal messages do. When the user writes a second text or a response, and selects the "Send" option for the soft key, the phone will now do as follows:

- Take the last received chat message and add the new text entered by the user to the beginning of the message - always on a new line.
- Maximum one SMS is used. When the message is "full" (a SMS may contain 160 charcters as a default standard), the text is removed line wise from the end of the message.

[0037] Since all chat messages are sent as standard SMS (including the initial chat message), the person receiving an initial chat message will receive it as a standard SMS message. The reception of a message is shown as the first display of fig. 4.

[0038] The embodiment explained above may be implemented as a new software application handling the messages. It is the user who determines who to invite to participate in the chat session. This is basically explained below with reference to fig. 6.

[0039] From idle mode (step 200) the user initiates the chat session by selecting chat from the menu (step 201) Then the user is requested to input a chat name (step 202) if a chat name is not stored as a default name. The user is then requested to input a chat number (step 203). and when this is done the user enters the chat editor (step 210). When the user wants to exit the chat editor, but does not want to the send the message he exits at step 214. where he e.g. may save the written text for later use or simply wants to quit without saving.

[0040] If he at step 211 indicates that he wants to send the chat message the chat history or at least a part of it is added at step 212. and the message is sent at step 213. Hereafter the phone goes back to idle mode at step 200.

[0041] In idle mode (step 200) when a message is received in step 204 and the user is offered the option to read the message in step 205. If the user does not want to read the message the phone goes back to idle mode (step 200), otherwise the received message is displayed at step 206, and the user is asked whether he wants to reply the message as chat in step 207. If he does not want to reply to the message the chat the message is handled as an ordinary message at step 215. If he does want to reply to the message as the chat the message it is checked at step 208 whether a chat name has been entered. If not the chat name may be entered at 209 and the phone enters the chat editor at step 210.

Chat based on a chat server.

[0042] According to this embodiment the user is still allowed to easily swap between message writing and message viewing. The user sets up a phone number to a chat server 40 in the Short Message Service Center 44 as indicated in fig. 5. The chat service is provided by the network, and may include a server containing chat rooms etc. When the user uses the chat room phone number the server 40 allows the requesting terminal to access an ongoing chat handled by the server. The chatting does not necessarily have to based on the use of SMS messages but could also include E-mail being converted to SMS messages at the chat server and forwarded to the chat participants as an ordinary chat message. Hereby the chat participants may be identified by phone number or E-mail address or the like.

[0043] A preferred embodiment of the system architecture for managing the credit system is shown in fig. 7. A Home Location Register 45 (HLR) contains a database including relevant subscriber information for the provision of the telecommunication service. A CCITT specified network 42 interconnects the individual parts of the system. An SMS gateway & SMS interworking Mobile Switching Center (MSC) 43 is a switching unit routing a message or a call to a Mobile Station 30-34 (the phone 1). A Short Message Service Center 44 (SMSC) and the SMS gateway & SMS interworking Mobile Switching Center (MSC) 43 handles and routes the SMS's between the Short Message Service Center 44

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and the Network 42 From the Network 42 the messages are routed to the Mobile Station 30-34 via a Mobile Switching Center (MSC) 41-42 Base Transceiver Station (BTS) 47-49 establish the air connection to the Mobile Stations 30-34.

[0044] According to a second embodiment of the invention a network operator or other third party company handling a chat server 40 could offer a chat function between persons not knowing each other For example a network operator may have a chat server 40 supporting a feature where the user may send a chat request from his mobile station 30-34 to the server 40 by means of a short message using a special phone number This server 40 automatically places people sending a similar request message to the server 40 into "chat groups" or "chat rooms". Whenever a user being part of such a group 30-34, sends a message to the server 40, the server 40 adds the text from the message on top of the previous communication in the chat group and forwards the up-dated communication in a message to all the other persons in the group 30-34. The chat server 40 is responsible for the distribution of the text messages and the distribution lists.

[0045] When using gateways in the network the user will be allowed to specify an E-mail address for the chat server, and not just a phone number. The user should furthermore be allowed to specify two phone numbers/ E-mail addresses; one to which chat message is sent and one from which the server messages are received.

Chat based on distribution lists.

[0046] According to a third embodiment of the invention the initiating user first has to select a distribution list to chat with. The initiating user will according to the present charging concept have to pay for a substatial part of the messages, because all messages will go though him. However there will be a market for this concept because it may be regarded as a "conference chat" similar to a conference call having multiple participants invited by an initiating user.

[0047] This third embodiment will be illustrated with reference to fig. 8. In the first display 100 (similar to the first display of fig. 3) is a chat entry display in the main menu of the phone, and as in the first embodiment this display includes a text label 101 defining the present functionality of the soft key 8, a menu status bar 102 and an animating icon 103.

[0048] By selecting "chat" the phone allows the user to define what number to chat with. By selecting "Enter Number" or "Phonebook" in the second display the user is allowed to target a phone number for his chatting request - either point-to-point chatting with another phone user as explained with reference to the first embodiment or a chat server based multi user chat session as explained with reference to the second embodiment. The third embodiment does allow the user to initiate a conference chat session where the participants are invited by the initiating user. The user has to move the hight lighting cursor 115 to the "Distribution list" by using the scroll key 10 and selecting the operation by pressing the selection key 8

[0049] In the third embodiment the "Chat menu" has the sub menus "Enter number" for manually inputting the chat phone number. "Phonebook" for picking the chat phone number up from the phonebook (this is the same way as getting a phone number from the phonebook for an SMS message), and "Distribution list". The "Distribution list" submenus inlcudes:

1. "Existing lists" - each including a number of already appointed participants for conference chat. These lists have names the which the user may scroll when he has selected the item;
2. "Add new list" - by means of which the user may name the distribution list, appoint members for a distribution list and add the distribution list to the "Existing lists" list; and
3. "Edit list" - here the user is allowed to select a distribution list from "Existing lists" and edit the distribution list name and add/delete/rename one or more of the appointed members of the distribution list.

[0050] If the user selects "Distribution list" in the second display he is allowed to invite users included in user-defined distribution lists "Erfa-group", "Sales" and "My group" to participate in a conference chat. When the user has selected one distribution list in the third display, e.g. the highlighted one 115, he may enter a message as indicated in the fourth and fifth display of fig. 8.

[0051] When the initiating user 300 (see fig. 9) finalizes the message and presses the "Send" softkey 8 the phone starts successively sending this first message to each of the conference chat participants 310 listed on the selected distribution list (this includes N individuals 311-313). When one of the other conference chat participants 312 replies (second input 315) to this first message, the reply includes the reply message on top of the original message, and the reply message is transmitted to the initiating user alone. The initiating user retransmits 316 the reply message to all the conference chat participants listed on the selected distribution list - advantageously to all except the replying one.

[0052] The initiating user may of course add his comments prior to the re-transmission. The initiating user may select whether his phone automatically re-transmits this reply message or whether he should accept the re-transmission. The phone of the initiating user acts as chat server and the other parties will see this chat as a point-to-point chat with the initiating user, however they will see the texts (and chat names) of the entire conversation.

[0053] However if the phone retransmits the reply automatically the phone will have to distribute a third input 317 if the initiating user wants to make comments to the

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reply. Later on the N'th participant 313 makes an input 318 and this input is transmitted to the initiating user 300 who automatically re-transmits this input to all the conference chat participants listed on the selected distribution list - advantageously to all except from the replying one.

Three party chat concept

[0054] In order to reduce the cost for the master (the initiating phone) of a e.g. three-point chat session, and if all the involved parties have a phone capable of doing a three-point chat . a setting to switch off the auto-forwarding of received short messages during the chatting could be offered.

[0055] This would make sense for e.g. "broadcasting" messages, then they can start by exchanging their phone numbers, and afterwards they can all enter three-point chatting (with the auto-forward switched off), and hereby each of the involved parties will send to both of the other chatters whenever they send a message; this will reduce the total amount of sent messages, and distribute the costs more evenly (the user will only have to pay for outgoing messages).

[0056] The suggested three-person chat in this document is actually not limited to three-person chatting. If several of the persons in the three-person chat have phones supporting three-party chat, one (or both) of the other chatters may also initiate three-person chat (and hence include a fourth, fifth etc person to the chatting). All users will - due to the auto-forwarding - receive all chat messages sent by all chatters.

Chat based on distributed distribution lists.

[0057] The third embodiment is based on the existing GSM specification that does not allow use of distribution lists for SMS message sending. However if the specification in the future allows use of distribution lists for SMS messages the initial message could as a fourth embodiment contain all phone numbers of the conference chat participants listed on the selected distribution list, and these numbers are then sent to all chatters - the other chatters can then use the numbers inside the message to reply to the chat message. All participants will then send messages using this "distribution list".

Chat useability improvements

[0058] A further embodiment of the invention includes a further improvement of the invention. The chat application will here has a history display in addition to the chat editor window. When entering the chat menu the user has to select between a new chat session (and the editor where the user may enter targets for the chat session, chat name and text occurs), or chat histories (where the user may select between the histories stored in the phone and identifyed by a label automatically generated based on the name of the originator of chat session and/or the time. This label may be renamable. When the user views the chat history (older messages send in the chat session), pressing the clear-key will bring the user back to the chat editor where he can enter new text. A further press of the clear-key will cause the phone to jump out of the chat application. The user may according to this embodiment be offered an option to save the chat history as a text string so the text string may be used in another application, and e.g. forward it to a third person.

[0059] This concept is based on offering the user an additional option in the SMS based chat editor, called "Save History". This option is according to the described embodiment available only from the chat editor and not from the history viewing (since here we only have "OK" on the soft-key - for simplicity). The "Save History" option will simply save the history as a concatenated message in the normal SMS Outbox.

[0060] If the history is longer than supported, the history is truncated from the end (oldest) before saved. When the "Save History" function is selected, the user will get a confirmation note showing that the "history is stored" or that the "history is stored to the Outbox" (so that user can find it afterwards). After a timeout, the phone returns to the Chat editor.

[0061] If the user - in the same chat session - chooses to save the history, there will be stored several messages in the Outbox (no overwriting). If the Outbox memory is full, user will get an error note, and the saving is discarded.

Claims

1. A method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of:

   - initiating a message exchange session by:
     - identifying in a first communication terminal at least one other communication terminal to be invited to participate in the message exchange session,
     - inputting a message text,
     - transmitting said message text to said at least one other communication terminal; and
   - responding to received message by:
     - inputting a message text for replying to the received message,
     - adding said inputted reply message text to the received message text, whereby the aggregate message text includes the message exchange session history,

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- transmitting said aggregate message text to the other communication terminal being party to the message exchange session.

2. A method according to claim 1, wherein a point-to point short message service in the wireless network is used as message exchange session.

3. A wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises:

- a software application having means for initiating a message exchange session, said initiating means includes:
  - means for identifying at least one other communication terminal to be invited to participate in the message exchange session,
  - means for entering a text input as a message text,
- a transmitter for transmitting said message text to said at least one other communication terminal; and
- a receiver for receiving a reply from said at least one other communication terminal,
- said software application furthermore having means for replying to a message during a message exchange session, said replying means includes:
  - means for entering a text input,
  - means for adding said text input to the received message text for generating an aggregate message text for replying by means of the transmitter.

4. A wireless communication terminal according to claim 3, wherein the transmitter transmits the message text by means of a point-to point short message service in the wireless network.

5. A wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises:

- said software application furthermore having means for replying to a message during a message exchange session, said replying means includes:
  - means for entering a text input,
  - means for adding said text input to the received message text for generating an aggregate message text for replying.

6. A computer program product stored on a computer readable storage medium, comprising:

- computer readable program code means for replying to a message during a message exchange session in a wireless communication system, said computer readable program code means provides a message exchange session handling application in a wireless communication terminal; and said computer readable program code means
- handles a text input entered by the user; and
- adds said text input to the received message text for generating an aggregate message text for replying.

7. A method for handling a message exchange session between wireless communication terminals via a wireless network, and including steps of:

- sending from a wireless communication terminal by means of a point-to point short message service in the wireless network a message containing a request for participating in a message exchange session;
- routing the request message from the wireless communication terminal to a message exchange session handling server via the wireless network;
- connecting in the message exchange session handling server the requesting wireless communication terminal to a group of communication terminals;
- handling a message text in said message exchange session handling server by successively adding received message text from group of communication terminals to the message text in order to update the message text; and
- transmitting the updated message text to the group of communication terminals participating in the message exchange session.

8. A system for handling a message exchange session between wireless communication terminals via a wireless network, said system includes

- means for handling point-to point short message service in the wireless network;
- a message exchange session handling server; and
- a group of wireless communication terminals accessing said message exchange session handling server via said point-to point short message service;

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- said wireless communication terminals are adapted to send a request for participating in a message exchange session by means of point-to point short message service to said message exchange session handling server.
- said message exchange session handling server has a message-text for the group of wireless communication terminals, and the server updates the message text by successively adding received message text from members of the group of communication terminals. and transmits the updated message text to the group of communication terminals participating in the message exchange session.

9. A method for handling a message exchange session between wireless communication terminals including steps of

- generating a list of communication terminals to be invited to participate in the message exchange session,
- inputting a message text,
- transmitting said message text to the communication terminals listed on said list,
- receiving a reply from one of the communication terminals listed on said list,
- transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

10. A method according to claim 9 wherein said message text is successively transmitted to each of said communication terminals listed on said list.

11. A method according to claims 9 or 10 wherein said reply is successively retransmitted to each of said communication terminals listed on said list apart from the replying one.

12. A method according to claim 9 wherein the reply message text is automatically added above the previous message text prior to the re-transmission of the reply from said one of the communication terminals to the communication terminals listed on said list.

13. A wireless communication terminal having a message exchange session handling application for handling messages in a message exchange session in a wireless communication system, said terminal comprises:

- means for generating a list of communication terminals to be invited to participate in the message exchange session,
- means for inputting a message text,
- means for transmitting said message text to the communication terminals listed on said list.
- means for receiving a reply from one of the communication terminals listed on said list.
- means for transmitting the reply from said one of the communication terminals to the communication terminals listed on said list.

14. A wireless communication terminal according to claim 13 wherein the transmission means successively transmits said message text to each of said communication terminals listed on said list.

15. A wireless communication terminal according to claims 13 or 14 wherein the transmission means successively re-transmits said reply to each of said communication terminals listed on said list apart from the replying one.

16. A wireless communication terminal according to claim 13 wherein the terminal includes means for adding the reply message text above the previous message text prior to the re-transmission of the reply from said one of the communication terminals to the communication terminals listed on said list.

:ID: <EP 1109415A2 (>

IPR2023-01271 Page 245

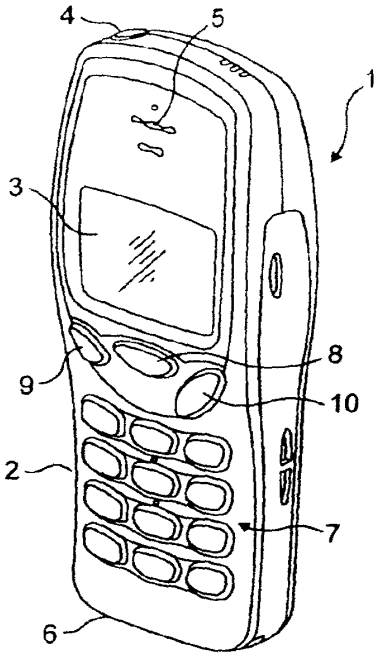


FIG. 1

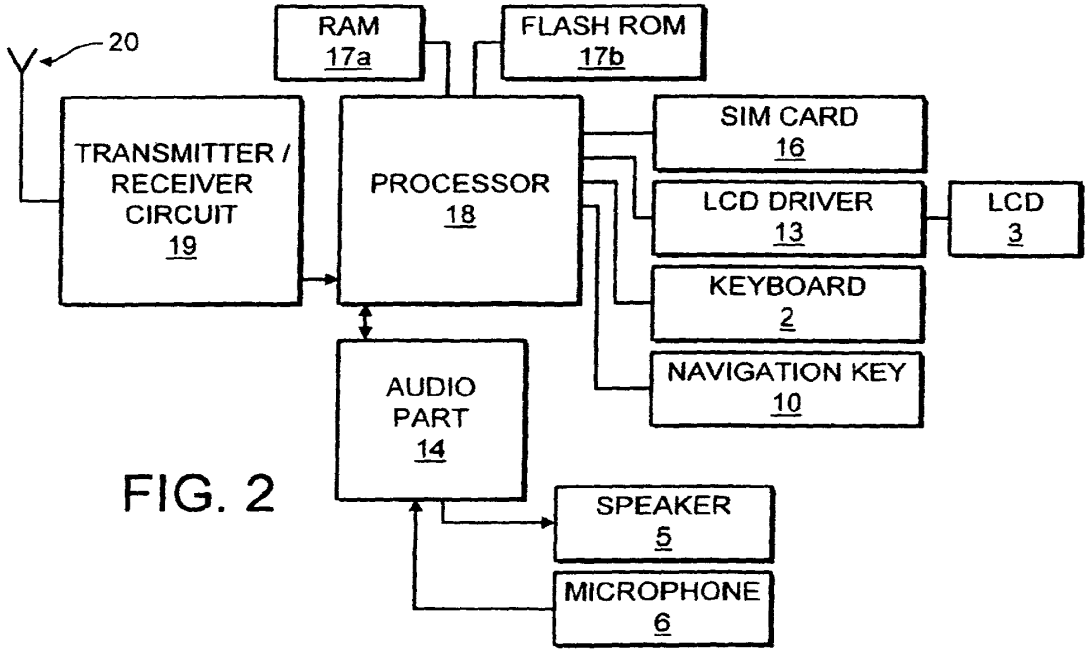


FIG. 2

IPR2023-01271 Page 246

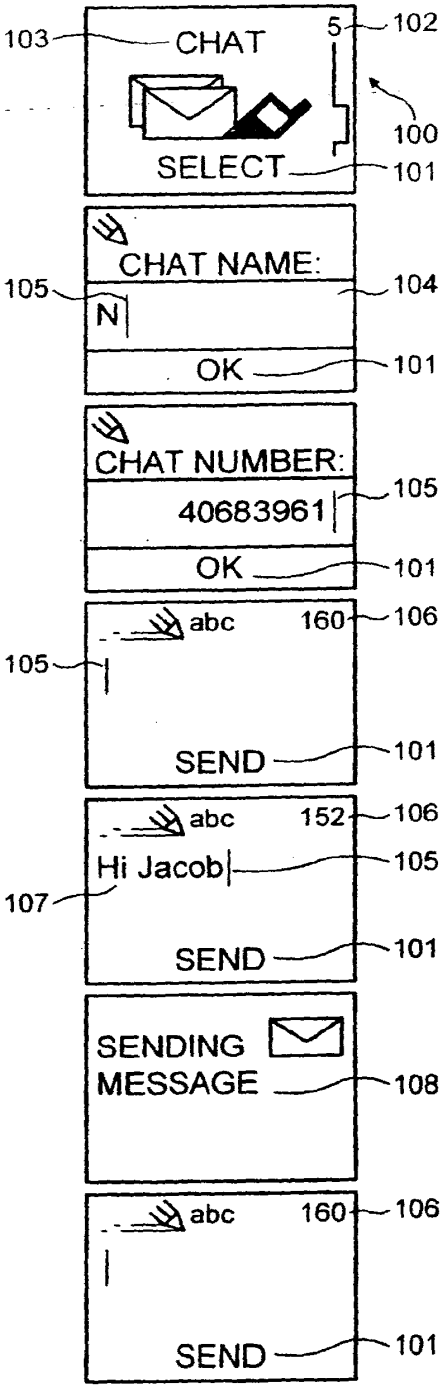


FIG. 3

IPR2023-01271 Page 247

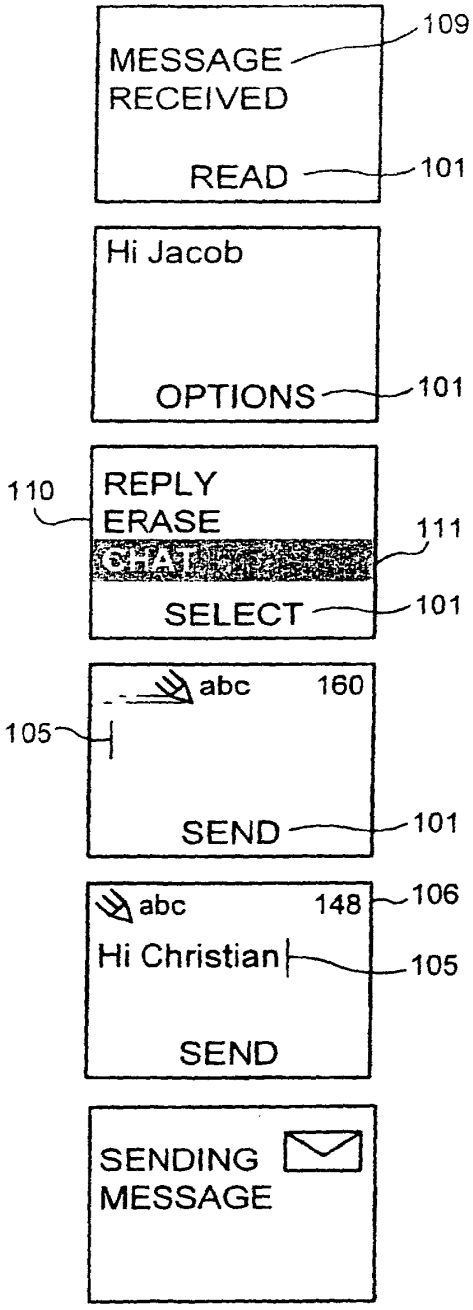


FIG. 4

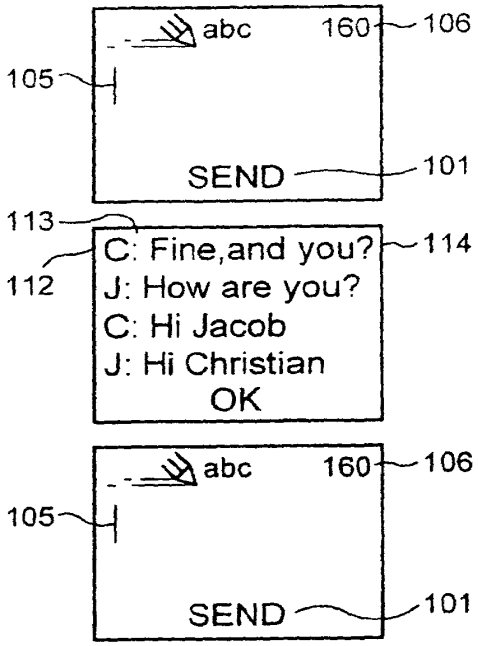


FIG. 5

IPR2023-01271 Page 248

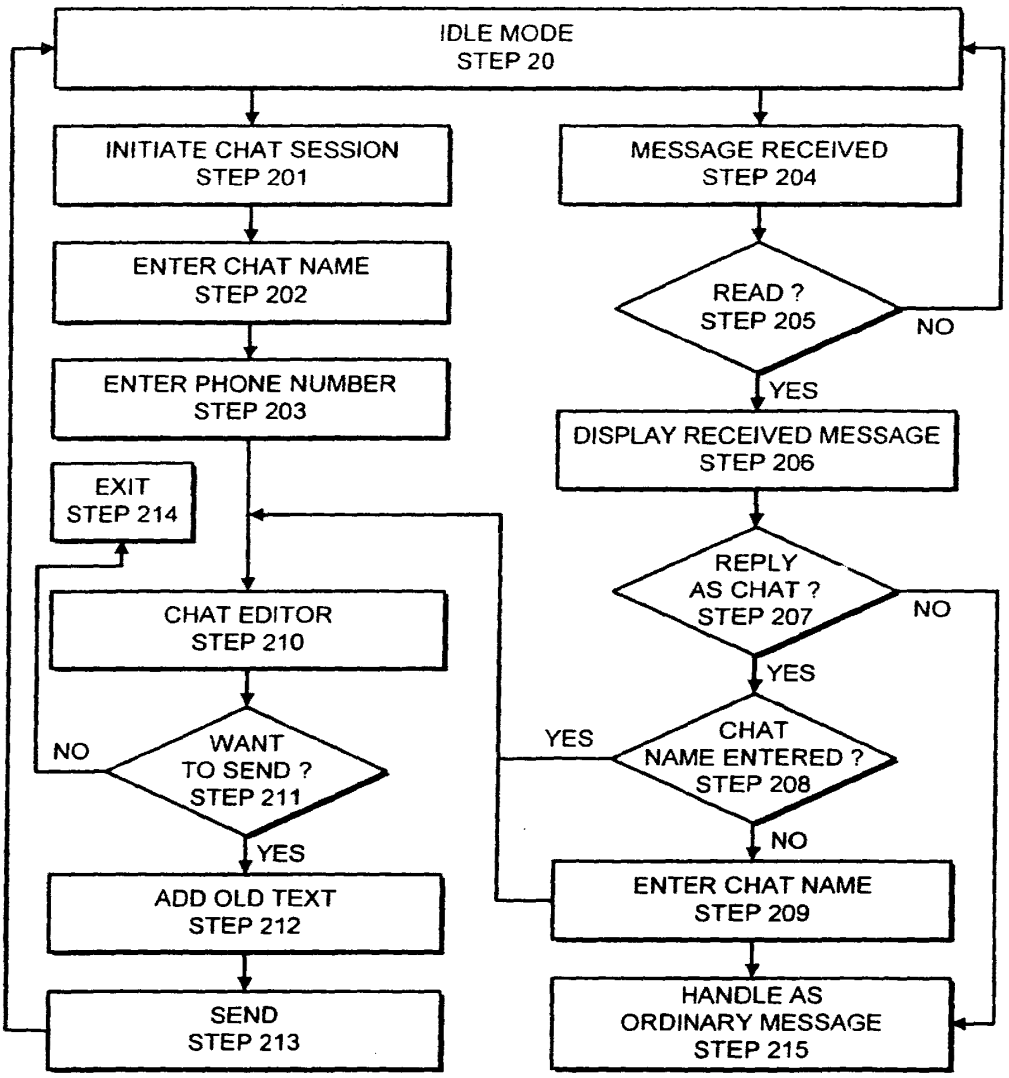


FIG. 6

IPR2023-01271 Page 249

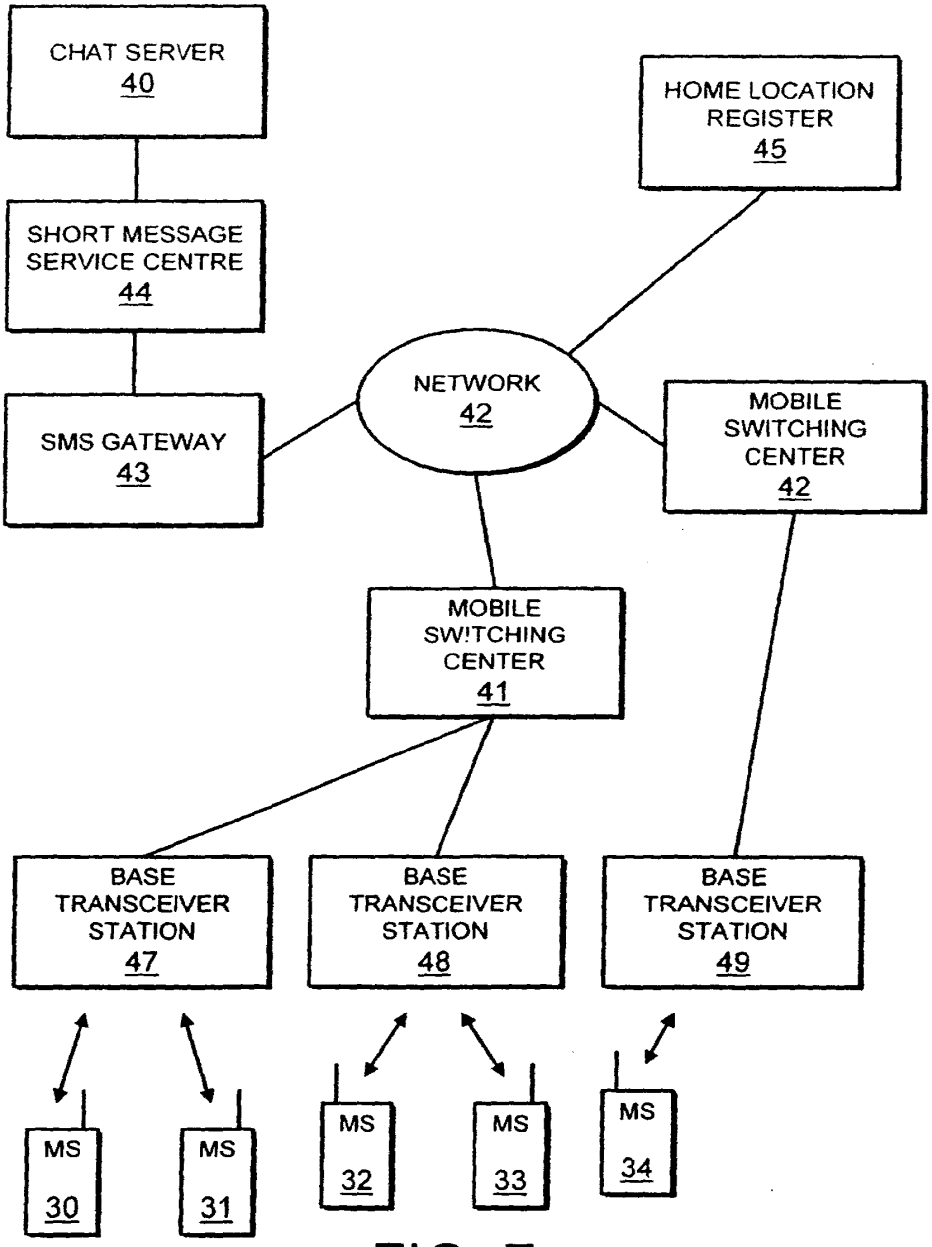


FIG. 7

IPR2023-01271 Page 250

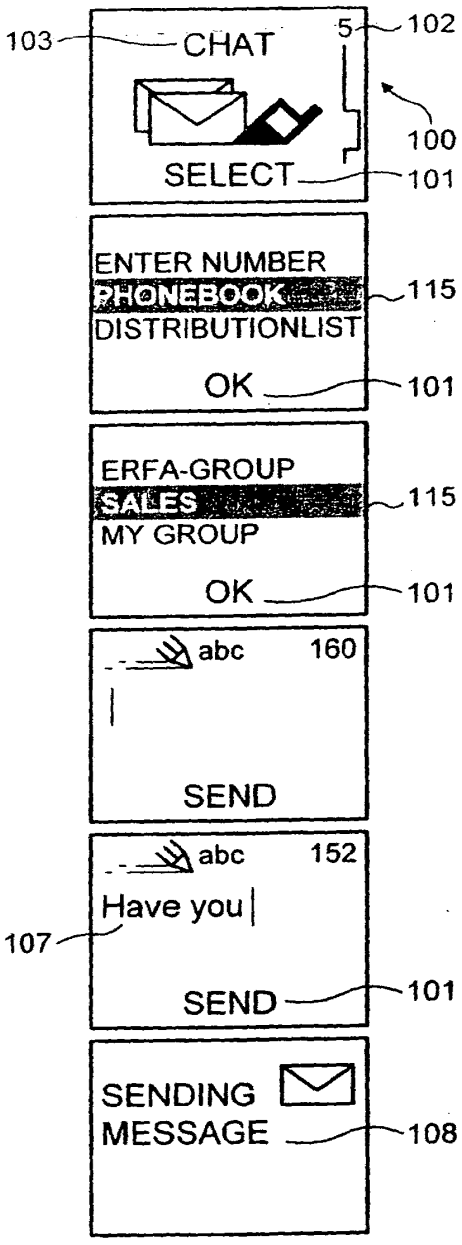


FIG. 8

CID: <EP_____1109415A2_I_>

IPR2023-01271 Page 251

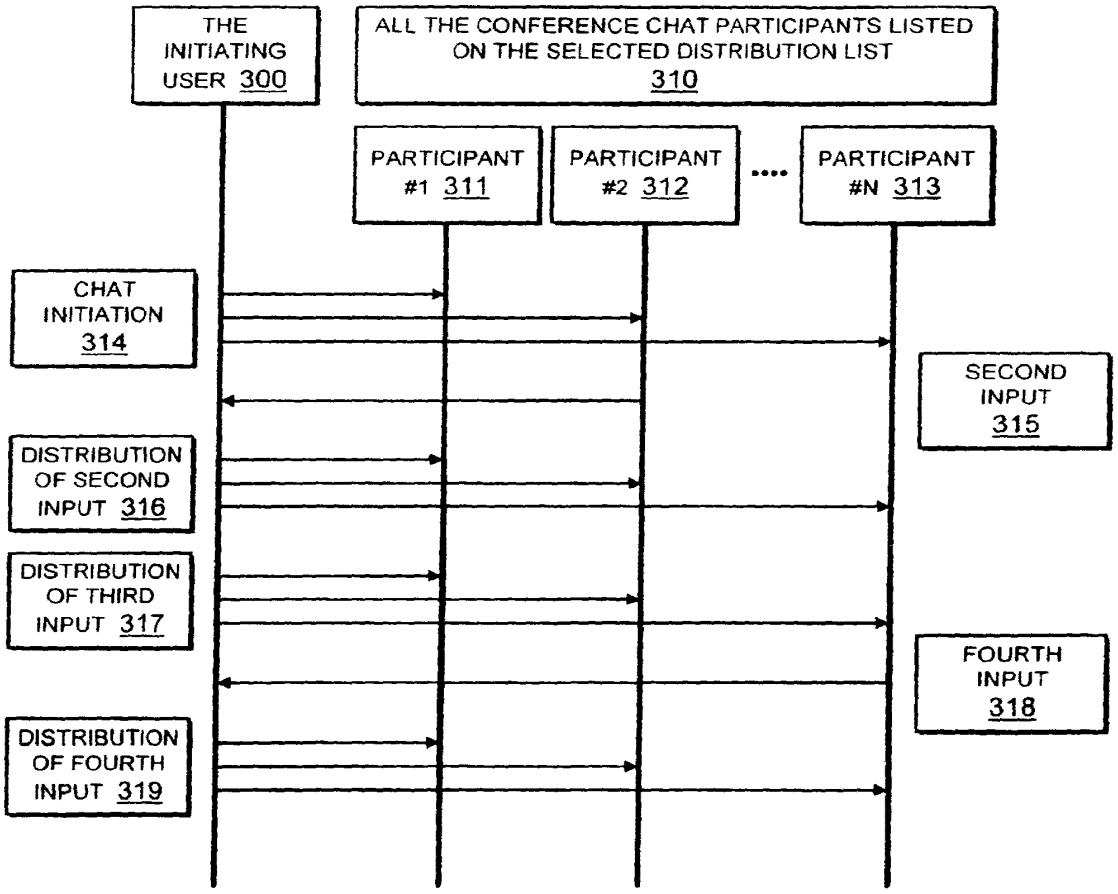


FIG. 9

ID: EP 1109415A2 I

IPR2023-01271 Page 252

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/106,160	04/13/2005	Jin-Woo You	51876P836	4038

8791 7590 09/08/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
LE, DANH C	

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	11/106,160	YOU ET AL.	
	Examiner	Art Unit	
	DANH C. LE	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2006*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ 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 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-13* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

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

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-5, drawn to a wireless communication terminal having a function of providing an integrate message service, classified in class 455, subclass 550.1.

II. Claims 6-10, drawn to a method for transmitting a message in a wireless communication terminal, classified in class 455, subclass 418.

III. Claims 11-15, drawn to a method for receiving a message in a wireless communication terminal, classified in class 455, subclass 412.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and II, III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination contains a key pad for receiving message content and a menu selecting signal in the IUI. The subcombination has separate utility such as having message notification.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C. LE whose telephone number is 571-272-7868. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



August 30, 2005
DANH CONG LE
PRIMARY EXAMINER

OIPE IAP55
OCT 10 2006
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application No.	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	2617
Examiner Name	Le, Danh C
Total Number of Pages in This Submission	10
Attorney Docket Number	7937P017

ENCLOSURES ***(check all that apply)***

- [X] Fee Transmittal Form
  - [ ] Fee Attached
- [X] Amendment / Response
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
  - [ ] PTO/SB/08
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Basic Filing Fee
  - [ ] Declaration/POA
- [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s)
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [X] Other Enclosure(s) *(please identify below):*

return postcard

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Eric S. Hyman, Reg. No. 30,139 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	
Date	10/5/06

CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Typed or printed name	Kumiko Alexander		
Signature		Date	10/6/06

Based on PTO/SB/21 (09-04) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 11/30/2005.
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OCT 1 0 2006
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FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT ($)

Complete if Known	
Application Number	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Examiner Name	Le, Danh C
Art Unit	2617
Attorney Docket No.	7937P017

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20. ☒ Credit any overpayments

FEE CALCULATION

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
2053	130	2053	130	Non-English specification	
1251	120	2251	60	Extension for reply within first month	
1252	450	2252	225	Extension for reply within second month	
1253	1,020	2253	510	Extension for reply within third month	
1254	1,590	2254	795	Extension for reply within fourth month	
1255	2,160	2255	1,080	Extension for reply within fifth month	
1401	500	2401	250	Notice of Appeal	
1402	500	2402	250	Filing a brief in support of an appeal	
1403	1,000	2403	500	Request for oral hearing	
1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1460	130	2460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
1809	790	1809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	
				Other fee (specify) _____	
				SUBTOTAL (2)	($)

SUBMITTED BY Complete (if applicable)

Name (Print/Type)	Eric S. Hyman	Registration No. (Attorney/Agent)	30,139	Telephone	(310) 207-3800
Signature				Date	10/5/06

Based on PTO/SB/17 (12-04) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 12/15/2004.
SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450



Atty. Docket No.: 007937.P017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the application of:	)	
	)	Examiner: Le, Danh C
Jin-Woo You	)	
	)	
Serial No.: 11/106,160	)	Art Unit: 2617
	)	
Filed: April 13, 2005	)	
	)	
For: WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF	)	

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Box No-Fee Amendment

Dear Sir:

In response to the outstanding Office Action mailed September 8, 2006, Applicant hereby elects Group I, claims 1-5, drawn to a wireless communication terminal having a function or providing an integrate message service, classified in class 455, subclass 550.1.

ESH:kla

IN THE CLAIMS

1.(original) A wireless communication terminal having a function of providing an integrated messaging service, the wireless communication terminal comprising:

a wireless transceiver for transceiving a message to/from an outside device through a wireless network;

a storage for storing an integrated messaging service program and messages in order to provide an integrated user interface (IUI);

a keypad for receiving a message content and a menu selecting signal in the IUI;

a displayer for displaying the message content and description data in the IUI; and

a controller for providing the IUI to the keypad and the displayer by operating the integrated messaging service program, determining a message kind of the message to be transmitted which is inputted in the IUI, generating an outgoing message including identification data corresponding to the message kind, transmitting the outgoing message, displaying the message content and the description data of the outgoing message in the IUI, determining a message kind of a received message, dividing the received message into a message content and description data, displaying the message content and the description data in the IUI, and controlling elements in the wireless communication terminal.

2. (original) The wireless communication terminal as recited in claim 1, wherein the description data include incoming/outgoing description data in order to present whether the message is transmitted or received.

3. (original) The wireless communication terminal as recited in claim 1, wherein the controller generates a multimedia message including a multimedia file and transmits the multimedia message to a multimedia contents server so that a wireless communication terminal of a receiving part accesses to the multimedia contents server and receives the multimedia message when the outgoing message is a multimedia message; and

the controller accesses to the multimedia contents server based on a Uniform Resource Locator (URL) included in an informing message and receives the multimedia message including the multimedia file to thereby display the multimedia message in the IUI when an incoming message is an informing message of the multimedia message.

4. (original) The wireless communication terminal as recited in claim 3, wherein the outgoing/incoming message is displayed with incoming/outgoing description data to indicate whether the message is transmitted or received and file description data to present a file kind included in the message content.

5. (original) The wireless communication terminal as recited in claim 3, wherein when a display form transformation request is received, an IUI display form is transformed into a conventional display form or the conventional display form into the IUI display form, and the message content is displayed on the displayer.

6. (withdrawn)A method for transmitting a message in a wireless communication terminal for providing an integrated messaging service, the method comprising the steps of:

a) inputting a message content in an integrated user interface (IUI);

b) determining a message kind of the message content;

c) generating an outgoing message including identification data;

d) transmitting the outgoing message to a receiving terminal; and

e) displaying the message content with description data in the IUI.

7. (withdrawn)The method as recited in claim 6, wherein the description data include incoming/outgoing description data in order to inform whether the message is transmitted or received.

8. (withdrawn)The method as recited in claim 6, further comprising a step of:

f) generating a multimedia message including a multimedia file and transmitting the multimedia message to a multimedia contents server so that, at a receiving terminal connects to the multimedia contents server and receives the multimedia message when an outgoing message is a multimedia message.

9. (withdrawn)The method as recited in claim 8, wherein the description data include incoming/outgoing description data in order to inform whether the message is transmitted or received and file description data to inform a file kind of the message content.

10. (withdrawn)The method as recited in claim 6, wherein the step d) includes a step of:

d1) when a display form transformation request is received, transforming an IUI display form into a conventional display form or the conventional display form into the IUI display form, and displaying the message content on the displayer.

11. (withdrawn)A method for receiving a message in a wireless communication terminal for providing an integrated message service, the method comprising the steps of:

a) determining a message kind of an incoming message;

b) informing of the incoming message to a user;

c) when a display form transformation request is received, dividing the incoming message into a message content and identification data and transforming the message content into a display form of an integrated user interface (IUI); and

d) displaying the transformed message content and description data in the IUI.

12. (withdrawn)The method as recited in claim 11, wherein the description data include incoming/outgoing description data in order to present whether the message is transmitted or received.

13. (withdrawn)The method as recited in claim 11, further comprising a step of:

e) in the receiving terminal, accessing to the multimedia contents server based on a Uniform Resource Locator (URL) included in an informing message and receiving the multimedia message including the multimedia file to thereby display the multimedia in the IUI when a receiving message is an informing message of the multimedia message.

14. (withdrawn)The method as recited in claim 13, wherein the description data include incoming/outgoing description data in order to present whether the message is transmitted or received and file description data to present the file description data of the message content.

15. (withdrawn)The method as recited in claim 11, wherein the step d) includes a step of:

d1) when a display form transformation request is received, transforming an IUI display form into a conventional display form or the conventional display form into the IUI display form, and displaying the message content on the displayer.

REMARKS

Claims 1-15 are pending in the present application. Applicant elects claims 1-5 of Group I for prosecution. Applicant requests withdrawal of claims 6-15 from consideration.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Date: 10/5/06

By: _____

Eric S. Hyman, Reg. No. 30,139

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(310) 207-3800

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Kumiko Alexander 10/6/06

Kumiko Alexander Date

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PTO/SB/06 (12-04)
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PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number 11/1061e0

APPLICATION 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 (37 CFR 1.16(a), (b), or (c))							
SEARCH FEE (37 CFR 1.16(k), (i), or (m))							
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))							
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	x =		OR	x =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	x =			x =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

10-10-06

AMENDMENT A		(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 ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 20	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	15	@ad>"20040501" and ((controller micro-processor processor micro) with divid$4 with content with data).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/06/24 11:25
S827	254	@ad<"20040501" and determin$4 with divid$4 with content with data	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/06/20 14:34
S841	190	@ad<"20040501" and (controller micro-processor processor micro) with divid$4 with content with data	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/06/24 11:22

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number 11/106,120

APPLICATION 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 (37 CFR 1.16(a), (b), or (c))							
SEARCH FEE (37 CFR 1.16(k), (i), or (m))							
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))							
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 = *		X =		OR	X =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 = *		X =			X =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

10-10-06

AMENDMENT A	(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 ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 15	Minus	** 20	=	X =		OR	X =	
Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	=	X =		OR	X =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

Examiat

AMENDMENT B	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
6/20/07									
Total (37 CFR 1.16(i))	* 5	Minus	** 20	=	X =		OR	X =	
Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	=	X =		OR	X =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

8791 7590 06/29/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER	
LE, DANH C	
ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 06/29/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/106,160	04/13/2005	Jin-Woo You	51876P836	4038

TITLE OF INVENTION: WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$0	$1700	10/01/2007

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) 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. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY 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 the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop 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.

PTOL-85 (Rev. 07/06) Approved for use through 06/30/2007.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including 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: Use Block 1 for any change of address)

8791 7590 06/29/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) 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 or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/106,160	04/13/2005	Jin-Woo You	51876P836	4038

TITLE OF INVENTION: WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$0	$1700	10/01/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
LE, DANH C	2617	455-466000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ 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; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

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 _____
2 _____
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. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

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 fee(s) are submitted:
☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) 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 United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/106,160	04/13/2005	Jin-Woo You	51876P836	4038

8791 7590 06/29/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER	
LE, DANH C	
ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 06/29/2007

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 226 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 226 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 07/06) Approved for use through 06/30/2007.

Notice of Allowability	Application No. 11/106,160	Applicant(s) YOU ET AL.	
	Examiner DANH C. LE	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

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 (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *6/20/07*.

2. ☒ The allowed claim(s) is/are *1-5*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

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 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Hyman on 6/20/07.

Claims 6-15 are cancelled.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 7/6/06 and 8/24/06 have been considered by the examiner and made of record in the application file.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

Claims 1-5 are allowed.

As to claim 1, Yoshimura et al (US 2003/0105925) teaches content distribution system... content distribution method. Suwa (US 2003/0095518) teaches radio communication method. Sato et al (US 2004/0253965) teaches terminal apparatus. Kawai et al (US 7,136,917) teaches communication system and method having communication data dividing and transmitting functions. Higuchi et al (US 2001/0028605) teaches electronic timepiece with calendar month-end non-correction device. Sato et al (US 2004/0165721) teaches encryption/decryption unit and storage medium. Nagakubo et al (US 2002/0015112) teaches infared remote control device for plasma display device. Makipaa et al (US 6,556,217) teaches system and method for content adaptation and pagination based on terminal capabilities. Eric Yeh et al (US 2005/0164721) teaches method and system for mobile device messaging. The teaching of above prior arts either alone or in combination fails to teach further comprising controller for providing the IUI to the keypad and the displayer by operating the integrated messaging service program, determining a message kind of the message to be transmitted which is inputted in the IUI, generating an outgoing message including

identification data corresponding to the message kind, transmitting the outgoing message, displaying the message content and the description data of the outgoing message in the IUI, determining a message kind of a received message, dividing the received message into a message content and description data, displaying the message content and the description data in the IUI, and controlling elements in the wireless communication terminal.

Dependent claims 2-5 are allowed for the same reason.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C. LE whose telephone number is 571-272-7868. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 24, 2007
DANH LE
PRIMARY EXAMINER

Notice of References Cited	Application/Control No. 11/106,160	Applicant(s)/Patent Under Reexamination YOU ET AL.	
	Examiner DANH C. LE	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0005125	01-2003	Berthaud et al.	709/226
*	B	US-2003/0095518	05-2003	Suwa, Yutaka	370/336
*	C	US-2004/0253965	12-2004	Sato et al.	455/456.3
*	D	US-7,136,917	11-2006	Kawai et al.	709/223
*	E	US-2001/0028605	10-2001	Higuchi et al.	368/37
*	F	US-2004/0165721	08-2004	Sano et al.	380/028
*	G	US-2002/0015112	02-2002	Nagakubo et al.	348/734
*	H	US-6,952,712	10-2005	Yoshimura et al.	709/201
*	I	US-6,556,217	04-2003	Makipaa et al.	345/667
*	J	US-2005/0164721	07-2005	Eric Yeh et al.	455/466
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

OIPE
JUL 0 8 2007
PATENT & TRADEMARK OFFICE

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	1	of	2

Complete if Known	
Application Number	~~11/103,160~~ 11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number - Kind Code[2] (if known)	Publication Date or Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/D.L./		US-2004/015547 A1	01-22-2004	Griffin, et al.	→
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/D.L./		EP 1 349 407 A2	01-10-2003	Casio Computer Co., Ltd.	↓	
✓		EP 1 109 415 A2	06-20-2001	Nokia Mobile Phones Ltd.	↓	

Examiner Signature	/Danh Le/	Date Considered	06/10/2007

*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.

[1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

Based on PTO/SB/08A (08-03) as modified by Stekoly, Solokoff, Taylor & Zafman (wt) 08/11/2003.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	~~11/103,160~~ 14/106,160
(use as many sheets as necessary)				Filing Date	April 13, 2005
				First Named Inventor	Jin-Woo You
				Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	7937P017

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

Examiner Signature	/Danh Le/	Date Considered	06/10/2007

*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.

[1]Applicant's unique citation designation number. [2]Applicant is to place a check mark here if English language Translation is attached.

Based on PTO/SB/08B (08-03) as modified by Blakely, Sokoloff, Taylor & Zafman (wh) 09/11/2003.
Send To: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

OIPE
AUG 24 2006
PATENT & TRADEMARK OFFICE

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number - Kind Code[2] *(if known)*	Publication Date or Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/D.L./		US-2004/015547 A1	01-22-2004	Griffin, et al.	
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3] - Number[4] - Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/D.L./		EP 1 349 407 A2	01-10-2003	Casio Computer Co., Ltd.		
		EP 1 109 415 A2	06-20-2001	Nokia Mobile Phones Ltd.		

Examiner Signature	/Danh Le/	Date Considered	06/10/2007

*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.

[1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3]Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

Based on PTO/SB/08A (08-03) as modified by Blakely, Sokoloff, Taylor & Zafman (wlr) 08/11/2003.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	2	of	2

Complete if Known	
Application Number	11/106,160
Filing Date	April 13, 2005
First Named Inventor	Jin-Woo You
Art Unit	
Examiner Name	
Attorney Docket Number	7937P017

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

Examiner Signature	/Danh Le/	Date Considered	06/10/2007

*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.

[1]Applicant's unique citation designation number. [2]Applicant is to place a check mark here if English language Translation is attached.

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 4038

SERIAL NUMBER	FILING OR 371(c) DATE / RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/106,160	04/13/2005	455	2617	51876P836

APPLICANTS

Jin-Woo You, Seoul, KOREA, REPUBLIC OF;
SangWoo Suk, Seoul, KOREA, REPUBLIC OF;

** CONTINUING DATA ********** NO

** FOREIGN APPLICATIONS **********

REPUBLIC OF KOREA 10-2004-0025882 04/14/2004 YES
REPUBLIC OF KOREA 10-2004-0083073 10/18/2004

IF REQUIRED, FOREIGN FILING LICENSE GRANTED **
05/12/2005

		STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed ☒ yes ☐ no 35 USC 119 (a-d) conditions met ☒ yes ☐ no ☐ Met after Allowance Verified and Acknowledged _____ Examiner's Signature _____ Initials		KOREA, REPUBLIC OF	6	15	3

ADDRESS
8791

TITLE

Wireless communicating terminal for providing integrated messaging service and method thereof

FILING FEE RECEIVED	FEES: Authority has been given in Paper	
1130	No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Issue Classification	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/106,160	YOU ET AL.	
	Examiner	Art Unit	
	DANH C. LE	2617	

ISSUE CLASSIFICATION

ORIGINAL CLASS	ORIGINAL SUBCLASS	CROSS REFERENCE(S) CLASS	CROSS REFERENCE(S) SUBCLASS (ONE SUBCLASS PER BLOCK)						
455	550.1	455	466	418					
INTERNATIONAL CLASSIFICATION		709	213	201					
H04M 1/00									
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(Assistant Examiner) (Date)

Danh 6/24/06

(Primary Examiner) (Date)

DANH LE

Total Claims Allowed: 5

O.G. Print Claim(s)	O.G. Print Fig.
1	2

Denise Hopkins 6/27/07
(Legal Instruments Examiner) (Date)

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

PRIMARY EXAMINER

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		31		61		91		121		151		181
2	2		32		62		92		122		152		182
3	3		33		63		93		123		153		183
4	4		34		64		94		124		154		184
5	5		35		65		95		125		155		185
6	6		36		66		96		126		156		186
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	30		60		90		120		150		180		210

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
11/106,160	YOU ET AL.
Examiner	**Art Unit**
DANH C. LE	2617

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
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Claim		Date								
Final	Original	6/24/06								
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Search Notes

Application/Control No.	Applicant(s)/Patent under Reexamination
11/106,160	YOU ET AL.
Examiner	**Art Unit**
DANH C. LE	2617

SEARCHED

Class	Subclass	Date	Examiner
455	550.1	6/20/07	DL
	466		
	418		
709	213		
	201		

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner
Interference Search		6/24/07	DL

SEARCH NOTES (INCLUDING SEARCH STRATEGY)

	DATE	EXMR
Inventor Name Search (Check for double patenting)	6/20/07	DL
EAST Search (US, USPUB, JPO, EPO, DERWENT)		

PART B - FEE(S) TRANSMITTAL

OIPE SEP 10 2007 PATENT & TRADEMARK OFFICE

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including 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: Use Block 1 for any change of address)

8791 7590 06/29/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040
09/10/2007 RMEBRAHI 00000061 11106160

01 FC:1501 1400.00 OP
02 FC:1504 300.00 OP
03 FC:8001 30.00 OP

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) 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 or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Linda Metz	(Depositor's name)
Linda Metz	(Signature)
9-7-07	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/106,160	04/13/2005	Jin-Woo You	51876P836	4038

TITLE OF INVENTION: WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$0	$1700	10/01/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
LE, DANH C	2617	455-466000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ 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; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

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 BLAKELY SOKOLOFF
2 TAYLOR & ZAFMAN
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. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: CURITEL COMMUNICATIONS, INC.
(B) RESIDENCE: (CITY and STATE OR COUNTRY): REPUBLIC OF KOREA

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 fee(s) are submitted:
☑ Issue Fee
☑ Publication Fee (No small entity discount permitted)
☑ Advance Order - # of Copies ten (10)

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☑ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 02-2666 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) 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 United States Patent and Trademark Office.

Authorized Signature _____ Date 9/6/07

Typed or printed name Eric S. Hyman Registration No. 30,139

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/106,160	10/16/2007	7283839	51876P836	4038

8791 7590 09/26/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 226 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Jin-Woo You, Seoul, KOREA, REPUBLIC OF;
SangWoo Suk, Seoul, KOREA, REPUBLIC OF;

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4337887

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PANTECH INC	10/31/2016

RECEIVING PARTY DATA

Name:	GOLDPEAK INNOVATIONS INC
Street Address:	SUITE #806, DIGITAL-RO 34-GIL, 55, GURO-GU
City:	SEOUL
State/Country:	KOREA, REPUBLIC OF

PROPERTY NUMBERS Total: 61

Property Type	Number
Patent Number:	7894330
Patent Number:	8102804
Patent Number:	7505775
Patent Number:	7725796
Patent Number:	8873519
Patent Number:	9313743
Patent Number:	8848674
Patent Number:	8649346
Patent Number:	9237566
Patent Number:	9008046
Patent Number:	8780860
Patent Number:	9054835
Patent Number:	9077510
Patent Number:	8538411
Patent Number:	9025485
Patent Number:	9088396
Patent Number:	9136924
Patent Number:	8787216
Patent Number:	8837452
Patent Number:	8811518
Patent Number:	9319252

Property Type	Number
Patent Number:	9088992
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Patent Number:	6809641
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Patent Number:	7103387
Patent Number:	7925242
Patent Number:	7475332
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Patent Number:	7636845
Patent Number:	8078145
Application Number:	14368224
Application Number:	14356218

Property Type	Number
Application Number:	14348840
Application Number:	14394248

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 5717304574
Email: edward.park@fidelis-laws.com
Correspondent Name: FIDELIS LAW GROUP, PLLC
Address Line 1: 444 W BROAD ST UNIT 426
Address Line 4: FALLS CHURCH, VIRGINIA 22046

NAME OF SUBMITTER:	EDWARD PARK
SIGNATURE:	/sjp/
DATE SIGNED:	03/27/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

source=Patent Assignment Agreement_2016.11 executed_Redacted#page1.tif
source=Patent Assignment Agreement_2016.11 executed_Redacted#page2.tif
source=Patent Assignment Agreement_2016.11 executed_Redacted#page3.tif
source=Patent Assignment Agreement_2016.11 executed_Redacted#page4.tif

PATENT ASSIGNMENT

This Patent Assignment (the "Assignment") is made from **PANTECH INC** ("Assignor"), a corporation organized and existing under the laws of Korea with its principal place at Pantech Building, 179 Seongam-ro Mapo-go, Seoul, Korea, to **GoldPeak Innovations Inc** ("Assignee"), a corporation organized under the laws of the Republic of Korea, having an address at suite # 806, Digital-ro 34-gil, 55, Guro-gu, Seoul, Korea.

WHEREAS, Assignor and Assignee have entered into that certain Patent Assignment Agreement dated as of October 31, 2016 (the "Agreement"), whereby, among other things, Assignor has agreed to assign, and Assignee has agreed to accept, all of those patents and patent applications listed on Annex A hereto, and all existing and any future Patents that may be granted therefore throughout the world, all of their foreign counterparts, reissues, re-examinations, renewals, extensions, provisional, divisional and continuation applications including continuation in part, and any United States and foreign applications and patents that claimed, claim and will claim priorities to those listed above, as well as all patents and applications from which those listed above derive, relate, or claim priority (collectively, the "Patent Rights").

NOW THEREFORE, in exchange for good and valuable consideration under the Agreement, the receipt and sufficiency of which Assignor hereby acknowledges, and as a condition to Assignee entering into the Agreement, Assignor hereby assigns and transfers to Assignee and Assignee accepts, all of the right, title and interest of Assignor throughout the world in and to any and all inventions claimed or disclosed in the Patent Rights.

This Assignment includes all of Assignor's right, title and interest in, to and under each of the Patent Rights (including without limitation, rights to damages and payments for past, present and future infringements or misappropriations, including the right to collect and receive any royalties, or settlements for such infringements, all rights to sue for injunctive or other equitable relief, and any and all causes of action relating to any of the inventions or discoveries thereof), and, as agreed to between the parties, all continuations, continuations-in-part, divisionals, substitutes, reexaminations, post-opposition foreign counterpart patents and applications, reissues and extensions thereof, if any, and, Assignor requests the Commissioner of Patents of the United States (and all foreign officials, whose duty it is to issue patents and applications as aforesaid) to record Assignee as the owner of such Patent Rights, to the same extent as held by Assignor, and to issue the Letters Patent for such Patent Rights in the name of Assignee, as assignee of the Patent Rights.

This instrument shall inure to the benefit of Assignee and its successors and assigns, and shall be binding upon Assignor and its successors and assigns.

Assignor hereby covenants that it has full right to convey the entire interest herein assigned, and that it has not executed, and will not execute, any agreement in conflict with this Assignment. Assignor hereby further covenants and agrees that it will communicate to Assignee any and all facts known to it respecting the Patent Rights, including the existing licenses, encumbrances or other restrictions that are expressly binding on successors to the Patent Rights, and testify in any

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legal proceeding, sign all lawful papers, execute and deliver all papers and take any actions that may be necessary or desirable to perfect the title to any aforementioned patents and inventions, execute all divisional, continuation, reexamination, reissue, substitute applications, and any similar and equivalent procedure under current and future legislations and regulations throughout the world, and make all rightful oaths to aid Assignee to obtain and enforce proper patent protection for said inventions in all countries.

Date of: _____

PANTECH INC.

_____
Signature

Joon CHUNG
Name

CEO
Title

GoldPeak Innovations Inc. :

_____
Signature

Youngjoon Rhee
Name

CEO
Title

JC

K

Annex A

Patents and/or Patent Applications

NO	Category	Application No	Filing Date	Patent No	Issued Date
1	[redacted]	12/388,243	2/18/2009	US 7894330	2/22/2011
2		12/347,352	12/31/2008	US 8102804	1/24/2012
3		11/165,744	6/24/2005	US 7505775	3/17/2009
4		11/320,374	12/27/2005	US 7725796	5/25/2010
5		13/715,278	12/14/2012	US 8873519	10/28/2014
6		14/057,557	3/9/2014	US 9313743	4/12/2016
7		13/481,481	5/25/2012	US 8848674	9/30/2014
8		13/332,089	12/20/2011	US 8649346	2/11/2014
9		13/877,827	4/4/2013	US 9237566	1/12/2016
10		14/056,474	10/17/2013	US 9008046	4/14/2015
11		13/098,056	4/29/2011	US 8780860	7/15/2014
12		13/578,531	8/10/2012	US 9054835	6/9/2015
13		13/504,908	4/27/2012	US 9077510	7/7/2015
14		12/916,203	10/29/2010	US 8538411	9/17/2013
15		13/891,522	5/10/2013	US 9025483	5/5/2015
16		14/547,112	11/18/2014	US 9088396	7/21/2015
17		13/807,706	12/28/2012	US 9136924	9/15/2015
18		13/149,223	5/31/2011	US 8787216	7/22/2014
19		14/043,005	10/1/2013	US 8837452	9/16/2014
20		13/505,707	5/2/2012	US 8811518	8/19/2014
21		13/500,288	4/4/2012	US 9319252	4/19/2016
22		13/847,319	3/19/2013	US 9088992	7/21/2015
23		13/651,034	10/12/2012	US 8917619	12/23/2014
24		13/984,476	8/8/2013	US 9191853	11/17/2015
25		13/978,519	7/5/2013	US 9386600	7/5/2016
26		13/961,380	8/7/2013	US 8964520	2/24/2015
27		10/730,853	12/8/2003	US 7660404	2/9/2010
28		10/194,038	7/11/2002	US 6809641	10/26/2004
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30		11/007,603	12/7/2004	US 7260419	8/21/2007
31		13/300,799	11/21/2011	US RE43789	11/6/2012
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33	[redacted]	13/171,344	6/28/2011	US 8200899	6/12/2012
34		11/295,202	12/6/2005	US 7567530	7/28/2009
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36		11/050,802	2/7/2005	US 7409225	8/5/2008
37		10/253,256	9/24/2002	US 7136671	11/14/2006
38		12/625,191	11/24/2009	US 8374572	2/12/2013
39		13/015,922	1/28/2011	US 8090405	1/3/2012
40		12/944,436	11/11/2010	US 8060114	11/15/2011
41		10/899,638	7/26/2004	US 7151487	12/19/2006
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43		13/363,428	2/1/2012	US 8319799	11/27/2012
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46		10/214,430	8/8/2002	US 6801271	10/5/2004
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48		12/645,912	12/23/2009	US 8270999	9/18/2012
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51		09/655,036	9/5/2000	US 6557010	4/29/2003
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54		11/134,778	5/19/2005	US 7475332	1/6/2009
55		12/816,688	6/16/2010	US 8331920	12/11/2012
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57		12/150,905	5/1/2008	8078145	12/13/2011
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59		14/556,218	5/5/2014		
60		14/348,840	3/31/2014		
61		14/394,248	10/13/2014		

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: GOLDPEAK INNOVATIONS INC

Application No./Patent No.: 11/106,160 Filed/Issue Date: 04/13/2005

Titled: WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF

GOLDPEAK INNOVATIONS INC, a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: CURITEL COMMUNICATIONS INC. To: PANTECH & CURITEL COMMUNICATIONS INC.

   The document was recorded in the United States Patent and Trademark Office at

   Reel 039982, Frame 0988, or for which a copy thereof is attached.

2. From: YOU, JIN-WOO et al. To: CURITEL COMMUNICATIONS, INC.

   The document was recorded in the United States Patent and Trademark Office at

   Reel 016772, Frame 0613, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: PANTECH & CURITEL COMMUNICATIONS INC. To: PANTECH CO., LTD.

The document was recorded in the United States Patent and Trademark Office at
Reel 039695, Frame 0820, or for which a copy thereof is attached.

4. From: PANTECH CO., LTD. To: PANTECH INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 039983, Frame 0344, or for which a copy thereof is attached.

5. From: PANTECH INC. To: GOLDPEAK INNOVATIONS INC

The document was recorded in the United States Patent and Trademark Office at
Reel 042098, Frame 0451, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/jwkim/	2017-10-24
Signature	Date
Jongwon Kim	66993
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/82 (07-17)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

[x] Practitioners associated with Customer Number: 66390

OR

[ ] Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

[x] The address associated with Customer Number: 66390

OR

[ ]

Firm or individual name		
Address		
City	State	Zip
Country		
Telephone	Email	

Assignee name and address: GOLDPEAK INNOVATIONS INC.
Suite # 806, Digital-ro 34-gil, 55,Guro-gu, Seoul, 08378, South Korea(Republic of Korea)

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature	Date 17 / 10 / 2017
Name Youngjoon Rhee	Telephone +82-10-8929-1905
Title CEO at GOLDPEAK INNOVATIONS INC	

This collection of information is required by 37 CFR 3.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	30740603
Application Number:	11106160
International Application Number:	
Confirmation Number:	4038
Title of Invention:	WIRELESS COMMUNICATING TERMINAL FOR PROVIDING INTEGRATED MESSAGING SERVICE AND METHOD THEREOF
First Named Inventor/Applicant Name:	Jin-Woo You
Customer Number:	8791
Filer:	Jongwon Kim
Filer Authorized By:	
Attorney Docket Number:	51876P836
Receipt Date:	24-OCT-2017
Filing Date:	13-APR-2005
Time Stamp:	12:07:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	11106160-4038.pdf	1967088 06a4dc847ca7fe7fc1c1db0a2a9f69c74e987f41	no	3

Warnings:

Information:					
2	Power of Attorney	80_sb_GPOA_GoldPeak.pdf	684881 66f5127db48c2b8b41fad91bdf748c3f97e394eb	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	2651969	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/106,160	04/13/2005	Jin-Woo You	51876P836

CONFIRMATION NO. 4038

66390
LEX IP MEISTER, PLLC
5180 PARKSTONE DRIVE, SUITE 175
CHANTILLY, VA 20151

POA ACCEPTANCE LETTER

OC000000095088946

Date Mailed: 10/30/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/24/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sleutchit/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/106,160	04/13/2005	Jin-Woo You	51876P836

CONFIRMATION NO. 4038

8791
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 Oakmead Parkway
Sunnyvale, CA 94085-4040

POWER OF ATTORNEY NOTICE

OC000000095088930

Date Mailed: 10/30/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/24/2017.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/sleutchit/

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6105570

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
GOLDPEAK INNOVATIONS INC	05/07/2020

RECEIVING PARTY DATA

Name:	PANTECH CORPORATION
Street Address:	8 YANGJAECHEONRO-21GIL, SUITE 402, SEOCHO-GU,
City:	SEOUL
State/Country:	KOREA, REPUBLIC OF
Postal Code:	06748

PROPERTY NUMBERS Total: 234

Property Type	Number
Patent Number:	10014988
Patent Number:	9548839
Patent Number:	9048991
Patent Number:	8631297
Patent Number:	8631298
Patent Number:	8681599
Patent Number:	7894330
Patent Number:	9750054
Patent Number:	9288824
Patent Number:	10057925
Patent Number:	8611297
Patent Number:	8102804
Patent Number:	8380227
Patent Number:	8583147
Patent Number:	9357486
Patent Number:	8606303
Patent Number:	7505776
Patent Number:	7505775
Patent Number:	7853852
Patent Number:	7725796

Property Type	Number
Patent Number:	9838194
Patent Number:	9270365
Patent Number:	8873519
Patent Number:	9713095
Patent Number:	10045304
Patent Number:	9313743
Patent Number:	10609650
Patent Number:	9680590
Patent Number:	9419739
Patent Number:	8649346
Patent Number:	9860046
Patent Number:	9485072
Patent Number:	9237566
Patent Number:	9008046
Patent Number:	8588185
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Patent Number:	9265034
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Patent Number:	9088396
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Patent Number:	9948440
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Patent Number:	8787216
Patent Number:	9893866
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Patent Number:	10567140
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Patent Number:	8699987

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Patent Number:	8331920

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Patent Number:	10582460
Patent Number:	9516614
Patent Number:	8964645
Patent Number:	9794029
Patent Number:	9363801
Patent Number:	9191932
Patent Number:	9030973
Patent Number:	10004062
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Patent Number:	10282054
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Patent Number:	9113312
Patent Number:	8634818
Patent Number:	10225697
Patent Number:	8332706

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Patent Number:	7366222
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Patent Number:	8098624
Patent Number:	7801074
Patent Number:	7333828
Patent Number:	7123912
Application Number:	15997919
Application Number:	16394702
Application Number:	16392323
Application Number:	15820980
Application Number:	16418708
Application Number:	16272473
Application Number:	16387174
Application Number:	15911518
Application Number:	16203319
Application Number:	16275039
Application Number:	16288278

Property Type	Number
Application Number:	14061316
Application Number:	16287787
Application Number:	15801433
Application Number:	16227369
Application Number:	15705131
Application Number:	16685738
Application Number:	15017133
Application Number:	16405803
Application Number:	16290914
Application Number:	12958749
Application Number:	16452244
Application Number:	16826013
Application Number:	16733106
Application Number:	16819625
Application Number:	16813676
Application Number:	16823170
Application Number:	16806830
Application Number:	16730711
Application Number:	16711269
Application Number:	16806665
Application Number:	16826054
Application Number:	16037067
Application Number:	16184560
Application Number:	16694830

CORRESPONDENCE DATA

Fax Number: (703)643-9789

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 4349062975
Email: yoon@capitoliplaw.com
Correspondent Name: YEASUN YOON
Address Line 1: 20319 KIAWAH ISLAND DR
Address Line 4: ASHBURN, VIRGINIA 20147

ATTORNEY DOCKET NUMBER:	PA01GOLDPEAKTOPANTECHCORP
NAME OF SUBMITTER:	YEASUN YOON
SIGNATURE:	/yoon/
DATE SIGNED:	05/13/2020
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 17
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CONFIRMATORY ASSIGNMENT OF PATENT RIGHTS

This CONFIRMATORY ASSIGNMENT OF PATENT RIGHTS (this "**Assignment**") is made this ____ day of April 2020, by **GoldPeak Innovations Inc,** a Korean company ("**Assignor**"), in favor of **Pantech Corporation.**, a Korean company ("**Assignee**").

WHEREAS, Assignor and Assignee are party to that certain Patent Sale and Purchase Agreement of even date herewith (as in effect from time to time, the "**Patent Sale and Purchase Agreement**"); capitalized terms used but not otherwise defined in this Assignment shall have the respective meaning assigned thereto in the Patent Sale and Purchase Agreement; and

WHEREAS, pursuant to the Patent Sale and Purchase Agreement, Assignor has agreed to sell, convey, transfer, assign and deliver to Assignee all right, title and interest, including, without limitation, Patent Rights, in and to the patents, provisional patent applications, and patent applications listed on listed on Schedule A hereto (collectively, the "**Patents**").

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged by Assignor, Assignor hereby sells, conveys, transfers, and assigns to Assignee, its successors, legal representatives and assigns all right, title and interest in the United States and throughout the world in and to:

The Patents and any and all letters patent that are or may be granted thereon, and any legal equivalent and counterpart thereof that may be granted in any country or countries foreign to the United States, in each case including without limitation any extensions, substitutes, continuations, continuations-in-part, divisions, reissues, reexaminations, and renewals thereof, or other equivalents thereof, and further, all rights and privileges pertaining to the Patents and any and all letters patent that are or may be granted thereon, and any legal equivalent thereof that may be granted in any country or countries foreign to the United States as well as all inventions, invention disclosures, and discoveries described in any of the foregoing and including, without limitation, the right, if any, to petition, sue or otherwise seek and recover damages, profits and any other remedy (monetary, injunctive, declaratory or other relief or remedy of any kind) in the United States and anywhere throughout the world for any past, present and future infringement thereof, conversion or misappropriation of, or other injury, offense, violation, breach of duty or wrong relating to, any of the Patents, or any license, agreement, contract or other matter relating thereto.

Assignor hereby authorizes and requests the Commissioner of Patents and Trademarks of the United States of America and the appropriate officers of all other jurisdictions in which the Patents are or may be registered or in which applications included among the Patents are pending, to record the title of Assignee, its successors, legal representatives and assigns, as owner of all right, title and interest in and to the Patents, and to issue to Assignee, its successors, legal representatives and assigns, all letters patent and any legal equivalent thereof that may be granted in any country or countries foreign to the United States and recordations of patent rights resulting from any application included among the Patents, according to this instrument.

Except to the extent that federal law preempts state law with respect to the matters covered hereby, this Assignment shall be governed by and construed in accordance with the laws of the State of Delaware, without giving effect to any of the principles of conflicts of laws thereof that would result in the application of the laws of another jurisdiction to this Assignment.

This Assignment will inure to the benefit of Assignee, its successors, assigns, and other legal representatives and will be binding upon Assignor, its successors, assigns, and other legal representatives.

Assignor has the full power and authority, and has obtained all Third Party consents, approvals and/or other authorizations required to enter into this Assignment and to carry out its obligations hereunder.

If Assignee is unable for any reason to secure Assignor's or its affiliates or their respective successors' or assigns' signature to any document it is entitled to under this Assignment, Assignor and its affiliates hereby irrevocably designate and appoint Assignee, and Assignee's duly authorized officers, agents and representatives, as its agents and attorneys-in-fact, coupled with an interest, with full power of substitution to act for and on the behalf and instead of Assignor, to execute and file any such document or documents and to do all other lawfully permitted acts to further the purposes of this Assignment with the same legal force and effect as if executed by Assignor.

IN WITNESS WHEREOF, Assignor has caused this Assignment to be executed by its duly authorized officer, as of the date first written above.

ASSIGNOR:

GoldPeak Innovations Inc.

By: Saekyung Park

Name: Saekyung Park

Title: CEO

Schedule A

Family	Country	Application #	Application Date	Issued #	Issued Date
1	U.S.A.	2017-406403	1/13/2017	10014988	7/3/2018
	U.S.A.	15/997,919	6/5/2018	Pending	
	U.S.A.	2015-726014	5/29/2015	9548839	1/17/2017
	U.S.A.	2014-184345	2/19/2014	9048991	6/2/2015
	U.S.A.	2013-750669	1/25/2013	8631297	1/14/2014
	U.S.A.	2012-750953	1/25/2013	8631298	1/14/2014
	U.S.A.	2011-012702	1/24/2011	8681599	3/25/2014
	U.S.A.	2009-388243	2/18/2009	7894330	2/22/2011
	TAIWAN	98105169	2/18/2009	I422201	1/1/2014
	SWEDEN	13170420.7	6/4/2013	2637348	6/24/2015
	NETHERLAND	13170420.7	2/18/2009	2637348	6/24/2015
	JAPAN	2016-215172	11/2/2016	6401224	9/14/2018
	JAPAN	2015-020714	2/4/2015	6038974	11/11/2016
	JAPAN	2013-221358	10/24/2013	5694479	2/13/2015
	JAPAN	2012-037585	2/23/2012	5400186	11/1/2013
	JAPAN	2009-554464	2/13/2009	4982653	5/11/2012
	ITALY	09 153 111.1	2/18/2009	2093924	8/14/2013
	U.K.	13170420.7	2/18/2009	2637348	6/24/2015
	E.P.O	09 153 111.1	2/18/2009	2093924	8/14/2013
	U.K.	09 153 111.1	2/18/2009	2093924	8/14/2013
	FRANCE	13170420.7	2/18/2009	2637348	6/24/2015
	FRANCE	09 153 111.1	2/18/2009	2093924	8/14/2013
	E.P.O	13170420.7	2/18/2009	2637348	6/24/2015
	FINLAND	13170420.7	6/4/2013	2637348	6/24/2015
	E.P.O	15166204.6	5/4/2015	2922233	11/22/2017
	GERMANY	15166204.6	11/13/2017	2922233	11/22/2017
	U.K.	15166204.6	11/13/2017	2922233	11/22/2017
	FRANCE	15166204.6	11/13/2017	2922233	11/22/2017
	GERMANY	09 153 111.1	2/18/2009	2093924	8/14/2013
	GERMANY	13170420.7	2/18/2009	2637348	6/24/2015
	CHINA	201310194226.5	5/23/2013	103354491	8/24/2016
	CHINA	200980000075.7	2/13/2009	101682489	7/24/2013
	CANADA	2715941	2/13/2009	2715941	4/11/2017
	AUSTRALIA	2009332929	2/13/2009	2009332929	11/14/2013
	KR	1020080124084	12/8/2008	925439	10/30/2009
2	U.S.A.	2016-069340	3/14/2016	9750054	8/29/2017

	U.S.A.	2013-960448	8/6/2013	9288824	3/15/2016
	U.S.A.	15/690,042	8/29/2017	10057925	8/21/2018
	U.S.A.	13/340447	12/29/2011	8611297	12/17/2013
	U.S.A.	2008-347352	12/31/2008	8102804	1/24/2012
	E.P.O	08866014	12/31/2008	2227923	7/29/2015
	SWEDEN	08866014	7/1/2010	2227923	7/29/2015
	NETHERLAND	08866014	7/1/2010	2227923	7/29/2015
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	CHINA	201410265062.5	6/13/2014	103997794	1/15/2019
	CHINA	200880127735	8/31/2010	101960906	4/20/2016
	KR	1020150011228	1/23/2015	1540418	7/23/2015
	KR	1020080047656	5/22/2008	1519345	5/6/2015
3	U.S.A.	12/398084	3/4/2009	8380227	2/19/2013
	U.S.A.	12/398072	3/4/2009	8583147	11/12/2013
	U.S.A.	2013-091916	11/27/2013	9357486	5/31/2016
	U.S.A.	12/371526	2/13/2009	8606303	12/10/2013
	U.S.A.	11/691410	3/26/2007	7505776	3/17/2009
	U.S.A.	11/165744	6/24/2005	7505775	3/17/2009
	TURKEY	05756764.6	1/12/2007	1767036	10/31/2012
	SLOVENIA	05756764.6	1/12/2007	1767036	10/31/2012
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	RUMANIA	05756764.6	1/12/2007	1767036	10/31/2012
	PORTUGAL	05756764.6	1/12/2007	1767036	10/31/2012
	POLAND	05756764.6	1/12/2007	1767036	10/31/2012
	NETHERLAND	05756764.6	1/12/2007	1767036	10/31/2012
	MEXICO	PA/a/2006/014980	12/19/2006	263607	1/8/2009
	MONACO	05756764.6	1/12/2007	1767036	10/31/2012
	Luxembourg	05756764.6	1/12/2007	1767036	10/31/2012
	LITHUANIA	05756764.6	1/12/2007	1767036	10/31/2012
	JAPAN	2007-517968	12/20/2006	4654241	12/24/2010
	ITALY	05756764.6	1/12/2007	1767036	10/31/2012
	INDIA	0713/DELNP/2007	1/25/2007	296948	5/22/2018
	ISRAEL	180227	12/21/2006	180227	12/28/2011
	ICELAND	05756764.6	6/25/2005	1767036	10/31/2012
	IRELAND	05756764.6	1/12/2007	1767036	10/31/2012
	HUNGARY	05756764.6	1/12/2007	1767036	10/31/2012
	GREECE	05756764.6	1/12/2007	1767036	10/31/2012

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	E.P.O	12189742	10/24/2012	2552164	9/5/2018
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	CZ	05756764.6	1/12/2007	1767036	10/31/2012
	CYPRUS	05756764.6	1/12/2007	CY20131100062 - EP1767036	10/31/2012
	CHINA	200910224551.5	11/17/2009	ZL200910224551.5	12/7/2016
	CHINA	200580020940.6	12/25/2006	ZL 2005 8 0020940.6	3/24/2010
	CANADA	2569425	12/1/2006	2569425	6/3/2014
	BULGARIA	05756764.6	1/12/2007	1767036	10/31/2012
	Belgium	05756764.6	1/12/2007	1767036	10/31/2012
	AUSTRALIA	2005257642	11/24/2006	2005257642	11/12/2009
	AUSTRIA	05756764.6	1/12/2007	1767036	10/31/2012
	KR	1020050019211	3/8/2005	875419	12/16/2008
	KR	1020090013393	2/18/2009	935294	12/24/2009
	KR	1020040077649	9/25/2004	908260	7/10/2009
4	U.S.A.	12/684847	1/8/2010	7853852	12/14/2010
	U.S.A.	11/320374	12/27/2005	7725796	5/25/2010
	TAIWAN	94146828	12/27/2005	I416897	11/21/2013
	MEXICO	MX/a/2007/007796	6/25/2007	270303	9/23/2009
	JAPAN	2013-236045	11/14/2013	5619262	9/26/2014
	JAPAN	2012-142491	6/25/2012	5554375	6/6/2014
	JAPAN	2007-548094	6/26/2007	5055132	8/3/2012
	ISRAEL	183915	6/14/2007	183915	9/1/2011
	E.P.O	05 818 969.7	7/2/2007	1832024	6/6/2018
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	CHINA	200580044699.0	6/25/2007	ZL200580044699.0	10/9/2012

	AUSTRALIA	2005326877	6/13/2007	2005326877	2/4/2010
	KR	1020040112929	12/27/2004	1079095	10/27/2011
	KR	1020040112926	12/27/2004	1080964	11/1/2011
5	U.S.A.	2016-014792	2/3/2016	9838194	12/5/2017
	U.S.A.	16/394,702	4/25/2019	Pending	
	U.S.A.	2014-513449	10/14/2014	9270365	2/23/2016
	U.S.A.	2012-715278	12/14/2012	8873519	10/28/2014
	JAPAN	2014-547111	6/12/2015	6212048	9/22/2017
	E.P.O	12857526.3	7/15/2014	2792093	7/11/2018
	GERMANY	12857526.3	5/30/2018	2792093	7/11/2018
	FRANCE	12857526.3	5/30/2018	2792093	7/11/2018
	U.K.	12857526.3	5/30/2018	2792093	7/11/2018
	CHINA	2012-80067029	12/14/2012	ZL201280067029.0	9/1/2017
	KR	1020200034567		Pending	
6	U.S.A.	2016-077466	3/22/2016	9713095	7/18/2017
	U.S.A.	15/653,355	7/18/2017	10045304	08/07/2018
	U.S.A.	2014-357557	5/9/2014	9313743	4/12/2016
	U.S.A.	16/293,321	5/5/2019	10609650	3/31/2020
	JAPAN	2014-540937	6/19/2014	5763845	6/19/2015
	E.P.O	12850075	6/4/2014	2782405	8/22/2018
	GERMANY	12850075	6/4/2014	2782405	8/22/2018
	FRANCE	12850075	6/4/2014	2782405	8/22/2018
	U.K.	12850075	6/4/2014	2782405	8/22/2018
	CHINA	201280056210.1	5/15/2014	ZL201280056210.1	5/15/2018
	KR	1020110119154	11/15/2011	10-1867314	6/7/2018
8	U.S.A.	2016-222068	7/28/2016	9680590	6/13/2017
	U.S.A.	2014-147295	1/3/2014	9419739	8/16/2016
	U.S.A.	2011-332089	12/20/2011	8649346	2/11/2014
	JAPAN	2014-134625	6/30/2014	6025783	10/21/2016
	JAPAN	2013-546010	6/14/2013	5575993	7/11/2014
	E.P.O	11850274.9	7/1/2013	Pending	
	CHINA	201180062059	6/21/2013	103270710	3/9/2016
	KR	1020100131864	12/21/2010	10-1867311	6/7/2018
9	U.S.A.	2016-335679	10/27/2016	9860046	1/2/2018
	U.S.A.	16/392,323	4/23/2019	Pending	
	U.S.A.	2016-992186	1/11/2016	9485072	11/1/2016
	U.S.A.	13/877,827	4/4/2013	9237566	1/12/2016
	JAPAN	2013-533775	5/31/2013	5766294	6/26/2015
	E.P.O	11832776.6	4/4/2013	Pending	
	CHINA	201610452850.4	6/21/2016	106059719	6/14/2019

	CHINA	201180049399	4/12/2013	103181109	8/3/2016
	KR	1020100100988	10/15/2010	10-1771550	8/21/2017
10	U.S.A.	14/056,474	10/17/2013	9008046	4/14/2015
	U.S.A.	2011-181456	7/12/2011	8588185	7/19/2013
	E.P.O	11807024.2	12/11/2012	Pending	
	KR	1020100068157	7/14/2010	10-1699023	1/17/2017
11	U.S.A.	2011-098056	4/29/2011	8780860	7/15/2014
12	U.S.A.	2015-733068	6/8/2015	9854545	12/26/2017
	U.S.A.	15/820,980	11/22/2017	Pending	
	U.S.A.	2012-578531	8/10/2012	9054835	6/9/2015
	JAPAN	2015-154385	8/4/2015	6175466	7/14/2017
	E.P.O	11742487.9	9/5/2012	2536227	5/8/2019
	GERMANY	11742487.9	9/5/2012	2536227	5/8/2019
	U.K.	11742487.9	9/5/2012	2536227	5/8/2019
	FRANCE	11742487.9	9/5/2012	2536227	5/8/2019
	SWITZERLAND	11742487.9	9/5/2012	2536227	5/8/2019
	IRELAND	11742487.9	9/5/2012	2536227	5/8/2019
	Luxembourg	11742487.9	9/5/2012	2536227	5/8/2019
	Monaco	11742487.9	9/5/2012	2536227	5/8/2019
	CHINA	201610908740.4	10/18/2016	Pending	
	CHINA	201180014458.7	9/18/2012	ZL201180014458.7	11/16/2016
	KR	10201100086B3	1/28/2011	10-1803015	11/23/2017
14	U.S.A.	15/206,508	7/11/2016	10299251	5/21/2019
	U.S.A.	16/418,708	5/28/2019	Pending	
	U.S.A.	13/875,808	5/2/2013	9392582	7/12/2016
	U.S.A.	13/875,869	5/2/2013	9131482	9/8/2015
	U.S.A.	2013-965837	8/13/2013	9265034	2/16/2016
	U.S.A.	2010-916203	10/29/2010	8538411	9/17/2013
	JAPAN	2014-080506	4/9/2014	5788051	8/7/2015
	JAPAN	2012-536694	4/23/2012	5525055	4/18/2014
	E.P.O	10827139.6	5/23/2012	Pending	
	KR	1020170127789	9/29/2017	10-1828917	2/7/2018
	KR	1020100088151	9/8/2010	10-1785997	10/10/2017
15	U.S.A.	2015-703360	5/4/2015	9787514	10/10/2017
	U.S.A.	16/272,473	2/11/2019	Pending	
	U.S.A.	15/729,604	10/10/2017	10237104	3/19/2019
	U.S.A.	2013-891522	5/10/2013	9025485	5/5/2015
	JAPAN	2015-511380	11/10/2014	6200944	9/1/2017
	E.P.O	13787400.4	12/3/2014	2850757	10/17/2017
	GERMANY	13787400.4	12/3/2014	2850757	10/17/2017

	FRANCE	13787400.4	12/3/2014	2850757	10/17/2017
	U.K.	13787400.4	12/3/2014	2850757	10/17/2017
	CHINA	201380036116.4	1/6/2015	ZL201380036116.4	11/3/2017
	KR	1020120050406	5/11/2012	Pending	
16	U.S.A.	2016-180153	6/13/2016	9742542	8/22/2017
	U.S.A.	2015-801116	7/16/2015	9369251	6/14/2016
	U.S.A.	16/387,174	4/17/2019	Pending	
	U.S.A.	2014-547112	11/18/2014	9088396	7/21/2015
	U.S.A.	2011-816182	2/8/2013	8897182	11/25/2014
	JAPAN	2016-115490	6/9/2016	6185116	8/4/2017
	JAPAN	2015-053011	3/17/2015	5952449	6/17/2016
	JAPAN	2013-524046	2/8/2013	5718464	3/27/2015
	GERMANY	11816634.7	3/11/2013	2605433	2/27/2019
	FRANCE	11816634.7	3/11/2013	2605433	2/27/2019
	SWITZERLAND	11816634.7	3/11/2013	2605433	2/27/2019
	Luxembourg	11816634.7	3/11/2013	2605433	2/27/2019
	MONACO	11816634.7	3/11/2013	2605433	2/27/2019
	IRELAND	11816634.7	3/11/2013	2605433	2/27/2019
	Belgium	11816634.7	3/11/2013	2605433	2/27/2019
	U.K.	11816634.7	3/11/2013	2605433	2/27/2019
	E.P.O	11816634.7	3/11/2013	2605433	2/27/2019
	CHINA	201610412657.8	8/11/2011	ZL201610412657.8	9/24/2019
	CHINA	201180049114.X	4/11/2013	103155456	6/29/2016
	KR	1020100098006	10/7/2010	1719542	3/20/2017
	KR	1020170033713	3/17/2017	1810962	12/24/2017
	KR	1020100098005	10/7/2010	1790502	
17	U.S.A.	2012-807706	12/28/2012	9136924	9/15/2015
	JAPAN	2013-518260	1/4/2013	6293482	2/23/2018
	E.P.O	11803762	2/1/2013	2592763	5/23/2018
	GERMANY	11803762	2/1/2013	2592763	5/23/2018
	FRANCE	11803762	2/1/2013	2592763	5/23/2018
	U.K.	11803762	2/1/2013	2592763	5/23/2018
	CHINA	201180037814.7	1/31/2013	ZL201180037814.7	11/17/2017
	KR	1020160171540	12/15/2016	10-1771549	8/21/2017
18	U.S.A.	2016-151296	5/10/2016	9948440	4/17/2018
	U.S.A.	2014-299679	6/9/2014	9344245	5/17/2016
	U.S.A.	15/911,518	3/5/2018	Pending	
	U.S.A.	2011-149225	5/31/2011	8787216	7/22/2014
	JAPAN	2013-513109	11/27/2012	5931056	5/13/2016
	E.P.O	11790009	12/5/2012	Pending	

	CHINA	201610951696.5	11/2/2016	Pending	
	CHINA	201180037855.6	1/31/2013	ZL201180037855.6	11/30/2016
	KR	1020100055073	6/10/2010	10-1790505	10/26/2017
19	U.S.A.	2016-192233	6/24/2016	9893866	2/13/2018
	U.S.A.	2014-464041	8/20/2014	9380581	6/28/2016
	U.S.A.	2013-043005	10/1/2013	8837452	9/16/2014
	U.S.A.	2011-008685	1/18/2011	8576822	11/5/2013
	JAPAN	2012-548900	7/11/2012	5855016	12/18/2015
	E.P.O	11733132	8/17/2012	Pending	
	U.S.A.	16/285,957	2/26/2019	10567140	2/18/2020
	U.S.A.	15/858,921	12/29/2017	10218485	2/26/2019
	CHINA	201180014290.X	9/17/2012	102804625	11/13/2018
	KR	1020100004219	1/18/2010	1740221	
20	U.S.A.	2009-505707	5/2/2012	8811518	8/19/2014
	KR	1020127011219	4/30/2012	1627393	5/30/2016
21	U.S.A.	2016-131725	4/18/2016	9825686	11/21/2017
	U.S.A.	2009-500288	4/4/2012	9319252	4/19/2016
	U.S.A.	16/203,319	11/28/2018	Pending	
	U.S.A.	15/814,605	11/16/2017	10153821	12/11/2018
	KR	1020127008173	3/29/2012	1621376	5/10/2016
22	U.S.A.	2015-279139	9/28/2016	10057940	8/21/2018
	U.S.A.	2015-801280	7/16/2015	9474025	10/18/2016
	U.S.A.	2013-847319	3/19/2013	9088992	7/21/2015
	KR	1020120027938	3/19/2012	10-1668865	6/12/2018
23	U.S.A.	2016-183158	6/15/2016	9730265	8/8/2017
	U.S.A.	16/275,039	2/13/2019	Pending	
	U.S.A.	2014-560838	12/4/2014	9374213	6/21/2016
	U.S.A.	2012-651034	10/12/2012	8917619	12/23/2014
	KR	1020110110798	10/27/2011	10-1841693	3/19/2018
24	U.S.A.	2016-341296	11/2/2016	9955376	4/24/2018
	U.S.A.	16/288,278	2/28/2019	Pending	
	U.S.A.	2015-937348	11/10/2015	9516538	12/6/2016
	U.S.A.	2013-984476	8/8/2013	9191833	11/17/2015
	E.P.O	12744486.3	8/9/2013	Notice of Allowance at 1/7/2020 (Issue fee due 5/7/2020)	
	CHINA	201610397886.7	6/7/2016	106060866B	1/7/2020
	CHINA	201280014327	9/22/2013	103444100	6/29/2016
	KR	1020170130604	10/11/2017	1860863	5/17/2018
27	U.S.A.	2014-191178	2/26/2014	9124688	9/1/2015
	U.S.A.	2009-553328	9/3/2009	8675844	3/18/2014

	U.S.A.	2003-730853	12/8/2003	7660404	2/9/2010
	HONG KONG	5101471	2/22/2005	1069062	2/12/2010
	E.P.O	06019434.7	12/5/2003	1727386	3/4/2009
	U.K.	06019434.7	9/18/2006	1727386	3/4/2009
	U.K.	03257661.3	12/5/2003	1427242	11/15/2006
	FRANCE	06019434.7	9/18/2006	1727386	3/4/2009
	E.P.O	03257661.3	12/5/2003	1427242	11/15/2006
	FRANCE	03257661.3	12/5/2003	1427242	11/15/2006
	GERMANY	06019434.7	9/18/2006	1727386	3/4/2009
	GERMANY	03257661.3	12/5/2003	1427242	11/15/2006
	CHINA	200310124920.6	12/7/2003	100558200	11/4/2009
	KR	1020020077576	12/7/2002	500670	7/1/2005
28	U.S.A.	2002-194038	7/11/2002	6909641	10/26/2004
	JAPAN	2002-196495	7/4/2002	3684373	6/10/2005
	CHINA	02140676.6	7/12/2002	101271871	8/23/2006
	KR	1020010041909	7/12/2001	420395	2/16/2004
29	U.S.A.	14/225,729	3/26/2014	8933955	12/23/2014
	U.S.A.	2013-035625	9/24/2013	8706168	4/22/2014
	U.S.A.	2012-654043	10/17/2012	8554185	10/8/2013
	U.S.A.	2009-412079	3/26/2009	8311519	11/13/2012
	JAPAN	2009-133842	6/4/2009	4764496	6/17/2011
	KR	1020080052642	6/4/2008	1481408	1/6/2015
30	U.S.A.	2004-007603	12/7/2004	7260419	8/21/2007
	KR	1020030088563	12/8/2003	603437	7/13/2006
31	U.S.A.	14/061316	10/23/2013	Pending	
	U.S.A.	2012-649539	10/11/2012	RE44620	7/9/2013
	U.S.A.	2011-300799	11/21/2011	RE43789	11/6/2012
	U.S.A.	2009-612327	11/4/2009	RE42996	12/6/2011
	U.S.A.	2004-882604	6/30/2004	7292561	11/6/2007
	KR	1020030087886	12/5/2003	633741	10/4/2006
32	U.S.A.	2013-861177	4/11/2013	9661113	5/23/2017
	U.S.A.	2010-716600	3/3/2010	8433379	4/30/2013
	U.S.A.	2005-106118	4/13/2005	7693558	4/6/2010
	KR	1020040025922	4/14/2004	598062	6/30/2006
33	U.S.A.	2011-171344	6/28/2011	8200899	6/12/2012
	U.S.A.	2009-362760	1/30/2009	7991958	8/2/2011
	KR	1020080046505	5/20/2008	985617	9/29/2010
34	U.S.A.	2005-295202	12/6/2005	7567530	7/28/2009
37	U.S.A.	2002-253256	9/24/2002	7136671	11/14/2006
38	U.S.A.	2015-929965	11/2/2015	9729699	8/8/2017

	U.S.A.	2014-196273	3/4/2014	9178982	11/3/2015
	U.S.A.	2013-746125	1/21/2013	8699987	4/15/2014
	U.S.A.	2009-625191	11/24/2009	8374572	2/12/2013
	U.S.A.	15/672,018	8/8/2017	10158752	12/18/2018
	U.S.A.	2003-749788	12/30/2003	7643815	1/5/2010
40	U.S.A.	2010-944436	11/11/2010	8060114	11/15/2011
	U.S.A.	2010-693142	1/25/2010	7912482	3/22/2011
	KR	1020040088333	11/2/2004	0632667	9/28/2006
	U.S.A.	2004-021778	12/23/2004	7668553	2/23/2010
41	U.S.A.	2004-899638	7/26/2004	7151487	12/19/2006
	U.S.A.	2003-749598	12/30/2003	6784829	8/31/2004
	CHINA	200410064136.5	8/19/2004	ZL200410064136.5	4/20/2011
	KR	1020030057848	8/21/2003	540248	12/23/2005
42	U.S.A.	2003-750000	12/30/2003	7006037	2/28/2006
	KR	1020030033022	5/23/2003	543308	1/6/2006
43	U.S.A.	16/287,787	2/27/2019	Pending	
	U.S.A.	2014-307326	6/17/2014	9495730	11/15/2016
	U.S.A.	2012-669162	11/5/2012	8767018	7/1/2014
	U.S.A.	13/363,428	2/1/2012	8319799	11/27/2012
	U.S.A.	2010-814262	6/11/2010	8120626	2/21/2012
	U.S.A.	2006-453433	6/28/2006	7755647	7/13/2010
	CHINA	200610095738.6	6/28/2006	101982805	6/15/2011
	KR	1020050056173	6/28/2005	756129	8/30/2007
44	U.S.A.	2011-275103	10/17/2011	8446915	5/21/2013
	U.S.A.	2010-716575	3/3/2010	8054846	11/8/2011
	U.S.A.	2006-441981	5/26/2006	7693163	4/6/2010
	KR	1020050045625	5/30/2005	653527	11/27/2006
45	U.S.A.	2004-933670	9/3/2004	7102196	9/5/2006
	KR	1020030062570	9/8/2003	539960	12/22/2005
46	U.S.A.	2002-214430	8/8/2002	6801271	10/5/2004
	JAPAN	2002-214711	7/24/2002	3773472	2/24/2006
	E.P.O	02014550	7/1/2002	1 316 841	1/1/2014
	U.K.	02014550	7/1/2002	1 316 841	1/1/2014
	FRANCE	02014550	7/1/2002	1 316 841	1/1/2014
	GERMANY	02014550	7/1/2002	02 014 550.4	1/1/2014
	CHINA	02140295.7	7/4/2002	ZL02140295.7	2/2/2005
	KR	1020010075793	12/3/2001	432009	5/7/2004
47	U.S.A.	2002-071750	2/6/2002	6925313	8/2/2005
	JAPAN	2002-031225	2/7/2002	4034079	11/2/2007
	ITALY	02250854	2/7/2002	1231757	11/15/2006

	HONG KONG	02109172.9	12/18/2002	1047666	3/4/2005
	E.P.O	02250854	2/7/2002	1231757	11/15/2006
	U.K.	02250854	2/7/2002	1231757	11/15/2006
	FRANCE	02250854	2/7/2002	1231757	11/15/2006
	GERMANY	02250854	2/7/2002	1231757	11/15/2006
	CHINA	02106877.1	2/7/2002	ZL02106877.1	10/6/2004
48	U.S.A.	2009-645912	12/23/2009	8270999	9/18/2012
	U.S.A.	2006-647636	12/28/2006	7660592	2/9/2010
	KR	1020050133300	12/29/2005	651594	11/22/2006
49	U.S.A.	2013-860672	4/11/2013	9204118	8/14/2015
	U.S.A.	2010-686822	1/13/2010	8433367	4/30/2013
	U.S.A.	2008-217175	7/2/2008	7668569	2/23/2010
	U.S.A.	2005-255610	10/21/2005	7412262	8/12/2008
	JAPAN	2010-099211	4/22/2010	5210347	3/1/2013
	JAPAN	2005-308910	10/24/2005	4557864	7/30/2010
	GERMANY	102005053671.9	11/10/2005	102005053671	12/24/2008
	CHINA	200510120388.x	11/11/2005	ZL200510120388.X	4/1/2009
	KR	1020040101848	12/6/2004	620741	8/29/2006
50	U.S.A.	2005-106160	4/13/2005	7283839	10/16/2007
	HONG KONG	06103630.4	3/22/2006	1083574	10/15/2010
	E.P.O	05252337	4/14/2005	1587288	11/3/2010
	U.K.	05252337	4/14/2005	1587288	11/3/2010
	FRANCE	05252337	4/14/2005	1587288	11/3/2010
	GERMANY	05252337	4/14/2005	1587288	11/3/2010
	KR	1020040083073	10/18/2004	572464	4/18/2006
	CHINA	200510079253.3	4/14/2005	101694372	5/26/2010
51	U.S.A.	2000-655036	9/5/2000	6557010	4/29/2003
	JAPAN	2000-272619	9/8/2000	3638249	1/21/2005
52	U.S.A.	2002-185141	6/27/2002	7103387	9/5/2006
	JAPAN	2002-201859	7/10/2002	3917027	2/16/2007
	E.P.O	02254584	6/28/2002	1309157	8/17/2011
	U.K.	02254584	6/28/2002	1309157	8/17/2011
	FRANCE	02254584	6/28/2002	1309157	8/17/2011
	GERMANY	02254584	6/28/2002	1309157	8/17/2011
	CHINA	02140907.2	7/9/2002	ZL02140907.2	6/4/2008
	KR	1020010067663	10/31/2001	438208	6/21/2004
53	U.S.A.	15/131,746	4/18/2016	9839000	12/05/2017
	U.S.A.	15/801,433	11/2/2017	Pending	
	U.S.A.	14/563,058	12/8/2014	9319507	4/19/2016
	U.S.A.	2013-972475	8/21/2013	8923927	12/10/2014

	U.S.A.	2011-052836	3/21/2011	8532626	9/10/2013
	U.S.A.	2008-183506	7/31/2008	7925242	4/12/2011
	U.S.A.	2006-354608	2/14/2006	7420566	9/2/2008
	KR	1020050012498	2/15/2005	610487	8/1/2006
54	KR	1020050009451	2/2/2005	656670	12/5/2006
	U.S.A.	2005-134778	5/19/2005	7475332	1/6/2009
55	U.S.A.	2012-676214	11/14/2012	8588755	6/17/2013
	U.S.A.	12/816,688	6/16/2010	8331920	12/11/2012
	KR	1020090065796	7/20/2009	1026905	3/28/2011
56	U.S.A.	2006-580741	10/12/2006	7636845	12/22/2009
	KR	1020050123711	12/15/2005	755536	8/29/2007
57	U.S.A.	2011-311458	12/5/2011	8565724	10/22/2013
	U.S.A.	2008-150905	5/1/2008	8078145	12/13/2011
	U.S.A.	2003-602810	6/24/2003	7386297	6/10/2008
	CHINA	03127468.4	6/30/2003	ZL03127468.4	12/5/2007
	KR	1020020085938	12/28/2002	551421	2/3/2006
62	U.S.A.	2016-082832	3/28/2016	9596352	3/14/2017
	U.S.A.	14/685,143	4/13/2015	9300805	3/29/2016
	U.S.A.	2013-058968	10/21/2013	9008637	4/14/2015
	U.S.A.	2011-182024	7/13/2011	8583098	7/8/2013
	U.S.A.	15/457,560	3/13/2017	10009471	06/26/2018
	U.S.A.	15/988,020	5/24/2018	10257359	4/9/2019
	KR	1020110000808	1/5/2011	1308192	9/6/2013
63	U.S.A.	15/338,993	10/31/2016	9769776	9/19/2017
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64	U.S.A.	2016-173139	6/3/2016	9794029	10/17/2017
	U.S.A.	16/227,369	12/20/2018	Pending	
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	U.S.A.	2013-888891	5/7/2013	9030973	5/12/2015
	JAPAN	2015-511358	11/7/2014	6132370	4/28/2017
	E.P.O	13788210.6	5/7/2013	2850758	9/5/2018
	GERMANY	13788210.6	5/7/2013	2850758	9/5/2018
	FRANCE	13788210.6	5/7/2013	2850758	9/5/2018
	U.K.	13788210.6	5/7/2013	2850758	9/5/2018

	CHINA	201380035640.X	1/4/2015	ZL201380035640.X	1/5/2018
65	U.S.A.	14/589971	1/5/2015	10004062	6/19/2018
	U.S.A.	16/685,738	11/15/2019	Pending	
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66	U.S.A.	2014-754045	6/29/2015	10103916	10/16/2018
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67	U.S.A.	15/167,518	5/27/2016	10162490	12/25/2018
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96	U.S.A.	12/861,637	8/23/2010	8098624	1/17/2012
	U.S.A.	2005-132400	5/19/2005	7801074	9/21/2010
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97	U.S.A.	2003-744321	12/22/2003	7333828	2/19/2008
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AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Texarkana Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
5:22-CV-00113	9/2/2022	for the Eastern District of Texas, Texarkana Division

PLAINTIFF	DEFENDANT
PANTECH CORPORATION and PANTECH WIRELESS, LLC	LG ELECTRONICS INC., and LG ELECTRONICS U.S.A., INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	9,136,924	9/15/2015	Pantech Corporation
2	9,854,545	12/26/2017	Pantech Corporation
3	10,869,247	12/15/2020	Pantech Wireless
4	9,313,809	4/12/2016	Pantech Wireless
5	9,065,486	6/23/2015	Pantech Wireless

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
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5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

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	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,283,839	10/16/2007	Pantech Corporation
2	9,575,631	2/21/2017	Pantech Corporation
3			
4			
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
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