DESCRIPTION

CONTENTS DELIVERY SYSTEM, CONTENTS DELIVERY METHOD, CONTENTS PROCESSING APPARATUS AND CONTENTS PROCESSING METHOD

Technical Field

The present invention relates to a contents delivery system, a contents delivery method, a contents processing apparatus and a contents processing method. More particularly, it relates to a contents delivery system, a contents delivery method, a contents processing apparatus and a contents processing method that can deliver contents without puzzling the user. The present invention further relates to a recording medium where a program to be executed by such a contents processing apparatus and also to such a program.

This patent application claims priority of Japanese Patent Application Laid-Open No. 2003-120544 filed on April 24, 2003, the entire contents of which is incorporated herein by reference.

Background Art

As a result of the wide spread use of the Internet and other communication network systems in recent years, various contents of audio/visual works are being

delivered by way of the Internet. Japanese Patent Application Laid-Open No. 2003-69977 proposes a technique of effectively delivering advertisement information to the user from the providers of such contents.

Known methods for delivering contents of audio/visual works by way of the Internet include delivery by streaming and delivery by downloaded files. In the case of delivery by streaming, the contents receiving party can output the data received by way of the Internet to a display so as to have it display the contents for viewing.

On the other hand, in the case of delivery by downloaded files, the delivered contents data are stored in a hard disc or the like once. Then, the user/viewer reproduces the files stored in the hard disc and watches the contents anytime he or she likes.

Since delivery by streaming does not involve the need of storing a large volume of received data, it is possible for a viewer to watch the delivered contents even if he or she does not have a hard disc or some other large capacity storage device. On the other hand, the viewer will have to face a large bill if the accounting system of the delivery service is based on connect time because the viewer has to be connected constantly with the server who provides the service of delivering the contents of audio/visual works as long as the viewer receives such contents.

To the contrary, in the case of delivery by downloaded files, the user/viewer can disconnect the line with the server when the transfer of the file is completed to consequently reduce the connect time because it is no longer necessary for the view to

be connected to the server. Additionally, since the contents are stored at side of the contents receiving party, the user/viewer can watch them whenever he or she likes thereafter.

Thus, delivery by streaming and delivery by downloaded files have advantages and disadvantages. When the user/viewer watches and listen to the contents by means of a personal computer, he or she may more often than not have knowledge about delivery by streaming and delivery by downloaded files. Then, it will not be any problem if the user/viewer is required to operate the computer differently for delivery by streaming and for delivery by downloaded files.

However, many users/viewers receiving the contents of audio/visual works that are delivered by the Internet by means of a television receiving set for viewing may not have sufficient knowledge about delivery by streaming and delivery by downloaded files. Then, it may be a problem for such users/viewers to operate differently for delivery by streaming and for delivery by downloaded files. Such a situation may constitutes an obstacle when popularizing systems for delivering the contents of audio/visual works by way of the Internet.

Disclosure of the Invention

Example embodiments may provide a contents delivery system and a contents delivery apparatus that are free from the problem.

Example embodiments may provide a contents delivery system and a contents delivery apparatus that can delivery the contents of audio/visual works by way of a network without forcing complicated cumbersome operations to ordinary users.

In accordance with a first aspect of the present invention, there is provided a contents delivery system for delivering contents from a contents delivery apparatus to a contents processing apparatus by way of a network, the system comprising: presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files from the contents processing apparatus to a user thereof; inputting specifying information specifying the set of contents, from the sets of contents on the list, to be delivered to the user of the contents processing apparatus from the contents processing apparatus; and acquiring by the contents processing apparatus the set of contents delivered from the contents delivering apparatus according to delivery information specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network; wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

Thus, in example embodiments, with the contents delivery system, a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files is presented from the contents processing apparatus to the user thereof and specifying information specifying the set of contents to be delivered to the user is input from the contents processing apparatus. Then, the contents processing apparatus acquires the set of

contents delivered from the contents delivering apparatus according to delivery information specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus.

In accordance with a second aspect of the present invention, there is provided a contents delivery method for a contents delivery system for delivering contents from a contents delivery apparatus to a contents processing apparatus by way of a network, the method comprising: presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files from a contents processing apparatus to a user thereof; inputting specifying information specifying the set of contents, from the sets of contents on the list, to be delivered to the user of the contents processing apparatus from the contents processing apparatus; and acquiring by the contents processing apparatus the set of contents delivered from the contents delivering apparatus according to delivery information specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network; wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

Thus, in example embodiments, with the contents delivery method, a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files is presented and, as specifying information specifying the set of contents to be delivered is input, the set of contents is acquired according to delivery information specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files.

In accordance with a third aspect of the present invention, there is provided a contents processing apparatus adapted to receive deliveries of contents from a contents delivery apparatus by way of a network, the apparatus comprising: presentation means for presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files; input means for inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and acquisition means for acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network; wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

The delivery information may be correlated with the license of the sets of contents.

The delivery information may further include information for accessing the sets of contents

In accordance with a fourth aspect of the present invention, there is provided a contents processing method to be used for a contents processing apparatus adapted to receive deliveries of contents from a contents delivery apparatus by way of a network, the method comprising: a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files; an input step of inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and an acquisition step of acquiring the set of contents delivered from a

contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network; wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

In accordance with a fifth aspect of the present invention, there is provided a program recorded on a recording medium so as to be installed in a contents processing apparatus for receiving contents delivered from a contents delivery apparatus by way of a network, the program comprising: a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files; an input step of inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and an acquisition step of acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network; wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

In accordance with a sixth aspect of the present invention, there is provided a program to be installed in a contents processing apparatus for receiving contents delivered from a contents delivery apparatus by way of a network, the program being adapted to cause a computer to execute: a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files;

an input step of inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and an acquisition step of acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network; wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

Other objects and specific advantages that example embodiments may provide will become clearer from the description given below by referring to the accompanying drawings that illustrate preferred embodiments of the invention.

Brief Description of the Drawings

FIG. 1 is a schematic block diagram of a contents delivery system according to the invention, showing the configuration thereof;

FIG. 2 is a schematic block diagram of a digital television receiving set operating as a component of the contents delivery system, showing the functional structure thereof;

FIG. 3 is a schematic front view of a remote commander for remotely operating a digital television receiving set that operates as component of the contents delivery system;

FIG. 4 is a schematic block diagram of the server operating as a component of the contents delivery system;

FIG. 5 is a schematic illustration of information that can be exchanged between a digital television receiving set and the server that operate as so many components of the contents delivery system;

FIG. 6 is a schematic illustration of the relationship between various IDs and metadata;

FIG. 7 is a schematic illustration of the relationship among package metadata, license metadata and contents metadata;

FIG. 8 is a flow chart of the operation of a digital television receiving set when receiving from the server contents that are delivered by streaming;

FIG. 9 is a flow chart of the processing operation that is a prerequisite for the processing operation of FIG. 8;

FIG. 10 is a schematic illustration of a startup file for delivery by streaming, showing the structure thereof;

FIG. 11 is a flow chart of the operation of reproducing a file that is stored in advance;

FIG. 12 is a flow chart of the operation that is a prerequisite for the processing operation of FIG. 11;

FIG. 13 is a schematic illustration of a startup file to be downloaded, showing the structure thereof;

FIG. 14 is a schematic illustration of a startup file for delivery by streaming to be used with another protocol;

FIG. 15 is part of a flow chart of the processing operation for utilizing contents by a digital television receiving set that is a component of a contents delivery system;

FIG. 16 is the remaining part of the flow chart of the processing operation for utilizing contents by a digital television receiving set that is a component of a contents delivery system;

FIG. 17 is an example of list of titles that can be displayed;

FIG. 18 is an example of list of titles in the package shown in FIG. 17;

FIG. 19 is another example of list of titles in the package shown in FIG. 17;

FIG. 20 is an example of package list that can be displayed;

FIG. 21 is an example of image of sales promotion that can be displayed;

FIG. 22 is another example of image of sales promotion that can be displayed; and

FIG. 23 is a schematic block diagram of a personal computer, showing the structure thereof.

Best Mode for Carrying out the Invention

Before describing preferred embodiments of the present invention, the present invention will be summarily described below.

A contents delivery system according to the invention is adapted to deliver contents of programs from a contents delivery apparatus that may typically operate as server 2 as shown in FIG. 1 to a contents processing apparatus, which may typically be

a digital television receiving set 3-1 as shown in FIG. 1, by way of a network such as Internet 1 as shown in FIG. 1.

A contents delivery system according to the invention is so designed as to present a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files from a contents processing apparatus to the user thereof such as a list of titles in a package as shown in FIG. 18 and input specifying information specifying the set of contents to be delivered to the user of the contents processing apparatus from the contents processing apparatus. For example, the specifying information may indicate that program "the Last Episode: Soaring in the Universe" is specified by means of cursor 141 in FIG. 18. Then, the contents processing apparatus acquires the set of contents delivered from the contents delivering apparatus according to the delivery information provided by the contents delivery apparatus by way of a network and specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files. For example, the delivery information may be contained in a startup file as shown in FIG. 6.

A contents delivery method according to the invention is so designed as to deliver contents by means of a contents delivery system adapted to delivery contents from a contents delivery apparatus that may typically operate as server 2 to a contents processing apparatus, which may typically be a digital television receiving set 3-1 as shown in FIG. 1, by way of a network such as Internet 1 as shown in FIG. 1.

More specifically, the contents delivery method so designed as to present a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files from a contents processing apparatus to the user thereof such as a list of titles in a package as shown in FIG. 18 and input specifying information specifying the set of contents to be delivered to the user of the contents processing apparatus from the contents processing apparatus. For example, the specifying information may indicate that program "the Last Episode: Soaring in the Universe" is specified by means of cursor 141 in FIG. 18. Then, the contents processing apparatus acquires the set of contents delivered from the contents delivering apparatus according to the delivery information provided by the contents delivery apparatus by way of a network and specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files. For example, the delivery information may be contained in a startup file as shown in FIG. 6.

A contents processing apparatus according to the invention is so designed as to receive a service of delivering contents, which may be television programs, from a contents delivery apparatus that may typically operate as server 2 by way of a network such as Internet 1 as shown in FIG. 1.

More specifically, the contents processing apparatus comprises a presentation means for presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files such as a list of titles in a package as shown in FIG. 18, an input

means for inputting specifying information specifying the set of contents to be delivered which may, for example, indicate that program "the Last Episode: Soaring in the Universe" is specified by means of cursor 141 in FIG. 18 and an acquisition means for acquiring the set of contents delivered from the contents delivering apparatus according to the delivery information provided by the contents delivery apparatus by way of a network and specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files. For example, the delivery information may be contained in a startup file as shown in FIG. 6.

For the purpose of the present invention, the delivery information may be correlated with the license of the specified sets of contents. More specifically, the set of contents that includes a startup file as shown in FIG. 6 shows a one to one correspondence relative to a contents ID, a contents ID shows a one to n correspondence relative to a license ID and a license ID shows a one to one correspondence relative to a license.

For the purpose of the present invention, the delivery information may further include information for accessing the specified sets of contents.

Furthermore, a contents processing method according to the invention is so designed as to use a digital television receiving set 3-1 as shown in FIG. 1 to receive a service of delivering contents, which may be television programs, from a contents delivery apparatus that may typically operate as server 2 by way of a network such as Internet 1 as shown in FIG. 1. The contents processing method comprises a

presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files such as a list of titles in a package as shown in FIG. 18, an input step of inputting specifying information specifying the set of contents to be delivered which may, for example, indicate that program "the Last Episode: Soaring in the Universe" is specified by means of cursor 141 in FIG. 18 and an acquisition step of acquiring the set of contents delivered from the contents delivering apparatus according to the delivery information provided by the contents delivery apparatus by way of a network and specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files. For example, the delivery information may be contained in a startup file as shown in FIG. 6.

Finally, a recording medium according to the invention carries therein a recorded program to be executed by a contents processing apparatus, which may typically be a digital television receiving set 3-1 for receiving a service of delivering contents, which may be television programs, from a contents delivery apparatus that may typically operate as server as shown in FIG. 1, by way of a network such as Internet 1 as shown in FIG. 1, the program comprising a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files such as a list of titles in a package as shown in FIG. 18, an input step of inputting specifying information specifying the set of contents to be delivered which may, for

example, indicate that program "the Last Episode: Soaring in the Universe" is specified by means of cursor 141 in FIG. 18 and an acquisition step of acquiring the set of contents delivered from the contents delivering apparatus according to the delivery information provided by the contents delivery apparatus by way of a network and specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files. For example, the delivery information may be contained in a startup file as shown in FIG. 6.

Now, a contents delivery system and a contents processing apparatus to be used for such a system according to the invention will be described in greater detail.

Referring to FIG. 1, a contents delivery system 11 according to the invention comprises a server 2 and a plurality of digital television receiving sets 3-1, 3-2 that are mutually connected by way of the Internet 1 that is a typical network. A broadcasting station 4 is also connected to the Internet 1. The server 2 receives and keeps television programs broadcast from the broadcasting station 4. Alternatively, the server 2 receives and keeps television programs provided by the broadcasting station 4 by way of the Internet 1. It may needless to say that the server 2 can keep its own programs in addition to the above-described television programs.

Each of the digital television receiving sets 3-1, 3-2 may be arranged in a house, an office or some other place and has a function of receiving the electric wave broadcast from the broadcasting station 4 so that the viewer thereof may view any of the television programs it receives. Additionally, it has a function of receiving

programs provided by the server 2 so that the viewer thereof may view any of them.

While FIG. 1 shows a server 2 and two digital television receiving sets 3-1, 3-2, the system may comprise a plurality of servers 2 and the number of digital television receiving sets may generally be greater than two. In other words, there may generally be more digital television receiving sets other than the digital television receiving sets 3-1, 3-2 shown in FIG. 1.

Note that the digital television receiving sets 3-1, 3-2 are referred to simply as digital television receiving sets 3 when it is not necessary to discriminate them.

FIG. 2 is a schematic block diagram of a digital television receiving set 3 operating as a component of a contents delivery system 11 according to the invention as shown in FIG. 1, showing the functional structure thereof.

Referring to FIG. 2, the digital television receiving set 3 comprises an input section 21 and various commands are input by the user by way of the input section 21. The digital television receiving set 3 further comprises a presentation section 22 that displays the images of programs and outputs the corresponding sounds. Additionally, the presentation section 22 presents other various pieces of information to the user.

Referring again to FIG. 2, browser 23 presents an HTML (hyper text markup language) document (including CSS (cascading style sheets) and executes the script contained in the HTML document. Additionally, the browser 23 presents a BML (broadcast markup language) document (including CSS) and executes the script contained in the BML. Still additionally, it can deal with the XrML (extensible rights

markup language) of ContentGuard, Inc.

A contents reproducing section 24 is realized by software, which may typically be Media Player (tradename, available from Microsoft), and controls and implements the operation of reception of contents through reproduction thereof. The contents reproducing section 24 also implements various control operations incorporated in the digital television receiving set 3 other than the processing operations of markup languages.

A DRM (digital right management) processing section 25 communicates with the DRM server 74 (see FIG. 4) of the server 2 and acquires licenses relating to contents and manages them in the digital television receiving set 3. Since the DRM processing section 25 supplies key Kc for decrypting encrypted data to the contents reproducing section 24, it may be integrated typically with the contents reproducing section 24 in order to securely manage the key Kc.

An accounting processing section 26 executes accounting processes that may vary depending on the accounting system involved in the process such as an electronic money system or a prepayment system. Contents storage section 27 is typically formed by using a hard disc so as to store the contents provided by the contents server 75 (FIG. 4) of the server 2.

An application 28 comprises various pieces of software and controls various operations of the digital television receiving set 3. Metadata database 29 keeps the metadata supplied from the metadata database 73 of the server 2 (FIG. 4).

The input section 21 outputs a signal that corresponds to the input by the user to the browser 23 and the contents reproducing section 24. The presenting section 22 presents the information provided from the browser 23 or the contents reproducing section 24. The contents reproducing section 24 reads out the required contents from the contents storage section 27. Whenever necessary, the contents reproducing section 24 issues instructions for an accounting process to the accounting processing section 26. The DRM processing section 25 executes a DRM process according to the instructions for the DRM process from the contents reproducing section 24 and subsequently outputs the key Kc that is necessary for decrypting the encrypted contents to the contents reproducing section 24.

The application 28 is adapted to start up the browser 23 for an operation and executes a process for issuing instructions necessary for reproducing contents to the contents reproducing section 24. Additionally, it issues instructions for retrieving metadata to the metadata database 29 and acquires the metadata obtained as a result of the retrieving operation.

The digital television receiving section 3 executes various operations according to the instructions from remote commander 51 as shown in FIG. 3. The remote commander 51 has number buttons 52 for numbers 1 through twelve. The remote commander 51 is also provided at the front end thereof with a generating section 53 for generating an infrared signal according to a corresponding button operation by the user.

In FIG. 3, direction buttons 55U, 55D, 55L and 55R that are operated by the user for moving the cursor on the presenting section 22 upward, downward, leftward and rightward respectively are arranged below the number buttons 52 and an enter button 54 to be operated for finalizing an input operation is arranged at the center of the direction buttons.

In FIG. 3, a detail button 56, a stop button 57 and a reproduction button 58 are arranged at a lower part of the remote commander 51. The detail button 56 is operated by the user when he or she gives instructions for displaying detailed information of the information that is being displayed. The stop button 57 is operated by the user when he or she stops the ongoing reproduction of contents. The reproduction button 58 is operated by the user when he or she gives instructions for reproducing contents. A menu button 59 is arranged above the reproduction button 58 so as to be operated by the user when he or she wants a menu to be displayed.

Although not shown in FIG. 3, the remote commander 51 may be further provided with various buttons to which various functions are assigned respectively.

FIG. 4 is a schematic block diagram of the server 2, illustrating the configuration thereof. The server 2 of the present invention includes a shop server 71, a settlement server 72, a metadata database server 73, a DRM server 74 and a contents server 75.

The above listed components of the server 2 exchanges information respectively with the corresponding sections of the digital television receiving set 3 as

shown in FIG. 5.

When the shop server 71 is accessed from the browser 23 by way of the Internet 1, it provides navigation information including an HTML document and a BML document to the browser 23. The settlement server 72 communicates with the browser 23 or the accounting processing section 26 to settle an account. The settlement server 72 executes a settlement process according to a request for the settlement process from the shop server 71 and outputs the outcome of the settlement to the shop server 71.

The metadata database 73 reads out the metadata requested by the application 28 out of the metadata it stores according to a metadata acquisition request from the application 28 and supplies them to the metadata database 29 of the digital television receiving set 3 so as to have it stores them.

The metadata database 73 also supplies the metadata obtained as a result of a retrieving operation according to a metadata retrieval request from the shop server 71 to the latter.

The DRM server 74 communicates with the DRM processing section 25 of the digital television receiving set 3 according to a license issuance request from the shop server 71 and executes a DRM process. The DRM process includes an authentication process of verifying that the user is a proper user having a license, a process for providing/acquiring the key Kc required for decrypting the corresponding encrypted data and other processes necessary for managing copy rights. When a

DRM process is executed properly, the DRM server 74 supplies the contents server 75 with a key Kc necessary for decrypting the corresponding contents. Additionally, when a DRM process is executed properly, the DRM server 74 supplies a corresponding key Kc to the DRM processing section 25 of the digital television receiving set 3.

The contents server 75 encrypts contents data by means of the key Kc supplied from the DRM server 74 and delivers them to the contents reproducing section 24 by streaming or to the contents storage section 27 as a downloaded file so as to have it store them.

While the server 2 includes a plurality of servers in the instance of FIGS. 4 and 5, it is also possible to compose the server 2 of a single server.

FIG. 6 is a schematic illustration of the relationship among various pieces of information relating to settlements, DRM processes and reproductions. As shown in FIG. 6, an appliance ID and a user ID show a one to one correspondence. The appliance ID is an ID assigned to the digital television receiving set 3 and the user ID is an ID assigned to the user who uses the digital television receiving set 3. Thus, the digital television receiving set 3 and the user are identified by these IDs.

The user to whom a predetermined user ID is assigned concludes a contract with a manager of the server 2 for the purchase of a package as a commodity. More specifically, the user purchases a television program he or she wants as a package out of the television programs provided by the server 2. The package shows a one to one

correspondence relative to a package metadata.

Each package contains one or more than one sets of contents. Each set of contents comprises a contents main body, Download. xml that is a management information file for downloading and a startup file. The contents main body refers to contents data of a television program.

Download. xml that is a management information file is prepared when the contents are to be downloaded. It includes therein a directory and file names. A download operation is completed when all the files listed in the directory are received.

A startup file contains information of the type of delivery that tells if the set of contents to be delivered needs to be delivered by downloaded files or by streaming. A startup file will be described in greater detail hereinafter by referring to FIG. 10.

A set of contents shows a one to one correspondence relative to a contents ID. The set of contents is identified by the contents ID. Additionally, the contents ID shows a one to one correspondence relative to a contents metadata. As shown in FIG. 7, a contents metadata contains a contents ID, a title, a genre name and a description of a television program.

A total of n (n being an integer not smaller than 1) license IDs are correlated to a contents ID. Similarly n license metadata are correlated to a single contents metadata.

The license ID is used to identify the license that is made to show a one to one correspondence relative to it. Each license is composed of a license ID, a usage rule

and a bundle of contents keys. A bundle of contents keys (which corresponds to the key Kc shown in FIG. 5) is a bundle of keys that includes an appropriate number of keys required for decrypting the set of contents for which the license is effective and shows a one to one correspondence relative to the contents ID.

A license metadata shows a one to one correspondence relative to a license ID. As shown in FIG. 7, a license metadata includes a license ID, a contents ID, a contents URL (uniform resource locator), a license URL, the type of delivery, the title of a set of contents and the text of a usage rule.

The license metadata and the contents metadata are made to show an n to one correspondence relative to each other by the contents ID included therein.

The contents URL of the license metadata indicates the accessing target for acquiring the contents. The license URL indicates the accessing target for acquiring the license. The type of delivery indicates that the sets of contents to be licensed are to be delivered by streaming or by downloaded files.

A package is made to show an m to n correspondence (n being an integer not smaller than 1 like m) relative to a license ID. Similarly, a package metadata is made to show an m to n correspondence relative to a license metadata.

As shown in FIG. 7, a package metadata is composed of a package ID, a shop site URL, a package utilization period, a package type, package information and a license ID list.

A package ID is a piece of information for identifying a package. A shop site

URL indicates the accessing target of the shop site for acquiring the package. The package utilization period indicates the period during which the package can be utilized.

The package type indicates if the package is a pack or a subscription. Additionally, the package type indicates if the package is a multicast or not. A pack is a package that contains a predetermined appropriate number of programs. With a subscription, the user can view the programs of a predetermined channel for a predetermined number of days. A multicast indicates that the package is provided to many and unspecified users free or on a fee charging basis.

Package information includes the title of the package and the fee charging system. The license ID list describes the license IDs of the licenses contained in the package.

The package metadata corresponds to the license metadata that by turn corresponds to the license IDs described therein.

Now, the process of reproducing a set of contents on the server 2 will be described below by referring to the flow chart of FIG. 8.

Note that, it is necessary for the digital television receiving set 3 to acquire a metadata from the server 2 before executing the process of FIG. 8. The process for acquiring a metadata is shown in the flow chart of FIG. 9.

Referring firstly to FIG. 9, the application 28 accesses the metadata database 73 by way of the Internet 1 according to the command from the user and requests to

acquire the metadata in Step S151. Then, as the metadata database 73 is accessed by the application 28 in Step S171, it reads out the metadata relating to the requested set of contents in Step S172 and supplies the metadata to the metadata database 29 of the digital television receiving set 3 by way of the Internet 1. The metadata database 29 receives and stores the metadata in Step S161.

As a result of the above process, the metadata database 29 of the digital television receiving set 3 keeps the metadata in advance. The metadata includes a package metadata, a license metadata and a contents metadata as shown in FIG. 6.

The process illustrated in FIG. 8 is executed in a state where the metadata is held in the metadata database 29 in a manner as described above. Note that the user interface shown in FIG. 8 comprises an input section 21 and a presenting section 22 shown in FIG. 2.

The user issues a command for starting up the menu of the digital television receiving set 31 by operating the menu button 59 of the remote commander 51. Then, in Step S1, the input section 21 by turn issues a command for starting up the menu to the contents reproducing section 24. In Step S21, the contents reproducing section 24 receives the command from the input section 21 and, in Step S22, it issues a command for reading out the metadata already stored in the metadata database 29 to the latter.

In Step S91, the metadata database 29 receives the command from the contents reproducing section 24 and, in Step S92, it reads out metadata that is stored in

advance and supplies it to the contents reproducing section 24.

In Step S23, the contents reproducing section 24 receives the metadata supplied from the metadata database 29 and, in Step S24, it reads out the titles of the sets of contents (programs) described therein and supplies them to the presenting section 22 that operates as user interface. In Step S2, the presenting section 22 displays a list of the sets of contents supplied from the contents reproducing section 24.

Then, the user views the displayed list and selects a program he or she wants, operating one or more than one appropriate direction buttons 55U through 55R and the enter button 54 of the remote commander 51. In Step S3, the input section 21 supplies a selection signal that corresponds to the operation carried out by the user (information specifying the selected program) to the browser 23.

In Step S51, the browser 23 receives the signal indicating the selected program from the input section 21 and, in Step S52, it requests the contents server 75 to supply the startup file that corresponds to the program (set of contents). The request includes the contents ID for identifying the set of contents.

In Step S122, the contents server 75 reads out the startup file of the set of contents that corresponds to the specified contents ID and transmits it to the browser 23.

In Step S53, the browser 23 receives the startup file (startup. html) from the contents server 75.

FIG. 10 is a schematic illustration of a startup file that can be received in this way, showing the configuration thereof. As shown in FIG. 10, the startup file describes that the contents ID of the selected set of contents is "content_ID1" and that the type of delivery of the set of contents is delivery by streaming ([content = "stream"]).

The startup file further describes that the delivery jumps to the URL that is described next after the elapse of a second and [http://contents_server.ssny.co.jp/samplet.tts] is specified for the URL.

In Step S54, the browser 23 starts up the contents reproducing section 24 by means of a plug in operation.

In Step S25, the contents reproducing section 24 starts operating and, in Step S26, it requests the DRM processing section 25 to acquire a license.

In Step S71, the DRM processing section 25 receives the request for acquiring a license from the contents reproducing section 24 and, in Step S72, it accesses the DRM server 74 and requests it to execute a DRAM process. At this time, the license ID for the set of contents to be reproduced by the contents reproducing section 24 and the user ID are added to the DRM server 74 as arguments.

In Step S111, the DRM server 74 executes the DRM process according to the request from the DRM processing section 25. Then, the DRM server 74 checks if the user has already acquired a license on the basis of the license ID and the user ID supplied from the DRM processing section 25. While the checking process will not

be described in greater detail, the user is required to acquire a license in advance in order to reproduce the set of contents. The DRM server 74 stores the license ID for identifying the license issued to the user and the user ID of the user. If the license ID and the user ID that are supplied from the DRM processing section 25 are already registered in a list, the user is determined to be an authorized user. If the license ID and the user ID are not registered in the list to show a proper correspondence, the user is determined to be not the user who purchased the license properly. The DRM server 74 notifies the DRM processing section 25 of the outcome of the checking process.

In Step S72, the DRM processing section 25 receives the outcome of the checking process from the DRM server 74 and determines if the user is to be authorized for reproduction of the set of contents or not according to the received outcome. Then, in Step S73, the result of the determination is supplied from the DRM processing section 25 to the contents reproducing section 24.

If the notice received from the DRM processing section 25 does not authorize the user for reproduction of the set of contents, the contents reproducing section 24 suspends the reproducing process in Step S27. If, on the other hand, the notice received from the DRM processing section 25 authorizes the user for reproduction of the set of contents (the notification contains the key Kc required for reproducing the set of contents), the contents reproducing section 24 accesses the contents URL (FIG. 7) that describes the license metadata of the license in Step S28. In the instance of

this example, the URL indicates that the set of contents is kept by the contents server 75.

In Step S123, the contents server 75 is accessed by the contents reproducing section 24 and, in Step S124, it reads out the data of the contents main body described in the contents URL and delivers them to the contents reproducing section 24 by streaming.

In Step S29, the contents reproducing section 24 receives the delivery of the contents data by streaming from the contents server 75 and, in Step S30, it decrypts the encrypted contents data by means of the Key Kc and supplies them to the presenting section 22 that operates as user interface. In Step S4, the presenting section 22 displays the contents data that are delivered from the contents reproducing section 24 by streaming.

Thus, the process of delivering the set of contents specified by the user by streaming is executed in the above described manner.

The process of delivering contents from the contents server 75 by streaming is described above. Now, the process of downloading contents to the digital television receiving set 3 in advance so as to be stored as files and reproduced later will be discussed below.

In this instance, the digital television receiving set 3 has to download contents data in advance. This process will be described by referring to the flow chart of FIG. 12.

In Step S361, the application 28 accesses the metadata database 73 and requests to acquire metadata. In Step S391, the metadata database 73 receives the request and, in Step S392, it reads out the metadata of the corresponding set of contents and transmits the read out metadata to the metadata database 29 of the digital television receiving set 31. In Step S371, the metadata database 29 stores the metadata supplied from the metadata database 73.

The above process is same as the process from Step S151 to Step S172 described above by referring to FIG. 9.

Then, in Step S362, the application 28 accesses the contents server 75 and requests transmission of contents according to a corresponding command from user. In Step S401, the contents server 75 that has received the request reads out the contents requested in Step S402 and transmits them to the contents storage section 27. In Step S381, the contents storage section 27 receives the contents transmitted from the contents server 75 and stores them.

In this way, the contents that correspond to the metadata are stored in advance both in the metadata database 29 and the contents storage section 29.

The process illustrated in FIG. 11 is executed in a state where the metadata and the contents are stored in advance in a manner as described above.

In Step S201, the input section 21 issues a command for starting up the menu to the contents reproducing section 24 according to a corresponding command from the user that is issued when the user operated the menu button 59. In Step S221, the

contents reproducing section 24 receives the menu startup command from the input section 21 and, in Step S222, it by turn issues a command for reading metadata to the metadata database 29.

In Step S291, the metadata database 29 receives the command from the contents reproducing section 24 and, in Step S292, it reads out the metadata that is stored in advance and outputs it to the contents reproducing section 24.

In Step S223, the contents reproducing section 24 receives the metadata from the metadata database 29 and, in Step S224, it reads out the titles of sets of contents and outputs them to the presenting section 22. In Step S202, the presenting section 22 that operates as user interface receives the presented program titles from the contents reproducing section 24 and presents them to the user.

Then, the user views the displayed program titles and selects the program that he or she wants to reproduce by operating the remote commander 51. In Step S203, the input section 21 supplies information that specifies the set of contents specified by the user to the browser 23.

In Step S221, the browser 23 receives the selection from the input section 21 and, in Step S222, it supplies the contents ID of the selected program (set of contents) to the metadata database 29 and requests transmission of the corresponding startup file.

In Step S293, the metadata database 29 receives the request from the browser 23 and, in Step S294, it reads out the startup file that corresponds to the set of contents

and supplies it to the browser 23.

In Step S253, the browser 23 receives the startup file supplied from the metadata database 29.

FIG. 13 illustrates an example of a startup file that the browser 23 may receive in the above-described manner. In this example, the type of delivery of contents is "download" and the contents ID is "content_ID2". In this example, again, the startup file further describes that the delivery jumps to the URL that is described next after the elapse of a second.

Since the destination of the jump is an MPEG-2TS file, it issues a command for starting up the contents reproducing section 24 by means of a plug in operation in Step S254.

In Step S225, the contents reproducing section 24 starts operating according to the command from the browser 23 and, in Step S226, it issues a request for acquiring license to the DRM processing section 25. In Step S271, the DRM processing section 25 receives the request for acquiring a license from the contents reproducing section 24 and, in Step S272, it communicates with the DRM server 74 and requests it to execute a DRM process. In Step S331, the DRM server 74 executes the DRM process according to the request from the DRM processing section 25. This process is same as the process of Step S111 in FIG. 8.

In Step S272, the DRM processing section 25 receives the outcome of the DRM process from the DRM server 74 and, in Step S273, it notifies the contents

reproducing section 24 of the outcome of the process.

If the received notice does not authorize the user for reproduction of the set of contents, the contents reproducing section 24 suspends the reproducing process. If, on the other hand, the received notice authorizes the user for reproduction of the set of contents, the contents reproducing section 24 issues a command for reading out the file of the set of contents specified in Step 228 for reproduction.

In the instance of this example, the URL indicates that the set of contents is stored in the contents storage section 27. Therefore, in Step S311, the contents storage section 27 receives the command for reading out the file from the contents reproducing section 24 and, in Step S312, it reads out the data of the specified file and supplies it to the contents reproducing section 24.

In Step S229, the contents reproducing section 24 receives the input of the data and, in Step S230, it outputs the data to the presenting section 22 that operates as user interface.

In Step S204, the presenting section 22 receives the data from the contents reproducing section 24 and displays them.

The contents stored in the contents storage section 27 of the digital television receiving set 3 in advance are reproduced in the above-described manner.

While the both files of the instances illustrated in FIGS. 10 and 13 are described by the scheme name of http (hypertext transfer protocol), a scheme name such as rtp (real-time transport protocol) may alternatively be used. What is required

essentially is that the resource type is expressed on the basis of the related protocol.

While processes to be executed between the server 2 and the digital television receiving set 3 are described above, FIGS. 15 and 16 illustrate flow charts of processes that are to be executed at the digital television receiving set 3 that is the apparatus for utilizing contents.

As the user operates the menu button 59, the contents reproducing section 24 outputs a list of titles as shown in FIG. 17 to the presenting section 22 according to the metadata stored in the metadata database 29 in Step S501.

In the instance of FIG. 17, icons for selecting a genre such as "Japanese movies", "foreign movies", "animations", "dramas" and "sports" are displayed and a list of titles of sets of contents of the selected genre (which is "animations" in the instance of FIG. 17) is also displayed. The title of each set of contents is displayed with information on availability, information on composition and information on accumulation.

In the illustrated instance, the first program is available "for three days" and the second program is available "for a day". The third and fourth programs are "not purchased yet" and the fifth program is "New!". The first program is composed as a "pack". The first through third programs are "already accumulated" in the contents storage section 27. In other words, the fourth and fifth programs are not accumulated yet.

In Step S502, the contents reproducing section 24 determines if a program is

selected or not and, if it is determined that no program is selected yet, it stands by for selection of a program.

If, on the other hand, it is determined that a program is selected in Step S502, the contents reproducing section 24 determines if the selected program is a "pack" program or not in Step S503. If the program is a pack program, the contents reproducing section 24 proceeds to Step S504. In Step S504, the contents reproducing section 24 displays a list of the titles of the sets of contents that are contained in the selected program ("pack") in a manner as shown in FIG. 18.

FIG. 18 shows an image that may be displayed when the first program that is titled as "Mechanized Worrier Z Gun Gun – All Episodes in 3 Weeks" is selected. In this instance, the 47th through the last episodes (the 50th episodes) are displayed out of a series of fifty episodes. The titles can be scrolled up and/or down by operating the upward direction button 55U and/or the downward direction button 55D of the remote commander 51.

The contents reproducing section 24 determines if the reproduction button 58 is operated or not in Step S505. If it is determined that the reproduction button 58 is not operated, the contents reproducing section 24 proceeds to Step S506, where it determines if a command for returning to the original image is issued or not. In the instance of displayed image of FIG. 18, a "return" button is displayed and the user can input a command for returning to the original image by operating the direction buttons 55U through 55R to move the cursor 141 onto the "return" button and then operating

the enter key 54. If a command for returning to the original image is not issued, the contents reproducing section 24 returns to Step S505 and the processes of the subsequent steps are repeatedly executed. If, on the other hand, it is determined that a command for returning to the original image is issued, the contents reproducing section 24 returns to Step S501, where the list of titles as shown in FIG. 17 is displayed again, and then the processes of the subsequent steps are executed.

If it is determined that the reproduction button 58 is operated in Step S505, the contents reproducing section 24 proceeds to Step S507. The contents reproducing section 24 skips the processes of Steps S504 through S506 and proceeds to Step S507 when it is determined in Step S502 that a program is selected and in Step S503 that the selected program is not a pack program (in other words, the selected program is a program of a single set of contents).

In Step S507, the contents reproducing section 24 determines if the program (set or sets of contents) reproduced or selected in Step S507 is already purchased or not. If the program is already purchased, the contents reproducing section 24 proceeds to Step S508, where it determines if the contents are those to be reproduced by streaming or not. This determination is made on the basis if the startup file of the program (contents) describes "stream" or not. If it is determined that the program (contents) is contents to be reproduced by streaming (if the startup file describes "stream"), the contents reproducing section 24 proceeds to Step S511, where it reproduces the contents. More specifically, as described above, the encrypted

contents that are delivered by streaming from the contents server 75 are decrypted by means of the key Kc and supplied to the processing section 22, where they are displayed. Note that, it is possible to determine the type of delivery of the contents not on the basis of the startup file but on the basis of the description of the license metadata of the program.

If it is determined that the contents are not those to be reproduced by streaming (if the startup file describes "download") in Step S508, the contents reproducing section 24 proceeds to Step S509, where it determines if the contents are already accumulated or not. If the contents are already accumulated, the contents reproducing section 24 proceeds to Step S511, where it reads out the encrypted contents data from the contents storage section 27 and decrypts them by means of the key Kc. Then, it supplies the decrypted contents to the presenting section 22 and has it display the contents.

If it is determined in Step S509 that the contents are not accumulated yet, the contents reproducing section 24 proceeds to Step S510, in which the contents storage section 27 executes the process of accumulating the contents. More specifically, the files to be downloaded by the contents server 75 are received by the contents storage section 27 and stored in the latter.

If, on the other hand, it is determined in Step S507 that the contents are not purchased yet, the contents reproducing section 24 proceeds to Step S512, where it executes the process of displaying a package list (which packet list is contained in the

package metadata).

For example, assume that a list of titles as shown in FIG. 19 is displayed in the process of displaying the list of titles in the pack in Step S509. According to the list of titles shown in FIG. 19, the availability information tells that the available period of the sets of contents in question has "expired". Therefore, if the user selects the lowermost one of the four episodes displayed to the user, or "the Last Episode: Soaring in the Universe" that is "not viewed yet", in FIG. 19, the user has to purchase it for viewing. Then, in Step S507, it is determined that the episode is not purchased by the user. In the case of the illustrated instance, the episode may be provided by way of one of three possible modes of purchase. Therefore, in Step S512, the three modes of purchase are displayed to the user in a manner as shown in FIG. 20.

In the uppermost mode of purchase in FIG. 20, the user can purchase only "the Last Episode". In the second mode of purchase in FIG. 20, the user can purchase a pack of "five episodes" from "the Episode 46" down to "the Last Episode". In the third mode of purchase in FIG. 20, the user can purchase a pack of all the episodes from "the Episode 1" down to "the Last Episode".

The user is expected to select one of the three modes of purchase by operating the remote commander 51.

Thus, in Step S513, the contents reproducing section 24 stands by until one of the three modes of purchase is selected by the user. If it is determined that one of the three modes of purchase is selected by the user, the contents reproducing section 24

proceeds to Step S514, where it determines if the selected episode (set of contents) is a set of contents to be reproduced by streaming or not. If the selected episode is a set of contents to be reproduced by streaming, the contents reproducing section 24 proceeds to Step S516, where it displays a sales promotion image as shown in FIG. 21, which is only an example. In the example of FIG. 21, it is displayed that a single episode of "the Last Episode: Soaring in the Universe" can be purchased for "¥200". The user can select either the button of "yes" or that of "no" in response to the sales promotion. More specifically, the user can select either the button of "yes" or that of "no" by operating the direction buttons 55U through 55R and the enter button 54 of the remote commander 51 to indicate that he or she purchases or does not purchase the episode.

If the user does not purchase the episode (if the button of "no" is operated), the contents reproducing section 24 returns to Step S512 to display the package list (FIG. 20) again and the subsequent processes are executed.

If it is determined in Step S517 that user issued a command for purchasing the episode (the button of "yes" is operated), the contents reproducing section 24 proceeds to Step S518, where it executes the process of reproducing the set of contents. Since the contents are reproduced by streaming in this instance, the set of contents that is delivered by streaming from the contents server 75 is received, decrypted and presented to the presenting section 22.

If it is determined in Step S514 that the selected episode (set of contents) is not

contents to be reproduced by streaming (and hence it is contents to be reproduced by downloaded files), the contents reproducing section 24 proceeds to Step S515, where it determines if the set of contents is already accumulated or not. If the set of contents is already accumulated, the contents reproducing section 24 proceeds to Step S516, in which it displays a sales promotion image as shown in FIG. 21 in a manner as described above. Then, as described above, the user can select either the button of "yes" or that of "no" by operating the direction buttons 55U through 55R and the enter button 54 of the remote commander 51 to indicate that he or she purchases or does not purchase the episode. If the user does not purchase the episode, the contents reproducing section 24 returns to Step S512.

If, on the other hand, it is determined that user issued a command for purchasing the episode, the contents reproducing section 24 proceeds to Step S518, where it executes the process of reproducing the set of contents. Since the set of contents is already stored in the contents storage section 27, the contents reproducing section 24 reproduces the set of contents stored in the contents storage section 27, decrypts it and then supplies it to the presenting section 22 so as to have it display the set of contents.

If it is determined in Step S515 that the set of contents is not accumulated yet, the contents reproducing section 24 proceeds to Step S519, where it has the presenting section 22 display a sales promotion image as shown in FIG. 22.

FIG. 22 shows an image that may be displayed when the user selected the first

mode of purchase in the image of FIG. 20. While the image of FIG. 21 is displayed in Step S516 when the user also selects the first mode of purchase shown in FIG. 20 but the set of contents is delivered by streaming. On the other hand, the image of FIG. 22 is displayed when the user selects the first mode of purchase but the set of contents is delivered by downloaded files. In this case, a message "It will take xx minutes for downloading" is displayed in addition to the title of the program. Again, the user selects the button of "yes" if he or she wants to purchase the contents, whereas the user selects the button of "no" if he or she does not want to purchase the contents.

In Step S520, the contents reproducing section 24 determines if a command for purchasing the contents is issued or not and, if no command is issued (since the button of "no" is selected), it returns to Step S512, where it displays a package list as shown in FIG. 20 once again and executes the subsequent processes.

If, on the other hand, it is determined in Step S520 that a command for purchasing the contents is issued (since the button of "yes" is selected), the contents reproducing section 24 proceeds to Step S521, where it downloads the files of the contents and executes the accumulation process. More specifically, the files to be downloaded that are supplied from the contents server 75 are actually downloaded to and stored in the contents storage section 27.

Thus, the list of sets of contents that is presented to the user includes those to be delivered by streaming and those to be delivered by downloaded files as a mixture thereof. However, the type of delivery is not displayed to the user. In other words,

only the titles of the programs (packages) are displayed to the user. Therefore, the user is not required to pay attention to if the set of contents he or she purchases is delivered by streaming or by downloaded files and can receive the program simply by selecting it. Furthermore, the user is not required to consider if the program is already purchased or not. When the program is not purchased yet, a message asking the user to purchase it or not is displayed. Then, the user simply has to answer the question.

If the set of contents is already purchased and is to be delivered by streaming or already accumulated, it is automatically reproduced. Therefore, any person who may be a senior person, a child and may not have knowledge on the Internet and protocols can view the set of contents without fail in a simple manner. The various pieces of information to be presented to the user are contained in the package metadata. Although not illustrated, the server 2 and the digital television receiving set 3 have respective communication sections that operate for interface processes necessary when communicating with each other by way of the Internet 1. Data are encrypted before they are exchanged.

While the present invention is applied to digital television receiving sets in the above description, the present invention can also be applied to video cassette recorders, television tuners, hard disc recorders, DVD (digital versatile disc) recorders and various other contents processing apparatus.

The contents to be delivered are not limited to those of television programs

and various other contents may also be delivered according to the invention.

The above-described processes may be executed by means of hardware. Alternatively, they may be executed by means of software. If they are executed by means of software, the digital television receiving set 3 includes a computer as shown in FIG. 23.

Referring to FIG. 23, CPU (central processing unit) 321 executes various processes according to the programs stored in ROM (read only memory) 322 or the programs loaded from storage section 328 to RAM (random access memory) 323. The RAM 323 appropriately stores the data necessary for the CPU 321 to execute various processes.

The CPU 321, the ROM 322 and the RAM 323 are connected to each other by way of bus 324. The bus 324 also connected to input/output interface 325.

The input/output interface 325 is by turn connected to an input section 326, a display that is typically formed by using a CRT (cathode ray tube) or an LCD (liquid crystal display), an output section 327 that typically comprises a speaker, a storage section 328 that typically comprises a hard disc and a communication section 329 that typically comprises a modem. The communication section 329 communicates with other components of the system by way of a network, which may typically be the Internet 1.

If necessary, the input/output interface 325 is connected to a drive 341 and equipped with a removable media 342, which may be a magnetic disc, an optical disc,

a magneto-optical disc or a semiconductor memory and, if necessary, the computer program read out from it is installed in the storage section 328.

When the above-described processes are executed by means of software, the programs composing the software are installed from a network or a recording medium.

As shown in FIG. 23, the recording medium is a removable media 342, which may be a magnetic disc (such as a floppy disc), an optical disc (such as a CD-ROM (compact disc – read only memory), a DVD (digital versatile disc) or the like), a magneto-optical disc (such as an MD (mini-disc)) or a semiconductor memory, may be arranged apart from the apparatus main body to store programs to be distributed to the user. Alternatively, it may be the ROM 322 or the hard disc included in the storage section 328 that is incorporated into the apparatus main body before it is delivered to the user with the programs stored in it.

For the purpose of the present invention, the steps describing the programs recorded in the recording medium include processes to be executed in time series in the described sequence and also those to be executed not necessarily in time series but in parallel or individually.

For the purpose of the present invention, a system refers to an arrangement comprising a plurality of apparatus.

The present invention is by no means limited to the above embodiments that are described by referring to the accompanying drawings, which may be altered, replaced or subjected to equivalent operations without departing from the spirit and

scope of the present invention as defined by the appended claims.

Industrial Applicability

As described above, according to the invention, it is possible to deliver the contents in a particularly easy and reliable manner. More specifically, it is possible to deliver such contents to general users who do not have specific technical knowledge relative to the mode of delivery without sacrificing the operability of the apparatus. Therefore, it is possible to make systems for delivering such contents by way of the Internet and other networks much more popular.

CLAIMS

1. A contents delivery system for delivering contents from a contents delivery apparatus to a contents processing apparatus by way of a network, the system comprising:

presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files from the contents processing apparatus to a user thereof;

inputting specifying information specifying the set of contents, from the sets of contents on the list, to be delivered to the user of the contents processing apparatus from the contents processing apparatus; and

acquiring by the contents processing apparatus the set of contents delivered from the contents delivering apparatus according to delivery information specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network;

wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

2. A contents delivery method for a contents delivery system for delivering contents from a contents delivery apparatus to a contents processing apparatus by way of a network, the method comprising:

presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files from a contents processing apparatus to a user thereof;

inputting specifying information specifying the set of contents, from the sets of contents on the list, to be delivered to the user of the contents processing apparatus from the contents processing apparatus; and

acquiring by the contents processing apparatus the set of contents delivered from the contents delivering apparatus according to delivery information specifying the set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network;

wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

3. A contents processing apparatus adapted to receive deliveries of contents from a contents delivery apparatus by way of a network, the apparatus comprising:

presentation means for presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files;

input means for inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and

acquisition means for acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network;

wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

4. The apparatus according to claim 3, wherein the delivery information further includes information for accessing the sets of contents.

5. A contents processing method to be used for a contents processing apparatus adapted to receive deliveries of contents from a contents delivery apparatus by way of a network, the method comprising:

a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files;

an input step of inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and

an acquisition step of acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying

each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network;

wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

6. A program recorded on a recording medium so as to be installed in a contents processing apparatus for receiving contents delivered from a contents delivery apparatus by way of a network, the program comprising:

a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files;

an input step of inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and

an acquisition step of acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network;

wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.

7. A program to be installed in a contents processing apparatus for receiving contents delivered from a contents delivery apparatus by way of a network, the program being adapted to cause a computer to execute:

a presentation step of presenting a list of a plurality of sets of contents including at least a set of contents to be delivered by streaming and a set of contents to be delivered by downloaded files;

an input step of inputting specifying information specifying the set of contents to be delivered from the sets of contents on the list; and

an acquisition step of acquiring the set of contents delivered from a contents delivering apparatus by way of a network according to delivery information specifying each set of contents as one to be delivered by streaming or one to be delivered by downloaded files, the delivery information being provided by the contents delivery apparatus by way of the network;

wherein the delivery information is correlated with Digital Right Management (DRM) information of the sets of contents.