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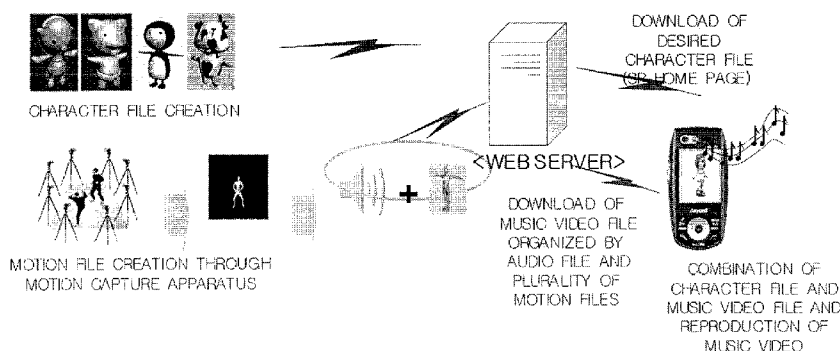
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(54) Title: MUSIC VIDEO SERVICE METHOD AND SYSTEM AND TERMINAL



(57) Abstract: An object of the invention is to provide music video service method, system and terminal which allow a client to create a desired music video file at first hand. The music video service method includes the steps of: storing a plurality of character files, a plurality of audio files, and a plurality of motion files; downloading the character files to a client terminal; and organizing one of the plurality of audio files and one or more of the plurality of motion files as a music video edition file based on selection information on the one of the plurality of audio files and the one or more of the plurality of motion files, and downloading the music video edition file to the client terminal.



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DESCRIPTION

MUSIC VIDEO SERVICE METHOD AND SYSTEM AND TERMINAL

5 Technical Field

The present invention relates to an additional service of a mobile terminal, and more particularly, to a music video service method, system and terminal.

10 Background Art

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

An additional service includes downloading various kinds of contents,
15 such as music video and games, to terminals, etc.

However, in the prior art, since clients download music video files created by established singers, it is difficult to create all music video files to clients' tastes.

Moreover, since music video files have a great deal of data, downloading
20 the music video files incurs high expenses.

Thus, there is a keen need for technology to allow clients to create desired music video files at first hand.

In addition, there is a keen need for technology that can greatly reduce the amount of data of music video files.

25

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 music video service method, system and terminal which allow a client to create a desired music video file at first hand.

5 It is another object of the invention to provide a music video service method, system and terminal which is capable of greatly reducing the amount of data of a music video file.

Technical Solution

10 To achieve the above and other objects and address the above and other problems occurring in the prior art, the present invention provides a music video service method including the steps of: storing a plurality of character files, a plurality of audio files, and a plurality of motion files; downloading the character files to a client terminal; and organizing one of the plurality of audio files and
15 one or more of the plurality of motion files as a music video edition file based on selection information on the one of the plurality of audio files and the one or more of the plurality of motion files, and downloading the music video edition file to the client terminal.

According to the music video service method of the present invention,
20 3D character files, audio files and motion files are differently created and stored in the database and a client can directly edit a music video to a client's taste by mapping the motion files onto the audio files.

In addition, since a music video file is organized by the 3D character files, the audio files and the motion files, it is possible to greatly reduce the
25 amount of data of the music video file as compared to a conventional AV music video file.

Advantageous Effects

The present invention provides music video service method, system and terminal which are capable of differently creating 3D character files, audio files and motion files and storing these files in the database and allowing a client to
5 directly edit a music video to a client's taste by mapping the motion files onto the audio files.

In addition, the present invention provides a music video service method, system and terminal which is capable of organizing a music video file by the 3D character files, the audio files and the motion files and making it possible to
10 greatly reduce the amount of data of the music video file as compared to a conventional AV music video file.

Brief Description of the Drawings

FIG. 1 is a view schematically showing a procedure of a music video
15 service method according to a preferred embodiment of the present invention.

FIG. 2 is a view illustrating a configuration of a music video service system according to a preferred embodiment of the present invention.

FIGs. 3 and 4 are views showing database structures used for a music video service according to a preferred embodiment of the present invention.

20 FIG. 5 is a procedural diagram illustrating a music video service method according to a preferred embodiment of the present invention.

FIG. 6 is a view illustrating a configuration of a client terminal according to a preferred embodiment of the present invention.

FIG. 7 is a flow chart illustrating a music video reproducing method
25 according to a preferred embodiment of the present invention.

Mode for Carrying Out the Invention

Hereinafter, a music video service method according to a preferred embodiment of the present invention will be described with reference to FIG. 1.

A service provider generates 3D character data using software such as 3D MAX or Maya, and adds lip position data for lip-sync to the character data to
5 create a character file.

In addition, the service provider extracts motion data on parts of a human body through an optical motion capture apparatus to create a motion file.

In addition, the service provider creates an audio file, such as an MP3 file, including audio data and lip-sync data.

10 The created character, motion and audio files are stored in a database of a Web server.

A client accesses the Web server through a client terminal, downloads and stores one of a plurality of character files stored in the database, selects a plurality of motion files for a selected audio file, performs a motion edition based
15 on the selected motion files, and downloads a music video edition file constituted by the selected audio file and the selected motion files.

Thereafter, the client terminal displays a character according to the stored character file, reproduces audio data of the audio file included in the music video edition file, performs lip-sync by moving a lip of the character according to lip-
20 sync data included in the audio file in synchronization with the reproduction of the audio file, and reproduces a music video file of the invention by moving parts of a body of the character according to the motion files included in the music video edition file.

Now, a configuration of a music video service system according to a
25 preferred embodiment of the present invention will be described with reference to FIG. 2.

The music video service system includes a Web server 100, a database

102, a service provider terminal 104 and client terminals T1 to T3.

The Web server 100 is connected to the client terminals T1 to T3 through a wired/wireless network, and provides a Web site for selection of an audio file, a plurality of motion files that match the audio file, and a character file to the client
5 terminals T1 to T3.

In addition, the Web server 100 downloads the character file, a music video file previously created by a service provider, or a music video edition file, which is edited by selection of a client, to the client terminal.

The database 102 stores various files for the music video service
10 according to the preferred embodiment of the present invention, including character files, motion files, audio files, music video files, etc., as shown in FIG. 3.

The character files include 3D character data and lip position information of the character, and may be provided with various files for various characters to
15 satisfy clients' diverse demands.

The motion files are motion data captured through a motion capture apparatus.

The audio files include audio data and lip-sync data synchronized with the audio data. The lip-sync data are lip motion data to move a lip of the
20 character in synchronization with the words of a song.

The music video files are music video files which are edited by a service provider and are provided to clients who want to download the music video files merely.

Each of the music video files includes a character file, an audio file and a
25 plurality of motion files, as shown in FIG. 4.

A music video edition file edited by selection of a client includes an audio file and a plurality of motion files, as shown in FIG. 4.

Here, the service provider may create a music video edition file in which a character file is not included, and store the created music video edition file in the database 102.

The service provider terminal 104 creates a character file including
5 character data and lip position data for lip-sync at a service provider's request using software such as 3D MAX or Maya, and stores the created character file in the database 102 through the Web server 100.

In addition, the service provider terminal 104 creates a motion file using motion data of parts of a body, which are extracted through an optical motion
10 capture apparatus, and stores the created motion file in the database 102 through the Web server 100.

In addition, the service provider terminal 104 creates an audio file, such as MP3 file, including audio data and lip-sync data, and stores the created audio file in the database 102 through the Web server 100.

15 The client terminals T1 to T3, which may be mobile communication terminals, personal computers, etc., access the Web side of the Web server 100 through a wired/wireless network, download and store one of a plurality of character files stored in the database 102, select a plurality of motion files for a selected audio file, perform a motion edition based on the selected motion files,
20 download a music video edition file constituted by the selected audio file and the selected motion files, and reproduce music video using the downloaded music video edition file and the stored character file.

In addition, the client terminals T1 to T3 may download a music video file or a music video edition file, which is stored in the database 102 through the
25 Web server 100, and reproduce the downloaded music video file or music video edition file.

Now, an operation of the music video service system as constructed

above will be described with reference to a procedural diagram of FIG. 5.

The service provider terminal 104 generates 3D character data using software such as 3D MAX or Maya at a service provider's request, adds lip position information to the generated 3D character data to create a character file, and transmits the created character file to the Web server 100 (Step 200). The Web server 100 that received the character file stores the received character file in the database 102 (Step 202). The Steps 200 and 202 are repeated to store character files for various characters in the database 102.

In addition, the service provider terminal 104 converts motion data captured through a motion capture apparatus into a motion file at a service provider's request and transmits the motion file to the Web server 100 (Step 204). The Web server 100 that received the motion file stores the received motion file in the database 102 (Step 206). The Steps 204 and 206 are repeated to store motion files for various motions in the database 102.

In addition, the service provider terminal 104 creates an audio file by adding lip-sync data to audio data at a service provider's request and transmits the created audio file to the Web server 100 (Step 208). The Web server 100 that received the audio file stores the received audio file in the database 102 (Step 210). The Steps 208 and 210 are repeated to store audio files for a variety of music in the database 102.

In addition, the service provider terminal 104 provides selection information of a character file, an audio file and a plurality of motion files for edition of a music video file to the Web server 100 at a service provider's request (Step 212). The Web server 100 that received the selection information for edition of the music video file creates the music video file with the character file, the audio file and the plurality of motion files corresponding to the selection information and stores the created music video file in the database 102 (Step 214).

The Steps 212 and 214 are repeated to store various music video files in the database 102.

One (for example, T1) of the plurality of client terminals T1 to T3 accesses the Web server 100 and requests the Web server 100 to download one of
5 a plurality of music video files stored in the database 102 at a client's request (Step 216). At the request for the download, the Web server 100 reads the requested music video file from the database 102 and downloads the read music video file to the client terminal T1 (Step 218). The client terminal T1 that received the downloaded music video file stores the music video file in a
10 memory unit and reproduces the music video file (Step 220).

In addition, one (for example, T1) of the plurality of client terminals T1 to T3 accesses the Web server 100 and requests the Web server 100 to download one of a plurality of character files stored in the database 102 at a client's request (Step 222). At the request for the download, the Web server 100 reads the
15 requested character file from the database 102 and downloads the read music video file to the client terminal T1 (Step 224). The client terminal T1 that received the downloaded character file stores the character file in the memory unit (Step 226). The stored character file is used to reproduce the music video edition file later.

20 In addition, one (for example, T1) of the plurality of client terminals T1 to T3 accesses the Web server 100 and transmits the selection information of the audio file and the plurality of motion files for music video edition, which are stored in the database 102, to the Web server 100 at a client's request (Step 228). Upon receiving the selection information of the audio file and the plurality of
25 motion files, the Web server 100 reads the audio file and the plurality of motion files from the database 102 based on the received selection information, creates the music video edition file based on the read files, and downloads the created

music video edition file to the client terminal T1 (Step 230). Then, the client terminal T1 stores the downloaded music video edition file in the memory unit and reproduces the music video edition file.

Now, a method of reproducing the music video edition file or the music
5 video file 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. 6.

The client terminal T1 includes a controller 300, a memory unit 302, a
10 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 a music video edition file or a music video file according to a preferred embodiment of the present invention.

15 The memory unit 302 stores a variety of information including process programs of the controller 300 and, particularly, a character file, a music video edition file, a music video file, etc., which are 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
20 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
25 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 music video file or the music video edition file in the client terminal T1 as constructed above will be described with
5 reference to FIG. 7.

The controller 300 checks whether or not a user inputs an instruction to reproduce a music video file or a music video edition file stored in the memory unit 302 through the operating panel 306 (Step 400).

If there is the instruction to reproduce the music video file or the music
10 video edition file, the controller 300 reads character data included in the character file stored in the memory unit 302, displays a character according to the read character data, reads and reproduces audio data included in the audio file, performs lip-sync by moving a lip portion of the character, which corresponds to lip position information included in the character file, according to lip-sync data
15 included in the audio file, and reproduces the music video file by moving parts of a body of the character according to the motion files included in the music video edition file (Step 404).

Industrial Applicability

20 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
25 appended claims and their equivalents.

CLAIMS

1. A music video service method comprising the steps of:
storing a plurality of character files, a plurality of audio files, and a
5 plurality of motion files;
downloading the character files to a client terminal; and
organizing one of the plurality of audio files and one or more of the
plurality of motion files as a music video edition file based on selection
information on the one of the plurality of audio files and the one or more of the
10 plurality of motion files, and downloading the music video edition file to the
client terminal.

2. The music video service method of claim 1, wherein character
data for display of a character and lip position information of the character are
15 included in the character files, and
wherein audio data and lip motion data to move a lip of the character in
synchronization with the words of a song are included in the audio files.

3. The music video service method of claim 1, wherein the
20 selection information is provided from the client terminal or a service provider
terminal.

4. A music video service method comprising the steps of:
requesting a server to download one of a plurality of character files
25 stored in a database;
selecting one of a plurality of audio files and some of a plurality of
motion files, the audio files and the motion files being stored in the database, and

requesting the server to download the selected audio file and motion files; and

displaying a character according to character data of the downloaded character file, reproducing audio data of the downloaded audio file, and reproducing a music video by moving the character according to the downloaded motion files in synchronization with the reproduction of the audio data.

5 5. The music video service method of claim 4, wherein character data for display of a character and lip position information of the character are included in the character files,

10 wherein audio data and lip motion data to move a lip of the character in synchronization with the words of a song are included in the audio files, and

 wherein the lip of the character is moved in synchronization with the reproduction of the audio data.

15 6. The music video service method of claim 4, further comprising the step of selecting, downloading and reproducing a music video file organized by a plurality of motion files for one audio file stored in the database and a plurality of motion files for one character file.

20 7. A music video service system comprising:

 a database that stores a plurality of character files, a plurality of audio files, and a plurality of motion files; and

 a server that downloads the character files to a client terminal at a client terminal's request, organizes one of the plurality of audio files and one or more of the plurality of motion files as a music video edition file based on selection information on the one of the plurality of audio files and the one or more of the plurality of motion files, and downloads the music video edition file to the client

terminal.

8. The music video service system of claim 7, wherein character data for display of a character and lip position information of the character are
5 included in the character files, and

wherein audio data and lip motion data to move a lip of the character in synchronization with the words of a song are included in the audio files.

9. The music video service system of claim 7, wherein the selection
10 information is provided from the client terminal or a service provider terminal.

10. A client terminal that provides a music video service, comprising:

a communication module that communicates with a server; and

15 a controller that requests the server to download one of a plurality of character files stored in a database, selects one of a plurality of audio files and some of a plurality of motion files, the audio files and the motion files being stored in the database, requests the server to download the selected audio file and motion files, displays a character according to character data of the downloaded
20 character file, reproduces audio data of the downloaded audio file, and reproduces a music video by moving the character according to the downloaded motion files in synchronization with the reproduction of the audio data.

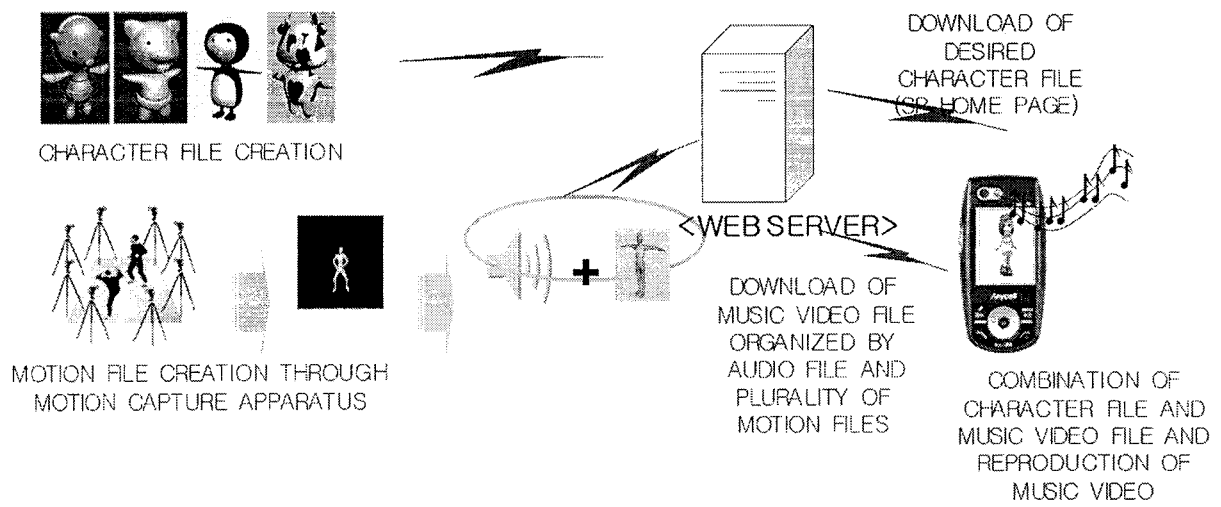
11. The client terminal of claim 10, wherein character data for
25 display of a character and lip position information of the character are included in the character files,

wherein audio data and lip motion data to move a lip of the character in

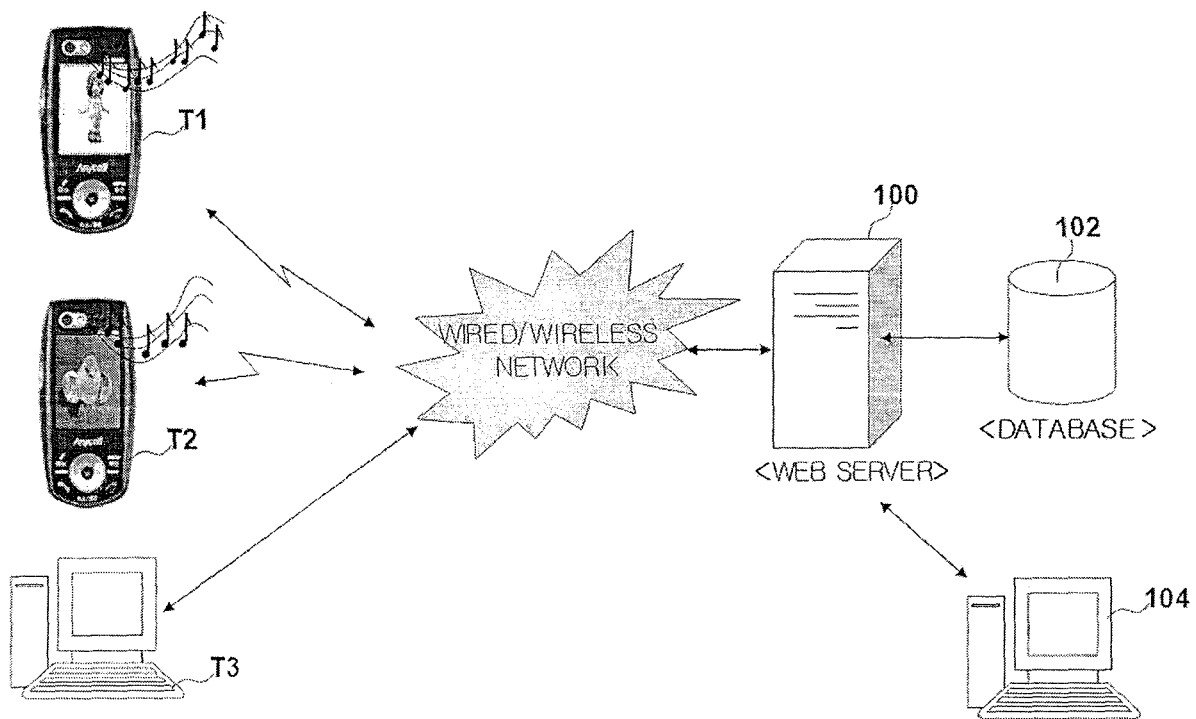
synchronization with the words of a song are included in the audio files, and
wherein the controller moves the lip of the character in synchronization
with the reproduction of the audio data.

- 5 12. The client terminal of claim 10, wherein the controller selects,
downloads and reproduces a music video file organized by a plurality of motion
files for one audio file stored in the database and a plurality of motion files for
one character file.

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Fig. 1

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Fig. 2

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Fig. 3

FIRST CHARACTER FILE (LIP POSITION DATA)
SECOND CHARACTER FILE (LIP POSITION DATA)
...
N-th CHARACTER FILE (LIP POSITION DATA)

FIRST MOTION FILE
SECOND MOTION FILE
....
M-th MOTION FILE

FIRST AUDIO FILE (LIP-SYNC DATA)
SECOND AUDIO FILE (LIP- SYNC DATA)
....
L-th AUDIO FILE (LIP-SYNC DATA)

FIRST MUSIC VIDEO FILE
SECOND MUSIC VIDEO FILE
....
O-th MUSIC VIDEO FILE

Fig. 4

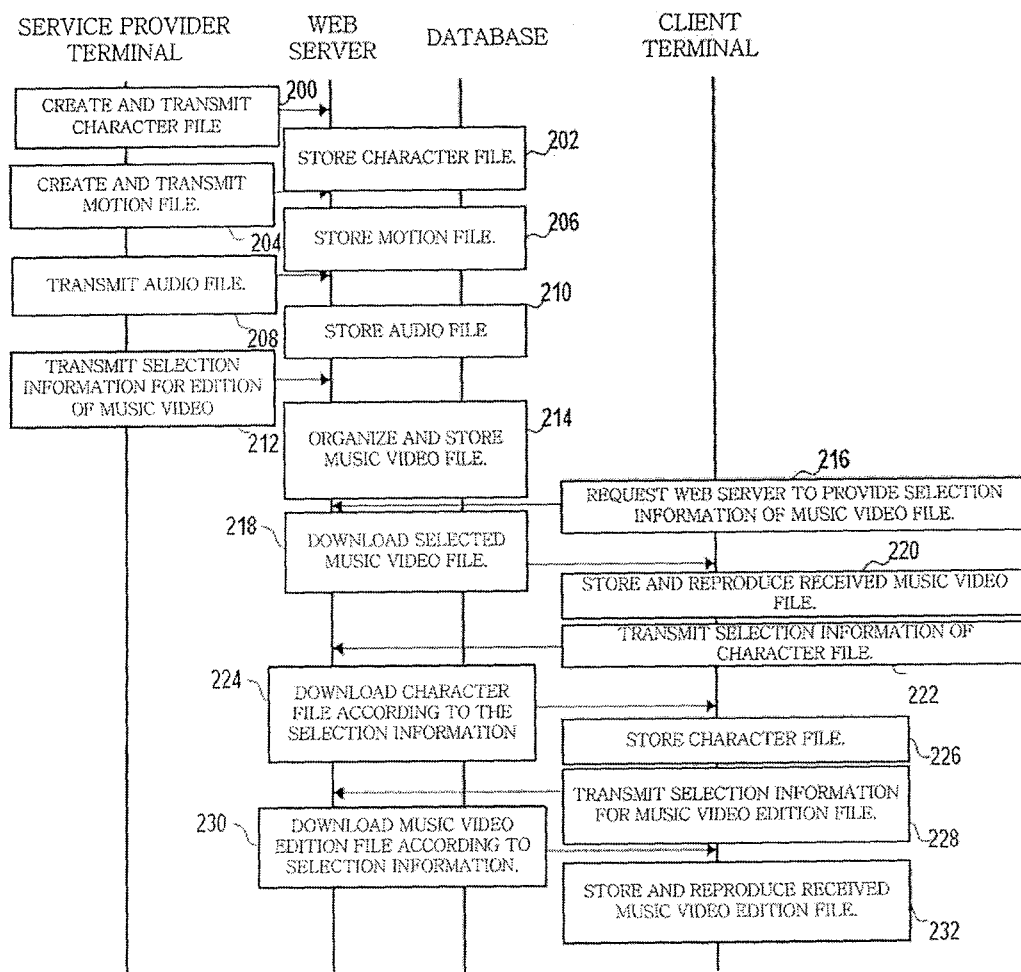
MUSIC VIDEO FILE

CHARACTER FILE						
FIRST AUDIO FILE (LIP-SYNC DATA)						
FIRST MOTION FILE	SECOND MOTION FILE	THIRD MOTION FILE	FOURTH MOTION FILE	FIFTH MOTION FILE	...	M-th MOTION FILE

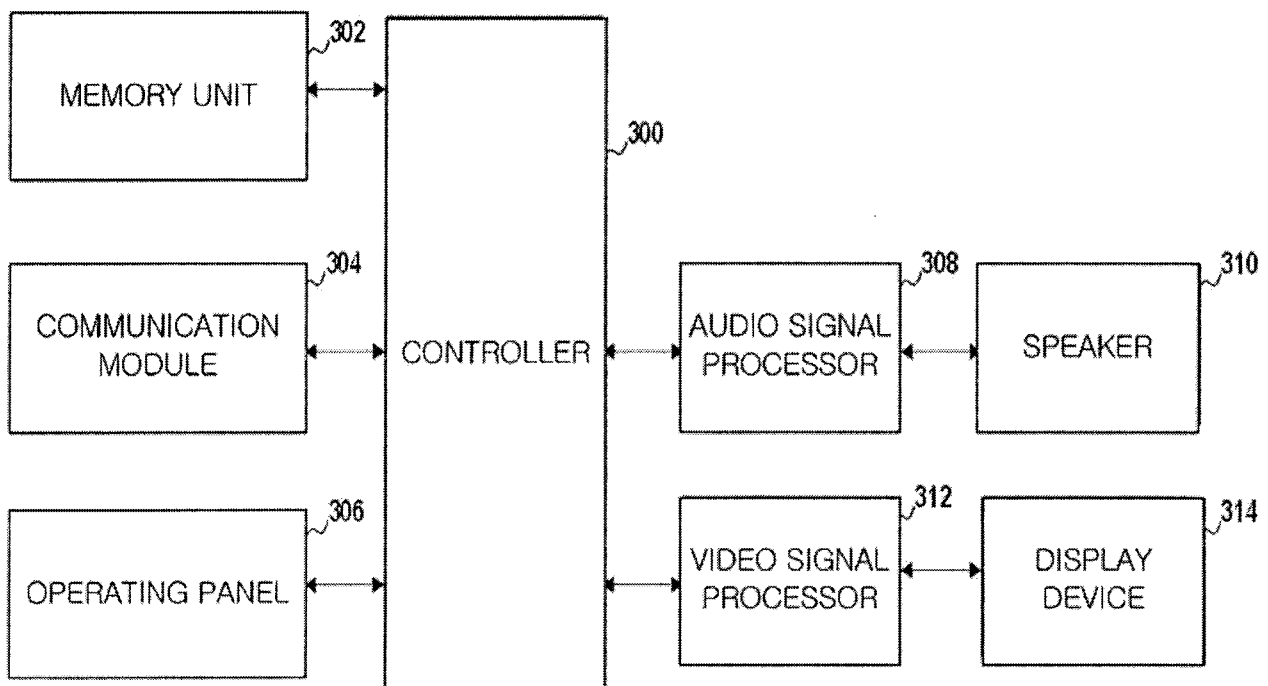
MUSIC VIDEO EDITION FILE

FIRST AUDIO FILE (LIP-SYNC DATA)						
FIRST MOTION FILE	SECOND MOTION FILE	THIRD MOTION FILE	FOURTH MOTION FILE	FIFTH MOTION FILE	...	M-th MOTION FILE

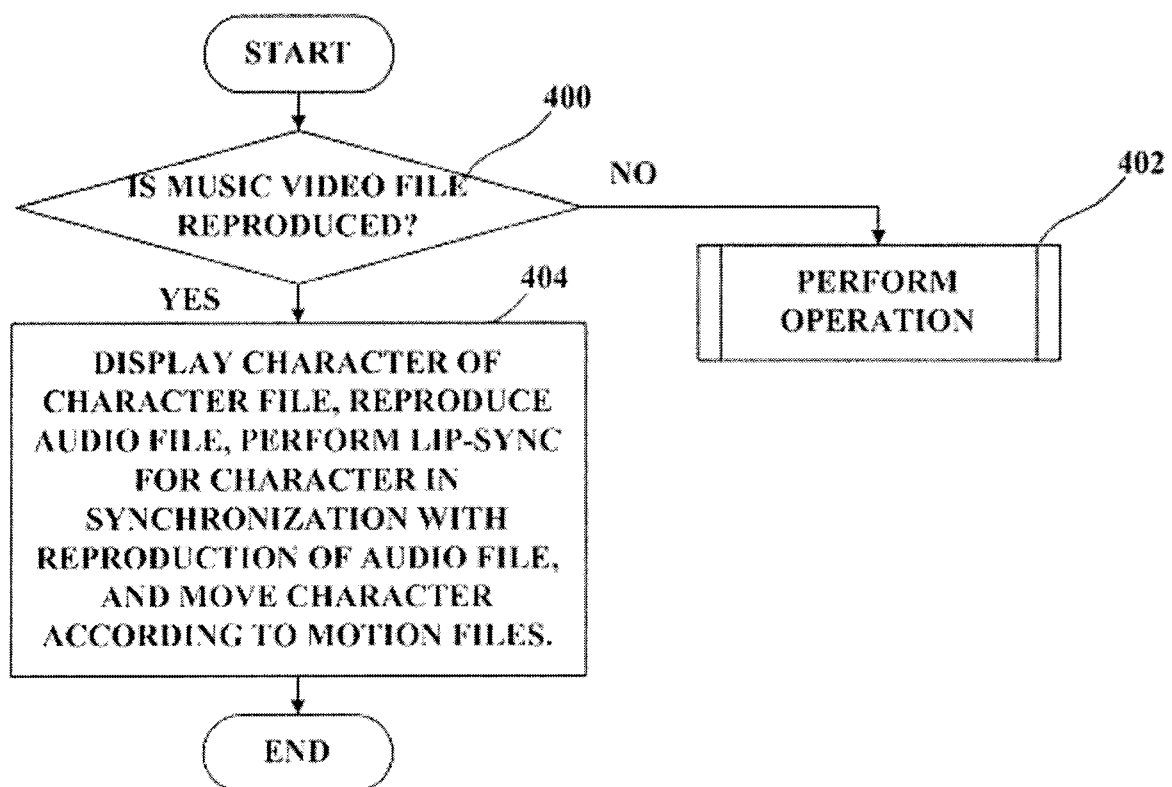
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Fig. 5

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Fig. 6

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Fig. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2006/002471**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)

IPC8 : H04Q., H04L, H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

JP, KP as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO internal), keywords : "music", "video", "service", "system", "terminal", "edit",

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/0069218 A1 (Sanghoo Sull, et al.) 6 June 2002 (see abstract, figure 2, claim 1)	1 ~ 12
A	JP 2005348425 (Hitachi Kokusai Electric Inc.) 15 December 2005 (see abstract, figure 1, claim 1)	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

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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

21 MARCH 2007 (21.03.2007)

Date of mailing of the international search report

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Name and mailing address of the ISA/KR

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Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Dong Hwan

Telephone No. 82-42-481-5755



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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