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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 January 2008 (03.01.2008)

PCT

(10) International Publication Number
WO 2008/001961 A1

(51) International Patent Classification:
H04Q 7/24 (2006.01)

(21) International Application Number:
PCT/KR2006/002470

(22) International Filing Date: 26 June 2006 (26.06.2006)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2006-0057332 26 June 2006 (26.06.2006) KR

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

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

Published:
— *with international search report*

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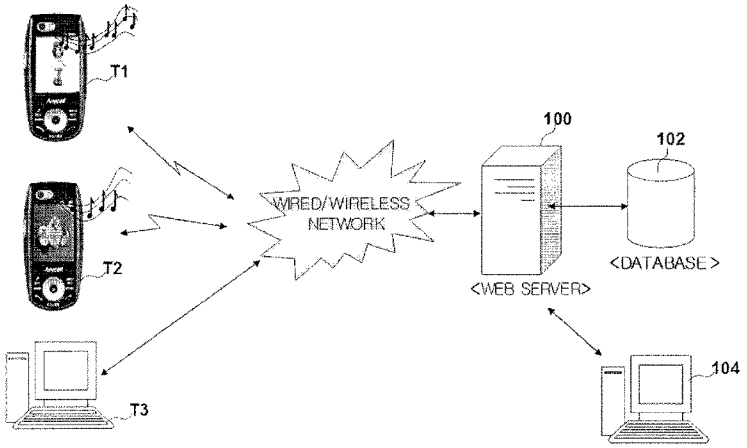
(54) **Title:** MOBILE ANIMATION MESSAGE SERVICE METHOD AND SYSTEM AND TERMINAL



(57) **Abstract:** An object of the invention is to provide an animation message service method, system and terminal which is capable of greatly reducing the amount of data for an animation message service by converting a 3D animation file into a flash file. The animation message service system includes: a database that stores a plurality of animation files; and a server that converting a plurality of 3D animation files into flash files as the plurality of animation files, stores the plurality of animation files in the database, and transmits one selected from the plurality of animation files to a specified client terminal. The server stores lip position information of a character included in the animation file in the database, stores a plurality of lip-sync files constituted by voice data corresponding to a plurality of announcements and lip motion data in the database, and transmits one selected from the plurality of lip-sync files, along with the animation file, to the client terminal.

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DESCRIPTION

MOBILE ANIMATION MESSAGE SERVICE METHOD AND SYSTEM AND TERMINAL

Technical Field

The present invention relates to a message service method, and more particularly, to an animation message service method, system and terminal.

Background Art

With development of technologies, there has been proposed a variety of messaging services through personal portable terminals such as mobile communication terminals.

A messaging service includes a SMS (Short Message Service), an MMS 9Multimedia Messaging System), an animation message service, and other services known in the art.

In particular, the animation message service, which is of a 2D image card type, has a narrow market range in the field of mobile contents services due to its limited representation.

To overcome this problem, there has been proposed a message service using 3D animation. However, the 3D animation message service has not been in wide use due to enormous data, that is, high service use fees.

Thus, there is a keen need for technology that can greatly reduce the amount of data for the 3D animation message service.

In addition, for the conventional animation message service, since a service provider transmits a created animation file to terminals of clients one-sidedly, there is a problem that the clients can not receive animation message services that suit clients' diverse tastes.

Accordingly, there is also a keen need for technology that can edit an animation file that suits the clients' diverse tastes at clients' requests.

Disclosure of Invention

Technical Problem

The present invention has been designed to overcome the above and other problems, and it is an object of the invention to provide an animation message service method, system and terminal which is capable of greatly reducing the amount of data for an animation message service by converting a 3D animation file into a flash file.

It is another object of the invention to provide an animation message service method, system and terminal which is capable of modifying some of animation, or synchronizing an audio file or a voice file with the animation.

Technical Solution

To achieve the above and other objects and address the above and other problems occurring in the prior art, the present invention provides an animation message service system including: a database that stores a plurality of animation files; and a server that converting a plurality of 3D animation files into flash files as the plurality of animation files, stores the plurality of animation files in the database, and transmits one selected from the plurality of animation files to a specified client terminal.

Preferably, the server stores lip position information of a character included in the animation file in the database, stores a plurality of lip-sync files constituted by voice data corresponding to a plurality of announcements and lip motion data in the database, and transmits one selected from the plurality of lip-sync files, along with the animation file, to the client terminal.

Preferably, the server stores a plurality of audio files in the database, and transmits one selected from the plurality of audio files, along with the animation file, to the client terminal.

According to an animation message service method, system and terminal of the present invention, the amount of data for an animation message service can be greatly reduced by converting a 3D animation file into a flash file.

In addition, lip-sync is possible by modifying some of animation, that is, a lip region, at a user's request, and synchronizing voice data with the animation.

Furthermore, a variety of demands of users can be satisfied by synchronizing an audio file with the animation at users' requests.

Advantageous Effects

The present invention provides an animation message service method, system and terminal, which is capable of greatly reducing the amount of data for an animation message service by converting a 3D animation file into a flash file.

In addition, the present invention provides an animation message service method, system and terminal, which is capable of making lip-sync possible by modifying some of animation, that is, a lip region, at a user's request, and synchronizing voice data with the animation, and satisfying a variety of demands of users by synchronizing an audio file with the animation at users' requests.

Brief Description of the Drawings

FIG. 1 is a view illustrating a configuration of an animation message service system according to a preferred embodiment of the present invention.

FIG. 2 is a view illustrating structures of an animation file, a lip-sync file, a final animation file according to a preferred embodiment of the present invention.

FIG. 3 is a procedural diagram illustrating an animation message service method according to a preferred embodiment of the present invention.

FIG. 4 is a view illustrating a configuration of a terminal according to a preferred embodiment of the present invention.

FIG. 5 is a flow chart illustrating a method of reproducing a final animation file according to a preferred embodiment of the present invention.

Mode for Carrying Out the Invention

Hereinafter, a configuration of an animation message service system according to a preferred embodiment of the present invention will be described with reference to FIG. 1.

A Web server 100 provides a Web site for selection or edition of an animation message of the invention to various kinds of terminals connected through a wire/wireless network. In addition, the Web server 100 downloads the animation message to a particular terminal.

A database 102 stores various files for the animation message service according to the preferred embodiment of the present invention. The files include an animation file, an audio file, a lip-sync file, an animation message, etc, as shown in (a) to (d) of FIG. 2.

The animation file is constituted by an animation file generated by converting a 3D animation file into a flash file, and information on lip position of a character which belongs to the animation file, as shown in (a) of FIG. 2. Here, the lip position information refers to position information to be modified for lip-sync.

The lip-sync file is constituted by announcement of a text data type, voice data corresponding to the announcement, and lip motion data corresponding to the announcement, as shown in (c) of FIG. 2.

In addition, the animation message combined by a client is constituted by some or all of an animation file, lip position information, an audio file and a lip-sync file depending on selection of a client.

A manager terminal 104 generates 3D animation using software such as 3D MAX or Maya at a manager's request, converts the 3D animation into a flash file as an animation file, and stores the animation file in the database 102 through the Web server 100.

In addition, the manager terminal 104 adds the lip position information of the character belonging to the animation file to the animation file for performance of a lip sync function of the present invention.

In addition, the manager terminal 104 generates an audio file at a client's request and stores the audio file in the database 102 through the Web server 100.

Various types of client terminals T1 to T3 such as mobile communication terminals or personal computers access a Web site of the Web server 100 through a wired/wireless network, organizes an animation message using some selected from various animation files, audio files and lip-sync files stored in the database 102, and requests transmission of the animation message. The request for the transmission of the animation message may be made to the requesting terminal or other terminals.

Now, an operation of the animation message service system as constructed above will be described with reference to a procedural diagram of FIG. 3.

The manager terminal 104 generates a 3D animation file using software such as 3D MAX or Maya at a service provider's request (Step 200) and converts the 3D animation file into a flash file (Step 202). Thereafter, the manager terminal 104 adds lip position information of a character included in the animation file to the animation file converted into the flash file and transmits the

animation file, along with the lip position information, to the Web server 100 (Step 204).

The Web server 100 that received the animation file to which the lip position information is added stores the animation file in the database 102 (Step 206).

The Steps 200 to 206 are repeated to store a plurality of animation files corresponding to various events in the database 102.

In addition, the manager terminal 102 generates an audio file which can be used as a background sound or an effect sound at a service provider's request and provides the generated audio file to the Web server 100 (Step 208).

The manager terminal 102 that received the audio file stores the audio file in the database 102 (Step 210).

The Steps 208 and 210 are repeated to store a plurality of audio files corresponding to various events in the database 102.

In addition, the manager terminal 102 generates a lip-sync file, which is constituted by announcement, voice data corresponding to the announcement, and lip motion data according to the voice data, at a service provider's request, and provides the generated lip-sync file to the Web server 100 (Step 212).

The manager terminal 102 that received the lip-sync file stores the lip-sync file in the database 102 (Step 214).

The Steps 212 and 214 are repeated to store a plurality of lip-sync files corresponding to various announcements in the database 102.

When one (for example, T1) of the plurality of client terminals T1 to T3 accesses the Web server 100 through the wired/wireless network at a client's request, the Web server 100 shows an animation file list, an audio file list and a lip-sync file list which are stored in the database 102, and a client selects one or more of an animation file, an audio file and a lip-sync file from the shown lists

and requests the Web server 100 to organize an animation message (Step 218).

According to the request of the client, the Web server 100 reads one or more of the animation file, the audio file and the lip-sync file, which are selected by the client, from the database 102 and organizes the animation message based on the read file(s). Thereafter, the Web server 100 transmits the organized animation message to the client terminal T1 or a client terminal requested by the client. The animation message is transmitted to the terminal through the wired/wireless network or other mobile communication systems (not shown).

The client terminal T1 that received the animation message synchronizes and reproduces the animation file, the audio file and the lip-sync file included in the animation message.

Now, a method of reproducing the animation message will be described in more detail.

Prior to description about the reproducing method, a general configuration of the client terminal T1 will be first described with reference to FIG. 4.

The client terminal T1 includes a controller 300, a memory unit 302, a communication module 302, an operating panel 306, an audio signal processor 308, a speaker 310, a video signal processor 312 and a display device 314.

The controller 300 controls the entire operation of the client terminal T1, including reproducing an animation message according to a preferred embodiment of the present invention.

The memory unit 302 stores a variety of information including process programs of the controller 300 and, particularly, an animation message received from the Web server 100.

The communication module 304 communicates with the Web server 100 through a wireless network, such as WiBro, or other mobile communication

systems (not shown).

The operating panel 306 interfaces between a user and the controller 300 and provides various kinds of information related to selection by the user to the controller 300.

The audio signal processor 308 processes an audio signal under control of the controller 300 and outputs the processed audio signal through the speaker 310.

The video signal processor 312 processes a video signal under control of the controller 300 and outputs the processed video signal through the display device 314.

Now, the method of reproducing the animation message in the client terminal T1 as constructed above will be described with reference to FIG. 5.

The controller 300 executes an instruction to reproduce the animation message stored in the memory unit 302, which is inputted by a user through the operating panel 306, or checks whether or not there occurs a receipt event of the animation message through the communication module 304 (Step 400).

If there occurs a reproduction instruction from the user or the receipt event of the animation message, the controller 300 reads the animation message from the memory unit 302 and checks whether or not a lip-sync file and an audio file are included in the read animation message (Step 404).

If the lip-sync file and the audio file are included in the animation message, the controller 300 synchronizes and reproduces an animation file, voice data of the lip-sync file, and the audio file included in the animation message, and modifies an image portion, which corresponds to lip position information added to the animation file, based on lip motion information included in the lip-sync file (Step 406). As a result, a lip of a character included in the animation message moves in correspondence to the voice data. Thus, 3D animation is

reproduced, a background sound or an effect sound and the voice data are outputted in synchronization with the 3D animation, and the character's lip moves as if the character really speaks, according to the voice data.

On the other hand, if only the lip-sync file is included in the animation message (Step 408), the controller 300 synchronizes and reproduces the animation file and the voice data of the lip-sync file included in the animation message, and modifies an image portion, which corresponds to the lip position information added to the animation file, based on the lip motion information included in the lip-sync file (Step 410). Thus, 3D animation is reproduced, the voice data are outputted in synchronization with the 3D animation, and the character's lip moves as if the character really speaks, according to the voice data.

In addition, if only the audio file is included in the animation message, the controller 300 synchronizes and reproduces only the animation file and the audio file (Step 412.

Industrial Applicability

While the invention has been shown and described with reference to certain embodiments and drawings, it will be understood by those skilled in the art that various changes in form and details may be made.

Thus, it is intended that the present invention covers the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

CLAIMS

1. An animation message service method comprising the steps of:

converting a plurality of 3D animation files into flash files, respectively;

storing the flash files as animation files in a database; and

transmitting one selected from the animation files stored in the database to a specified client terminal.

2. The animation message service method of claim 1, wherein lip position information of a character is included in the animation files, and

wherein a plurality of lip-sync files, each being constituted by voice data corresponding to a plurality of announcements and lip motion data, are stored in the database,

further comprising the step of transmitting one selected from the plurality of lip-sync files, along with the animation files, to the client terminal.

3. The animation message service method of claim 1, wherein a plurality of audio files are stored in the database,

further comprising the step of transmitting one selected from the plurality of audio files, along with the animation files, to the client terminal.

4. An animation message reproducing method comprising the steps of:

checking whether it is requested to reproduce an animation message organized by an animation file and lip position information of a character, voice data and lip motion data, which are included in the animation file; and

synchronizing and reproducing the animation file and the voice file and

modifying an image corresponding to the lip position information based on the lip motion data.

5. The animation message reproducing method of claim 4, wherein an audio file is included in the animation message, and

wherein the audio file is reproduced in synchronization with the animation file.

6. An animation message service system comprising:

a database that stores a plurality of animation files; and

a server that converting a plurality of 3D animation files into flash files as the plurality of animation files, stores the plurality of animation files in the database, and transmits one selected from the plurality of animation files to a specified client terminal.

7. The animation message service system of claim 6, wherein the server stores lip position information of a character included in the animation file in the database,

stores a plurality of lip-sync files constituted by voice data corresponding to a plurality of announcements and lip motion data in the database, and

transmits one selected from the plurality of lip-sync files, along with the animation file, to the client terminal.

8. The animation message service system of claim 6, wherein the server stores a plurality of audio files in the database, and

transmits one selected from the plurality of audio files, along with the animation file, to the client terminal.

9. A client terminal for an animation message service, comprising:

a communication module that communicates with an animation message service system which stores a plurality of animation files and a plurality of lip-sync files constituted by lip position information of a character, voice data and lip motion data, which are included in the animation files;

an operating panel that provides an interface with a user; and

a controller that requests the animation message service system to transmit one of the animation files, lip position information included in the animation file, and selection information of one of the lip-sync files to a specified client terminal.

10. The client terminal of claim 9, wherein the animation message service system further stores a plurality of audio files, and

wherein the controller requests the animation message service system to transmit one of the audio files, along with the animation file, to the specified client terminal.

11. A client terminal for an animation message service, comprising:

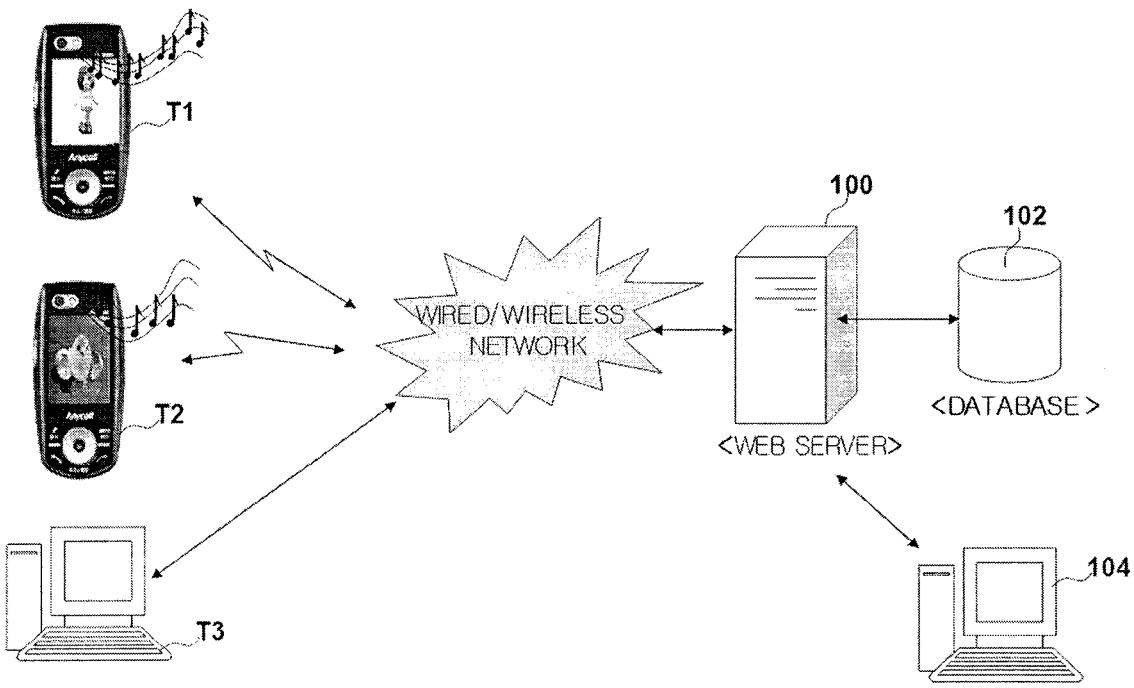
a memory unit that stores an animation message organized by an animation file and lip position information of a character, voice data and lip motion data, which are included in the animation file; and

a controller that synchronizes and reproduces the animation file and the voice file and modifies an image corresponding to the lip position information based on the lip motion data.

12. The client terminal of claim 11, wherein an audio file is further included in the animation message, and

wherein the controller reproduces the audio file in synchronization with the animation file.

Fig. 1


T1
T2
T3
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NETWORK
100
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102
<DATABASE>
104

Fig. 2

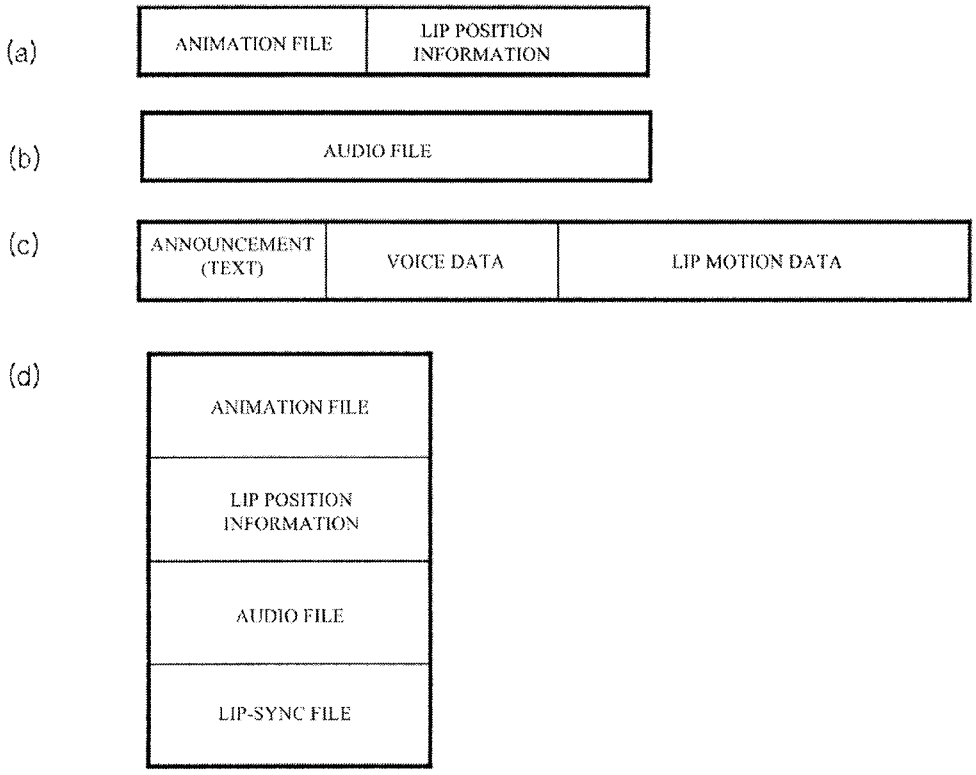

(a)
ANIMATION FILE
LIP POSITION INFORMATION
(b)
AUDIO FILE
(c)
ANNOUNCEMENT (TEXT)
VOICE DATA
LIP MOTION DATA
(d)
ANIMATION FILE
LIP POSITION INFORMATION
AUDIO FILE
LIP-SYNC FILE

Fig. 3

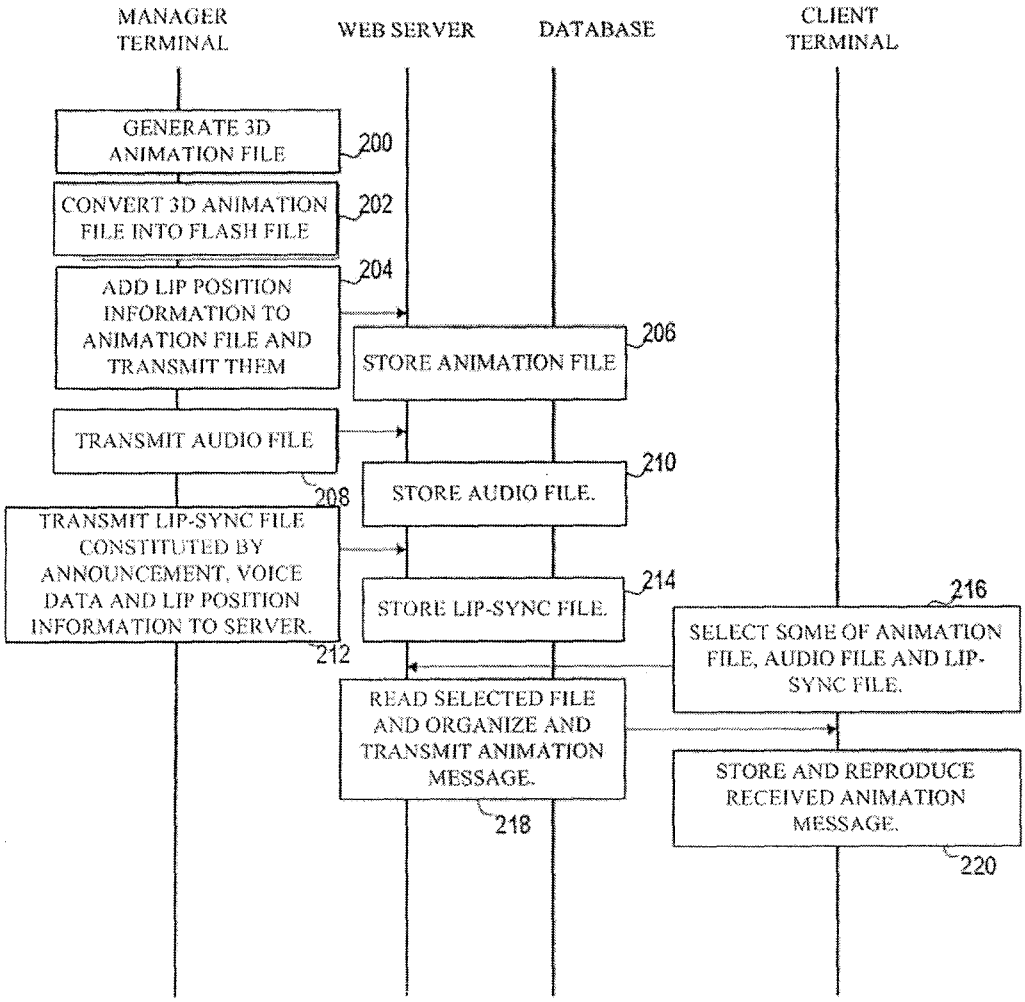

MANAGER TERMINAL
WEB SERVER
DATABASE
CLIENT TERMINAL
GENERATE 3D ANIMATION FILE
200
CONVERT 3D ANIMATION FILE INTO FLASH FILE
202
ADD LIP POSITION INFORMATION TO ANIMATION FILE AND TRANSMIT THEM
204
STORE ANIMATION FILE
206
TRANSMIT AUDIO FILE
208
STORE AUDIO FILE.
210
TRANSMIT LIP-SYNC FILE CONSTITUTED BY ANNOUNCEMENT, VOICE DATA AND LIP POSITION INFORMATION TO SERVER.
212
STORE LIP-SYNC FILE.
214
SELECT SOME OF ANIMATION FILE, AUDIO FILE AND LIP-SYNC FILE.
216
READ SELECTED FILE AND ORGANIZE AND TRANSMIT ANIMATION MESSAGE.
218
STORE AND REPRODUCE RECEIVED ANIMATION MESSAGE.
220

Fig. 4

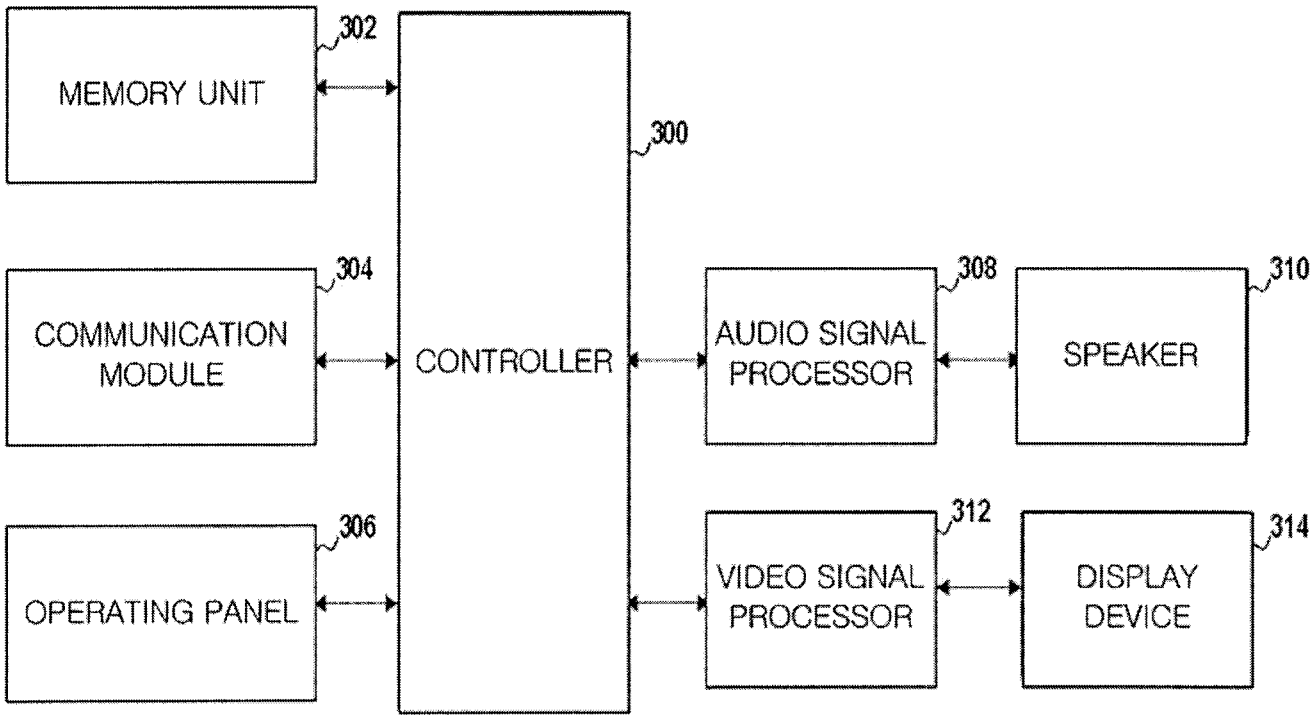
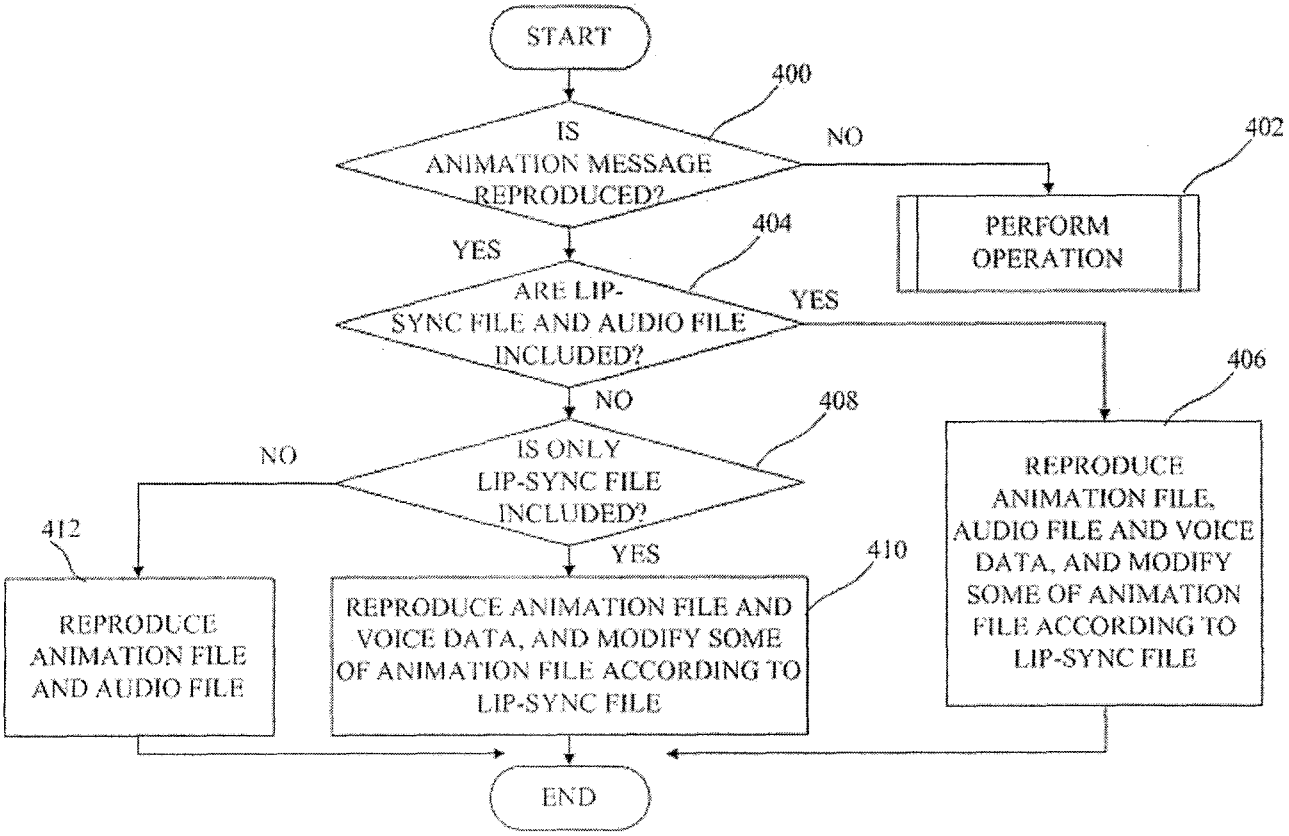

MEMORY UNIT
302
CONTROLLER
300
COMMUNICATION MODULE
304
AUDIO SIGNAL PROCESSOR
308
SPEAKER
310
OPERATING PANEL
306
VIDEO SIGNAL PROCESSOR
312
DISPLAY DEVICE
314

Fig. 5


START
400
IS ANIMATION MESSAGE REPRODUCED?
NO
402
PERFORM OPERATION
YES
404
ARE LIP-SYNC FILE AND AUDIO FILE INCLUDED?
YES
406
REPRODUCE ANIMATION FILE, AUDIO FILE AND VOICE DATA, AND MODIFY SOME OF ANIMATION FILE ACCORDING TO LIP-SYNC FILE
NO
408
IS ONLY LIP-SYNC FILE INCLUDED?
NO
412
REPRODUCE ANIMATION FILE AND AUDIO FILE
YES
410
REPRODUCE ANIMATION FILE AND VOICE DATA, AND MODIFY SOME OF ANIMATION FILE ACCORDING TO LIP-SYNC FILE
END

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2006/002470

A. CLASSIFICATION OF SUBJECT MATTER

H04Q 7/24(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 8 : H04Q 7/24

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
KR, JP : IPC as above

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search terms used)
eKIPASS(KIPO internal) "animation", "flash"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004-0061667 A1 (TETSUAYA SAWANO et al.) 01 April 2004 See abstract, and paragraphs 21-34.	1-12
A	US 2006-0092154 AA (LEE, D. G.) 04 May 2006 See abstract, and paragraphs 21-56.	1-12
A	KR 10-2005-0077907 A (E2 CO., LTD.) 04 August 2005 See abstract, and figure 3.	1-12

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 MARCH 2007 (21.03.2007)	**21 MARCH 2007 (21.03.2007)**

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Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea
Facsimile No. 82-42-472-7140

Authorized officer
KANG, HEE GOK
Telephone No. 82-42-481-8264

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR2006/002470

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004-0061667 A1	01.04.2004	JP 2004120543 A2	15.04.2004
US 2006-0092154 AA	04.05.2006	CN 1770139 A	10.05.2006
		EP 1657682 A2	17.05.2006
		EP 1657682 A3	24.05.2006
		JP 2006134322 A2	25.05.2006
		KR 2006038677 A	04.05.2006
KR 10-2005-0077907 A	04.08.2005	None	