

SPECIFICATION

REPORT RECEPTION SYSTEM AND REPORT RECEPTION METHOD

TECHNICAL FIELD

5 [0001]

The present invention relates to a report reception system and a report reception method, and more particularly, to a report reception system and a report reception method which are suitable for systems dealing with reports to the police, fire stations, and the like and capable of diversifying information channel after reports by telephone and enabling tasks to be streamlined.

BACKGROUND ART

15 [0002]

In a case in which an incident or an accident occurs, it is necessary to promptly report to the police or the fire station. In this case, a telephone is often used for the report, and numbers easy to remember (110 for the police, 119 for the fire station, and 118 for Japan Coast Guard) are commonly used throughout the country as telephone numbers for the reports, and a report call is connected to a fire-defense headquarter or the like near a report transmission place. The report numbers are well known to the public by school education or the like so that a report can be made immediately

even in unforeseen circumstances.

[0003]

However, in reports by telephone from reporters, information other than voice does not reach the police or the fire station. Using data communication by application software installed in a smartphone or the like, it is possible to report together with an image other than voice or location information, but to spread the report using the application software to many people, it takes much time and efforts. In this regard, in an emergency report system disclosed in Patent Document 1, application software for position measurement is installed in a mobile terminal carried by a reporter, and position information is transferred to an emergency report destination.

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CITATION LIST

PATENT DOCUMENT

[0004]

Patent Document 1: JP 2007-180685 A

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SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0005]

However, in the emergency report system disclosed in Patent Document 1, in order to download the application

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software for position measurement, it is necessary for communication service providers to develop systems therefor, and it is necessary to set up a system so that cooperation from the communication service providers is obtained. Further, installing such software in mobile terminals such as smartphones in advance is considered, but in this case, it is still necessary to obtain cooperation from the communication service providers and device manufacturers.

[0006]

The present invention was made to solve the above problems, and it is an object of the present invention to provide a technique that enables even information other than voice to be acquired from a reporter terminal that makes a telephone report and enables tasks to be streamlined in a report reception system of an organization that receives reports.

SOLUTIONS TO PROBLEMS

[0007]

In order to solve the above problems, a report reception system of the present invention is a report reception system that receives a report and includes a first report receiving terminal including a call unit that makes a phone call using voice input/output, a second report receiving terminal including a call unit that makes a phone call using voice

input/output, a display output unit that displays and outputs information, and a connection destination transmitting unit that transmits information of a connection destination connected from a reporter terminal, and a management server including a connection control unit that controls a connection of the terminal connected to a network. Further, the first report receiving terminal receives an incoming call including a telephone number from the reporter terminal and establishes a first voice call connection with the reporter terminal, the connection destination transmitting unit of the second report receiving terminal transmits connection destination information including identification information of the report reception system to the reporter terminal on the basis of the telephone number of the reporter terminal, and when a connection request to the connection destination is received from the reporter terminal, the connection control unit of the management server establishes a second voice call connection between the report receiving terminal and the reporter terminal, and the management server acquires information using the sensor of the reporter terminal.

EFFECTS OF THE INVENTION

[0008]

According to the present invention, it is possible to provide a technique that enables even information other than

voice to be acquired from a reporter terminal that makes a telephone report and enables tasks to be streamlined in a report reception system of an organization that receives reports.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Fig. 1 is a configuration diagram of a report reception system and peripheral devices according to one embodiment.

10 Fig. 2 is a configuration diagram of a multi-function telephone terminal.

Fig. 3 is a configuration diagram of a command board terminal.

15 Fig. 4 is a configuration diagram of a fire station management server.

Fig. 5 is a configuration diagram of a reporter terminal.

Fig. 6 is a diagram illustrating an example of a case management table.

20 Fig. 7 is a diagram illustrating an example of a connection information table.

Fig. 8 is a diagram illustrating an example of an image management table.

Fig. 9A is a sequence diagram illustrating a process of a report reception system (a normal report).

25 Fig. 9B is a sequence diagram illustrating a process of a

report reception system (a sign language report).

Fig. 9C is a sequence diagram illustrating a process of a report reception system (a foreign language report).

Fig. 10 is a diagram illustrating an example of a short
5 message displayed on a reporter terminal.

Fig. 11 is a diagram illustrating an example of a fire station report screen displayed on a reporter terminal.

Fig. 12A is a diagram illustrating an example of a command manipulation screen displayed on a command board
10 terminal (a normal report).

Fig. 12B is a diagram illustrating an example of a command manipulation screen displayed on a command board terminal (a sign language report).

Fig. 13 is an example illustrating a screen at the time
15 of report by sign language interpretation displayed on a reporter terminal.

MODE FOR CARRYING OUT THE INVENTION

[0010]

20 Hereinafter, an embodiment according to the present invention will be described with reference to Figs. 1 to 13.

[0011]

In Japan, there are a fire department, a police department, a regional maritime safety headquarters, and the
25 like as organizations that receive reports, and the present

embodiment will be described using the fire department as an example.

[0012]

First, a configuration of a report reception system
5 according to one embodiment will be described with reference to Figs. 1 to 5.

Fig. 1 is a configuration diagram of a report reception system and peripheral devices according to one embodiment.

Fig. 2 is a configuration diagram of a multi-function
10 telephone terminal.

Fig. 3 is a configuration diagram of a command board terminal.

Fig. 4 is a configuration diagram of a fire station management server.

15 Fig. 5 is a configuration diagram of a reporter terminal.

[0013]

A report reception system of a fire station of the present embodiment is configured to be able to perform communication with an external telephone terminal by telephone
20 and an external information processing terminal by a global network such as an interface.

[0014]

A multi-function telephone terminal 200, a command board terminal 100, a private branch exchange (PBX) 14, a main
25 distributing frame (MDF) 16, a fire station management server

10, and a router 12 are installed in a fire station 1.

[0015]

The multi-function telephone terminal 200 is connected to an external telephone line via the PBX 14 and the MDF 16. A
5 base station A 30 is installed at the end of the telephone line and communicates with a reporter terminal 300 wirelessly. A telephone exchange 20 is an exchange installed in a telephone exchange station and performs exchange processing to connect an outgoing call to 119 to a terminal of the fire
10 station.

[0016]

The fire station management server 10, the command board terminal 100, and the router 12 are connected via a local area network (LAN) in the fire station 1. The router 12 is
15 connected to an external network such as the Internet and configured to be able to perform communication with the fire station management server 10, the command board terminal 100, and a sign language interpreter terminal 400, a foreign language interpreter terminal 500, and a vehicle
20 terminal/field terminal 600 placed outside the fire station 1.

[0017]

The multi-function telephone terminal 200 is a telephone terminal that enables an operator of the command board terminal 100 (hereinafter referred to simply as a "commander")
25 to perform a call with the reporter or give a command to

contact a person at the scene.

[0018]

The command board terminal 100 is an information processing device that enables the commander to receive a report via a network line and talk with the reporter, contact a fire station vehicle or a field terminal using a voice or a video, or display and detect a position of a field or a position of a vehicle using map information.

[0019]

The multi-function telephone terminal 200 and the command board terminal 100 are terminals used as a set by the commander, one or more sets are installed in one fire station, and the commander receives a report and performs tasks of giving a command such as a command to dispatch firefighters or a command to investigate a current situation. The multi-function telephone terminal 200 and the command board terminal 100 are connected via a serial line such as RS 232C so that information such as a telephone number of the reporter is transferred from the multi-function telephone terminal 200 to the command board terminal 100. In the present embodiment, the multi-function telephone terminal 200 and the command board terminal 100 are configured as separate terminals but may be implemented by a single information processing terminal having a telephone function and a PC function.

[0020]

The fire station management server 10 is a server that holds a fire station management database, and performs provision of a web page and a connection process between a terminal or the reporter terminal installed outside and the
5 command board terminal 100.

[0021]

The MDF 16 is a main switchboard that performs wiring and distribution of a large amount of communication facilities at the fire department headquarter. The PBX 14 is a device that
10 performs a call exchange process within the fire department headquarters.

[0022]

The reporter terminal 300 is a mobile terminal such as a general smartphone used by the reporter, and has a
15 communication function, an information processing function, a call function, a photographing function, and a GPS function. The reporter terminal is connected to the telephone line during a call and connected to the network line at the time of data communication. In addition to the smartphone, a mobile
20 phone terminal, a tablet having a telephone function, a laptop PC, or the like can be used.

[0023]

The sign language interpreter terminal 400 and the foreign language interpreter terminal 500 are terminals used
25 by a sign language interpreter and a foreign language

interpreter, respectively, and are terminals which include a configuration in which peripheral devices are added to a PC or television set having an information processing capability, a display, a speaker, a camera, a microphone, a communication
5 function, and the like and can perform a voice call with an image.

[0024]

The vehicle terminal/field terminal 600 is a portable terminal such as a smartphone, a tablet, a laptop PC, or the
10 like which displays necessary information for emergency crews or firefighters.

[0025]

Next, a configuration of the multi-function telephone terminal 200 will be described with reference to Fig. 2. As
15 illustrated in Fig. 2, the multi-function telephone terminal 200 includes a control unit 201, an input/output interface (I/F) 202, a transceiving unit 203, a storage device 204, a touch panel display 205, a serial I/F 206, and a headset 210.

[0026]

20 The input/output I/F 202 is connected to the PBX 14 and exchanges voice and data. The control unit 201 is a unit that controls the respective units of the multi-function telephone terminal 200. The touch panel display 205 displays information and receives a command or a number input from the commander.
25 The storage device 204 is a memory that stores setting data,

recording data, and the like. When there is an incoming call from the PBX 14, digital data is converted into analog data via a transceiving unit 203, a voice is output to a headset of the headset 210 of the commander, and a voice spoken by the commander is received by the microphone of the headset 210 and transferred to a person who speaks on the phone.

[0027]

Further, the multi-function telephone terminal 200 includes the serial I/F 206, and information necessary for a command such as the telephone number of the caller is transferred to a serial I/F 114 (Fig. 3) of the command board terminal 100.

[0028]

Then, a configuration of the command board terminal will be described with reference to Fig. 3. A hardware configuration of the command board terminal 100 is implemented by, for example, a general personal computer illustrated in Fig. 3.

[0029]

The command board terminal 100 includes a central processing unit (CPU) 102, a main storage device 104, a network I/F 106, a display I/F 108, an input/output I/F 110, an auxiliary storage I/F 112, a serial I/F 114, and a voice I/F 116 which are connected via a bus.

[0030]

The CPU 102 controls the respective units of the command board terminal 100, loads a necessary program onto the main storage device 104, and executes the program. The main storage device 104 is usually constituted by a volatile memory such as a RAM, and stores a program executed by the CPU 102 and data to be referred to. The network I/F 106 is an interface for establishing a connection with the network in the fire station. The display I/F 108 is an interface for connecting a display device such as a liquid crystal display (LCD), and a display part of a touch panel display 120 is connected to the display I/F 108. The input/output I/F 110 is an interface for connecting input/output devices. In the example of Fig. 3, a keyboard 130, a mouse 131 of a pointing device, and a touch panel part of the touch panel display 120 are connected.

15 [0031]

The command board terminal 100 includes a touch panel display 120 which is connected to both the display I/F 108 and the input/output I/F 110 and can also input the command and data at the same time as display.

20 [0032]

The voice I/F 116 is connected to the headset 210. The headset 210 is shared with the multi-function telephone terminal 200, and undertakes roles of a microphone and a speaker so that a voice is selectively or simultaneously input to or output from the two terminals. The voice input/output

such as call related to the command board terminal is performed using the headset 210.

[0033]

The auxiliary storage I/F 111 is an interface for
5 establishing a connection with an auxiliary storage device
such as a hard disk drive (HDD) 150 or a solid state drive
(SSD).

[0034]

The HDD 150 has a large storage capacity, and a program
10 for executing the present embodiment is stored. In the command
board terminal 100, a management server interface program 160,
a telephone terminal interface program 161, a call program 162,
an image display program 163, a short message generation
program 164, and a command program 165 are installed.

15 [0035]

The management server interface program 160 is a program
that exchanges information with the fire station management
server 10 and performs transmission and reception of the
command with the fire station management server 10. The
20 telephone terminal interface program 161 is a program that
receives information from the multi-function telephone
terminal. The call program 162 is a program that performs a
phone call with the reporter in accordance with a protocol
capable of exchanging a voice in an IP network such as a real-
25 time transport protocol (RTP). The image display program 163

is a program that displays a camera image from the reporter, a position of the reporter, or the like as a display screen. The short message generation program 164 is a program that generates a short message and transmits the short message to the reporter terminal 300. The command program 165 is a program that transmits the command or information to the fire station, external devices, and squad members engaged in tasks although the details are omitted.

[0036]

Similarly to the command board terminal 100 illustrated in Fig. 4, the sign language interpreter terminal 400 and the foreign language interpreter terminal 500 are implemented by a common personal computer, but in addition to the command board terminal 100, a camera that images a situation of a sign language interpreter or a foreign language interpreter is installed.

[0037]

In the sign language interpreter terminal 400 and the foreign language interpreter terminal 500, an image is transferred to the command board terminal 100 via the fire station management server 10, and a program of exchanging information with the command board terminal 100 and the reporter terminal is installed. As the program, a web browser or a dedicated program may be used.

[0038]

Next, a configuration of the fire station management server will be described with reference to Fig. 4.

As illustrated in Fig. 3, a hardware configuration of the fire station management server 10 includes a CPU 1002, a main storage device 1008, a display I/F 1004, an input/output I/F 1006, a network I/F 1010, and an auxiliary storage I/F 1012 which are connected via a bus.

[0039]

A monitoring or an output result of an operation state is displayed on a display device 1030. Input/output devices such as a keyboard 1020 and a mouse 1022 are connected to the input/output I/F 1006, and an administrator inputs the command or the like through the input/output devices. A LAN in the fire station or a WAN such as the Internet is connected to the network I/F 1010, and communication with an external device is performed via this I/F. A storage device such as a hard disk device 1060 that stores data and a program is connected to the auxiliary storage I/F 1012. The hard disk device 1060 may be connected on an array to constitute a disk array.

[0040]

A task process application program, an OS, or the like are stored in the hard disk device 1060, loaded onto the main storage device 1008 when executed, and executed by the CPU 1002.

[0041]

A management DB access program 1070, a screen provision program 1072, and an inter-terminal connection program 1074 are installed in the hard disk device 1060 of the fire station management server 10 as an application program.

5 [0042]

The management DB access program 1070 is a program that accesses a table stored in a database of the fire station management server 10 and reads and writes data. The screen provision program 1072 is a program that implements a web
10 server function of generating a program to be provided to each terminal. The inter-terminal connection program 1074 is a program that enables a connection to be established with each terminal and enables information to be exchanged with each terminal.

15 [0043]

A case management table 700, a connection information table 710, and an image management table 720 are stored in the hard disk device 1060 of the fire station management server 10 as the database of the fire station management server 10.

20 [0044]

The case management table 700 is a table for storing and managing necessary information as a case for each report. The connection information table 710 is a table storing information for establishing a connection with each terminal.
25 The image management table 720 is a table for managing an

image to be distributed to each terminal. These tables will be described later in detail.

[0045]

Next, a configuration of the reporter terminal will be
5 described with reference to Fig. 5.

In this example, the reporter terminal 300 is assumed to be a smartphone. As illustrated in Fig. 5, as hardware, the reporter terminal 300 includes a CPU 301, an RF unit 302, a baseband processor 303, a camera 304, a wireless LAN unit 305,
10 a display I/F 310, a GPS 306, a main memory 307, a flash memory 350, an input/output I/F 330, and an audio I/F 340 which are connected via a bus. A touch panel display 320 is connected to the display I/F 310 and the input/output I/F 330, and a microphone 342 and a speaker 344 are connected to the
15 audio I/F 340.

[0046]

The CPU 301 is a unit that controls the respective units of the reporter terminal 300 and performs an arithmetic operation and control for executing a program loaded onto the
20 main memory 307. The CPU 301 executes various processes by reading the program stored in the flash memory 350 onto the main memory 307 and executing the program. These programs and data may be stored in the flash memory 350 in advance, may be input from a storage medium such as a USB memory, or may be
25 downloaded from an external server or the like via the network.

Further, functions implemented by the program may be implemented by dedicated hardware.

[0047]

The RF unit 302 is an interface device that converts a
5 signal of the baseband processor 303 into a radio frequency
signal of a radio band and conversely converts a radio
frequency signal of a radio band into a signal of the baseband
processor 303. The reporter terminal 300 can communicate with
a base station using a 3G line or a 4G line via the RF unit
10 302 or communicate with the server using the Internet and can
exchange necessary information and download data.

[0048]

The baseband processor 303 is a processor that controls a
module related to communication and a phone call of the
15 reporter terminal 300.

[0049]

The wireless LAN unit 305 is a part that communicates
with a neighboring access point in accordance with a wireless
LAN standard (for example, IEEE 802.11 a/b/g/n/ac or the like).
20 The wireless LAN unit 305 also has a function of measuring
states of radio waves which are transmitted and received with
the access point in a communication band of the wireless LAN.

[0050]

The camera 304 captures a situation around the reporter
25 terminal 300 as a still image or a moving image and stores it

in the flash memory 350 as the image data. In particular, in the present embodiment, the image data captured to the camera 304 is uploaded onto the fire station management server 10 as the report information.

5 [0051]

The display I/F 310 is an interface for establishing a connection with a display device. The input/output I/F 330 is an interface for establishing a connection with an input/output device. In the present embodiment, the touch
10 panel display 320 is connected to the display I/F 310 and the input/output I/F 330. The touch panel display 320 has a role of an input device of a mechanism of receiving data or a command when a reporter 5 touches the touch panel display 320 with a finger or a touch pen together with a function of
15 displaying a screen.

[0052]

A GPS 306 is a device that receives radio waves from GPS satellites and obtains its own position. In the present embodiment, it has a meaning of transmitting the position of
20 the reporter to the fire station management server 10.

[0053]

The main memory 307 is a storage device which loads and temporarily stores the program stored in the flash memory 350 and stores work data.

[0054]

The audio I/F 340 is an interface for establishing a connection with the microphone 342 and the speaker 344. The microphone 342 is a device collecting a sound from the outside.
5 The speaker 344 is a device outputting a sound. When a call is performed, the user inputs a voice through the microphone 342 and listens to a voice of a counterpart from the speaker 344.

[0055]

The flash memory 350 is usually a non-volatile memory
10 that has a larger capacity than the main memory 307 and stores a program and data. The flash memory 350 is a storage device of a relatively large capacity that stores various kinds of data such as sound source data and moving image data and programs such as program application software.

15 [0056]

A call program 352, a short message processing program 354, and a web browser 356 are installed in the flash memory 350. The call program 352 is a program which performs a phone call by a telephone function of the reporter terminal 300. The
20 short message processing program 354 is a program that generates the short message and performs transmission and reception of the short messages with other devices. The web browser 356 is a program that downloads the web page from the web server (the fire station management server 10 in the
25 present embodiment), displays the web page, and performs an

input process from the web page if necessary.

[0057]

Next, a data structure used in the report reception system will be described with reference to Figs. 6 to 8.

5 Fig. 6 is a diagram illustrating an example of a case management table.

Fig. 7 is a diagram illustrating an example of a connection information table.

10 Fig. 8 is a diagram illustrating an example of an image management table.

The tables illustrated in Figs. 6 to 8 are tables which are all managed as a database of the fire station management server.

[0058]

15 The case management table 700 is a table for managing a report as a case when there is a report from the reporter, and as illustrated in Fig. 6, the case management table 700 includes fields such as a case number 700a, a reporter telephone number 700b, a report date and time 700c, a report
20 type 700d, a reception command board terminal ID 700e, and a connection ID 700f.

[0059]

A case number is stored in the case number 700a. The case number is a number uniquely assigned by the fire station
25 management server 10 to identify an incident when there is a

report. When the case number is assigned, a task supported by the fire station proceeds using the case number as the key. A telephone number of the reporter when there is a report is stored in the reporter telephone number 700b. A report date and time at which there is a report is stored in the report date and time 700c in a format of year, month, day, hour, minute, and second (yyyymmddhhmmss). A type of report (fire extinguishing/emergency) classified by the commander is stored in the report type 700d. A terminal ID of the command board terminal 100 of the commander who accepts the report is stored in the reception command board terminal ID 700e. An ID for linking to a record of the connection information table 710 to be described next is stored in the connection ID 700f.

[0060]

The connection information table 710 is a table for holding information for establishing a connection with each terminal, and includes a connection ID 710a, a reporter terminal ID 710b, a command board terminal ID 710c, a sign language interpreter terminal ID 710d, a foreign language interpreter terminal ID 710e, a vehicle terminal/field terminal (1) ID 710f1, a vehicle terminal/field terminal (2) ID 710f2 ... as illustrated in Fig. 7.

[0061]

The connection ID 710a uniquely manages a session of each connection and stores an ID for linking to the record of the

case management table 700 described above. An ID for uniquely identifying the reporter terminal 300 is stored in the reporter terminal ID 710b. In the example of Fig. 7, a report telephone number at the time of report is used. An ID uniquely identifying the command board terminal 100 is stored in the command board terminal ID 710c. An ID uniquely identifying the sign language interpreter terminal 400 is stored in the sign language interpreter terminal ID 710d. An ID uniquely identifying the foreign language interpreter terminal 500 is stored in the foreign language interpreter terminal ID 710e. Each of the vehicle terminal/field terminal (1) ID 710f1, the vehicle terminal/field terminal (2) ID 710f2, ... stores an ID uniquely identifying the vehicle terminal/field terminal 600. Here, the vehicle terminal/field terminal 600 can establish a connection with a plurality of terminals for one session.

[0062]

As illustrated in Fig. 7, each of the command board terminal ID 710c, the sign language interpreter terminal ID 710d, the foreign language interpreter terminal ID 710e, the vehicle terminal/field terminal (1) ID 710f1, and the vehicle terminal/field terminal (2) ID 710f2 may be a specific character string or may be a network address such as an IP address.

[0063]

The image management table 720 is a table for managing image information exchanged between the respective terminals

under the management of the fire station management server when connected, and the image management table 720 includes fields such as an image ID 720a, a connection ID 720b, a transmission source ID 720c, and a file path 720d as
5 illustrated in Fig. 8.

[0064]

An ID for uniquely identifying each image is stored in the image ID 720a. An ID to be linked with the connection ID of the connection information table 710 is stored in the
10 connection ID 720b. An ID of a terminal that transmits an image is stored in the transmission source ID 720c. A file path on a file system to be accessed by the fire station management server 10 is stored in the file path 720d.

[0065]

15 Further, when an image is an image of a map, an ID of a terminal that transmits the position information is stored in the transmission source ID 720c.

[0066]

Next, a process of the report reception system will be
20 described with reference to Figs. 9A to 13.

Figs. 9A to 9C are sequence diagrams illustrating a process of the report reception system.

Fig. 10 is a diagram illustrating an example of a short message displayed on the reporter terminal.

25 Fig. 11 is a diagram illustrating an example of a fire

station report screen displayed on the reporter terminal.

Figs. 12A and 12B are diagrams illustrating examples of a command manipulation screen displayed on the command board terminal.

5 Fig. 13 illustrates an example of a screen at the time of report by sign language interpretation displayed on the reporter terminal.

[0067]

When the reporter witnesses a fire or a person injured by
10 an accident or an emergency case occurs, the reporter makes a report at 119 from the reporter terminal 300 (smartphone) of the reporter (A01). An outgoing call by a radio wave is received by the base station A 30 of the nearby mobile phone network and reaches the telephone exchange 20 having the base
15 station within a jurisdiction area via a wired telephone line. Then, the telephone exchange 20 connects the outgoing call with the fire station having jurisdiction over the area. As a result, the report to 119 which is the nationwide common telephone number is transmitted to an appropriate fire station.

20 [0068]

In the fire station that receives the report, the multi-function telephone terminal 200 manipulated by the commander (a report receiver) receives the outgoing call and performs a voice call with the reporter using the speaker and the
25 microphone (A02). At this time, the telephone number of the

caller is notified along with the outgoing call, the multi-function telephone terminal 200 transfers the telephone number and the report date and time to the command board terminal 100 manipulated by the same commander (A11), and the telephone
5 number of the caller is displayed on the touch panel display 120 of the command board terminal 100.

[0069]

The commander that receives the report talks with the reporter and hears a disaster situation. Further, the
10 commander verbally understands a situation of a scene, an injured person, or a sick person by conversation. Then, the commander determines whether or not additional information such as image information or position information is necessary as further detailed information. When the additional
15 information is determined to be necessary, a future instruction for transmitting the additional information is given to the reporter, and a line is disconnected from the commander or the reporter, and the phone call ends (A03a and A03b).

20 [0070]

The command board terminal 100 transfers necessary parameters (the telephone number, the report date and time, a type of report, and the like) to the fire station management server 10, and reports a case (A21). The fire station
25 management server 10 generates a case number for identifying a

case and adds a new record to the case management table 700 (S30). Further, the fire station management server 10 notifies the command board terminal 100 of the generated case number (A22).

5 [0071]

Then, the command board terminal 100 transmits a short message addressed to the telephone number of the caller through a short message service (SMS) (A12). The transmission may be performed automatically when the report to 119 is
10 received or may be transmitted when the operator performs a manipulation.

[0072]

In the short message, a connection destination uniform resource locator (URL) 2002 of the fire station management
15 server 10 and a message 2001 indicating that the URL is to be clicked are written as illustrated in Fig. 10, and a fire-defense headquarter name or a commander name, or the like may be written if necessary. In addition to the URL of the fire station management server 10, a parameter indicating the case
20 number is included in the connection destination URL 2002. Further, the ID of the command board terminal 100 in charge of acceptance may be directly embedded in the URL, and the ID may be read so that the fire station management server 10 is connected to the command board terminal 100.

25 [0073]

If the line is disconnected, and the call ends, the reporter terminal 300 receives the short message originated by the command board terminal 100. This is because since the short message is transmitted via the telephone line, it can be
5 received only after a phone call ends. In 4G communication, since voice/data can be bidirectionally communicated through multiple channels, the reporter reporting with the reporter terminal 300 in which such functions can be used may receive the short message during a phone call and respond to the
10 message.

[0074]

The reporter taps the URL described in the received short message (S01) and accesses the fire station management server
10 of the connection destination associated with the URL via the network. The fire station management server 10 transmits a
15 fire station report screen to the reporter terminal 300.

[0075]

A normal report selection button 2011, a sign language report selection button 2012, a foreign language report
20 selection button 2013, and a message 2010 for urging selection thereof are displayed on the fire station report screen as illustrated in Fig. 11.

[0076]

A normal report is a type of report in which an image or
25 position information is added on the basis of a conversation,

and information is transferred. The sign language report is a type of report in which the sign language interpreter establishes a connection through an image or a voice call, interprets a sign language of the reporter into a voice, and transfers the voice to the commander. The foreign language report is a type of report in which a connection with the foreign language interpreter is established as a change point to the normal report, the interpreter interprets a foreign language spoken by a foreign language speaker into Japanese, and Japanese is transferred to the command.

[0077]

Here, the reporter taps the normal report selection button 2011 and selects the normal report.

[0078]

Upon receiving the selection of the normal report from the reporter terminal, the fire station management server 10 connects the command board terminal 100 with the reporter terminal. Usually, the command board terminal 100 is a terminal that is manipulated by the same commander as the multi-function telephone terminal 200 that made a conversation just now from the reporter terminal, and is the command board terminal 100 identified by the reception command board terminal ID of the record of the case number accessed by the reporter terminal in the case management table 700. The fire station management server 10 and the command board terminal

100 may be constantly in a connected state or may be connected after there is a connection request from the reporter terminal.
[0079]

The fire station management server 10 establishes a
5 connection with each terminal in accordance with a protocol capable of exchanging a voice and a moving image such as an RTP (A05 and A24). Accordingly, the command board terminal 100 connects the voices of the reporter terminal 300 and the command board terminal 100 via the fire station management
10 server 10 via a network line and performs a phone call. Further, an image (a moving image or a still image) is captured by the camera (imaging device) of the reporter terminal 300, and the captured image is transmitted to the command board terminal 100 via the fire station management
15 server 10 and the network line and displayed or recorded. The commander can perform a voice call to ask the reporter to capture an image of a scene or an injured or sick person and acquire position information through a GPS device of the reporter terminal 300 and transfer the position information to
20 the command board terminal via the fire station management server 10 so that the position information is displayed on the map.

[0080]

At this time, the fire station management server 10
25 acquires the image or the position information using the

program on the reporter terminal 300. If necessary, the fire station management server 10 downloads a program for that purpose to the reporter terminal 300 and executes the program. Alternatively, a program operated on a browser may be
5 transmitted along with a WEB screen.

[0081]

The image acquisition may be able to be manipulated from the command board terminal 100. For example, switching a still image or a moving image or manipulating zooming or lighting
10 from the command board terminal 100 while fixing the terminal to the reporter is considered.

[0082]

Accordingly, the operator of command board terminal 100 can obtain the image information from the reporter and obtain
15 the position information. The operator of the command board terminal 100 can obtain the image information by giving an instruction to the reporter, see and determine the state of the scene in the case of a fire, and see and determine a state of a person in the case of an injured or sick person. Further,
20 it is possible to detect a report by mischief and reduce unnecessary dispatch by seeing the image information.

[0083]

Further, it is possible to obtain the position information and cause the display screen of the command board
25 terminal 100 to display the map and the position of the

reporter. As compared to a case where the position is orally heard from the reporter, it is possible to know the position of the reporter quickly and accurately. Further, in the case of a fire, it is possible to determine a situation of an alley around the scene from the map and select the vehicle to be dispatched (a size, a water discharge distance, or the like). Accordingly, it is possible to properly select the vehicle and quickly reach the scene.

[0084]

Further, the fire station management server can establish a connection with the vehicle terminal/field terminal 600 (A31 and A32) and can transfer the voice or the image from the reporter (A33).

[0085]

In other words, the obtained voice call connection, the image information, and the position information can be transmitted to the vehicle terminal installed by the fire truck or the ambulance or the field terminal used by a crew working at the scene such as the firefighter or the emergency crew. The voice call is connected from the reporter to the terminal, a three-way call is performed by the reporter, the command board operator, and the crew working at the scene, or the position information of the reporter or the image information is transmitted to the vehicle terminal and the field terminal and displayed. Accordingly, it is possible to

collect information while going to the scene urgently or give an instruction to the reporter, and thus the operation after arrival can be performed smoothly. Further, in particular, although not illustrated, the report to the fire station is
5 recorded in a recording device. Recorded data of the report may be transmitted to the vehicle terminal/field terminal 600 to help preparation for an appropriate response.

[0086]

The command board terminal 100 can acquire and display
10 the information of the position or the state of the vehicle or the crew working at the scene, and the command board terminal operator selects the vehicle terminal/field terminal to be connected on the basis of the information and establishes a connection. Further, it is possible to access the command
15 board terminal which is responding to the report from the vehicle terminal/field terminal 600 side, establish a connection, and perform the voice call or acquire the image information or the position information.

[0087]

20 As illustrated in Fig. 12A, the command manipulation screen displayed on the command board terminal 100 includes a case display field 3010, a reporter image field 3020, and a reporter position information field 3030.

[0088]

25 Case information related to the report is displayed in

the case display field 3010. An image of the scene which is captured by the camera 304 of the reporter terminal 300 and transmitted from the reporter is displayed in the reporter image field 3020. A map to be displayed is displayed in the
5 reporter position information field 3030 on the basis of the position information transmitted from the reporter.

[0089]

In the present embodiment, although the command board terminal and the reporter terminal 300 are connected to the
10 network using the SMS on the basis of the telephone number of the reporter terminal 300, any other method may be used if a connection can be established on the basis of the telephone number of the reporter terminal 300.

[0090]

15 Thus, in the present embodiment, in the case of the reporter makes a telephone report, since communication of a protocol in which the voice or the image can be used is performed from the reporter terminal 300 of the same reporter, the fire station side can receive a contact of the report made
20 using the detailed information such as the image information or the position information.

[0091]

In the above description, the example in which the reporter selects the normal report selection button 2011 and
25 performs the normal report in the fire station report screen

illustrated in Fig. 11 has been described.

[0092]

Next, an example in which a person who is unable to make a voice call makes a report, that is, performs a sign language report will be described with reference to Figs. 9B, 12B, and 13.

In Fig. 9B, the vehicle terminal/field terminal of Fig. 9A is replaced with a sign language interpreter terminal.

[0093]

10 A place at which the reporter makes a phone call to 119 through the terminal is similar to that in the case of the normal report of Fig. 9A. Here, the reporter is unable to have a voice conversation but disconnects the telephone call after calling to notify of the telephone number.

15 [0094]

The command board terminal transmits the short message in which the connection destination URL is written to the reporter terminal 300 associated with the caller telephone number automatically or in accordance with the operator's 20 determined in the case of manual (A12).

[0095]

Since the reporter terminal 300 receives the short message transmitted from the command board terminal, the reporter terminal 300 taps the connection destination URL 25 (S01), display the fire station report screen, and select the

sign language report selection button 2012.

[0096]

If the sign language report selection button is selected, the fire station management server 10 establishes a connection with the reporter terminal 300, the sign language interpreter terminal 400, and the command board terminal 100 (A05 and A33). The sign language interpreter terminal 400 is a terminal used by the sign language interpreter who can understand a sign language and perform a normal voice conversation and used by, for example, the sign language interpreter working for a sign language interpretation service provider.

[0097]

If the three terminals, that is, the sign language interpreter terminal 400, the reporter terminal 300, and the command board terminal 100 are connected to one another, a conversation based on the sign language and the voice can be performed via the screen and voice using the cameras and the displays of these terminals. The reporter takes a picture of him/herself and transmits a sign language image. Since the image of the sign language of the reporter is displayed on the sign language interpreter terminal, the sign language is interpreted into a voice and transferred to the command board terminal operator through the voice call. Further, the voice from the commander is interpreted into the sign language by the sign language interpreter, the sign language is

photographed by the camera and displayed on the sign language report screen of the reporter terminal 300, and thus an intention of the command board is transferred to the reporter. Further, in the case of the reporter has either a speaking
5 ability or a hearing ability, a part of the sign language may be replaced with the voice with discretion of a party in interest.

[0098]

As illustrated in Fig. 13, a display 4010 indicating that
10 the sign language report is in process and a sign language interpretation 4020 of the sign language interpreter are displayed in the sign language report screen displayed on the reporter terminal 300.

[0099]

15 As illustrated in Fig. 12B, the command manipulation screen displayed on the command board terminal 100 includes a case display field 3110, a reporter image field 3120, a sign language interpreter image field 3140, and a reporter position information field 3130.

20 [0100]

The case information related to the report is displayed in the case display field 3110, similarly to the example of Fig. 12A. Similarly to the example of Fig. 12A, the image of the scene or the like which is captured by the camera 304 of
25 the reporter terminal 300 and transmitted from the reporter is

displayed in the reporter image field 3120, and the map to be displayed is displayed in the reporter position information field 3130 on the basis of the position information transmitted from the reporter. The captured image of the sign language interpreter is displayed by the camera installed in the sign language interpreter terminal 400 in the sign language interpreter image field 3140.

[0101]

The sign language image of the sign language interpreter or the image being captured by the reporter terminal 300 is displayed on the reporter terminal 300, but the image of the commander may be displayed on the reporter terminal 300.

[0102]

Similarly to the normal report, the image information or the position information of the reporter terminal 300 is transmitted to the command board terminal 100, but at this time, it is preferable to transmit information to the sign language interpreter terminal 400 as well. It is because it is easy for the interpreter to interpret if the interpreter knows the position and the situation of the scene.

[0103]

Further, similarly to the case of the normal report, a connection with the vehicle terminal/field terminal 600 may be established so that a four-way call is performed.

[0104]

The example for the case of the sign language report has been described above. When the reporter makes a telephone report, the communication of the protocol in which the voice or the image can be used is performed from the reporter terminal 300 of the same reporter is performed, and thus the fire station side can receive the contact of the report made using the detailed information such as the image information or the position information. In particular, a connection with the sign language interpreter is established using this, the sign language interpretation is performed, and thus even a person who is unable to make a voice call can make a report based on the telephone report.

[0105]

In the above description, the example in which the reporter selects the normal report selection button 2011 and performs the normal report in the fire station report screen illustrated in Fig. 11 or the example in which the reporter selects the sign language report selection button 2012 and performs the sign language report has been described.

[0106]

Next, an example in which a report is performed using a language other than Japanese, that is, a foreign language report is performed will be described with reference to Fig. 9C.

In Fig. 9C, the vehicle terminal/field terminal of Fig.

9A is replaced with the foreign language interpreter terminal.

[0107]

A process of making the telephone report to 119 and displaying the fire station report screen is similar to the case of the normal report or the sign language report. A reporter who has a language other than Japanese as a mother language selects the foreign language report selection button 2013 in the fire station report screen illustrated in Fig. 11. Here, a connection with the foreign language interpreter terminal 500 may be immediately established, and the interpreter may talk with the reporter and determine a language on behalf of a person in charge, or a connection with the terminal of the foreign language interpreter selected using the foreign language selection screen may be performed. Further, in a case where the commander can understand the selected foreign language, a connection with the interpreter terminal may be omitted even when the foreign language report is selected.

[0108]

In the case of the foreign language report, the foreign language translator transfers information while interpreting a conversation between the reporter and the commander.

Even in the case of the foreign language report, similarly to the case of the normal report, in a case where the reporter makes a telephone report, the communication of

the protocol in which the voice or the image can be used is performed from the reporter terminal 300 of the same reporter is performed, and thus the fire station side can receive the contact of the report made using the detailed information such as the image information or the position information. In particular, in the case of the foreign language report, the connection with the foreign language interpreter is established using this, the foreign language interpretation is performed, and even a person who has no sufficient ability to speak in Japanese can make a report based on the telephone report.

REFERENCE SIGNS LIST

[0109]

15	1	Fire station
	10	Fire station management server
	12	Router
	14	PBX
	16	MDF
20	100	Command board terminal
	200	Multi-function telephone terminal
	300	Reporter terminal
	400	Sign language interpreter terminal
	500	Foreign language interpreter terminal
25	600	Vehicle terminal/field terminal

CLAIMS

1. A report reception system that receives a report, comprising:

5 a report receiving terminal including a call unit that makes a phone call using voice input/output and a display output unit that displays and outputs information;

a connection destination transmitting unit that transmits information of a connection destination to be connected from a reporter terminal; and

10 a connection control unit that controls a connection of a terminal connected to the network,

wherein the call unit receives an incoming call including a telephone number from a reporter terminal and establishes a first voice call connection with the reporter terminal,

15 the connection destination transmitting unit transmits connection destination information including identification information of the report reception system to the reporter terminal on the basis of the telephone number of the reporter terminal, and

20 when a connection request to the connection destination is received from the reporter terminal, the connection control unit transmits a report screen including choices of a normal report and the other reports to the reporter terminal,

when a choice of the normal report is received from the
25 reporter terminal, the connection control unit establishes a

second voice call connection between the call unit and the reporter terminal, and

according to a request via the call unit from the report receiving terminal, the connection control unit acquires
5 information acquired by using a sensor of the reporter terminal from the reporter terminal, and transfers the information to the report receiving terminal.

2. The report reception system according to claim 1, wherein
10 the connection destination information includes a case number of the report reception or a report receiving terminal ID, and

the connection control unit establishes a connection with the report receiving terminal in the second voice call connection on the basis of the case number or the report
15 receiving terminal ID included in the connection destination information.

3. The report reception system according to claim 1, wherein the connection destination information includes identification
20 information of the report receiving terminal, and

the connection control unit establishes a connection with the report receiving terminal in the second voice call connection on the basis of the identification information of the report receiving terminal included in the connection
25 destination information.

4. The report reception system according to claim 1, wherein
information received from the reporter terminal is image
information photographed by a photographing unit of the
5 reporter terminal.

5. The report reception system according to claim 1, wherein
information acquired from the reporter terminal is position
information acquired by a position measuring unit of the
10 reporter terminal, and the report receiving terminal outputs
the position information together with map information from
the display output unit.

6. The report reception system according to claim 1, wherein
15 a first voice call connection between the reporter terminal
and the report receiving terminal is performed via a telephone
line, and

a second voice call connection and sensor information
acquisition in the reporter terminal and the report receiving
20 terminal are performed via a network line.

7. The report reception system according to claim 1, wherein
the connection destination information is transmitted by using
a short message service.

8. The report reception system according to claim 1, wherein the reporter terminal connected by the connection destination information downloads a program and transmits sensor information using the program.

5

9. The report reception system according to claim 6, wherein the first voice call connection is disconnected when the connection destination information is transmitted to the reporter terminal, and

10 a connection with the report receiving terminal is established after the first voice call connection is disconnected.

10. The report reception system according to claim 1, wherein
15 another terminal connected to a network is connectable,

when a choice of the other reports is received from the reporter terminal, the connection control unit performs a second voice call connection between the reporter terminal and the other terminal, and

20 the connection control unit transfers sensor information acquired by using a sensor of the reporter terminal transmitted from the reporter terminal to the other terminal.

11. The report reception system according to claim 10,
25 wherein the other terminal includes an interpreter terminal

used by an interpreter, and

a connection with the interpreter terminal is established on the basis of a manipulation of the reporter terminal.

5 12. The report reception system according to claim 11, wherein the interpreter terminal is a sign language interpreter terminal manipulated by a sign language interpreter or a foreign language interpreter terminal manipulated by a foreign language interpreter.

10

13. The report reception system according to claim 10, wherein the other terminal includes a vehicle terminal installed in a vehicle or a field terminal used by a field manager.

15

14. A report reception method using a report reception system that receives a report,

the report reception system comprising

a report receiving terminal including a call unit that
20 makes a phone call using voice input/output and a display output unit that displays and outputs information,

a connection destination transmitting unit that transmits information of a connection destination to be connected from a reporter terminal, and

25 a connection control unit that controls a connection of a

terminal connected to the network,

the report reception method comprising:

a step of receiving, by the call unit, an incoming call including a telephone number from the reporter terminal and
5 establishing a first voice call connection with the reporter terminal;

a step of transmitting, by the connection destination transmitting unit, connection destination information including identification information of the report reception
10 system to the reporter terminal on the basis of the telephone number of the reporter terminal;

a step of transmitting by the connection control unit, a report screen including choices of a normal report and the other reports to the reporter terminal when a connection
15 request to the connection destination is received from the reporter terminal; and

a step of establishing, by the connection control unit, a second voice call connection between a report receiving terminal and the reporter terminal when a choice of the normal
20 report is received from the reporter terminal, acquiring information acquired by using a sensor of the reporter terminal from the reporter terminal, according to a request via the call unit from the report receiving terminal, and transferring the information to the report receiving terminal.