US 20150040157A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2015/0040157 A1**

(43) **Pub. Date: Feb. 5, 2015**

Tanabe

(54) **VIDEO DISPLAY DEVICE, VIDEO DISPLAY METHOD, AND PROGRAM**

(76) Inventor: **Takumi Tanabe**, Hyogo (JP)

(21) Appl. No.: **14/387,022**

(22) PCT Filed: **Aug. 29, 2012**

(86) PCT No.: **PCT/JP2012/005437**

§ 371 (c)(1),
(2), (4) Date: **Sep. 22, 2014**

(30) **Foreign Application Priority Data**

Mar. 28, 2012 (JP) 2012-075060

Publication Classification

(51) **Int. Cl.**

H04N 21/81	(2006.01)
H04N 21/458	(2006.01)
H04N 21/222	(2006.01)
H04N 21/462	(2006.01)

(52) **U.S. Cl.**

CPC ***H04N 21/812*** (2013.01); ***H04N 21/462*** (2013.01); ***H04N 21/458*** (2013.01); ***H04N 21/222*** (2013.01)

USPC **725/32**

(57) **ABSTRACT**

An AV playback device includes: an advertisement downloader which accesses a predetermined advertisement script server via the Internet, obtains, from the advertisement script server, an advertisement script including information indicating an address of one of advertisement data servers on the Internet, accesses the address on the Internet included in the obtained advertisement script, and obtains advertisement data located at the address; and an advertisement player which displays the advertisement data obtained by the advertisement downloader on an AV monitor. The advertisement data servers each stores an advertisement corresponding to a different advertising company.

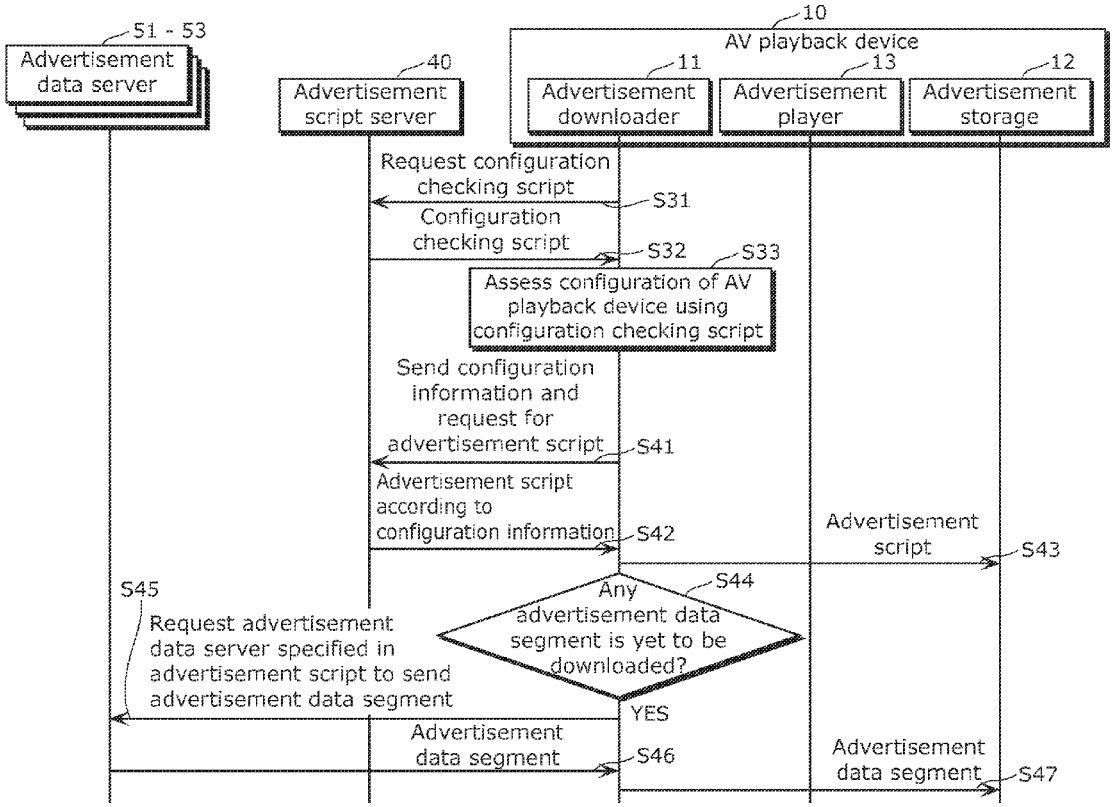

FIG. 1

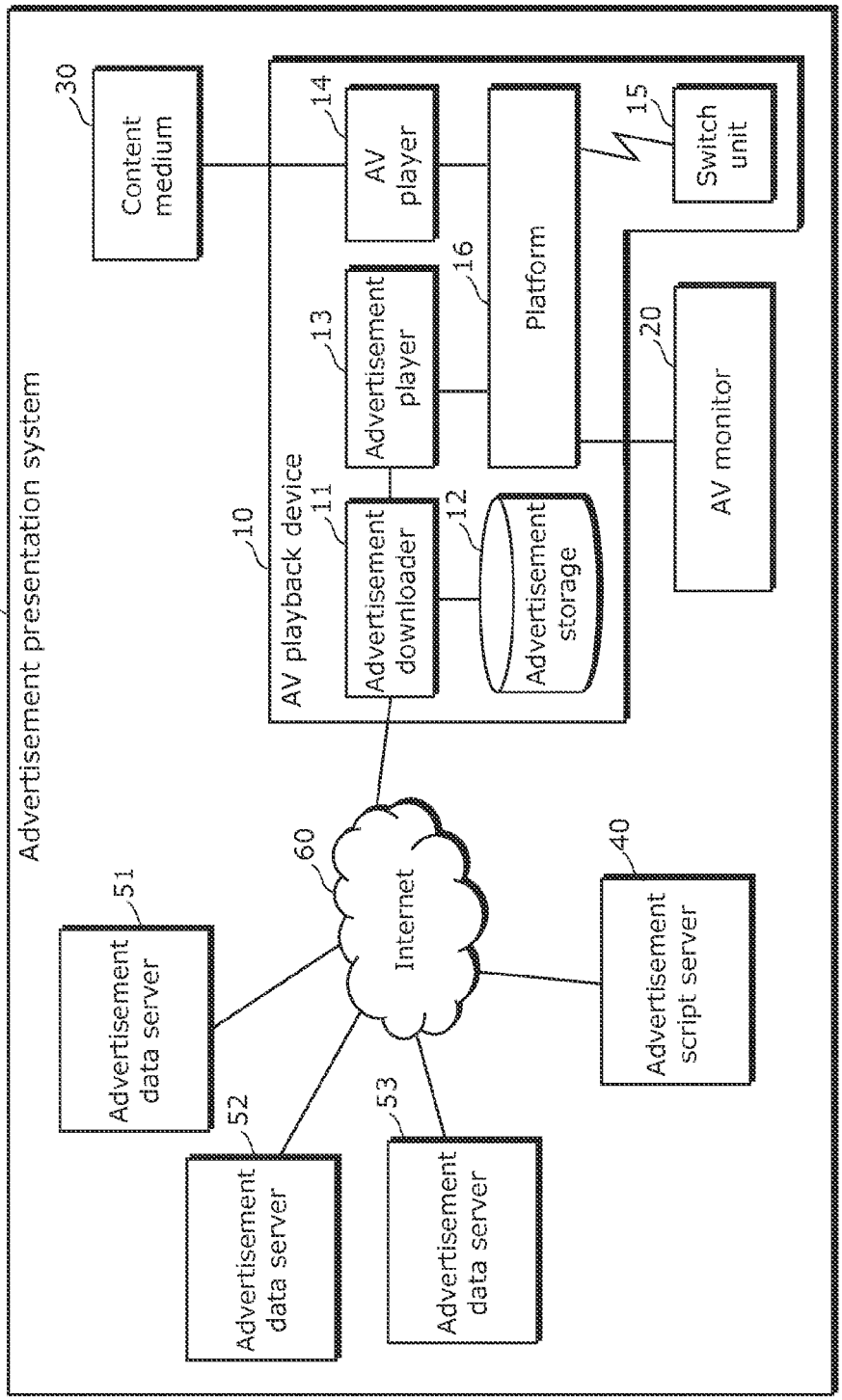
1
Advertisement presentation system
30
Content medium
10
AV playback device
14
AV player
15
Switch unit
13
Advertisement player
16
Platform
11
Advertisement downloader
12
Advertisement storage
20
AV monitor
60
Internet
51
Advertisement data server
52
Advertisement data server
53
Advertisement data server
40
Advertisement script server

FIG. 2

File name (corresponding to URL)	File description
//server1/script.adml	Advertisement script
//server2/img1.png	Image
⋮	⋮
//server2/anim1.js	Animation
⋮	⋮
//server2/video1.mpg	Video
⋮	⋮
default.png	Default

FIG. 3

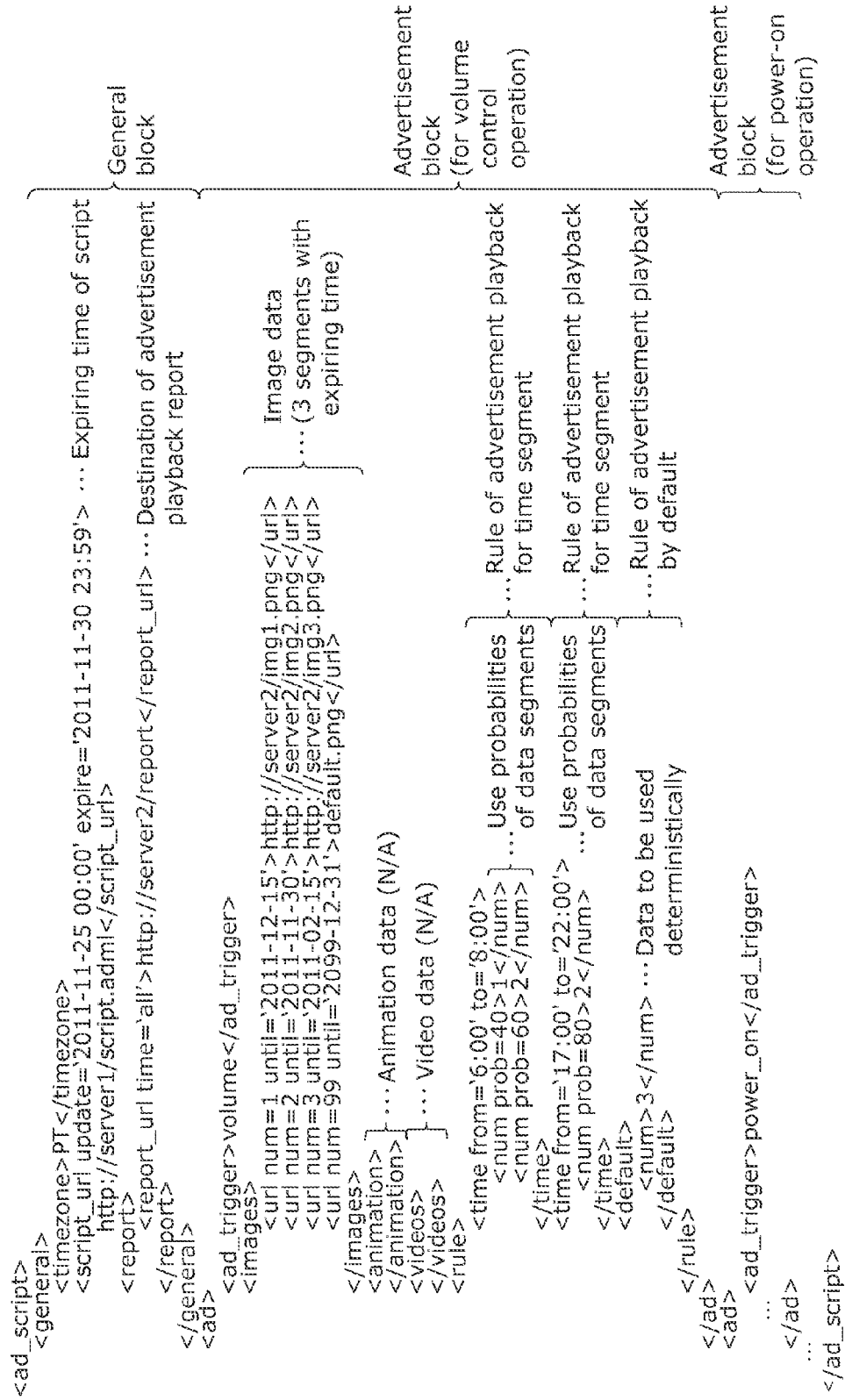
<ad_script>
<general>
<timezone>PT</timezone>
<script_url update='2011-11-25 00:00' expire='2011-11-30 23:59'> ... Expiring time of script
http://server1/script.adml</script_url>
<report>
<report_url time='all'>http://server2/report</report_url> ... Destination of advertisement playback report
</report>
</general>
General block
<ad>
<ad_trigger>volume</ad_trigger>
<images>
<url num=1 until='2011-12-15'>http://server2/img1.png</url>
<url num=2 until='2011-11-30'>http://server2/img2.png</url>
<url num=3 until='2011-02-15'>http://server2/img3.png</url>
<url num=99 until='2099-12-31'>default.png</url>
Image data
... (3 segments with expiring time)
</images>
<animation> ... Animation data (N/A)
</animation>
<videos> ... Video data (N/A)
</videos>
Advertisement block (for volume control operation)
<rule>
<time from='6:00' to='8:00'>
<num prob=40>1</num>
<num prob=60>2</num>
... Use probabilities of data segments
... Rule of advertisement playback for time segment
</time>
<time from='17:00' to='22:00'>
<num prob=80>2</num>
... Use probabilities of data segments
... Rule of advertisement playback for time segment
</time>
<default>
<num>3</num> ... Data to be used deterministically
... Rule of advertisement playback by default
</default>
</rule>
</ad>
<ad>
<ad_trigger>power_on</ad_trigger>
...
</ad>
...
</ad_script>
Advertisement block (for power-on operation)

FIG. 4

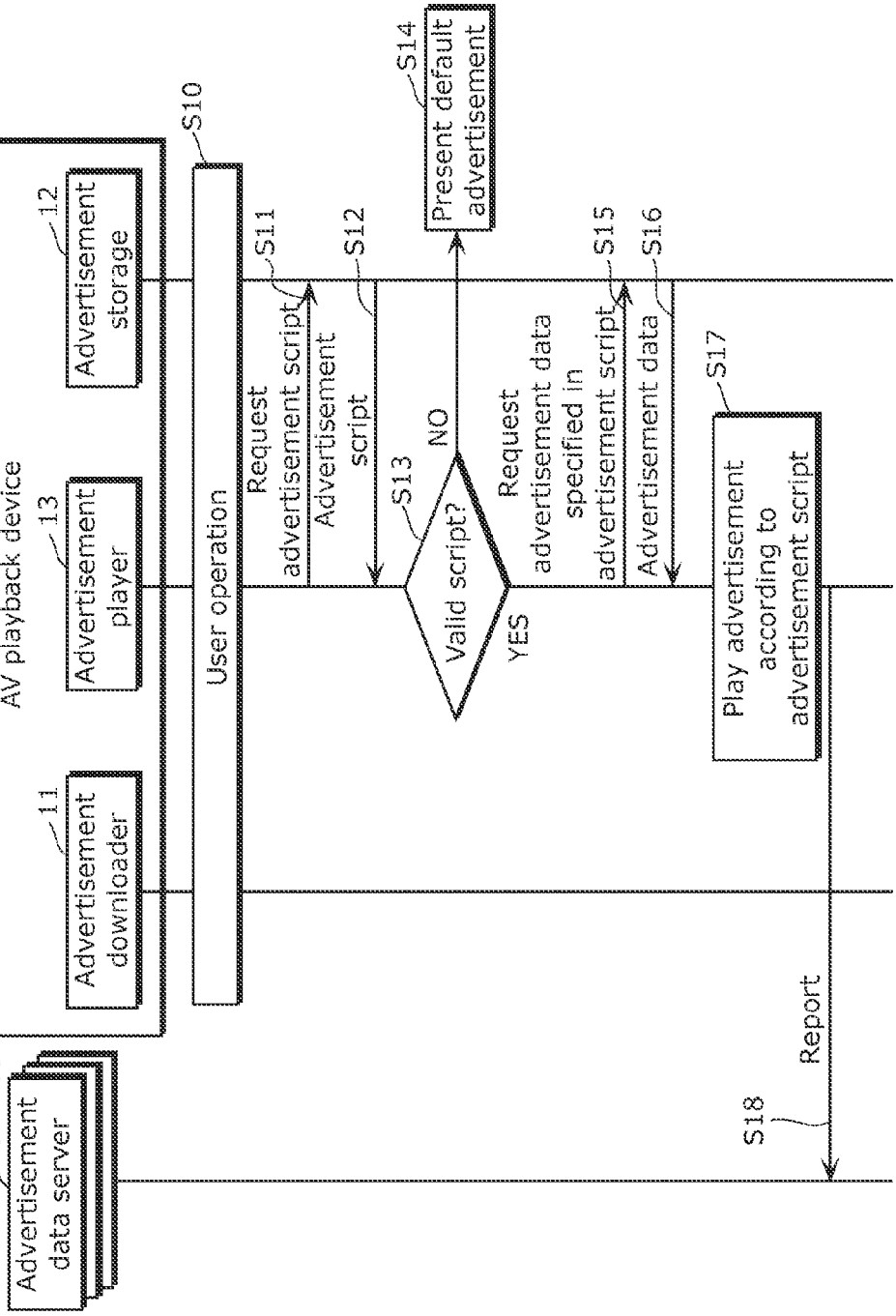
Advertisement data server
51 - 53
AV playback device
10
Advertisement downloader
11
Advertisement player
13
Advertisement storage
12
User operation
S10
Request advertisement script
S11
Advertisement script
S12
Valid script?
S13
NO
YES
Present default advertisement
S14
Request advertisement data specified in advertisement script
S15
Advertisement data
S16
Play advertisement according to advertisement script
S17
Report
S18

FIG. 5

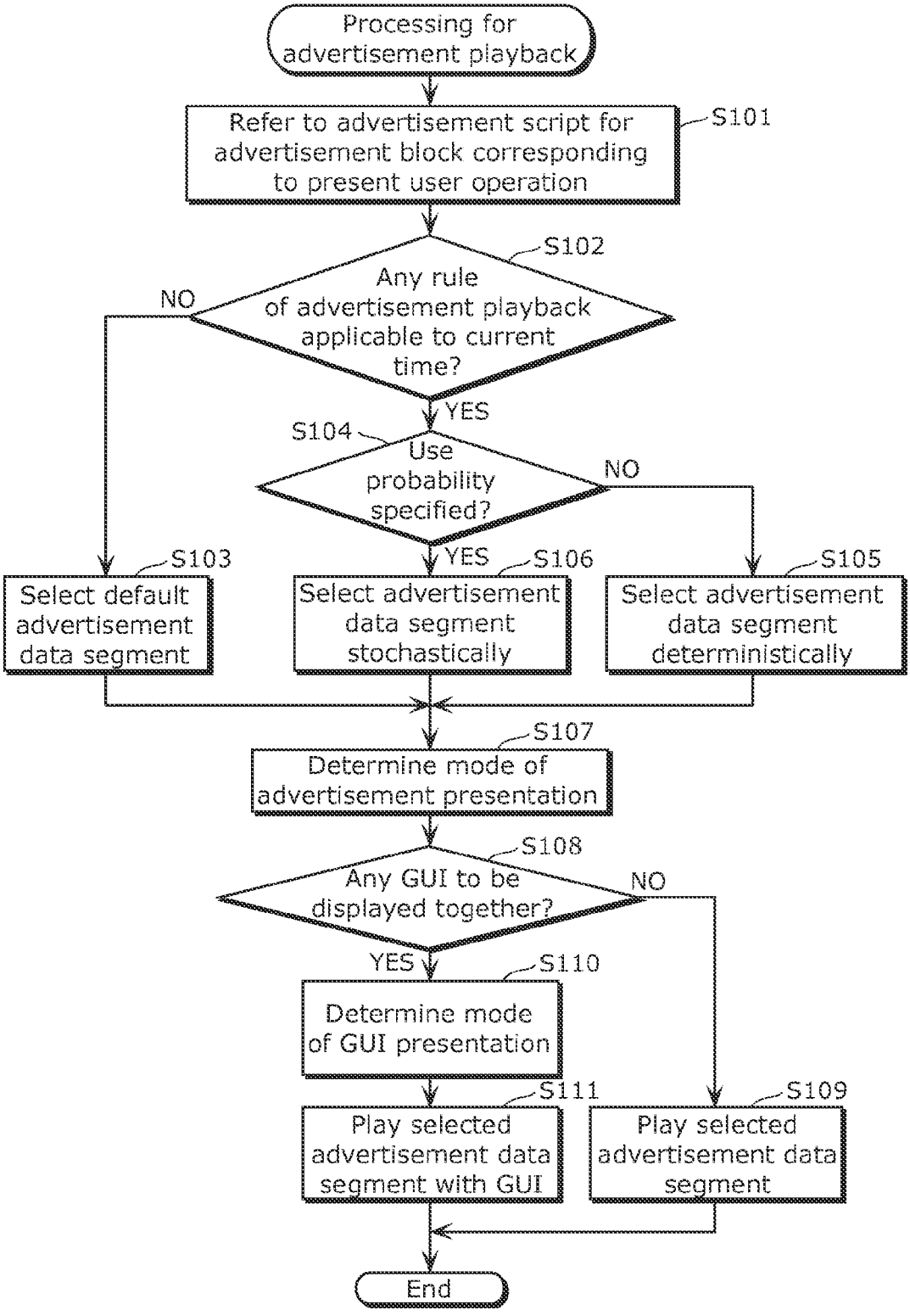
Processing for advertisement playback
Refer to advertisement script for advertisement block corresponding to present user operation
S101
S102
Any rule of advertisement playback applicable to current time?
NO
YES
S104
Use probability specified?
NO
YES
S103
Select default advertisement data segment
S106
Select advertisement data segment stochastically
S105
Select advertisement data segment deterministically
S107
Determine mode of advertisement presentation
S108
Any GUI to be displayed together?
NO
YES
S110
Determine mode of GUI presentation
S111
Play selected advertisement data segment with GUI
S109
Play selected advertisement data segment
End

FIG. 6A

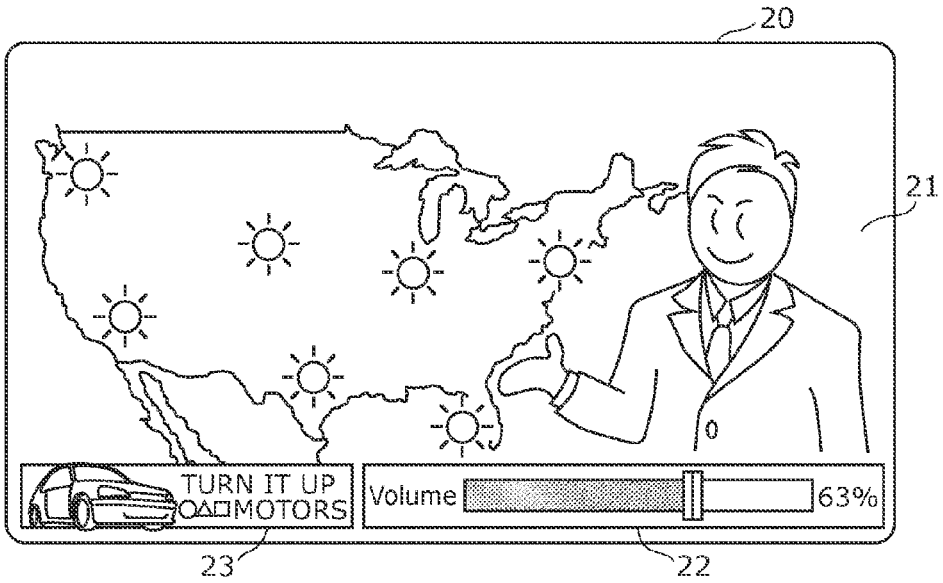
20
21
TURN IT UP
MOTORS
Volume
63%
23
22

FIG. 6B

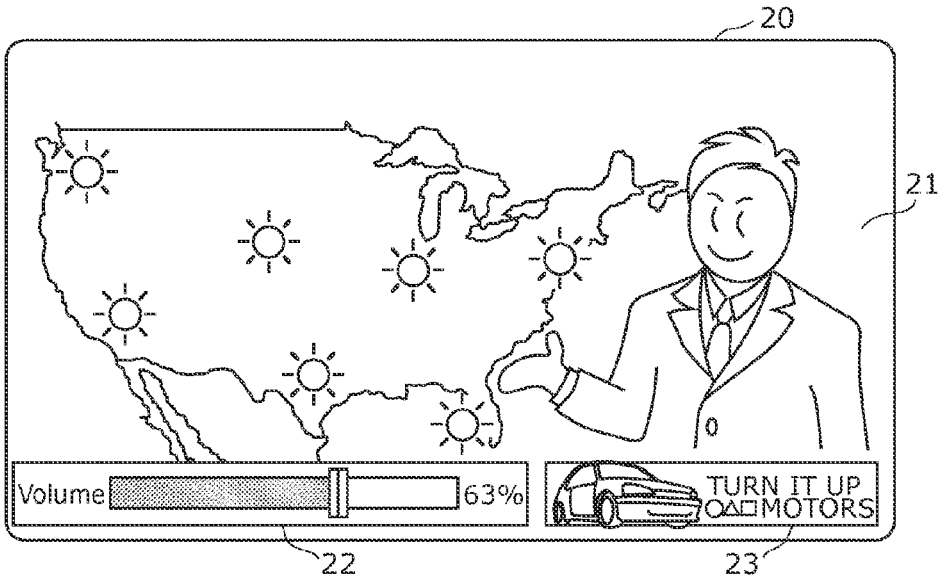
20
21
Volume
63%
TURN IT UP
MOTORS
22
23

FIG. 6C

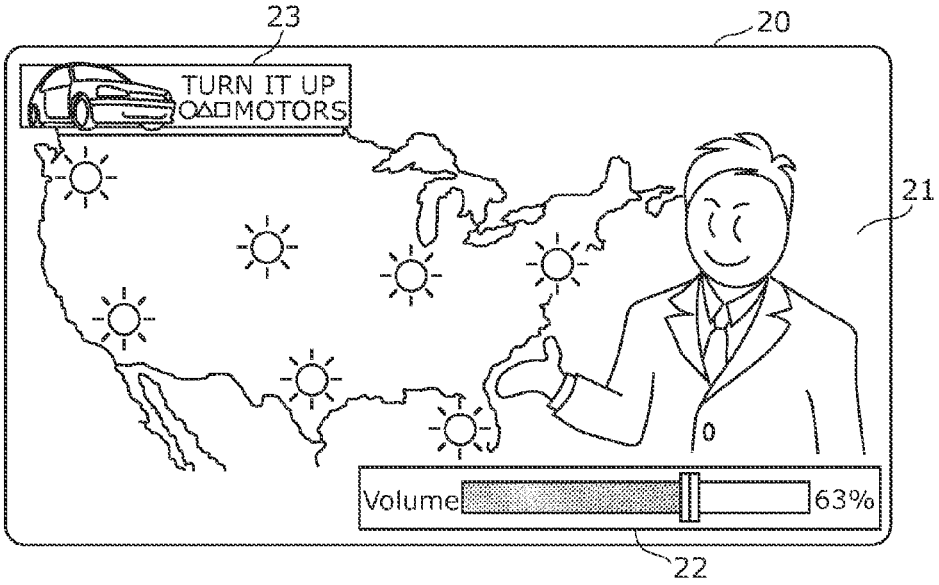
23
20
TURN IT UP
MOTORS
21
Volume
63%
22

FIG. 6D

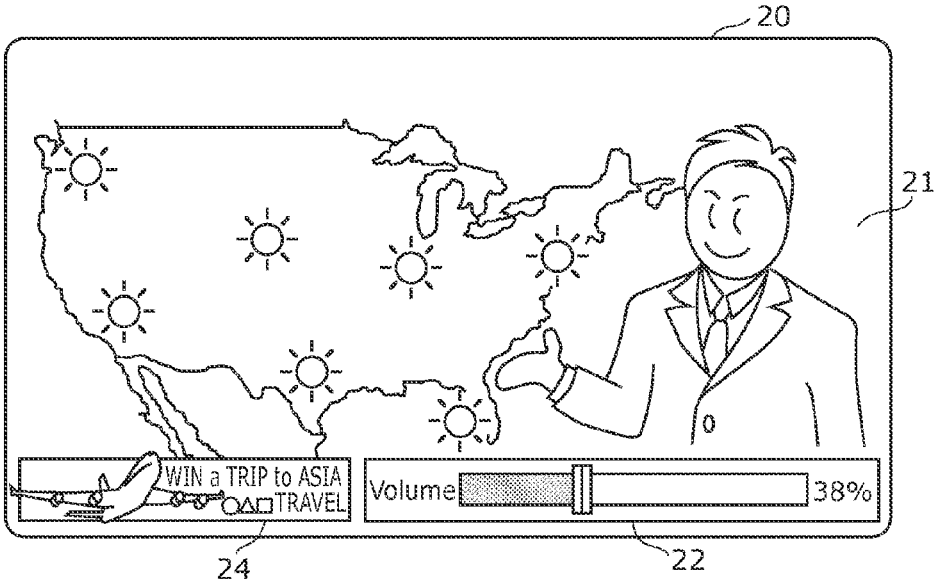
20
21
WIN a TRIP to ASIA
TRAVEL
Volume
38%
24
22

FIG. 6E

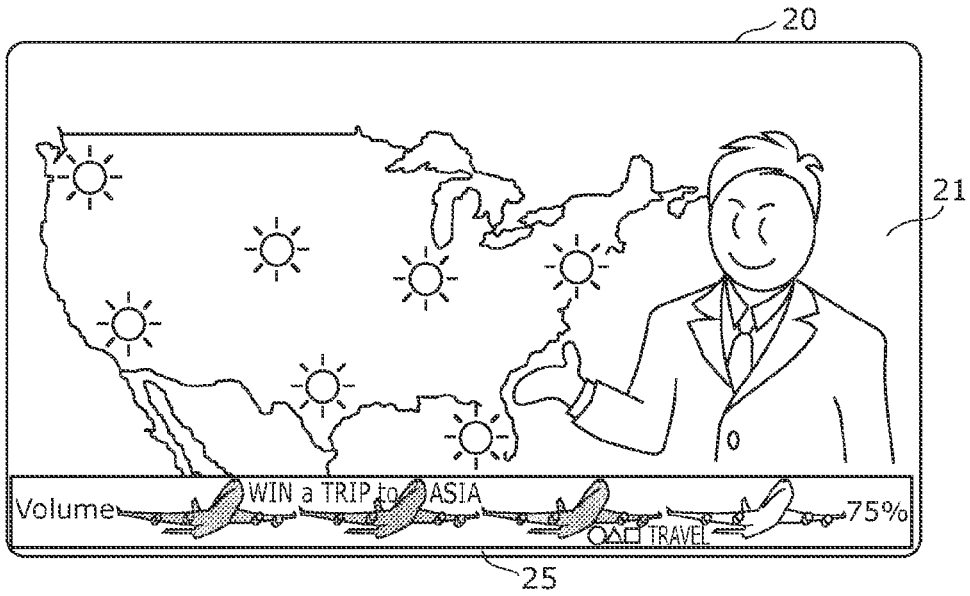

FIG. 7

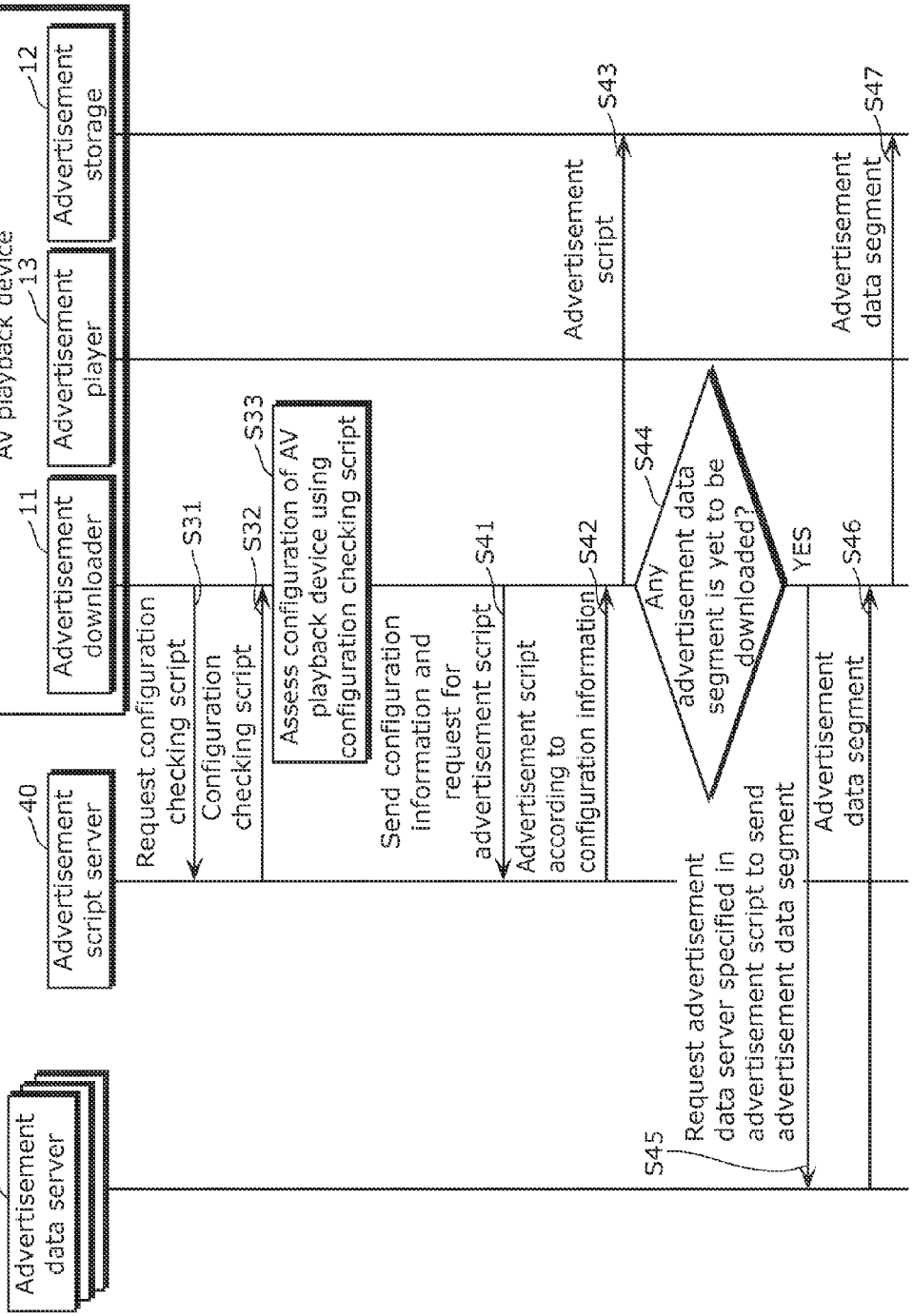
AV playback device
10
Advertisement downloader
11
Advertisement player
13
Advertisement storage
12
Advertisement script server
40
Advertisement data server
51 - 53
Request configuration checking script
S31
Configuration checking script
S32
Assess configuration of AV playback device using configuration checking script
S33
Send configuration information and request for advertisement script
S41
Advertisement script according to configuration information
S42
Advertisement script
S43
Any advertisement data segment is yet to be downloaded?
S44
YES
Request advertisement data server specified in advertisement script to send advertisement data segment
S45
Advertisement data segment
S46
Advertisement data segment
S47

FIG. 8

Item	Properties or availability
CPU	Model no.
GPU	Model no.
Screen resolution	1920 x 1080
Parallax 3D display	YES
codec1	YES
codec2	NO
⋮	⋮
api1	NO
api2	YES
⋮	⋮

VIDEO DISPLAY DEVICE, VIDEO DISPLAY METHOD, AND PROGRAM

TECHNICAL FIELD

[0001] The present invention relates to a video display device, a video display method, and a program, and, in particular, to a technique for adaptive and flexible control of presentation of advertisements.

BACKGROUND ART

[0002] There has been a known system which executes objects downloadable from a network (network loadable object, or NLO).

[0003] For example, Patent Literature (PTL) 1 discloses an application execution device which starts a specific virtual machine associated with an object to be executed (for example, a Java (registered trademark) virtual machine associated with a lava (registered trademark) applet) and causes the virtual machine to download and execute the object.

[0004] According to PTL 1, the application execution device thus configured automatically starts a virtual machine appropriate for an NLO to be executed, and thereby allows a user to handle different types of NLOs by the same operation without consciously selecting a virtual machine.

[0005] Such an application execution device allows for execution of different types of NLOs for advertisement presentation upon the same operation by a user, and is thus useful as, for example, a video display device which presents an advertisement by executing an NLO.

CITATION LIST

Patent Literature

[0006] [PTL 1] Japanese Unexamined Patent Application Publication No.

SUMMARY OF INVENTION

Technical Problem

[0007] However, when video display devices including such application execution devices become widespread, techniques for enhancing advertising effectiveness higher than ever before will be sought. Examples of such techniques include a technique for adaptive provision of advertisements to each video display device and a technique for flexible presentation of advertisements with variation and interestingness.

[0008] Conceived to address the situation, an object of the present invention is to provide a video display device, a video display method, and a program for adaptive and flexible control of advertisement presentation.

Solution to Problem

[0009] In order to achieve the above-described object, a video display device according to an aspect of the present invention is provided which displays an advertisement obtained via a communication network. The video display device includes: a download unit configured to access a default server via the communication network, obtain a script including information indicating an address on the communication network from the default server, access the address on the communication network included in the script, and obtain an advertisement located at the address, the default server being a predetermined server device, and the address indicating one of server devices each storing an advertisement corresponding to a different advertising company; and an advertisement playback unit configured to display the advertisement obtained by the download unit on a screen.

Advantageous Effects of Invention

[0010] The video display device according to the present invention is capable of playing an advertisement indicated by an address included in a script, and thereby achieves flexible presentation of advertisements with variation and interestingness. As a result, advertisements thus presented have effectiveness higher than ever before.

BRIEF DESCRIPTION OF DRAWINGS

[0011] FIG. **1** is a functional block diagram illustrating an example of a configuration of an advertisement presentation system in an embodiment.

[0012] FIG. **2** shows an example of content of an advertisement storage in the embodiment.

[0013] FIG. **3** shows an example of content of an advertisement script in the embodiment.

[0014] FIG. **4** is a sequence diagram illustrating an example of advertisement display performed upon a user operation in the embodiment.

[0015] FIG. **5** is a flowchart illustrating a specific example of advertisement display in the embodiment.

[0016] FIG. **6**A shows an example of an advertisement displayed upon a volume control operation in the embodiment.

[0017] FIG. **6**B shows an example of an advertisement displayed upon a volume control operation in the embodiment.

[0018] FIG. **6**C shows an example of an advertisement displayed upon a volume control operation in the embodiment.

[0019] FIG. **6**D shows an example of an advertisement displayed upon a volume control operation in the embodiment.

[0020] FIG. **6**E shows an example of an advertisement displayed upon a volume control operation in the embodiment.

[0021] FIG. **7** is a sequence diagram illustrating an example of download of an advertisement in the embodiment.

[0022] FIG. **8** shows an example of configuration information of a video display device in the embodiment.

DESCRIPTION OF EMBODIMENTS

[0023] A video display device according to an aspect of the present invention displays an advertisement obtained via a communication network and includes: a download unit configured to access a default server via the communication network, obtain a script including information indicating an address on the communication network from the default server, access the address on the communication network included in the script, and obtain an advertisement located at the address, the default server being a predetermined server device, and the address indicating one of server devices each storing an advertisement corresponding to a different advertising company; and an advertisement playback unit configured to display the advertisement obtained by the download unit on a screen.

[0024] In this configuration, an advertisement to be displayed is indicated in each script, so that a variety of advertisements may be presented by replacing one script with another, which is a very simple operation. Furthermore, it is also possible to present an advertisement provided by an advertising company switched arbitrarily according to an advertisement script.

[0025] Furthermore, the download unit may be further configured to obtain, via the communication network, presentation mode information in which a mode of presentation of the advertisement is specified, and the advertisement playback unit is configured to play the advertisement according to the presentation mode information obtained by the download unit.

[0026] In this configuration, an advertisement is played based on presentation mode information, so that the advertisement may be presented in a variety of modes by changing the presentation mode information, which is a very simple operation.

[0027] Furthermore, the advertisement may include the presentation mode information corresponding to the advertisement. Moreover, the script may include the presentation mode information, and advertisement playback unit may be configured to display the advertisement according to the presentation mode information included in the script.

[0028] In this configuration, such a presentation mode of each advertisement may be specified either in itself or in a script, so that the presentation mode of the advertisement may be specified in a flexible manner.

[0029] Furthermore, the default server may further store the presentation mode information, and the download unit may be configured to obtain the presentation mode information from the default server.

[0030] In this configuration, an advertisement is played based on presentation mode information stored in the default server, so that the advertisement may be presented in a variety of modes by changing the presentation mode information in the default server, which is a very simple operation.

[0031] Furthermore, the video display device may further include an engine unit configured to execute a program, wherein the download unit may be further configured to obtain, via the communication network, a program for assessing presentation capability of the video display device before obtaining the presentation mode information, the engine unit may be configured to assess the presentation capability of the video display device by executing the obtained program, and the download unit may be configured to obtain presentation mode information corresponding to a result of the assessing of the presentation capability by the engine unit.

[0032] In this configuration, an advertisement may be presented in a mode appropriate for presentation capability of each video display device.

[0033] Furthermore, the default server may further store the program, and the download unit may be configured to obtain the program from the default server.

[0034] In this configuration, the video display device is capable of assessing its own presentation capability using the program obtained from the default server.

[0035] Furthermore, the presentation mode information may be information in which a way of presenting the advertisement when displayed as an animation is specified.

[0036] In this configuration, an advertisement may be displayed as an animation, so that the advertisement may be presented in a manner interesting to users.

[0037] These general and specific aspects may be implemented using a system, a method, an integrated circuit, a computer program, or a computer-readable recording medium, or any combination of systems, methods, integrated circuits, computer programs, or computer-readable recording media.

Embodiment

[0038] The following describes a video display device according to an aspect of the present invention with reference to the drawings.

[0039] The embodiment is described as a specific example of the present invention. The values, materials, constituent elements, layout and connection of the constituent elements, steps, and the order of the steps in the embodiment are given not for limiting the present invention but merely for illustrative purposes only. Therefore, among the structural elements in the following embodiment, structural elements not recited in any one of the independent claims are described as arbitrary structural elements.

(Advertisement Presentation System)

[0040] FIG. **1** is a functional block diagram illustrating an example of an advertisement presentation system according to the embodiment.

[0041] An advertisement presentation system **1** is a system which presents an advertisement in synchronization with a user operation performed on a audio and visual (AV) playback device **10**, and includes an AV playback device **10**, an AV monitor **20**, a content medium **30**, an advertisement script server **40**, advertisement data servers **51** to **53**, and the Internet **60**.

[0042] The AV playback device **10** is an example of the video display device. The AV monitor **20** is an example of a screen. The advertisement script server **40** is an example of a default server. The advertisement data servers **50** to **53** are an example of server devices. The Internet **60** is an example of a communication network.

[0043] The AV playback device **10** plays AV content received from the content medium **30** by causing the AV monitor **20** to display images and output audio. The AV playback device **10** is also configured to cause the AV monitor **20** to display an advertisement in synchronization with a user operation performed on the AV playback device **10**.

[0044] The AV monitor **20** is a device which displays images and outputs audio. Examples of constituent elements of the AV monitor **20** include a liquid-crystal display device, a plasma display device, an organic light-emitting diode display device, a video projector, and a loudspeaker. The AV monitor **20** may be integrated with the AV playback device **10** or may be provided separately. The AV monitor **20** may also be a display device capable of displaying 3D images using parallax.

[0045] The content medium **30** is a medium capable of containing AV content, and not limited to a specific type of medium. The content medium **30** may be any type of a medium capable of containing AV content. Examples of the medium include a broadcast channel, a communication line, a hard disk, an optical disc, and a semiconductor memory. Thus, the AV playback device **10** may be any consumer electronics (CE) which obtains and reproduces AV content from the content medium **30**, such as a terrestrial television receiver, a satellite television receiver, a cable television

receiver, an Internet television receiver, a hard disk video recorder-player, a digital versatile disc (DVD) player, a Blu-Ray disc player, or a digital media frame.

[0046] The advertisement script server **40** is a server connected to the Internet **60**, and holds advertisement scripts in which a presentation mode of each advertisement is specified. The advertisement script is an example of presentation mode information. FIG. **3** shows an example of the advertisement script.

[0047] The advertisement data servers **51** to **53** are servers connected to the Internet **60**, and store advertisement data of substantial content of advertisements, such as image, animations, and videos. Each of the advertisement data servers **51** to **53** may store advertisement data for a corresponding one of advertising companies.

[0048] The advertisement script stored in the advertisement script server **40** and the advertisement data stored in the advertisement data servers **51** to **53** are downloaded to the AV playback device **10** via the Internet **60**. In response to a request from the AV playback device **10**, the advertisement script server **40** includes addresses of the advertisement data servers **51** to **53** in an advertisement script as necessary so that the AV playback device **10** can obtain the advertisement data from the advertisement data servers **51** to **53**.

[0049] The Internet **60** provides an interactive connection between the AV playback device **10**, the advertisement script server **40**, and the advertisement data servers **51** to **53**.

(AV Playback Device)

[0050] The following describes the AV playback device **10** in detail.

[0051] As shown in FIG. **1**, the AV playback device **10** includes an advertisement downloader **11**, advertisement storage **12**, and an advertisement player **13**, an AV player **14**, a switch unit **15**, and a platform **16**.

[0052] The advertisement downloader **11** is a downloader for advertisement scripts and advertisement data. The advertisement downloader **11** downloads advertisement scripts from the advertisement script server **40** and advertisement data from the advertisement data servers **51** to **53** via the Internet **60**, and stores the advertisement scripts and advertisement data in the advertisement storage **12**. The advertisement downloader **11** may further include a network adapter for access to the Internet **60**. The advertisement downloader **11** is an example of a download unit.

[0053] The advertisement storage **12** is a storage device which stores downloaded advertisement scripts and advertisement data. The advertisement storage **12** may include, for example, a hard disk drive or a semiconductor memory drive.

[0054] The advertisement player **13** is a renderer which interprets and executes an advertisement script and has an advertisement displayed. The advertisement player **13** is activated from the platform **16** and decodes advertisement data of images, animations, videos, and the like and executes advertisement data codes according to the advertisement script. The advertisement player **13** decodes and executes advertisement data using a codec for images or videos and an interpreter for animations. Furthermore, the advertisement player **13** may decode and execute advertisement data using not only such a downloaded advertisement script but also a codec for images or videos and an interpreter for animations included in the platform **16**. The advertisement player **13** is an example of an advertisement playback unit.

[0055] The AV player **14** is a decoder for AV content data. The AV player **14** obtains AV content data from the content medium **30** and plays the AV content. The AV player **14** may have a configuration appropriate for the type of the content medium **30** from which AV content data is obtained. For example, the AV player **14** includes a television tuner, a network adapter, a hard disk drive, an optical disc drive, or a disk adapter. The AV player **14** may decode AV content data using an image codec and an audio codec included in the platform **16**.

[0056] The switch unit **15** is an interface which receives user operations. For example, the switch unit **15** is an infrared remote control. The switch unit **15** receives user operations on the AV playback device **10**, such as switching on and off the AV playback device **10** and turning up and down the volume of the AV playback device **10**, and notifies the platform **16** of details of the operations.

[0057] The platform **16** is a collective name for constituent elements for providing basic functions of the AV playback device **10**. The platform **16** includes hardware elements, such as a central processing unit (CPU), a graphic processing unit (GPU), a random access memory (RAM), a read-only memory (ROM), and middleware elements, such as a controller for the entire AV playback device **10**, image codecs, audio codecs, video codecs, and animation interpreters. The platform **16** is an example of an engine unit which executes a program.

[0058] The platform **16** controls the entire AV playback device **10** according to user operations which the platform **16** is notified of by the switch unit **15**.

[0059] When the switch unit **15** notifies the platform **16** of a user operation, the platform **16** instructs the advertisement player **13** to play an advertisement and generates a GUI appropriate for the type of the user operation (for example, when the user operation is an operation for adjusting the volume level, a slide bar for volume control is generated). Then, the platform **16** combines the advertisement played by the advertisement player **13** and the generated GUI. When the AV player **14** is playing AV content, the combined advertisement and the GUI are further combined with the AV content on a screen.

[0060] The platform **16** generates an AV signal which indicates the combined advertisement, GUI, and AV content item, and outputs the AV signal to the AV monitor **20**.

[0061] The advertisement downloader **11**, advertisement player **13**, AV player **14**, and the middleware included in the platform **16** may be provided as software functions achieved by the CPU executing a given program stored in the ROM or as hardware such as an integrated circuit. The middleware may be downloaded from an external server.

(Advertisement Storage)

[0062] FIG. **2** shows an example of an advertisement script and advertisement data stored in the advertisement storage **12**.

[0063] In the example shown in FIG. **2**, the advertisement storage **12** stores a downloaded advertisement script and advertisement data segments as files each having a name corresponding to a uniform resource locator (URL) indicating an address on the Internet **60**.

[0064] The advertisement script is a script in which URLs of advertisement data segments and rules of advertisement playback for each type of user operations are specified.

[0065] The advertisement data represents substantial advertisement content of an image, an animation, a video, or the like. Examples of the advertisement data include image data in a format such as Portable Network Graphics (PNG) or Joint Photographic Experts Group (JPEG), animation data described using JavaScript (registered trademark) (JS), Flash (SWF), or the like, and video data in a format such as Moving Picture Experts Group (MPEG) or QuickTime Movie (MOV). The advertisement data may include an advertisement data segment to be played by default.

(Advertisement Script)

[0066] FIG. **3** shows an example of an advertisement script.

[0067] In the example shown in FIG. **3**, the advertisement script includes a general block and one or more advertisement blocks each associated with a type of user operation.

[0068] The general block includes an expiring time of the advertisement script and a destination of an advertisement playback report.

[0069] Each of the advertisement blocks includes a type of user operation associated with the advertisement block, a URL of an advertisement data segment, and a rule of advertisement playback for each time segment. The rule of advertisement playback specifies an advertisement data segment to be played and a use probability of the advertisement data segment, for example

[0070] The following describes part of the content of the advertisement script shown in FIG. **3**.

[0071] The general block indicates that the advertisement script is valid until 23:59 on Nov. 30, 2011 and that an advertisement playback report is sent to http://server2/report.

[0072] In the advertisement block associated with a user operation for volume control, three image data segments at http://server2/img1.png, http://server2/img2.png, and http://server2/img3.png are designated. The advertisement block further includes an expiring time of each of the image data segments. Expired image data segments (for example, an advertisement data segment for a past limited-time offer) are no longer used. The advertisement block further includes rules of advertisement playback for time segments. The rules specify that the use probability of img1.png to img2.png are 40% to 60% from 6:00 to 8:00, the use probability of img2.png is 80% (that is, no advertisement is displayed at a probability of 20%) from 17:00 to 22:00, and img3.png is deterministically used by default in other time segments.

[0073] The subsequent advertisement block, which is associated with a user operation for power-on, includes similar content (details of the content is not described herein).

[0074] The following describes advertisement playback using the advertisement script and the advertisement data stored in the advertisement storage **12**.

(Advertisement Playback)

[0075] FIG. **4** is a sequence diagram illustrating an example of advertisement playback. The advertisement playback is performed only when the AV playback device **10** receives a user operation performed on the AV playback device **10** by a user.

[0076] When receiving a user operation (S**10**), the platform **16** gives the advertisement player **13** an instruction to play an advertisement corresponding to the user operation. Upon receiving the instruction to play an advertisement, the advertisement player **13** retrieves an advertisement script from the advertisement storage **12** (S**11**, S**12**). The advertisement player **13** need not retrieve the same advertisement script again when the advertisement player **13** has already retrieved the advertisement script.

[0077] The advertisement player **13** determines whether or not the advertisement script is valid (S**13**). When the advertisement script is not valid (**513**, NO), the advertisement player **13** plays a default content item (S**14**). The advertisement player **13** determines whether or not the advertisement script is valid by comparison between the expiring time specified in the general block of the advertisement script and the current time on the AV playback device **10**.

[0078] When the advertisement script is valid (**513**, YES), the advertisement player **13** retrieves, from the advertisement storage **12**, an advertisement data segment specified in an advertisement block corresponding to the present user operation (S**15**, S**16**), and plays an advertisement according to rules of advertisement playback included in the advertisement block (S**17**). After finishing the advertisement playback, the advertisement player **13** sends an advertisement playback report to an advertisement data server among the advertisement data servers **51** to **53** from which the advertisement player **13** has downloaded the advertisement data segment used for the advertisement playback (S**18**).

(Details of Processing for Advertisement Playback)

[0079] FIG. **5** is a flowchart illustrating a detailed example of processing for advertisement playback performed by the advertisement player **13**.

[0080] The advertisement player **13** refers to an advertisement script for an advertisement block corresponding to the type of a present user operation (S**101**). When the advertisement block includes no rule of advertisement playback for a time segment applicable to the current time (S**102**, NO), the advertisement player **13** selects an advertisement data segment specified in a default rule of advertisement playback (S**103**).

[0081] When the advertisement block includes a rule of advertisement playback for a time segment applicable to the current time (S**102**, YES), the advertisement player **13** performs the following processing.

[0082] First, the advertisement player **13** selects an advertisement data segment to be used. When the advertisement block includes a use probability of an advertisement data segment (S**104**, YES), the advertisement player **13** selects the advertisement data segment stochastically according to the use probability included in the advertisement block (S**106**). When the total of use probabilities included in the rules of advertisement playback for the current time segment is smaller than 100, the advertisement player **13** may select no advertisement data segment, and thus no advertisement is displayed. When the advertisement block includes no use probability of an advertisement data segment (S**104**, NO), the advertisement player **13** selects an advertisement data segment deterministically (S**106**).

[0083] The advertisement player **13** may select an advertisement data segment using additional information other than the time segment. For example, when each AV content item and each advertisement data segment are previously provided with category information, the advertisement player **13** may select, based on the category information, an advertisement data segment relating to an AV content item currently being played or played most recently. The category information may be provided to each scene in an AV content

item. In this case, a relating advertisement data segment is selected for each scene in the AV content item.

[0084] After selecting an advertisement data segment, the advertisement player **13** then determines a mode of advertisement presentation (S**107**). The mode of advertisement presentation determines, for example, a position, color, size, and display duration of the advertisement. The mode of advertisement presentation may be represented by an advertisement data segment itself or additionally described in an advertisement script as shown in FIG. **3** (the additional description is not shown in the drawings).

[0085] The advertisement player **13** may determine, as the mode of advertisement presentation, a mode of advertisement presentation represented by an advertisement data segment itself or a mode of advertisement presentation described in an advertisement script. The advertisement player **13** may computationally determine a mode of advertisement presentation using an embedded program each time the advertisement player **13** selects an advertisement data segment.

[0086] The advertisement player **13** may position advertisement images at a fixed position, such as in a lower left corner of a screen. Alternatively, the advertisement player **13** may position advertisements images at different positions. For example, an advertisement image is positioned in one of four corners of a screen, and then the next advertisement image is positioned in another one of the four corners. Alternatively, the advertisement player **13** may position an advertisement image at a position selected from positions each associated with a GUI. Furthermore, the advertisement player **13** may switch positions of a GUI and an advertisement image each time a new advertisement image is displayed.

[0087] The advertisement player **13** may determine colors of an advertisement images as specified in advertisement data. Alternatively, the advertisement player **13** may determine a color different from a color specified in advertisement data of an advertisement image as a color of the advertisement image in coordination with colors of a GUI displayed together with the advertisement image or colors of images of an AV content item on the screen.

[0088] The advertisement player **13** may determine the size of advertisement images as specified in advertisement data. Alternatively, the advertisement player **13** may change the size of an advertisement image in coordination with change in the mode of GUI presentation. For example, an advertisement image is displayed in a larger size when a slider of a volume bar indicates a higher volume level. Furthermore, an advertisement image may be displayed over an area where a volume bar indicates the volume level.

[0089] The advertisement player **13** may set the display duration of an advertisement at a fixed length, such as 3 seconds. Alternatively, the advertisement player **13** may change the display duration of an advertisement randomly within a range, such as a range of 2 to 10 seconds.

[0090] Next, when there is no applicable GUI to be displayed to the type of a current user operation (S**108**, NO), for example, when the device is turned on, the advertisement player **13** plays the selected advertisement data segment in the determined mode (S**112**).

[0091] When there is an applicable GUI to be displayed to the type of a current user operation (S**108**, YES), for example, when the volume level is changed, the advertisement player **13** determines a mode of GUI presentation (S**110**). The mode of GUI presentation determines, for example, a position, color, size, and appearance of the GUI.

[0092] The advertisement player **13** may position a GUI at a fixed position, such as in a lower right corner of a screen. Alternatively, the advertisement player **13** may switch positions of a GUI and an advertisement image each time a new advertisement image is displayed.

[0093] The color of a GUI may be fixed. Alternatively, the color of a GUI may be changed in coordination with colors of an advertisement image displayed together.

[0094] A GUI may have an appearance such that the GUI itself serves as an advertisement.

[0095] Next, the advertisement player **13** plays the selected advertisement data segment and the GUI in the respective determined modes (S**111**).

Examples of the Mode of Advertisement Presentation

[0096] The following describes examples of the mode of advertisement presentation on the AV monitor **20** by the AV playback device **10** with the above-described configuration. In the following examples, it is assumed that a user watching a weather report on television performs an operation to change the volume level.

[0097] FIG. **6**A shows an example of the mode of advertisement presentation. In this example, when a user watching a television picture **21** displayed on a television presses a volume button of a switch unit **15** (infrared remote control), the television shows a slide bar **22** at the bottom right of the screen of the television and at the same time an advertisement image **23** at the bottom left.

[0098] FIG. **6**B shows an example where, in contrast to FIG. **6**A, the position of the advertisement image **23** and the position of the slide bar **22** are switched. The presentation shown in FIG. **6**A and the presentation shown in FIG. **6**B are selectively performed so that the screen may switchably displays a picture in which the advertisement image **23** is shown at a first position (bottom-left) corresponding to the slide bar **22** displayed at the bottom right position and a picture in which the advertisement image **23** is shown at a second position (bottom-right) corresponding to the slide bar **22** displayed at the bottom left position.

[0099] FIG. **6**C shows an example where the position of the advertisement image **23** is different from the position of the advertisement image **23** shown in FIG. **6**A. The presentation shown in FIG. **6**A and the presentation shown in FIG. **6**C are selectively performed so that the position of the advertisement **23** may be changed from a position where the advertisement **23** is once displayed (bottom-left) to another position (top-left).

[0100] FIG. **6**D shows an example where an advertisement image **24** different from the advertisement image **23** shown in FIG. **6**A is displayed. Such changing of advertisement images may be performed depending on a time segment or in coordination with an AV content item or a scene in the AV content item currently on the screen. For example, an advertisement of a travel company as shown in FIG. **6**D is displayed as an advertisement relating to travel when a user watching a travel program performs an operation to change the volume level or when a user turns on the AV playback device **10** on the morning after the day the user watches a travel program.

[0101] FIG. **6**E shows an example of the mode of advertisement presentation in which a GUI has an appearance such that the GUI itself serves as an advertisement. In the example of the mode of advertisement presentation, an appearance of the advertisement image **24** is applied to a slide bar **25**.

[0102] In another example, the size of an advertisement image may be increased as a user turns up the volume higher (not shown in the drawings). In yet another example, the size of an advertisement image may be increased as a user turns down the volume lower. In yet another example, the size of an advertisement image may be increased to be more eye-catching while the audio is muted because the user is probably not watching the video content on a screen. Alternatively, an advertisement image may not be displayed while a GUI is displayed.

[0103] The advertisement image may be an animation. For example, the advertisement image **23** may be an animation of a car with spinning wheels, and the advertisement image **24** may be an animation of an airplane taking off and flying away. In another example, an advertisement image may be displayed without being accompanied by a GUI, and the advertisement image is shifted further to the right on a screen as the volume is turned up higher, and further to the left as the volume is turned down lower. In this manner, an advertisement image itself may be an animation. Furthermore, the position of an advertisement image may be freely moved as an animation on a screen.

[0104] Furthermore, when an advertisement image is displayed in response to an operation which is neither performed to cause a GUI to appear on a screen nor performed on an AV content item currently on a screen, such as an operation to turn on a device, the advertisement image may be displayed over the screen.

(Advertisement Download)

[0105] The following describes advertisement download in which an advertisement script and advertisement data are downloaded and stored in the advertisement storage **12**.

[0106] FIG. **7** is a sequence diagram illustrating an example of advertisement download. The advertisement download is performed as needed while the AV playback device **10** is connected to the Internet **60**.

[0107] For example, the advertisement downloader **11** starts advertisement download on a scheduled date and time or at a predetermined interval, with reference to the current date and time on the AV playback device **10**.

[0108] The advertisement downloader **11** downloads a configuration checking script from the advertisement script server **40** before downloading an advertisement script (S**31**, S**32**). The configuration checking script is an example of a program for assessing presentation capability of the AV playback device **10**. The configuration checking script is, for example, a script for obtainment of configuration information of the AV playback device **10** in relation to capability for advertisement presentation. The advertisement downloader **11** obtains configuration information of the AV playback device **10** in relation to capability for advertisement presentation by executing the configuration checking script (S**33**).

[0109] The advertisement downloader **11** provides the advertisement script server **40** of the obtained configuration information (S**41**). The advertisement script server **40** transmits an advertisement script appropriate for the provided configuration information to the advertisement downloader **11** (S**42**). The advertisement downloader **11** receives an advertisement script from the advertisement script server **40**, and stores the advertisement script in the advertisement storage **12** (S**43**).

[0110] When the advertisement script includes a description as to an advertisement data segment not stored in the advertisement storage **12** (S**44**, YES), the advertisement downloader **11** downloads the advertisement data segment according to a URL specified in the advertisement script (S**45**, S**46**), and stores the advertisement data in the advertisement storage **12** (S**47**).

(Configuration Information of AV Playback Device)

[0111] FIG. **8** shows an example of the configuration information of the AV playback device **10** obtained by executing the configuration checking script.

[0112] Referring to FIG. **8**, the example of the configuration information in relation to capability for advertisement presentation of the AV playback device **10** includes items indicating hardware specifications, such as the model number of a central processing unit (CPU), the model number of a graphics processing unit (GPU), screen resolution, capability for parallax 3D display, available codecs, and available application interface (API).

[0113] Some of the items in FIG. **8** may be dependent on each other, so that capability for advertisement presentation of the A_V playback device **10** may be sufficiently indicated by part of the items in FIG. **8**.

[0114] Based on such configuration information provided to the advertisement script server **40** by the advertisement downloader **11**, the advertisement script server **40** selects, from among prepared advertisement scripts, an advertisement script indicating only an advertisement data segment which the AV playback device **10** is capable of playing appropriately, and provides the selected advertisement script to the AV playback device **10**.

[0115] Optionally, the advertisement script server **40** may generate an advertisement script appropriate for the AV playback device **10**. For example, the advertisement script server **40** may select a script for an animation already stored in the advertisement script server **40** and generate a script by combining the selected script and a script instructing obtainment of a picture or a video from the advertisement data server **51**, **52**, or **53**, and transmit the generated script to the AV playback device **10**.

[0116] It is therefore easy to change content of an advertisement on the screen applying the same animation effect to the advertisement.

[0117] For example, the advertisement script server **40** may generate an advertisement script appropriate for the AV playback device **10** based on device information of the AV playback device **10** so that an advertisement data server which provides data of an advertisement related to a peripheral device suitable for the AV playback device **10** is selected.

[0118] Optionally, an advertisement data server may be selected depending on current time.

[0119] More specifically, an advertisement for a predetermined manufacturer may be selectively displayed or restricted. For example, advertisements for alcoholic drinks are restricted in a time segment in which children may view such advertisements.

[0120] The downloading of a configuration checking script and obtaining of a configuration information (S**31** to S**33** in FIG. **7**) need not be performed each time an advertisement script is downloaded. They may be performed less frequently than the downloading of an advertisement script. In this case, the obtained configuration information may be stored in the advertisement storage **12**, and the advertisement script server **40** may be provided with the configuration information stored in the advertisement storage **12**.

Conclusion

[0121] The AV playback device **10** and the advertisement presentation system **1** produce various advantageous effects as follows.

[0122] An advertisement is played using an advertisement data segment and a mode which are specified in an advertisement script. It is therefore possible to present a variety of advertisements as intended by a provider of the advertisement script through a very simple operation of replacing one advertisement script with another.

[0123] An effective period is set for each advertisement script and each advertisement data segment. This enables preloading of an advertisement script and an advertisement data segment in order to shorten a delay in displaying an advertisement, and allows for avoidance of troubles which undermine the effectiveness of advertising, such as a lingering old advertisement. Preloading an advertisement script and an advertisement data segment also produces an advantageous effect that an advertisement is displayed without a connection to the Internet, particularly immediately after the power is turned on, for example.

[0124] The mode of advertisement presentation, such as position, color, size, display duration, use probability, is flexibly controlled according to description in advertisement scripts. Advertisements are thereby presented to a user with variation and interestingness, so that it is possible to avoid boring the user and deteriorating the effectiveness of the advertisements.

[0125] The mode of advertisement presentation is changed depending on the type of user operation or the time segment. It is also possible to set a probability at which an advertisement is NOT presented. It is therefore possible to adjust frequency of displaying an advertisement during a prime-time slot or in response to a type of user operations frequently performed, such as an operation for changing volume level. This will make a user impressed and allow the user to feel less annoyed with appearance of advertisements on the screen.

[0126] The mode of GUI presentation, such as the position, color, appearance of a GUI is changeable in coordination with the mode of advertisement presentation. For example, the color of a slide bar is changed in coordination with the color of an advertisement, so that advertisements can be presented with increased variation and interestingness. It is thereby possible to avoid boring the user and deteriorating effectiveness of the advertisements. Furthermore, the effectiveness of advertisements may be enhanced by changing the mode of GUI presentation in coordination with the content of the advertisement. For example, the color of a slide bar may be changed in coordination with the corporate color of the advertiser.

[0127] Each AV playback device provides the advertisement script server with configuration information as to its own capability for advertisement presentation. This allows the advertisement script server to selectively provide the AV playback device with an advertisement script with which the AV playback device can appropriately play advertisement data.

[0128] For example, when configuration information indicates that the AV playback device **10** is capable of presenting parallax 3D images, the AV playback device **10** is provided with an advertisement script in which image data for parallax 3D presentation is specified as advertisement data. When configuration information indicates that the AV playback device **10** is not capable of presenting parallax 3D images, the AV playback device **10** is provided with an advertisement script in which image data for normal 2D presentation is specified as advertisement data.

[0129] As a result, the AV playback device need not make a complicated determination for download of appropriate advertisement data and provides appropriate advertising effectiveness by performing advertisement playback according to a downloaded advertisement script selected by the advertisement script server.

[0130] In particular, some consumer electronics AV playback devices support only limited types of advertisement data for the purpose of optimization of cost for platform, for example. When this is the case, if each AV playback device is required to select, from among advertisement data segments stored in many advertisement data servers, an advertisement data segment to download which the AV playback device itself supports, this operation of the AV playback device is troublesome. Such troublesomeness is all eliminated by the advertisement script server which selectively provides each AV playback device with an advertisement script in accordance with configuration information of the AV playback device.

[0131] In order to download an advertisement script, the AV playback device need not communicate with other than the advertisement script server which centrally manages advertisement scripts. Then, the AV playback device interprets the downloaded advertisement script and communicates with an advertisement data server, so that the AV playback device may play an advertisement as appropriate.

[0132] As described above, the AV playback device **10** and the advertisement presentation system **1** are provided as a video display device and an advertisement presentation system which are capable of adaptive and flexible control of advertisement presentation.

INDUSTRIAL APPLICABILITY

[0133] The present invention is applicable to a variety of systems which display advertisements on consumer electronics.

REFERENCE SIGNS LIST

[0134] **1** Advertisement presentation system
[0135] **10** AV playback device
[0136] **11** Advertisement downloader
[0137] **12** Advertisement storage
[0138] **13** Advertisement player
[0139] **14** AV player
[0140] **15** Switch unit
[0141] **16** Platform
[0142] **20** AV monitor
[0143] **21** Television image
[0144] **22**, **25** Slide bar
[0145] **23**, **24** Advertisement
[0146] **30** Content medium
[0147] **40** Advertisement script server
[0148] **51** to **53** Advertisement data server
[0149] **60** Internet

1. A video display device which displays an advertisement obtained via a communication network, the video display device comprising:

a download unit configured to access a default server via the communication network, obtain a script including information indicating an address on the communica-

tion network from the default server, access the address on the communication network included in the script, and obtain an advertisement located at the address, the default server being a predetermined server device, and the address indicating one of server devices each storing an advertisement corresponding to a different advertising company; and

an advertisement playback unit configured to display the advertisement obtained by the download unit on a screen.

2. The video display device according to claim **1**,

wherein the download unit is further configured to obtain, via the communication network, presentation mode information in which a mode of presentation of the advertisement is specified, and

the advertisement playback unit is configured to play the advertisement according to the presentation mode information obtained by the download unit.

3. The video display device according to claim **2**,

wherein the advertisement includes the presentation mode information corresponding to the advertisement.

4. The video display device according to claim **2**,

wherein the script includes the presentation mode information, and

the advertisement playback unit is configured to display the advertisement according to the presentation mode information included in the script.

5. The video display device according to claim **2**,

wherein the default server further stores the presentation mode information, and

the download unit is configured to obtain the presentation mode information from the default server.

6. The video display device according to claim **2**, further comprising

an engine unit configured to execute a program,

wherein the download unit is further configured to obtain, via the communication network, a program for assessing presentation capability of the video display device before obtaining the presentation mode information,

the engine unit is configured to assess the presentation capability of the video display device by executing the obtained program, and

the download unit is configured to obtain presentation mode information corresponding to a result of the assessing of the presentation capability by the engine unit.

7. The video display device according to claim **6**,

wherein the default server further stores the program, and

the download unit is configured to obtain the program from the default server.

8. The video display device according to claim **2**,

wherein the presentation mode information is information in which a way of presenting the advertisement when displayed as an animation is specified.

9. A video display method for displaying an advertisement obtained via a communication network, the video display method comprising:

accessing a default server via the communication network, obtaining a script including information indicating an address on the communication network from the default server, accessing the address on the communication network included in the script, and obtaining an advertisement located at the address, the default server being a predetermined server device, and the address indicating one of server devices each storing an advertisement corresponding to a different advertising company; and

playing the obtained advertisement on a screen.

10. A non-transitory computer-readable recording medium on which a program which causes a computer to execute the video display method according to claim **9** is recorded.

* * * * *