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(54) METHOD FOR RECORDING EXECUTION SCREEN AND ELECTRONIC DEVICE FOR PROCESSING THE SAME

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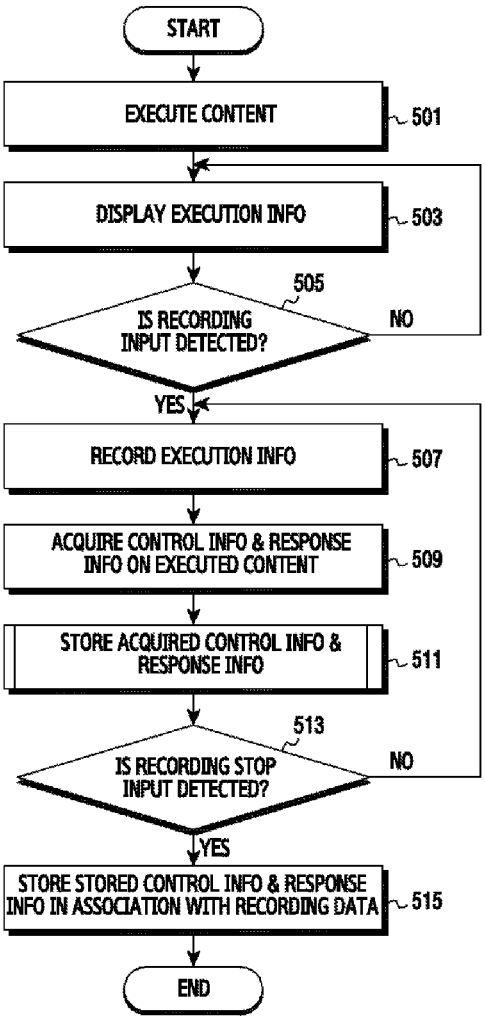
(57) **ABSTRACT**

An electronic device and a method for recording a content execution screen are disclosed. The electronic device includes a memory and a processor electrically connected to the memory. The processor is configured to control for executing content, confirming at least one part of the content, and recording the at least one part of the content in association with a haptic effect.



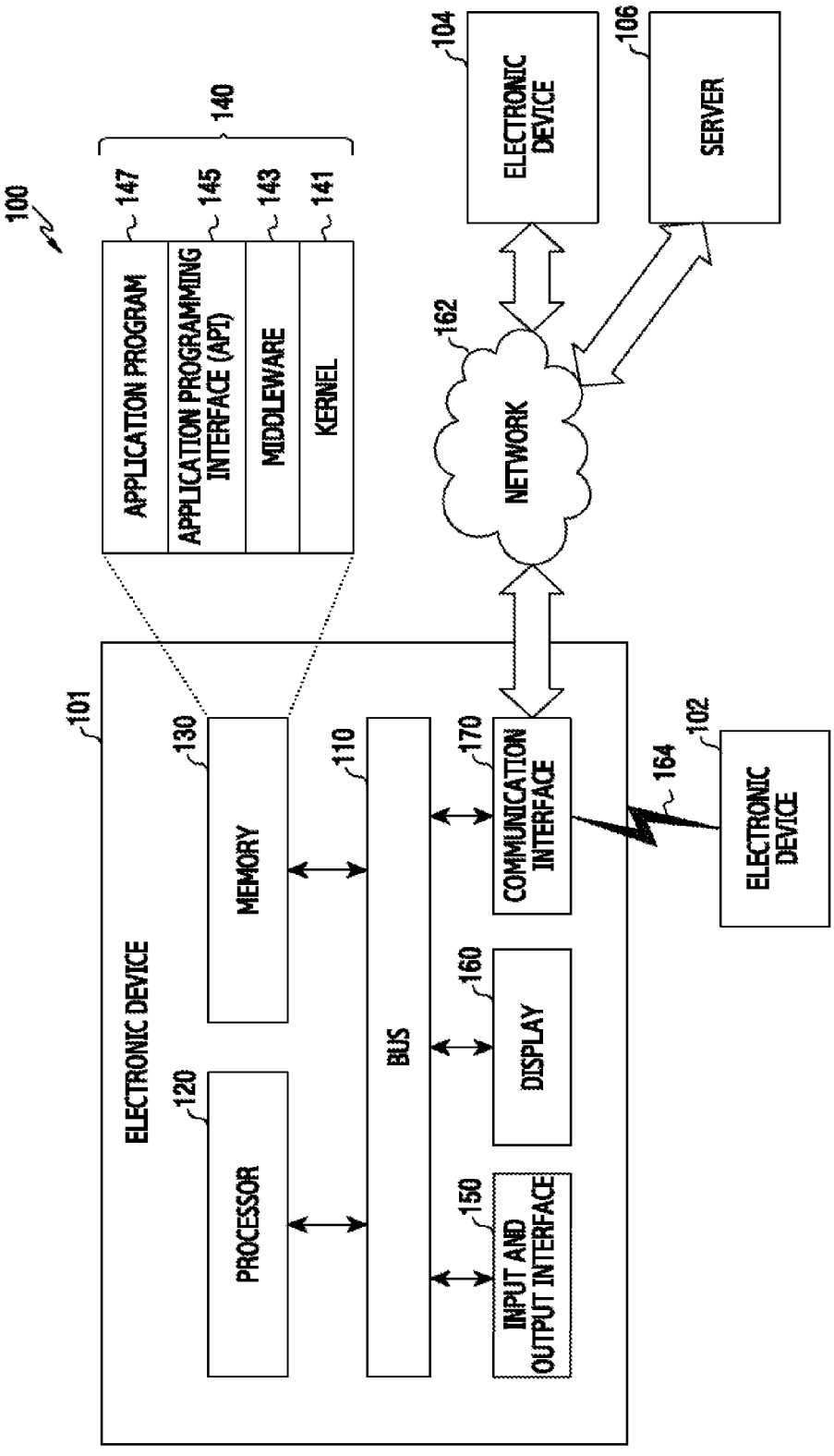

100
140
147
145
143
141
APPLICATION PROGRAM
APPLICATION PROGRAMMING INTERFACE (API)
MIDDLEWARE
KERNEL
104
ELECTRONIC DEVICE
106
SERVER
162
NETWORK
101
ELECTRONIC DEVICE
130
MEMORY
110
BUS
170
COMMUNICATION INTERFACE
164
102
ELECTRONIC DEVICE
120
PROCESSOR
160
DISPLAY
150
INPUT AND OUTPUT INTERFACE

FIG. 1

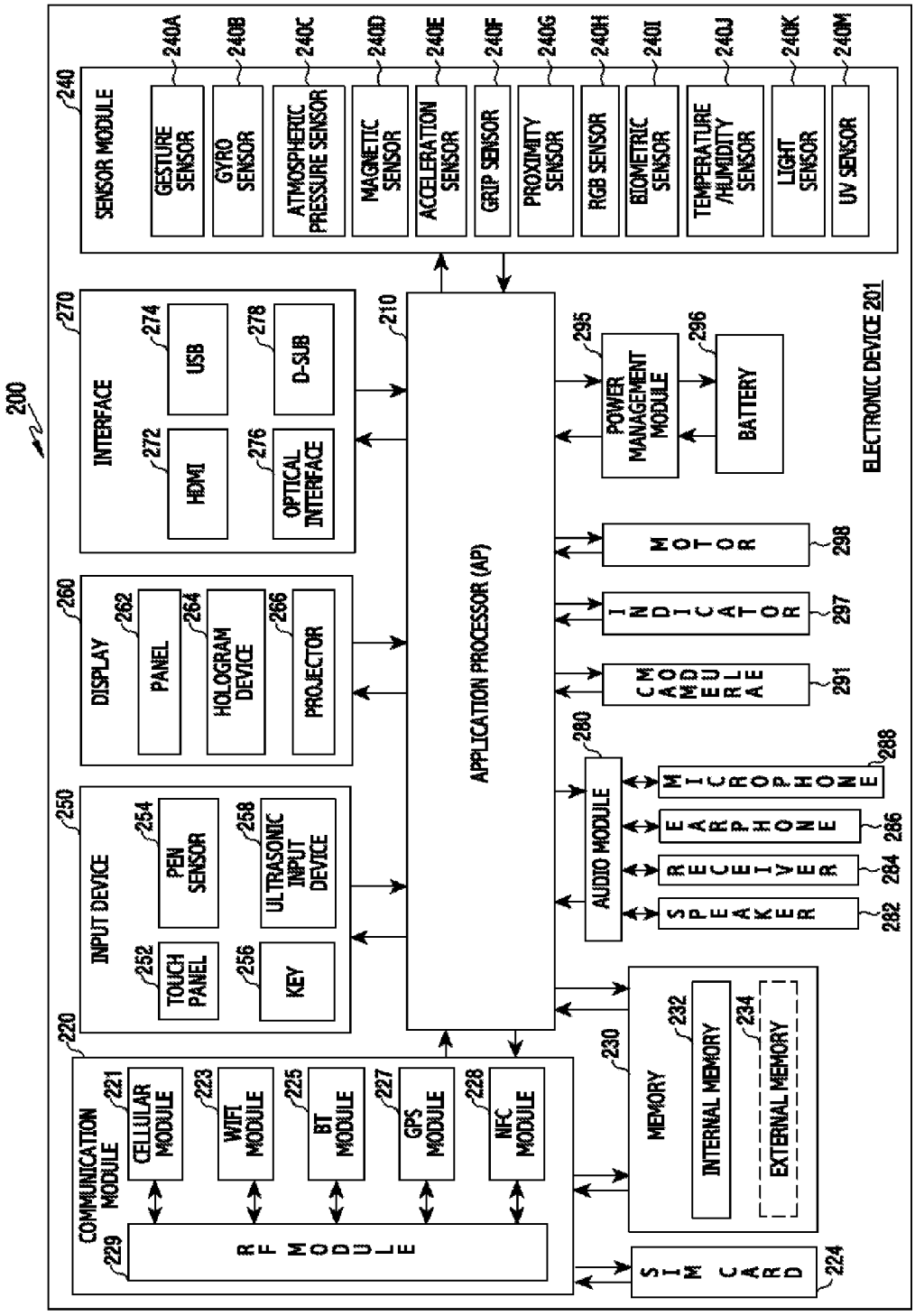

200
ELECTRONIC DEVICE 201
APPLICATION PROCESSOR (AP)
210
SENSOR MODULE
240
GESTURE SENSOR
240A
GYRO SENSOR
240B
ATMOSPHERIC PRESSURE SENSOR
240C
MAGNETIC SENSOR
240D
ACCELERATION SENSOR
240E
GRIP SENSOR
240F
PROXIMITY SENSOR
240G
RGB SENSOR
240H
BIOMETRIC SENSOR
240I
TEMPERATURE /HUMIDITY SENSOR
240J
LIGHT SENSOR
240K
UV SENSOR
240M
INTERFACE
270
USB
274
D-SUB
278
HDMI
272
OPTICAL INTERFACE
276
DISPLAY
260
PANEL
262
HOLOGRAM DEVICE
264
PROJECTOR
266
INPUT DEVICE
250
PEN SENSOR
254
ULTRASONIC INPUT DEVICE
258
TOUCH PANEL
252
KEY
256
COMMUNICATION MODULE
220
CELLULAR MODULE
221
WIFI MODULE
223
BT MODULE
225
GPS MODULE
227
NFC MODULE
228
RF MODULE
229
MEMORY
230
INTERNAL MEMORY
232
EXTERNAL MEMORY
234
SIM CARD
224
AUDIO MODULE
280
SPEAKER
282
RECEIVER
284
EARPHONE
286
MICROPHONE
288
CAMERA MODULE
291
INDICATOR
297
MOTOR
298
POWER MANAGEMENT MODULE
295
BATTERY
296

FIG. 2

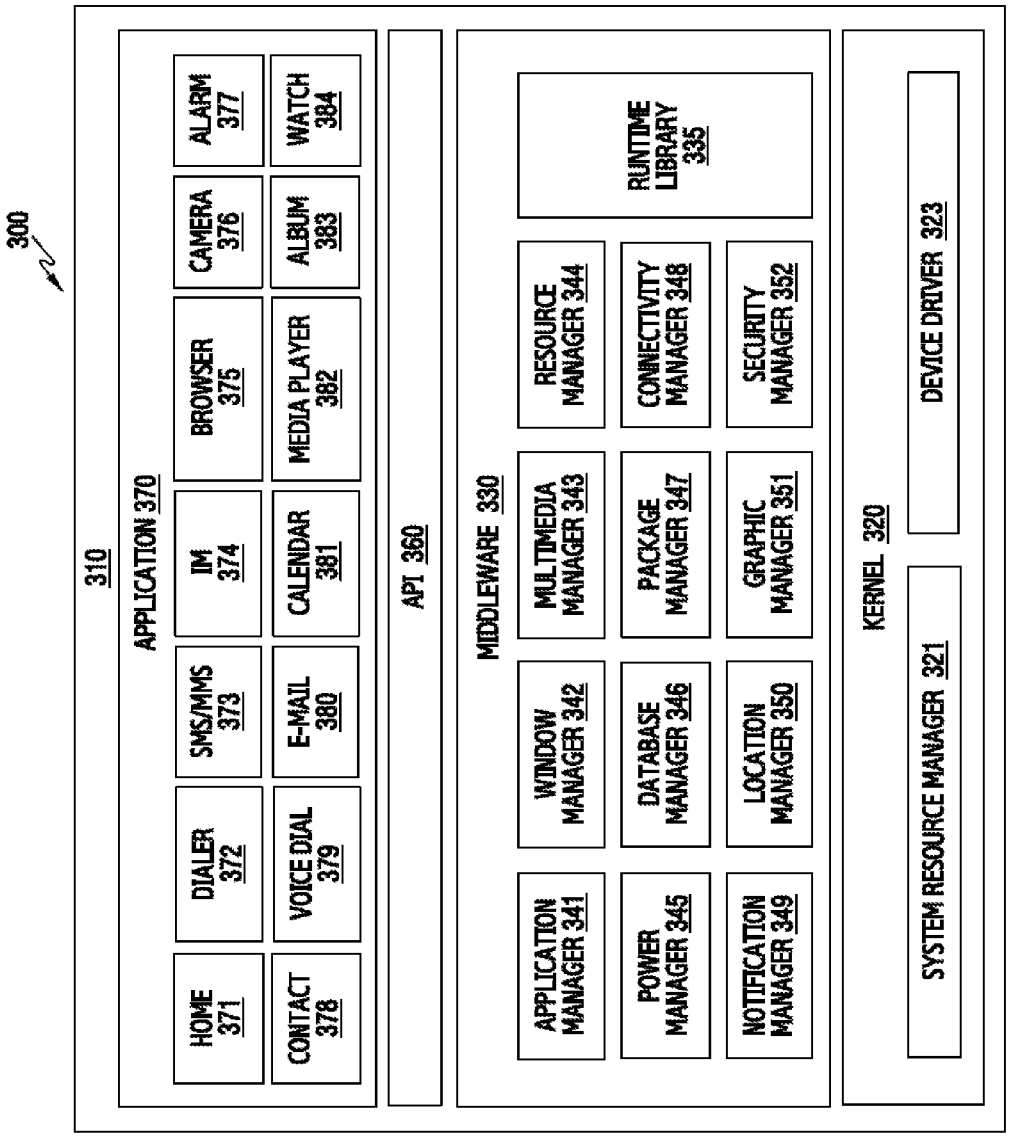

300
310
APPLICATION 370
HOME 371
DIALER 372
SMS/MMS 373
IM 374
BROWSER 375
CAMERA 376
ALARM 377
CONTACT 378
VOICE DIAL 379
E-MAIL 380
CALENDAR 381
MEDIA PLAYER 382
ALBUM 383
WATCH 384
API 360
MIDDLEWARE 330
APPLICATION MANAGER 341
WINDOW MANAGER 342
MULTIMEDIA MANAGER 343
RESOURCE MANAGER 344
RUNTIME LIBRARY 335
POWER MANAGER 345
DATABASE MANAGER 346
PACKAGE MANAGER 347
CONNECTIVITY MANAGER 348
NOTIFICATION MANAGER 349
LOCATION MANAGER 350
GRAPHIC MANAGER 351
SECURITY MANAGER 352
KERNEL 320
SYSTEM RESOURCE MANAGER 321
DEVICE DRIVER 323

FIG.3

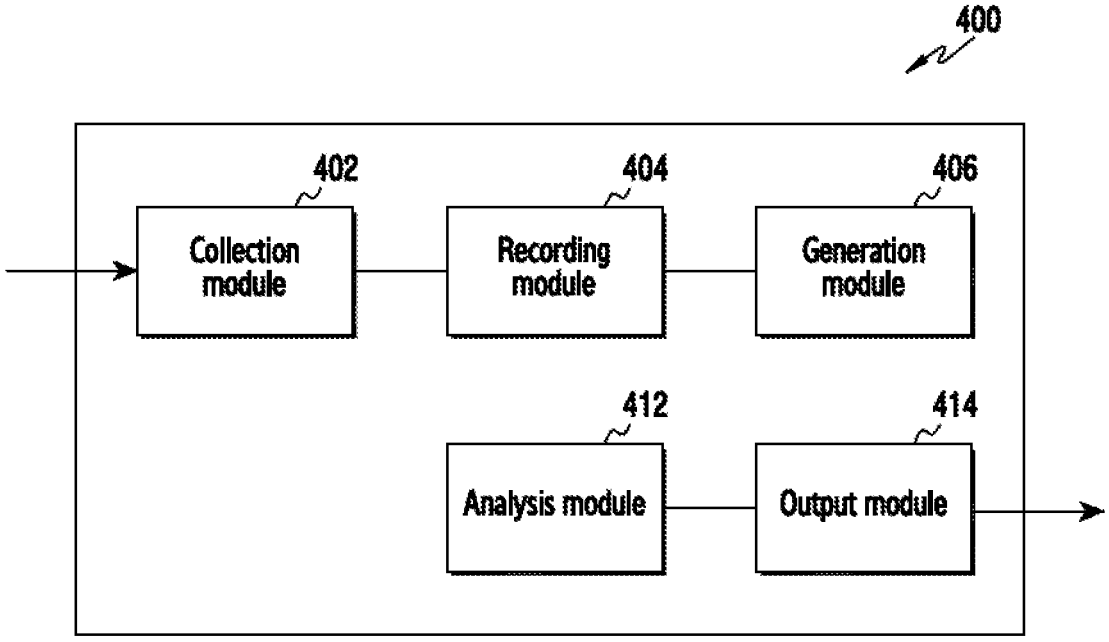

400
402
Collection module
404
Recording module
406
Generation module
412
Analysis module
414
Output module

FIG.4A

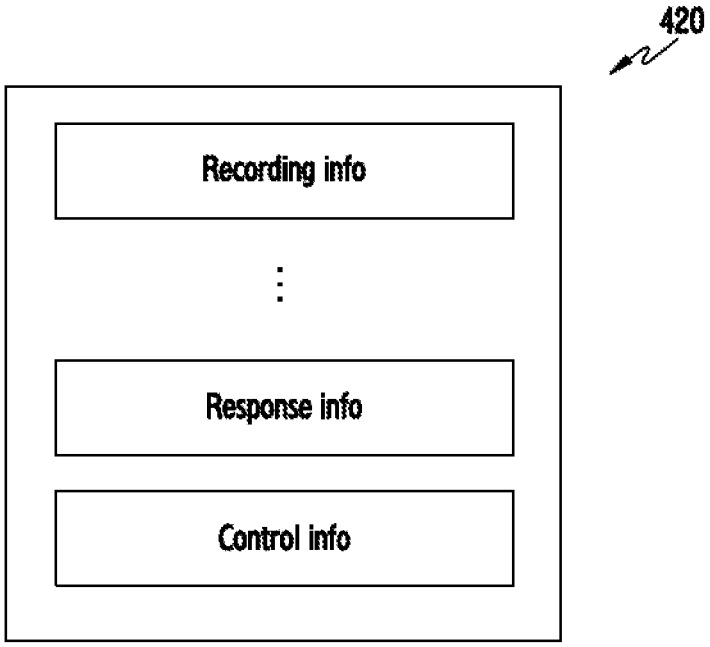


FIG.4B

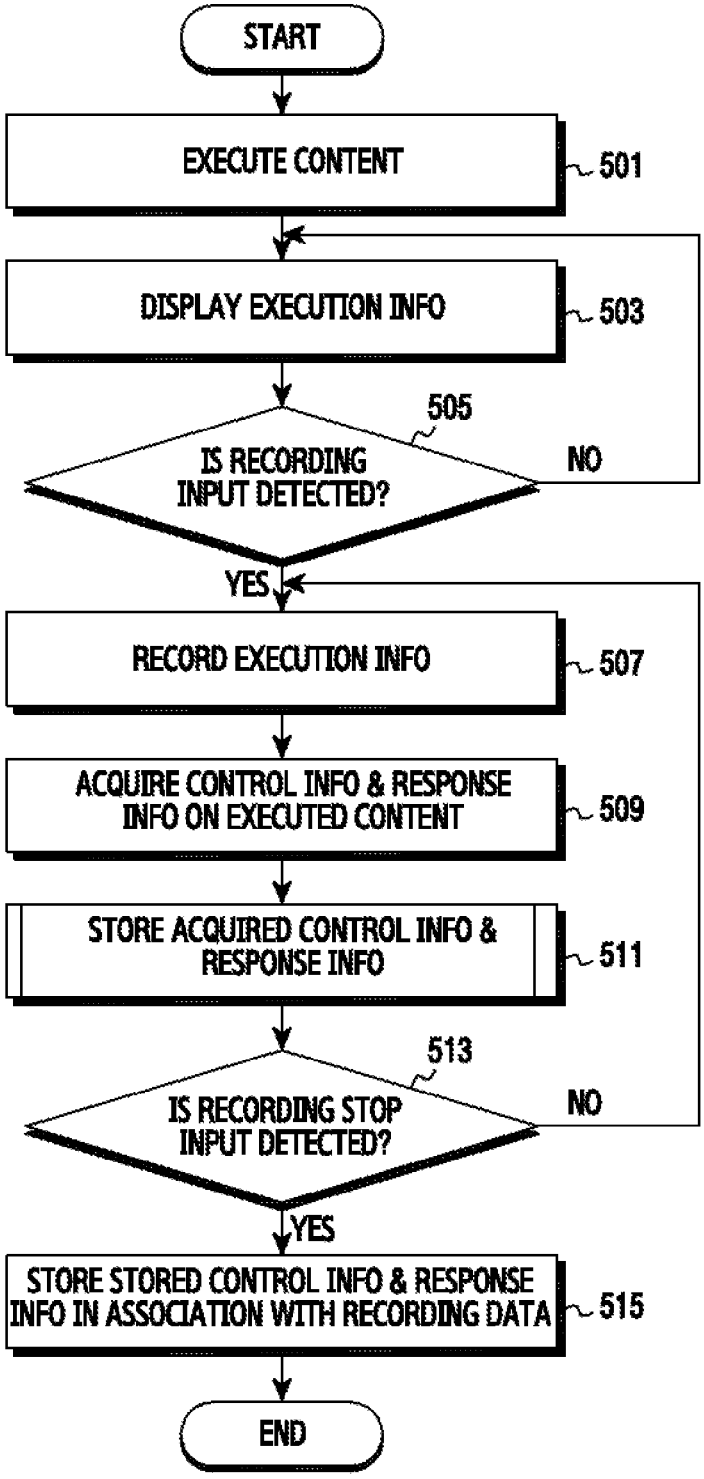

START
EXECUTE CONTENT
501
DISPLAY EXECUTION INFO
503
505
IS RECORDING INPUT DETECTED?
NO
YES
RECORD EXECUTION INFO
507
ACQUIRE CONTROL INFO & RESPONSE INFO ON EXECUTED CONTENT
509
STORE ACQUIRED CONTROL INFO & RESPONSE INFO
511
513
IS RECORDING STOP INPUT DETECTED?
NO
YES
STORE STORED CONTROL INFO & RESPONSE INFO IN ASSOCIATION WITH RECORDING DATA
515
END

FIG.5

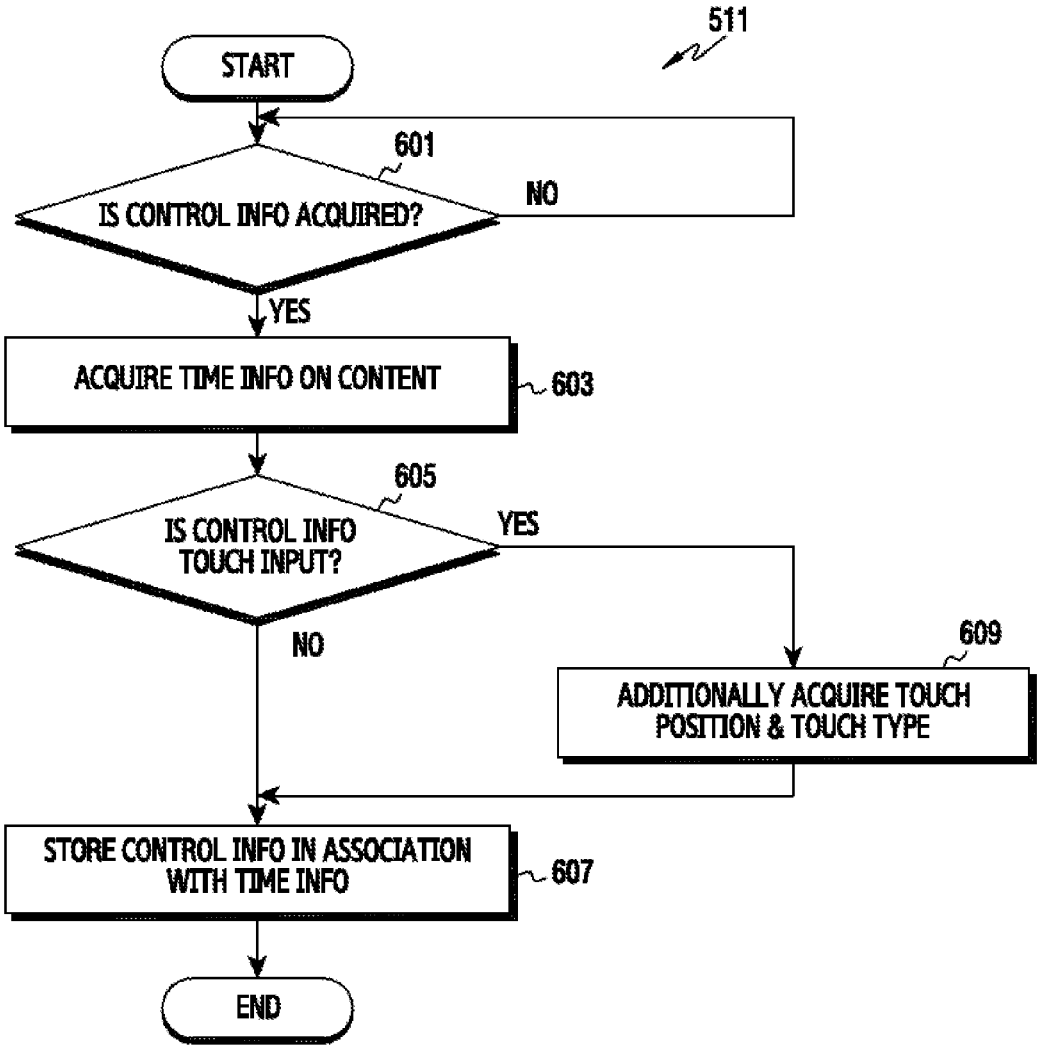

511
START
601
IS CONTROL INFO ACQUIRED?
NO
YES
ACQUIRE TIME INFO ON CONTENT
603
605
IS CONTROL INFO TOUCH INPUT?
YES
NO
609
ADDITIONALLY ACQUIRE TOUCH POSITION & TOUCH TYPE
STORE CONTROL INFO IN ASSOCIATION WITH TIME INFO
607
END

FIG.6

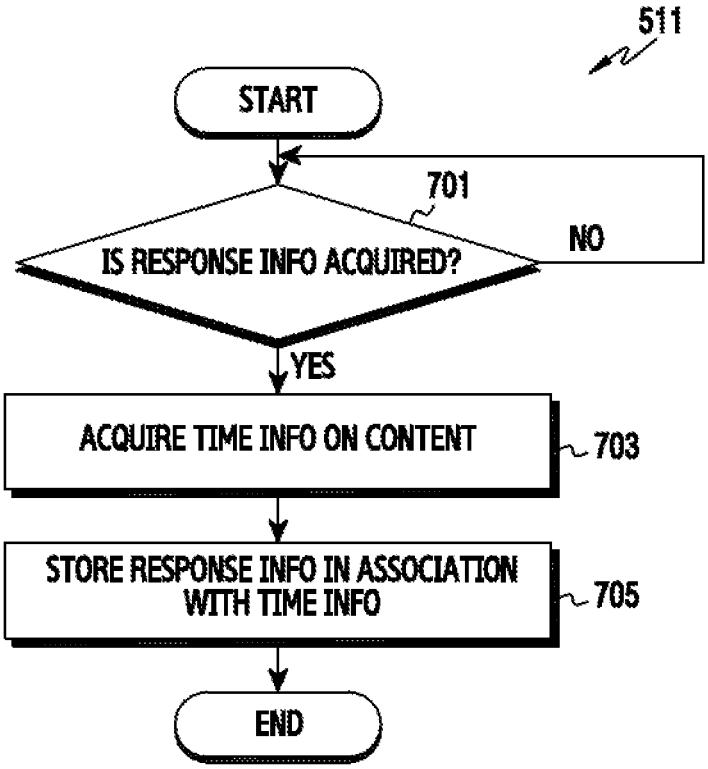

511
START
701
IS RESPONSE INFO ACQUIRED?
NO
YES
ACQUIRE TIME INFO ON CONTENT
703
STORE RESPONSE INFO IN ASSOCIATION WITH TIME INFO
705
END

FIG.7

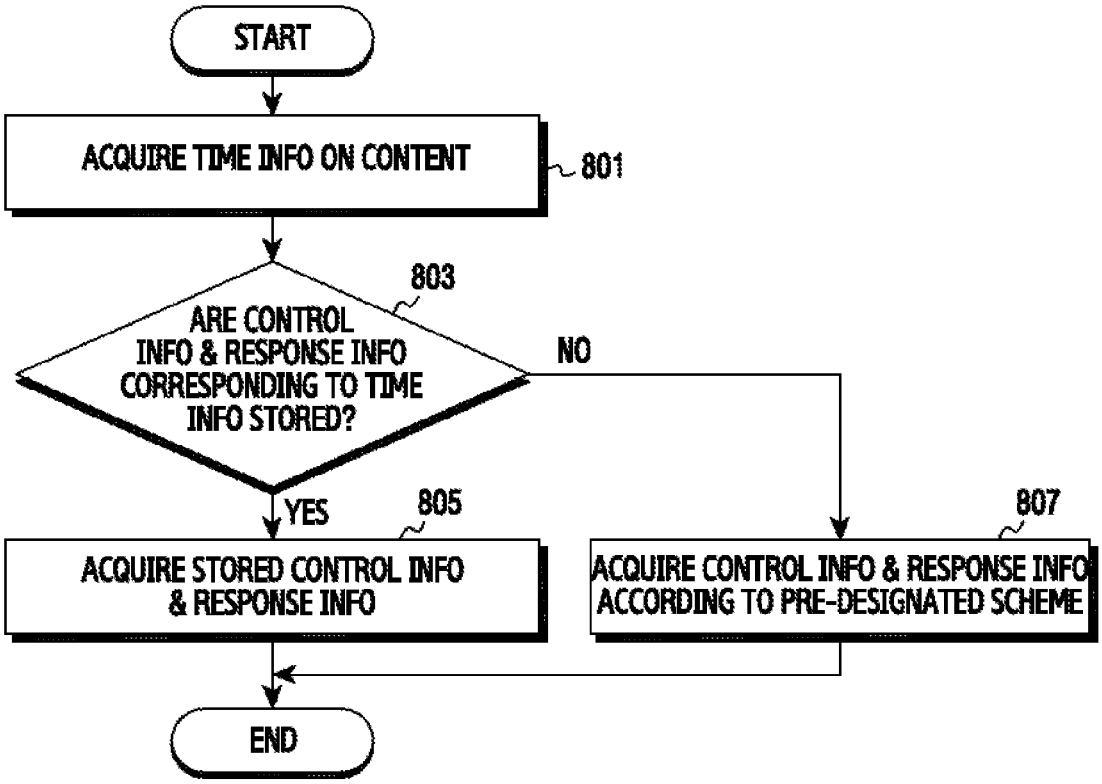

START
ACQUIRE TIME INFO ON CONTENT
801
803
ARE CONTROL INFO & RESPONSE INFO CORRESPONDING TO TIME INFO STORED?
NO
YES
805
ACQUIRE STORED CONTROL INFO & RESPONSE INFO
807
ACQUIRE CONTROL INFO & RESPONSE INFO ACCORDING TO PRE-DESIGNATED SCHEME
END

FIG.8

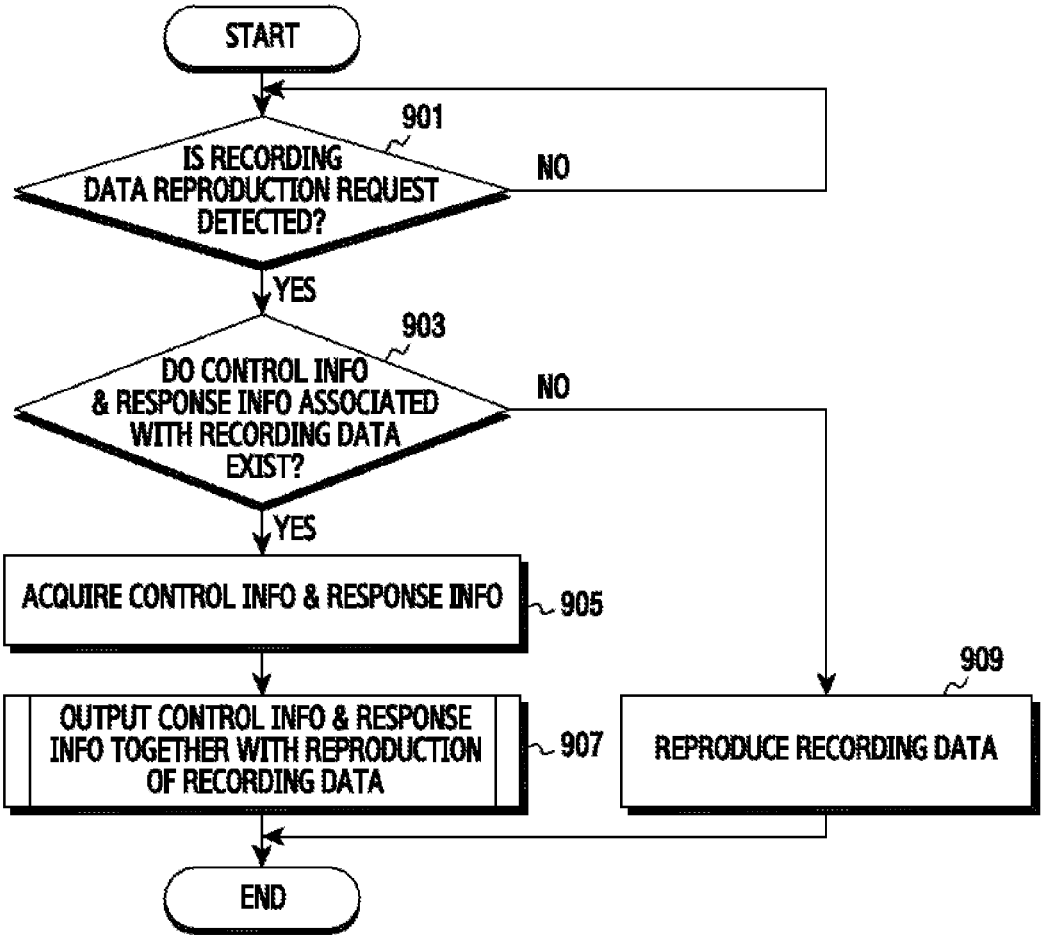

START
901
IS RECORDING DATA REPRODUCTION REQUEST DETECTED?
NO
YES
903
DO CONTROL INFO & RESPONSE INFO ASSOCIATED WITH RECORDING DATA EXIST?
NO
YES
ACQUIRE CONTROL INFO & RESPONSE INFO
905
OUTPUT CONTROL INFO & RESPONSE INFO TOGETHER WITH REPRODUCTION OF RECORDING DATA
907
909
REPRODUCE RECORDING DATA
END

FIG.9

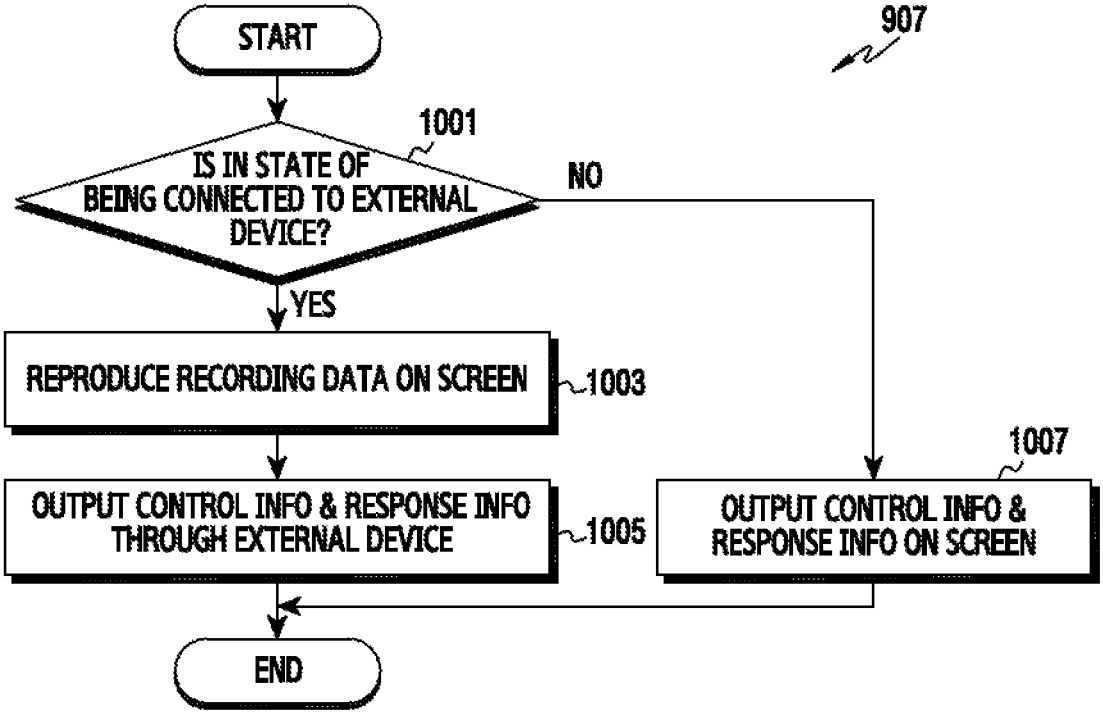

907
START
1001
IS IN STATE OF BEING CONNECTED TO EXTERNAL DEVICE?
NO
YES
REPRODUCE RECORDING DATA ON SCREEN
1003
OUTPUT CONTROL INFO & RESPONSE INFO THROUGH EXTERNAL DEVICE
1005
1007
OUTPUT CONTROL INFO & RESPONSE INFO ON SCREEN
END

FIG.10

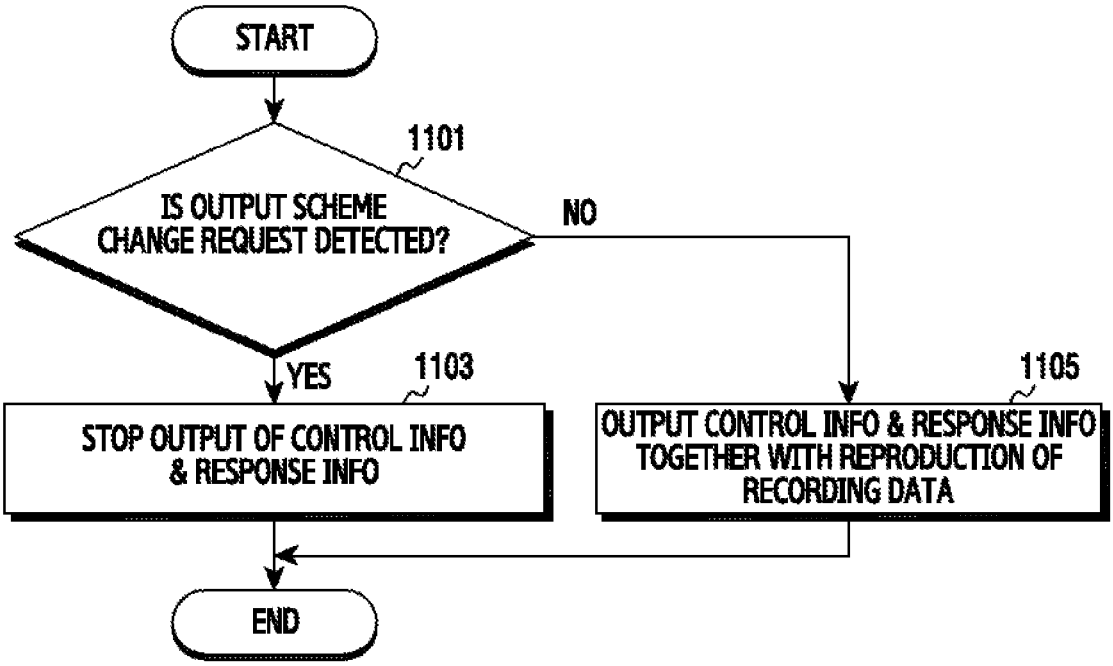

START
1101
IS OUTPUT SCHEME CHANGE REQUEST DETECTED?
NO
YES
1103
STOP OUTPUT OF CONTROL INFO & RESPONSE INFO
1105
OUTPUT CONTROL INFO & RESPONSE INFO TOGETHER WITH REPRODUCTION OF RECORDING DATA
END

FIG.11

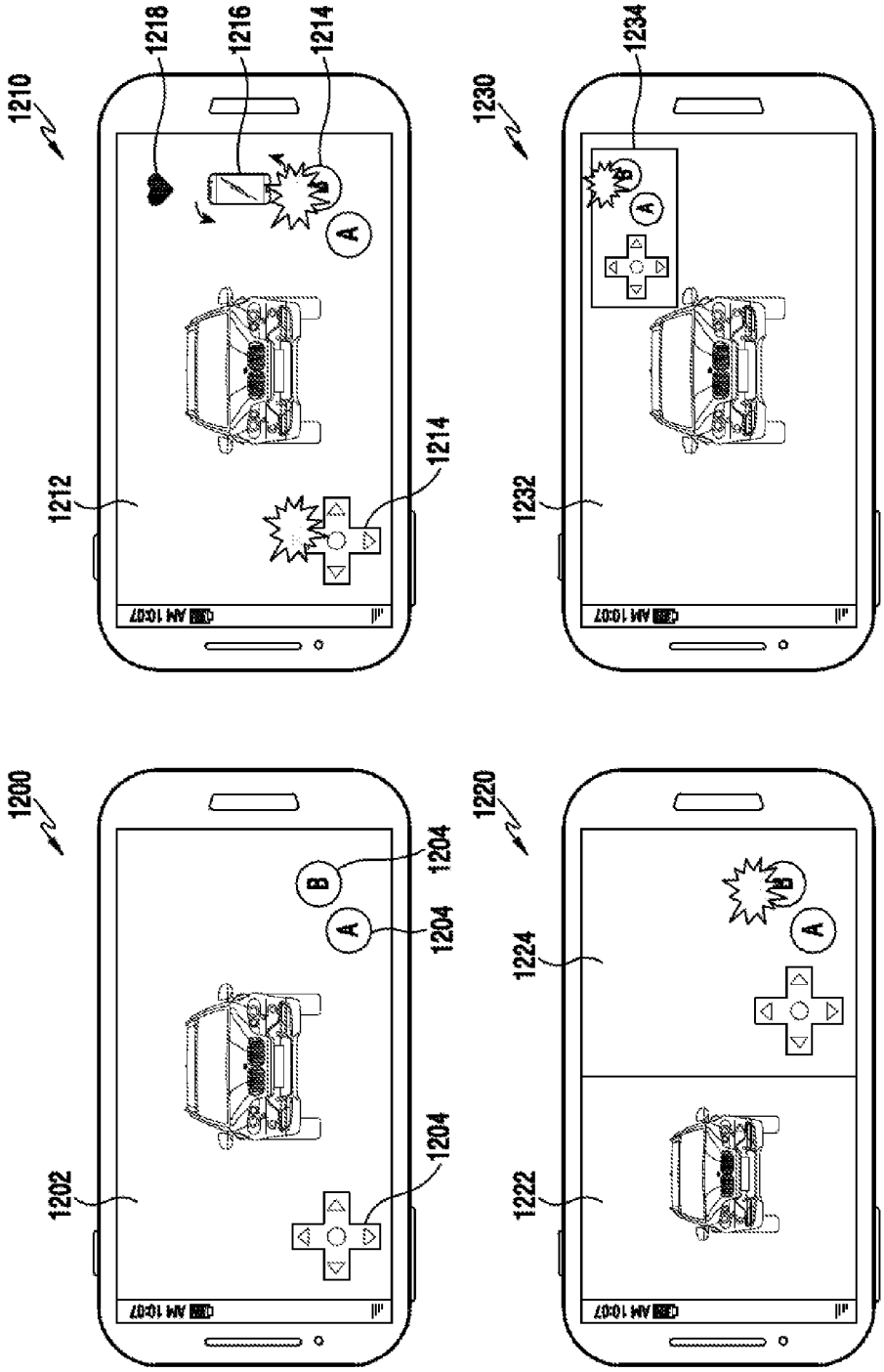

1210
1218
1216
1214
A
1212
1214
1230
1234
B
A
1232
1200
B
1204
A
1204
1202
1204
1220
B
A
1224
1222

FIG. 12

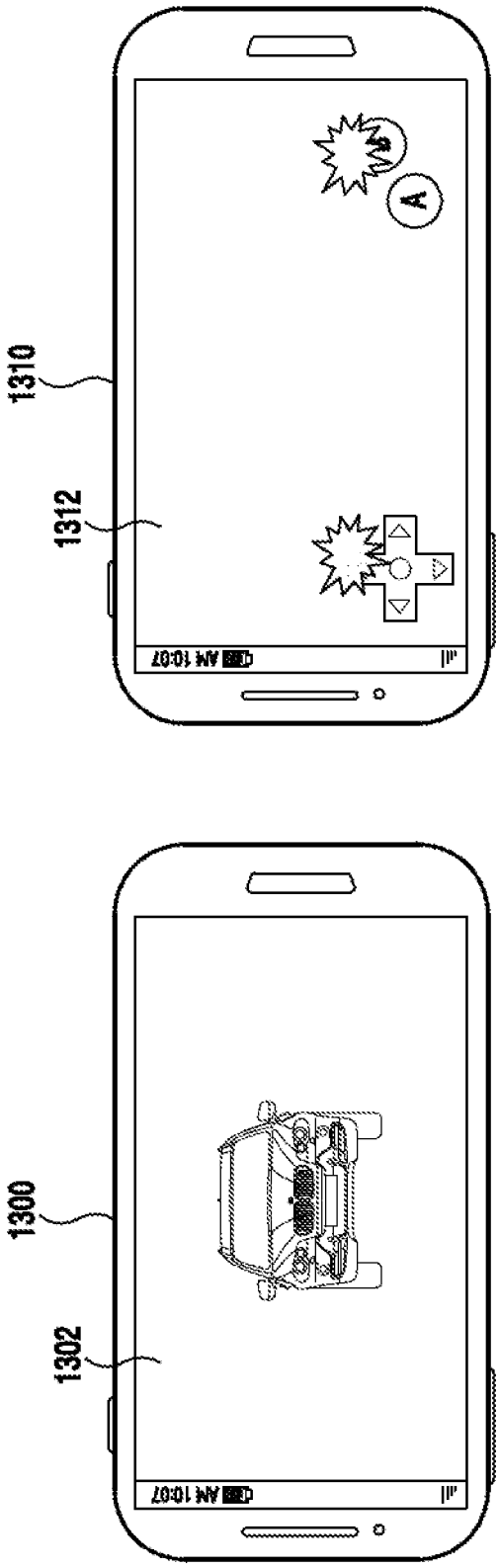


FIG. 13

METHOD FOR RECORDING EXECUTION SCREEN AND ELECTRONIC DEVICE FOR PROCESSING THE SAME

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This application claims the benefit under 35 U.S.C. §119(a) of a Korean patent application filed on Oct. 15, 2015 in the Korean Intellectual Property Office and assigned Serial number 10-2015-0144222, the entire disclosure of which is hereby incorporated by reference.

TECHNICAL FIELD

[0002] The present disclosure relates to an apparatus and a method for recording a content execution screen. More particularly, the present disclosure relates to an apparatus and a method for storing control information and response information on the executed content when a content execution screen is recorded.

BACKGROUND

[0003] Recently, electronic devices that integrally perform one or more functions are gradually proliferating. Further, mobile terminals broadly classified as so-called "smart phones" mainly feature in such electronic devices. A mobile terminal typically includes a large screen touch-type display module, and includes a high-pixel camera module in addition to a basic function of communicating with the other party and is capable of capturing still images and moving images. Also, the mobile terminal can reproduce multimedia content, such as music, moving images, and the like, and can connect to a network and it can be configured to perform web surfing. The mobile terminal is gradually being equipped with one or more high-performance processors and thus can perform various functions.

[0004] Recently, the electronic device can generate and store various types of data. For example, the electronic device can generate recording data obtained by recording information, which is displayed on a screen, in the form of an image or a moving image.

[0005] The above information is presented as background information only to assist with an understanding of the present disclosure. No determination has been made, and no assertion is made, as to whether any of the above might be applicable as prior art with regard to the present disclosure.

SUMMARY

[0006] Aspects of the present disclosure are to address at least the above-mentioned problems and/or disadvantages and to provide at least the advantages described below. Accordingly, an aspect of the present disclosure is to provide an apparatus and a method for storing information associated with content control when recording data is generated. Typically, when an electronic device generates recording data, the electronic device only generates recording data including at least one piece of information among image information and audio information which are output according to the execution of content, and does not record control information on the content. Accordingly, when the recording data being stored is reproduced, a user cannot confirm a situation of controlling the content at the time of recording.

[0007] Another aspect of the present disclosure is to provide an apparatus and a method for separating recording information from control information and storing the recording information separated from the control information when recording data is generated.

[0008] Another aspect of the present disclosure is to provide an apparatus and a method for selectively outputting control information when recording data is reproduced.

[0009] In accordance with an aspect of the present disclosure, an electronic device is provided. The electronic device may include a memory and a processor electrically connected to the memory, wherein the processor is configured to control for executing content, confirming at least one part of the content, and recording the at least one part of the content in association with a haptic effect.

[0010] In accordance with another aspect of the present disclosure, an operating method of an electronic device is provided. The operating method includes executing content, confirming at least one part of the content, recording the at least one part of the content, acquiring additional information collected by at least one sensor while the at least one part of the content is recorded, and storing the collected information in association with recording data.

[0011] In accordance with another aspect of the present disclosure, a non-transitory computer-readable recording medium is provided. The non-transitory computer-readable recording medium may store a program for executing operations including executing content, confirming at least one part of the content, recording the at least one part of the content, acquiring additional information collected by at least one sensor while the at least one part of the content is recorded, and storing the collected information in association with recording data.

[0012] Other aspects, advantages, and salient features of the disclosure will become apparent to those skilled in the art from the following detailed description, which, taken in conjunction with the annexed drawings, discloses various embodiments of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The above and other aspects, features, and advantages of various embodiments of the present disclosure will be more apparent from the following description taken in conjunction with the accompanying drawings, in which:

[0014] FIG. **1** is a block diagram illustrating an electronic device in a network environment according to various embodiments of the present disclosure;

[0015] FIG. **2** is a block diagram illustrating a configuration of an electronic device according to various embodiments of the present disclosure;

[0016] FIG. **3** is a block diagram illustrating a configuration of a program module according to various embodiments of the present disclosure;

[0017] FIG. **4**A is a block diagram illustrating a configuration of a processor according to various embodiments of the present disclosure;

[0018] FIG. **4**B is a view illustrating a configuration of recording data according to various embodiments of the present disclosure;

[0019] FIG. **5** is a flowchart illustrating a recording operation of an electronic device according to various embodiments of the present disclosure;

[0020] FIG. **6** is a flowchart illustrating an execution process of a method for acquiring control information by an electronic device according to various embodiments of the present disclosure;

[0021] FIG. **7** is a flowchart illustrating an execution process of a method for acquiring response information by an electronic device according to various embodiments of the present disclosure;

[0022] FIG. **8** is a flowchart illustrating an execution process of a method for acquiring control information and response information by an electronic device according to various embodiments of the present disclosure;

[0023] FIG. **9** is a flowchart illustrating an execution process of a method for reproducing recording data by an electronic device according to various embodiments of the present disclosure;

[0024] FIG. **10** is a flowchart illustrating an execution process of a method for reproducing recording data by an electronic device according to various embodiments of the present disclosure;

[0025] FIG. **11** is a flowchart illustrating an execution process of a method for reproducing recording data by an electronic device according to various embodiments of the present disclosure;

[0026] FIG. **12** is a view illustrating a configuration of a screen of an electronic device for processing recording data according to various embodiments of the present disclosure; and

[0027] FIG. **13** is a view illustrating a configuration of a screen of an electronic device for reproducing recording data according to various embodiments of the present disclosure.

[0028] Throughout the drawings, it should be noted that like reference numbers are used to depict the same or similar elements, features, and structures.

DETAILED DESCRIPTION

[0029] The following description with reference to the accompanying drawings is provided to assist in a comprehensive understanding of various embodiments of the present disclosure as defined by the claims and their equivalents. It includes various specific details to assist in that understanding but these are to be regarded as merely exemplary. Accordingly, those of ordinary skill in the art will recognize that various changes and modifications of the various embodiments described herein can be made without departing from the scope and spirit of the present disclosure. In addition, descriptions of well-known functions and constructions are omitted for clarity and conciseness.

[0030] The terms and words used in the following description and claims are not limited to the bibliographical meanings, but, are merely used by the inventor to enable a clear and consistent understanding of the present disclosure. Accordingly, it should be apparent to those skilled in the art that the following description of various embodiments of the present is provided for illustration purpose only and not for the purpose of limiting the present disclosure as defined by the appended claims and their equivalents.

[0031] It is to be understood that the singular forms "a," "an," and "the" include plural referents unless the context clearly dictates otherwise. Thus, for example, reference to "a component surface" includes reference to one or more of such surfaces.

[0032] The terms "have", "may have", "include", or "may include" used in the various embodiments of the present disclosure indicate the presence of disclosed corresponding functions, operations, elements, and the like, and do not limit additional one or more functions, operations, elements, and the like. In addition, it should be understood that the terms "include" or "have" used in the various embodiments of the present disclosure are to indicate the presence of features, numbers, steps, operations, elements, parts, or a combination thereof described in the specifications, and do not preclude the presence or addition of one or more other features, numbers, steps, operations, elements, parts, or a combination thereof.

[0033] The terms "A or B", "at least one of A or/and B" or "one or more of A or/and B" used in the various embodiments of the present disclosure include any and all combinations of words enumerated with it. For example, "A or B", "at least one of A and B" or "at least one of A or B" means (1) including at least one A, (2) including at least one B, or (3) including both at least one A and at least one B.

[0034] Although the term such as "first" and "second" used in various embodiments of the present disclosure may modify various elements of various embodiments, these terms do not limit the corresponding elements. For example, these terms do not limit an order and/or importance of the corresponding elements. These terms may be used for the purpose of distinguishing one element from another element. For example, a first user device and a second user device all indicate user devices and may indicate different user devices. For example, a first element may be named a second element without departing from the scope of right of various embodiments of the present disclosure, and similarly, a second element may be named a first element.

[0035] It will be understood that when an element (e.g., first element) is "connected to" or "(operatively or communicatively) coupled with/to" to another element (e.g., second element), the element may be directly connected or coupled to another element, and there may be an intervening element (e.g., third element) between the element and another element. To the contrary, it will be understood that when an element (e.g., first element) is "directly connected" or "directly coupled" to another element (e.g., second element), there is no intervening element (e.g., third element) between the element and another element.

[0036] The expression "configured to (or set to)" used in various embodiments of the present disclosure may be replaced with "suitable for", "having the capacity to", "designed to", "adapted to", "made to", or "capable of" according to a situation. The term "configured to (set to)" does not necessarily mean "specifically designed to" in a hardware level. Instead, the expression "apparatus configured to . . . " may mean that the apparatus is "capable of . . . " along with other devices or parts in a certain situation. For example, "a processor configured to (set to) perform A, B, and C" may be a dedicated processor, e.g., an embedded processor, for performing a corresponding operation, or a generic-purpose processor, e.g., a central processing unit (CPU) or an application processor (AP), capable of performing a corresponding operation by executing one or more software programs stored in a memory device.

[0037] The terms as used herein are used merely to describe certain embodiments and are not intended to limit the present disclosure. As used herein, singular forms may include plural forms as well unless the context explicitly indicates otherwise. Further, all the terms used herein, including technical and scientific terms, should be interpreted to have the same meanings as commonly understood by those skilled in the art to which the present disclosure pertains, and should not be interpreted to have ideal or

excessively formal meanings unless explicitly defined in various embodiments of the present disclosure.

[0038] An electronic device according to various embodiments of the present disclosure may be a device. For example, the electronic device according to various embodiments of the present disclosure may include at least one of: a smart phone; a tablet personal computer (PC); a mobile phone; a video phone; an e-book reader; a desktop PC; a laptop PC; a netbook computer; a workstation, a server, a personal digital assistant (PDA); a portable multimedia player (PMP); an MP3 player; a mobile medical device; a camera; or a wearable device (e.g., a head-mount-device (HMD), an electronic glasses, an electronic clothing, an electronic bracelet, an electronic necklace, an electronic appcessory, an electronic tattoo, a smart mirror, or a smart watch).

[0039] In other embodiments, an electronic device may be a smart home appliance. For example, of such appliances may include at least one of: a television (TV); a digital versatile disc (DVD) player; an audio component; a refrigerator; an air conditioner; a vacuum cleaner; an oven; a microwave oven; a washing machine; an air cleaner; a set-top box; a home automation control panel; a security control panel; a TV box (e.g., Samsung HomeSync™, Apple TV™, or Google TV™); a game console (e.g., Xbox™, PlayStation™); an electronic dictionary; an electronic key; a camcorder; or an electronic frame.

[0040] In other embodiments, an electronic device may include at least one of: a medical equipment (e.g., a mobile medical device (e.g., a blood glucose monitoring device, a heart rate monitor, a blood pressure monitoring device or a temperature meter), a magnetic resonance angiography (MRA) machine, a magnetic resonance imaging (MRI) machine, a computed tomography (CT) scanner, or an ultrasound machine); a navigation device; a global positioning system (GPS) receiver; an event data recorder (EDR); a flight data recorder (FDR); an in-vehicle infotainment device; an electronic equipment for a ship (e.g., ship navigation equipment and/or a gyrocompass); an avionics equipment; a security equipment; a head unit for vehicle; an industrial or home robot; an automatic teller's machine (ATM) of a financial institution, point of sale (POS) device at a retail store, or an internet of things device (e.g., a Lightbulb, various sensors, an electronic meter, a gas meter, a sprinkler, a fire alarm, a thermostat, a streetlamp, a toaster, a sporting equipment, a hot-water tank, a heater, or a boiler and the like)

[0041] In certain embodiments, an electronic device may include at least one of: a piece of furniture or a building/structure; an electronic board; an electronic signature receiving device; a projector; and various measuring instruments (e.g., a water meter, an electricity meter, a gas meter, or a wave meter).

[0042] An electronic device according to various embodiments of the present disclosure may also include a combination of one or more of the above-mentioned devices. Further, it will be apparent to those skilled in the art that an electronic device according to various embodiments of the present disclosure is not limited to the above-mentioned devices.

[0043] FIG. **1** is a view illustrating a network environment **100** including an electronic device **101** according to various embodiments of the present disclosure.

[0044] Referring to FIG. **1**, the electronic device **101** may include a bus **110**, a processor **120**, a memory **130**, an input/output (I/O) interface **150**, a display **160**, and a communication interface **170**.

[0045] The bus **110** may be a circuit for connecting the above-described elements (e.g., the processor **120**, the memory **130**, the I/O interface **150**, the display **160** or the communication interface **170**, etc.) with each other, and transferring communication (e.g., a control message) between the above-described elements.

[0046] The processor **120** may include a central processing unit (CPU), a communication processor (CP), a graphic processing unit (GPU), and the like.

[0047] The processor **120** may receive, for example, an instruction from the above-described other elements (e.g., the memory **130**, the I/O interface **150**, the display **160**, or the communication interface **170**, etc.) via the bus **110**, decipher the received instruction, and execute an operation or a data process corresponding to the deciphered instruction.

[0048] The memory **130** may include any suitable type of volatile or non-volatile memory. The memory **130** may store an instruction or data received from the processor **120** or other elements (e.g., the I/O interface **150**, the display **160**, or the communication interface **170**, etc.), or generated by the processor **120** or other elements. The memory **130** may include, for example, programming modules **140** such as a kernel **141**, a middleware **143**, an application programming interface (API) **145**, or an application **147**. The each of the programming modules may be configured using a software, a firmware, a hardware, or a combination of two or more of these.

[0049] Referring to FIG. **1**, the kernel **141** may control or manage system resources (e.g., the bus **110**, the processor **120**, or the memory **130**, etc.) used for executing an operation or a function implemented in the rest of the programming modules, for example, the middleware **143**, the API **145**, or the application **147**. Also, the kernel **141** may provide an interface for allowing the middleware **143**, the API **145**, or the application **147** to access an individual element of the electronic device **101** and control or manage the same.

[0050] The middleware **143** may perform a mediation role so that the API **145** or the application **147** may communicate with the kernel **141** to give and take data. Also, in connection with task requests received from the applications **147**, the middleware **143** may perform a control (e.g., scheduling or load balancing) for a task request using, for example, a method of assigning priority that may use a system resource (e.g., the bus **110**, the processor **120**, or the memory **130**, etc.) of the electronic device **101** to at least one application **134**.

[0051] The API **145** is an interface for allowing the application **147** to control a function provided by the kernel **141** or the middleware **143**, and may include at least one interface or function (e.g., an instruction) for file control, window control, image processing, or character control, etc.

[0052] The I/O interface **150** may transfer an instruction or data input from a user via an I/O unit (e.g., a sensor, a keyboard, or a touchscreen) to the processor **120**, the memory **130**, or the communication interface **170** via the bus **110**, for example. For example, the I/O interface **150** may provide data regarding a user's touch input via the touchscreen to the processor **120**. Also, the I/O interface **150** may,

for example, output an instruction or data received via the bus **110** from the processor **120**, the memory **130**, or the communication interface **170** via the I/O unit (e.g., a speaker or a display). For example, the I/O interface **150** may output voice data processed by the processor **120** to a user via a speaker.

[0053] The display **160** may include, for example, a liquid crystal display (LCD), a light emitting diode (LED) display, an organic light emitting diode (OLED) display, a plastic OLED (POLED), a micro electro mechanical system (MEMS) display, or an electronic paper display. The display **160** may display various types of contents (for example, text, images, videos, icons, or symbols) for users. The display **160** may include a touch screen, and may receive, for example, a touch, gesture, proximity, or hovering input by using an electronic pen or a part of the user's body.

[0054] The communication interface **170** may connect communication between the electronic device **101** and an external device (for example, the electronic device **104** or the server **106**). For example, the communication interface **170** may be connected to a network **162** through wireless communication **164** or wired communication, and may communicate with an external device. The communication interface **170** may communicate with the electronic device **102** via the wireless communication **164**, as illustrated in FIG. **1**.

[0055] The wireless communication may use at least one of, for example, long term evolution (LTE), LTE-Advance (LTE-A), code division multiple access (CDMA), Wideband CDMA (WCDMA), universal mobile telecommunications system (UMTS), wireless broadband (WiBro), and global system for mobile communications (GSM) as a cellular communication protocol.

[0056] The wired communication may include, for example, at least one of universal serial bus (USB), high definition multimedia interface (HDMI), recommended standard 232 (RS-232), and plain old telephone service (POTS).

[0057] The network **162** may include at least one of communication networks such as a computer network (for example, a local area network (LAN) or a wide area network (WAN)), the Internet, and a telephone network.

[0058] The electronic devices **102** and **104** may be devices of the same type as that the electronic device **101** or devices of different types from that of the electronic device **101**. According to an embodiment, the server **106** may include a group of one or more servers. According to various embodiments, all or some of the operations executed in the electronic device **101** may be carried out in another electronic device or a plurality of electronic devices (for example, the electronic device **102** or **104** and the server **106**). According to an embodiment, when the electronic device **101** should perform some functions or services automatically or by a request, the electronic device **101** may make a request for performing at least some functions related to the functions or services to another device (for example, the electronic device **102** or **104**, or the server **106**) instead of performing the functions or services by itself or additionally. The electronic device (for example, the electronic device **102** or **104**, or the server **106**) may carry out the functions requested by the electronic device **101** or additional functions and provide results thereof to the electronic device **101**. The electronic device **101** may provide the requested functions or services to another electronic device based on the received results or after additionally processing the received results. To this end, for example, cloud computing, distributed computing, or client-server computing technology may be used.

[0059] FIG. **2** is a block diagram **200** illustrating an electronic device **201** according to various embodiments of the present disclosure. The electronic device **201** may configure, for example, all or a portion of the electronic device **101** illustrated in FIG. **1**.

[0060] Referring to FIG. **2**, the electronic device **201** may include one or more application processors (AP) **210**, a communication module **220**, a subscriber identification module (SIM) card **224**, a memory **230**, a sensor module **240**, an input unit **250**, a display **260**, an interface **270**, an audio module **280**, a camera module **291**, a power management module **295**, a battery **296**, an indicator **297**, or a motor **298**.

[0061] The AP **210** may drive an OS or an application to control a plurality of hardware or software elements connected to the AP **210**, and perform various data processes including multimedia data and operations. The AP **210** may be implemented, for example, as a system on chip (SoC). According to an embodiment, the AP **210** may further include at least one of a graphic processing unit (GPU) or image signal processor (ISP). According to an embodiment, the AP **210** may be implemented to include at least a portion (e.g., the cellular module **221**) of the above-described elements. Also, the AP **210** may store data received from at least one of other elements or generated by at least one of other elements in a non-volatile memory.

[0062] The communication module **220** (e.g., the communication interface **170**) may perform data transmission/reception in communication between the electronic device **201** (e.g., the electronic device **101** shown in FIG. **1**) and other electronic devices (e.g., the electronic device **104** or the server **106** shown in FIG. **1**) connected via a network. According to an embodiment, the communication module **220** may include a cellular module **221**, a wireless fidelity (Wi-Fi) module **223**, a Bluetooth (BT) module **225**, a GPS module **227**, a near field communication (NFC) module **228**, and a radio frequency (RF) module **229**.

[0063] The cellular module **221** may provide voice communication, image communication, a short message service, or an Internet service, etc. via a communication network (e.g., LTE, LTE-A, CDMA, WCDMA, UMTS, WiBro, or GSM, etc.). Also, the cellular module **221** may perform discrimination and authentication of an electronic device within a communication network using, for example, a subscriber identify module (e.g., a SIM card **224**). According to an embodiment, the cellular module **221** may perform at least a portion of functions that may be provided by the AP **210**. According to an embodiment, the cellular module **221** may include a communication processor (CP). Also, the cellular module **221** may be, for example, implemented as a SoC. Though elements such as the cellular module **221** (e.g., a communication processor (CP)), the memory **230**, or the power management module **295**, etc. are illustrated as elements separated from the AP **210** in FIG. **2**, according to an embodiment, the AP **210** may be implemented to include at least a portion (e.g., the cellular module **221**) of the above-described elements.

[0064] Each of the Wi-Fi module **223**, the BT module **225**, the GPS module **227**, or the NFC module **228** may include, for example, a processor for processing data transmitted/

received via a relevant module. Though the cellular module **221**, the Wi-Fi module **223**, the BT module **225**, the GPS module **227**, or the NFC module **228** are illustrated as separate blocks in FIG. **2**, according to an embodiment, at least a portion (e.g., two or more elements) of the cellular module **221**, the Wi-Fi module **223**, the BT module **225**, the GPS module **227**, or the NFC module **228** may be included in one integrated circuit (IC) or an IC package. For example, at least a portion (e.g., a CP corresponding to the cellular module **221** and a Wi-Fi processor corresponding to the Wi-Fi module **223**) of processors corresponding to each of the cellular module **221**, the Wi-Fi module **223**, the BT module **225**, the GPS module **227**, or the NFC module **228** may be implemented as one SoC.

[0065] Referring to FIG. **2**, the RF module **229** may perform transmission/reception of data, for example, transmission/reception of an RF signal. The RF module **229** may include, for example, a transceiver, a power amp module (PAM), a frequency filter, or a low noise amplifier (LNA), etc., though not shown. Also, the RF module **229** may further include a part for transmitting/receiving an electromagnetic wave on a free space in wireless communication, for example, a conductor or a conducting line, etc. Though FIG. **2** illustrates the cellular module **221**, the Wi-Fi module **223**, the BT module **225**, the GPS module **227**, and the NFC module **228** share one RF module **229**, according to an embodiment, at least one of the cellular module **221**, the Wi-Fi module **223**, the BT module **225**, the GPS module **227**, or the NFC module **228** may perform transmission/reception of an RF signal via a separate RF module.

[0066] The SIM card **224** may be a card including a subscriber identify module, and may be inserted into a slot formed in a specific position of the electronic device. The SIM card **224** may include unique identify information (e.g., integrated circuit card identifier (ICCID)) or subscriber information (e.g., international mobile subscriber identity (IMSI)).

[0067] The memory **230** (e.g., the memory **20**) may include a built-in memory **232** or an external memory **234**. The built-in memory **232** may include, for example, at least one of a volatile memory (e.g., dynamic random access memory (DRAM), static RAM (SRAM), synchronous dynamic RAM (SDRAM)) and a non-volatile memory (e.g., one time programmable read only memory (OTPROM), programmable ROM (PROM), erasable and programmable ROM (EPROM), electrically erasable and programmable ROM (EEPROM), mask ROM, flash ROM, NAND flash memory, NOR flash memory, etc.).

[0068] According to an embodiment, the built-in memory **232** may be a solid state drive (SSD). The external memory **234** may further include a flash drive, for example, compact flash (CF), secure digital (SD), micro secure digital (Micro-SD), mini secure digital (Mini-SD), extreme digital (xD), or a memory stick. The external memory **234** may be functionally connected with the electronic device **201** via various interfaces. According to an embodiment, the electronic device **201** may further include a storage device (or a storage medium) such as a hard drive.

[0069] Referring to FIG. **2**, the sensor module **240** may measure a physical quantity or detect an operation state of the electronic device **201**, and convert the measured or detected information to an electric signal. The sensor module **240** may include, for example, at least one of a gesture sensor **240**A, a gyro sensor **240**B, an atmospheric pressure sensor **240**C, a magnetic sensor **240**D, an acceleration sensor **240**E, a grip sensor **240**F, a proximity sensor **240**G, a color sensor or a red, green, blue (RGB) sensor **240**H, a living body sensor or biometric sensor **240**I, a temperature/humidity sensor **240**J, an illuminance sensor or light sensor **240**K, or an ultraviolet (UV) sensor **240**M. Additionally or alternatively, the sensor module **240** may include, for example, an electronic nose (E-nose) sensor (not shown), an electromyography (EMG) sensor (not shown), an electroencephalogram (EEG) sensor (not shown), an electrocardiogram (ECG) sensor (not shown), an infrared (IR) sensor (not shown), an iris sensor (not shown), or a fingerprint sensor (not shown), etc. The sensor module **240** may further include a control circuit for controlling at least one sensor belonging thereto.

[0070] The input unit **250** may include a touch panel **252**, a digital stylus or (digital) pen sensor **254**, a key **256**, or an ultrasonic input unit **258**. The touch panel **252** may recognize a touch input using at least one of capacitive, resistive, infrared, or ultrasonic methods. Also, the touch panel **252** may further include a control circuit. A capacitive touch panel may perform detection by a physical contact or proximity recognition. The touch panel **252** may further include a tactile layer. In this case, the touch panel **252** may provide a tactile reaction to a user.

[0071] The digital stylus or (digital) pen sensor **254** may be implemented using, for example, a method which is the same as or similar to receiving a user's touch input, or using a separate sheet for detection. The key **256** may include, for example, a physical button, an optical key or keypad. The ultrasonic input unit **258** is a unit for recognizing data by detecting a sound wave using a microphone (e.g., a microphone **288**) in the electronic device **201** via an input tool generating an ultrasonic signal, and enables wireless recognition. According to an embodiment, the electronic device **201** may receive a user input from an external device (e.g., a computer or a server) connected to the communication module **220** using the communication module **220**.

[0072] Referring to FIG. **2**, the display **260** (e.g., the display **160** shown in FIG. **1**) may include a panel **262**, a hologram device **264**, or a projector **266**. The panel **262** may be, for example, a liquid crystal display (LCD), or an active-matrix organic light-emitting diode (AM-OLED), etc. The panel **262** may be implemented, for example, such that it is flexible, transparent, or wearable. The panel **262** may be configured as one module together with the touch panel **252**. The hologram device **264** may show a three-dimensional image in the air using interferences of light. The projector **266** may project light onto a screen to display an image. The screen may be positioned, for example, inside or outside the electronic device **201**. According to an embodiment, the display **260** may further include a control circuit for controlling the panel **262**, the hologram device **264**, or the projector **266**.

[0073] The interface **270** may include, for example, a high-definition multimedia interface (HDMI) **272**, a universal serial bus (USB) **274**, an optical interface **276**, or a D-subminiature (D-sub) **278**. The interface **270** may be included, for example, in the communication interface **170** illustrated in FIG. **1**. Additionally or alternatively, the interface **270** may include, for example, a mobile high-definition link (MHL) interface, a secure digital (SD) card/multi-media card (MMC) interface, or an infrared data association (IrDA) standard interface.

[0074] The audio module **280** may convert a sound and an electric signal in dual directions. At least a partial element of the audio module **280** may be included, for example, in the I/O interface **150** illustrated in FIG. **1**. The audio module **280** may process sound information input or output via, for example, a speaker **282**, a receiver **284**, an earphone **286**, or a microphone **288**, etc.

[0075] The camera module **291** is a device that may shoot a still image and a moving picture. According to an embodiment, the camera module **291** may include one or more image sensors (e.g., a front sensor or a rear sensor), a lens (not shown), an image signal processor (ISP) (not shown), or a flash (not shown) (e.g., an LED or xenon lamp).

[0076] The power management module **295** may manage power of the electronic device **201**. Though not shown, the power management module **295** may include, for example, a power management integrated circuit (PMIC), a charger integrated circuit (IC), or a battery or a battery or fuel gauge.

[0077] The PMIC may be mounted, for example, inside an integrated circuit or a SoC semiconductor. A charging method may be classified into a wired charging method and a wireless charging method. The charging IC may charge a battery and prevent introduction of an overvoltage or an overcurrent from a charger. According to an embodiment, the charging IC may include a charging IC for at least one of the wired charging method and the wireless charging method. The wireless charging method may be, for example, a magnetic resonance method, a magnetic induction method, or an electromagnetic wave method, etc., and may additionally include an additional circuit for wireless charging, for example, a circuit such as a coil loop, a resonance circuit, or a rectifier, etc.

[0078] The battery gauge may measure, for example, a remnant of the battery **296**, a voltage, a current, or a temperature while charging. The battery **296** may store or generate electricity, and supply power to the electronic device **201** using the stored or generated electricity. The battery **296** may include, for example, a rechargeable battery or a solar battery.

[0079] Referring to FIG. **2**, the indicator **297** may display a specific state of the electronic device **201** or a portion thereof (e.g., the AP **210**), for example, a booting state, a message state, or a charging state, etc. The motor **298** may convert an electric signal to mechanical vibration. Though not shown, the electronic device **201** may include a processor (e.g., a GPU) for supporting a mobile TV. The processor for supporting the mobile TV may process media data corresponding to standards, for example, such as digital multimedia broadcasting (DMB), digital video broadcasting (DVB), or a media flow, etc.

[0080] The aforementioned elements of the electronic device according to various embodiments of the present disclosure may be constituted by one or more components, and the name of the corresponding element may vary with a type of electronic device. The electronic device according to various embodiments of the present disclosure may include at least one of the aforementioned elements. Some elements may be omitted or other additional elements may be further included in the electronic device. Further, some of the components of the electronic device according to the various embodiments of the present disclosure may be combined to form a single entity, and thus, may equivalently execute functions of the corresponding elements prior to the combination.

[0081] FIG. **3** is a block diagram **300** of a program module **310** according to an embodiment of the present disclosure.

[0082] Referring to FIG. **3**, the program module **310** (for example, the programs **140** shown in FIG. **1**) may include an operating system (OS) for controlling resources related to the electronic device (for example, the electronic device **101** shown in FIG. **1**) and/or various applications (for example, the application programs **147** shown in FIG. **1**) executed in the operating system. The operating system may be, for example, Android, iOS, Windows, Symbian, Tizen, Bada, or the like.

[0083] The programming module **310** may include a kernel **320**, middleware **330**, an API **360**, and/or applications **370**. At least some of the program module **310** may be preloaded in the electronic device or downloaded from the server.

[0084] The kernel **320** (for example, the kernel **141** shown in FIG. **1**) may include, for example, a system resource manager **321** or a device driver **323**. The system resource manager **321** may control, allocate, or collect the system resources. According to an embodiment, the system resource manager **321** may include a process management unit, a memory management unit, or a file system management unit. The device driver **323** may include, for example, a display driver, a camera driver, a Bluetooth (BT) driver, a shared-memory driver, a USB driver, a keypad driver, a WiFi driver, an audio driver, or an inter-process communication (IPC) driver.

[0085] Referring to FIG. **3**, the middleware **330** may provide a function required by the applications **370** in common or provide various functions to the applications **370** through the API **360** so that the applications **370** can efficiently use limited system resources within the electronic device. According to an embodiment, the middleware **330** (for example, the middleware **143** shown in FIG. **1**) may include, for example, at least one of a runtime library **335**, an application manager **341**, a window manager **342**, a multimedia manager **343**, a resource manager **344**, a power manager **345**, a database manager **346**, a package manager **347**, a connectivity manager **348**, a notification manager **349**, a location manager **350**, a graphic manager **351**, and a security manager **352**.

[0086] The runtime library **335** may include, for example, a library module that a compiler uses to add new functions through a programming language while the application **370** is executed. The runtime library **335** may perform input/output management, memory management, or a function for an arithmetic function.

[0087] The application manager **341** may manage, for example, a life cycle of at least one of the applications **370**. The window manager **342** may manage graphical user interface (GUI) resources used by a screen. The multimedia manager **343** may grasp formats required for the reproduction of various media files, and may perform an encoding or decoding of the media file by using a codec suitable for the corresponding format. The resource manager **344** may manage resources such as a source code, a memory, and a storage space of at least one of the applications **370**.

[0088] The power manager **345** may operate together with a basic input/output system (BIOS) to manage a battery or power and may provide power information required for the operation of the electronic device. The database manager **346** may generate, search for, or change a database to be used by at least one of the applications **370**. The package

manager **347** may manage the installation or the updating of applications distributed in the form of package file.

[0089] The connectivity manager **348** may manage wireless connection of, for example, Wi-Fi or BT. The notification manager **349** can display or notify of an event such as an arrival message, promise, proximity notification, and the like in such a way that does not disturb a user. The location manager **350** may manage location information of the electronic device. The graphic manager **351** may manage graphic effects to be provided to a user and user interfaces related to the graphic effects. The security manager **352** may provide all security functions required for system security or user authentication. According to an embodiment, when the electronic device (for example, electronic device **101** shown in FIG. **1**) has a call function, the middleware **330** may further include a telephony manager for managing a voice call function or a video call function of the electronic device.

[0090] Referring to FIG. **3**, the middleware **330** may include a middleware module for forming a combination of various functions of the aforementioned components. The middleware **330** may provide modules specialized according to types of operating systems in order to provide differentiated functions. Further, the middleware **330** may dynamically remove some of the existing components or add new components.

[0091] The API **360** (for example, the API **145** shown in FIG. **1**) is, for example, a set of API programming functions, and a different configuration thereof may be provided according to an operating system. For example, Android® or iOS® may provide one API set per platform, and Tizen® may provide two or more API sets per platform.

[0092] The applications **370** (for example, the application programs **147** shown in FIG. **1**) may include, for example, one or more applications which can provide functions such as home **371**, dialer **372**, short message service (SMS)/multi-media message service (MMS) **373**, instant message (IM) **374**, browser **375**, camera **376**, alarm **377**, contacts **378**, voice dialer **379**, email **380**, calendar **381**, media player **382**, album **383**, clock or watch **384**, health care (for example, measure exercise quantity or blood sugar), or environment information (for example, atmospheric pressure, humidity, or temperature information).

[0093] According to an embodiment, the applications **370** may include an application (hereinafter, referred to as an "information exchange application" for convenience of the description) supporting information exchange between the electronic device (for example, the electronic device **101** shown in FIG. **1**) and an external electronic device. The information exchange application may include, for example, a notification relay application for transferring predetermined information to an external electronic device or a device management application for managing an external electronic device.

[0094] For example, the notification relay application may include a function of transferring, to the external electronic device, notification information generated from other applications of the electronic device, **101** shown in FIG. **1**, (for example, an SMS/MMS application, an e-mail application, a health management application, or an environmental information application). Further, the notification relay application may receive notification information from, for example, a control device and provide the received notification information to the user. The device management application may manage (for example, install, delete, or update), for example, a function for at least a part of the external electronic device communicating with the electronic device (for example, turning on/off the external electronic device itself (or some elements thereof) or adjusting brightness (or resolution) of a display), applications executed in the external electronic device, or services provided from the external electronic device (for example, a telephone call service or a message service).

[0095] According to an embodiment, the applications **370** may include an application (for example, health management application) designated according to attributes of the external electronic device (for example, attributes of the electronic device such as the type of electronic device which corresponds to a mobile medical device). According to an embodiment, the applications **370** may include an application received from the external electronic devices (for example, the server or the electronic device). According to an embodiment, the applications **370** may include a preloaded application or a third party application which can be downloaded from the server. The names of the components of the program module **310** according to the embodiment illustrated in FIG. **3** may vary according to the type of operating system.

[0096] According to various embodiments, at least some of the programming module **310** may be implemented by software, firmware, hardware, or a combination of two or more thereof. At least some of the programming module **310** may be implemented (for example, executed) by, for example, the processor (for example, the application program). At least some of the programming module **310** may include, for example, a module, program, routine, sets of instructions, or process for performing one or more functions.

[0097] FIG. **4**A is a block diagram illustrating a configuration of a processor **400** according to various embodiments of the present disclosure. According to various embodiments of the present disclosure, the processor **400** may be a processor (e.g., the processor **120**) of an electronic device (e.g., the electronic device **101**).

[0098] Referring to FIG. **4**A, the processor **400** may include a collection module **402**, a recording module **404**, a generation module **406**, an analysis module **412**, and an output module **414**.

[0099] According to various embodiments of the present disclosure, the collection module **402** may collect control information and response information on content. According to an embodiment of the present disclosure, the collection module **402** may collect control information and response information in a situation of recording the executed content. According to various embodiments of the present disclosure, the collection module **402** may collect control information on the basis of at least one sensor. According to an embodiment of the present disclosure, the collection module **402** may collect information associated with an input, which controls a function or an operation of the executed content, on the basis of at least one of a microphone, a touch sensor, a touch screen, a gyro sensor, and a gesture sensor. For example, with respect to a touch input, the collection module **402** may collect a position of the occurrence of the touch input, the number of times of the touch input, a time period for maintaining the touch input, and the like. As another example, with respect to a voice input, the collection module **402** may collect a time point of detecting the voice input, a designated control command corresponding to the voice

input, and the like. According to various embodiments of the present disclosure, the collection module **402** may collect response information on the basis of at least one sensor. The response information may be associated with an effect, which may occur in the electronic device due to the execution of content during recording, and a response of a user to the execution of content during recording. According to an embodiment of the present disclosure, the collection module **402** may collect response information on content during recording on the basis of at least one of a biometric sensor, a magnetic sensor, an acceleration sensor, an inertial sensor, a microphone, and a vibration sensor. For example, with respect to the occurrence of a haptic effect (e.g., a vibration effect), the collection module **402** may collect a time period for the occurrence of a haptic effect, a haptic pattern, and the like. As another example, the collection module **402** may collect biometric information, which satisfies a pre-designated condition among pieces of biometric information of the user measured during recording, a time point of acquiring the biometric information, and the like.

[0100] According to various embodiments of the present disclosure, with reference to FIG. **4**A, the recording module **404** may record and store image information, which is output on a screen of the electronic device according to the execution of content, and audio information which is output through a speaker of the electronic device.

[0101] According to various embodiments of the present disclosure, the generation module **406** may store the control information and the response information, which have been collected by the collection module **402**, as separate data. According to various embodiments of the present disclosure, the generation module **406** may store the collected control information and response information in association with recording data. According to an embodiment of the present disclosure, the generation module **406** may add identifiers (e.g., storage locations) for the control information and the response information, which are separately stored, to a header of the recording data. In another embodiment of the present disclosure, the generation module **406** may insert, as additional information, the control information and the response information into the recording data. According to various embodiments of the present disclosure, the control information and the response information may be stored as meta information of the recording data.

[0102] According to various embodiments of the present disclosure, the analysis module **412** may determine whether there exist control information and response information associated with recording data being reproduced. According to an embodiment of the present disclosure, the analysis module **412** may analyze a header included in the recording data and may determine whether the control information and the response information exist.

[0103] According to various embodiments of the present disclosure, the output module **414** may output a reproduction screen of recording data. According to various embodiments of the present disclosure, the output module **414** may output the control information and the response information while outputting the reproduction screen of the recording data.

[0104] According to various embodiments of the present disclosure, at least one of the collection module **402**, the recording module **404**, the generation module **406**, the analysis module **412**, and the output module **414** may be omitted from the configuration of the processor **400**, and the processor **400** may additionally include another element. According to various embodiments of the present disclosure, the collection module **402**, the recording module **404**, the generation module **406**, the analysis module **412**, and the output module **414** of the processor **400** may be at least one software element executed by the processor **400**.

[0105] FIG. **4**B is a view illustrating a configuration of recording data **420** according to various embodiments of the present disclosure.

[0106] Referring to FIG. **4**B, the recording data **420** may include recording information. According to an embodiment of the present disclosure, the recording information may include image information and audio information recorded with respect to the executed content. According to various embodiments of the present disclosure, the recording data **420** may be one datum including response information and control information. According to an embodiment of the present disclosure, the response information and the control information may be additional information on the recording data **420**. For example, the recording data **420** may include respective headers of the recording information, the response information, and the control information. Accordingly, when the recording data **420** is reproduced, at least one piece of information among the recording information, the response information, and the control information may be selectively reproduced or may not be reproduced.

[0107] Although not illustrated, according to various embodiments of the present disclosure, the recording data **420** may be generated in the form of being separated from at least one piece of information among the response information and the control information.

[0108] The electronic device according to various embodiments of the present disclosure may include a memory and a processor electrically connected to the memory. According to an embodiment of the present disclosure, the processor may perform a control operation for executing content, confirming at least one part of the content, and recording the at least one part of the content in association with a haptic effect.

[0109] According to various embodiments of the present disclosure, the processor may perform a process for acquiring haptic information, which corresponds to the haptic effect, from the content.

[0110] According to various embodiments of the present disclosure, the processor may perform a process for acquiring haptic information, which corresponds to the haptic effect, from the electronic device or an external device connected to the electronic device.

[0111] According to various embodiments of the present disclosure, the content may include image information.

[0112] According to various embodiments of the present disclosure, the content may include text information.

[0113] According to various embodiments of the present disclosure, the processor may perform a process for associating the haptic effect on the basis of situation information related to the electronic device or a user of the electronic device.

[0114] According to various embodiments of the present disclosure, the processor may perform a process for associating the haptic effect on the basis of situation information related to an external device connected to the electronic device through a communication module.

[0115] According to various embodiments of the present disclosure, the processor may perform a process for associ-

ating the haptic effect in response to a recording command over the at least one part of the content.

[0116] According to various embodiments of the present disclosure, the processor may perform a control operation for storing haptic information, which corresponds to the haptic effect, as metadata in a file related to the at least one part of the content.

[0117] According to various embodiments of the present disclosure, the processor may perform a control operation for storing haptic information, which corresponds to the haptic effect, as the at least one part of the content.

[0118] According to various embodiments of the present disclosure, the processor may perform a control operation for confirming an attribute related to the at least one part of the content. When the attribute is a first designated value, the processor may perform a control operation for storing first haptic information, which enables the haptic effect to be performed as a first value, as at least one part of haptic information, and when the attribute is a second designated value, the processor may perform a control operation for storing second haptic information, which enables the haptic effect to be performed as a second value, as the at least one part of the haptic information.

[0119] According to various embodiments of the present disclosure, the processor may perform a control operation for confirming an attribute related to the at least one part of the content, When the attribute is a first designated attribute, the processor may perform a control operation for storing first haptic information, which enables the haptic effect to be performed as a first haptic effect, as at least one part of haptic information, and when the attribute is a second designated attribute, the processor may perform a control operation for storing second haptic information, which enables the haptic effect to be performed as a second haptic effect, as the at least one part of the haptic information.

[0120] FIG. **5** is a flowchart illustrating a recording operation of the electronic device **101** according to an embodiment of the present disclosure.

[0121] According to an embodiment of the present disclosure, the electronic device **101** may be the electronic device **201**, the processor **120**, and the processor **400**.

[0122] Referring to FIG. **5**, in operation **501**, the electronic device **101** (shown in FIG. **1**) may execute content. According to an embodiment of the present disclosure, the electronic device **101** may execute at least one piece of content on the basis of an input (e.g., a key input, a touch input, a gesture input, a voice input, etc. for executing content) by a user. For example, the content may include one or more of a web page, digital document data, audio data, video data, image data, and an application executable by the electronic device **101**. According to various embodiments of the present disclosure, the execution of the content may include a movement to another electronic device.

[0123] In operation **503**, the electronic device **101** may display, on the screen, execution information according to the execution of the content. According to an embodiment of the present disclosure, the execution information is an execution screen according to the execution of content, and may include at least one object. The object may include at least one of at least one icon and a control menu which are included in the execution screen. For example, the execution information may be an execution screen of game content, an execution screen of a web browser, a reproduction screen of video data, and the like. In addition, the execution information may include audio information (e.g., an effect sound) which is output through the speaker of the electronic device **101** according to the execution of content.

[0124] In operation **505**, the electronic device **101** may determine whether a recording input has been detected. According to various embodiments of the present disclosure, the recording input may be a pre-designated input indicating that the displayed execution information is recorded. According to an embodiment of the present disclosure, the recording input may be generated on the basis of at least one of a gesture input, a key input, a touch input, and a voice input.

[0125] When the recording input has not been detected in operation **505**, the electronic device **101** may perform an operation of displaying the execution screen of the content.

[0126] When the recording input has been detected in operation **505**, the electronic device **101** (shown in FIG. **1**) may record the execution information in operation **507**. According to an embodiment of the present disclosure, the electronic device **101** may record and store at least one piece of information among execution information which is output through the screen and execution information which is output through the speaker. According to various embodiments of the present disclosure, the electronic device **101** may determine a time point of recording the execution information on the basis of a time point of detecting the recording input. For example, the electronic device **101** may record the execution information which begins to be displayed from the time point of detecting the recording input. As another example, the electronic device **101** may record the execution information displayed from a time point which is faster by a designated time period (e.g., 5 seconds) than the time point of detecting the recording input, or may record the execution information displayed from a time point which is later by the designated time period (e.g., 5 seconds) than the time point of detecting the recording input.

[0127] In operation **509**, the electronic device **101** may acquire control information and response information on the executed content through at least one sensor. According to various embodiments of the present disclosure, the control information may be associated with an input which controls a function or an operation of the executed content. For example, the control information may include at least one of an input which stops the execution of content, an input which resumes the stopped execution of the content, and an input which changes execution information (e.g., an execution screen) of the executed content. According to an embodiment of the present disclosure, the control information may be associated with an input which selects at least one object of the execution information displayed on the screen. For example, the electronic device **101** may acquire, as the control information, a position at which a touch input has occurred while the recording operation is performed, the number of times of the touch input, a time period during which the touch input is maintained, and the like. According to an embodiment of the present disclosure, the control information, which selects an object, may be acquired through a key input, a voice input, a gesture input, and the like in addition to the touch input. For example, when a key input, a voice input, a gesture input, and the like are detected which control a function or an operation of content, the electronic device **101** (shown in FIG. **1**) may acquire, as the control information, information on the type of the input and information on a time point of detecting the input, and the

like. The type of the input may be a control command corresponding to the voice input, the tilt of the electronic device corresponding to the gesture input, and the like.

[0128] According to various embodiments of the present disclosure, the response information may be associated with an effect (e.g., a haptic effect, a light-emitting effect, an olfactory effect, etc.) which may occur in the electronic device **101** due to the execution of content during recording. According to an embodiment of the present disclosure, when content providing a haptic function is executed, the electronic device **101** may acquire, as the response information, information associated with a time point of occurrence of a haptic effect (e.g., a vibration effect), a haptic pattern, and the like. According to another embodiment of the present disclosure, when content providing an olfactory effect is executed, the electronic device **101** may acquire, as the response information, information associated with a time point of occurrence of the olfactory effect, an occurrence pattern, the type (e.g., the type of scent) of an effect, and the like. According to still another embodiment of the present disclosure, when content providing a light-emitting function is executed, the electronic device **101** may acquire, as the response information, information associated with a time point of occurrence of the light-emitting effect, a light-emitting pattern, and the like. According to various embodiments of the present disclosure, the response information may be associated with a response of the user to the execution of the content during recording. According to an embodiment of the present disclosure, the response of the user may be a voice (or a shout) which is input through the microphone of the electronic device. According to another embodiment of the present disclosure, the response of the user may be biometric information (e.g., blood pressure, heart rate, etc.) measured through the biometric sensor (e.g., biometric sensor **240**I shown in FIG. **2**) of the electronic device **101** (e.g., electronic device **201** in FIG. **2**). According to various embodiments of the present disclosure, the electronic device **101** may acquire the control information and the response information through an external electronic device (e.g., a device worn by the user's body) **101** connected to the electronic device **101** according to a short-range communication scheme.

[0129] Referring to FIG. **5**, in operation **511**, the electronic device **101** may store the acquired control information and response information.

[0130] In operation **513**, the electronic device **101** may determine whether a recording stop input has been detected. According to various embodiments of the present disclosure, the recording stop input may be a pre-designated input which indicates the recording stop of the displayed execution information. According to an embodiment of the present disclosure, the recording stop input may be generated on the basis of at least one of a gesture input, a key input, a touch input, and a voice input.

[0131] When the recording stop input has not been detected in operation **513**, the electronic device **101** may perform an operation of recording the execution information. According to an embodiment of the present disclosure, the electronic device **101** may perform an operation associated with operation **507**.

[0132] When the recording stop input has been detected in operation **513**, in operation **515**, the electronic device **101** may store the stored control information and response information in association with recording data. According to an embodiment of the present disclosure, the electronic device **101** may store the control information and the response information in such a manner that the control information and the response information may be selectively reproduced when the recording data is reproduced. In an embodiment of the present disclosure, the electronic device **101** may store the control information and the response information as special data separated from recording data on the execution information. For example, the electronic device **101** may add identifiers (e.g., storage locations) for the control information and the response information to a header of the recording data. In another embodiment of the present disclosure, the electronic device **101** may insert, as additional information, the control information and the response information into the recording data. For example, the recording data may include a header for the control information and the response information inserted as additional information.

[0133] According to various embodiments of the present disclosure, at least one of operations **501** to **515** may be omitted. For example, operation **505** may be omitted.

[0134] FIG. **6** is a flowchart illustrating an execution process of a method for acquiring control information by the electronic device **101** (shown in FIG. **1**) according to various embodiments of the present disclosure. According to an embodiment of the present disclosure, the electronic device **101** may be the electronic device **201** (shown in FIG. **2**), the processor **120** (shown in FIG. **1**), and the processor **400** (shown in FIG. **4**A).

[0135] According to various embodiments of the present disclosure, the execution process of the method for acquiring control information may be detailed operations of operation **511** illustrated in FIG. **5**.

[0136] Referring to FIG. **6**, in operation **601**, the electronic device **101** may determine whether the control information has been acquired through at least one sensor for acquiring control information. According to an embodiment of the present disclosure, the at least one sensor for acquiring control information may include at least one of a touch sensor, a touch screen, a microphone, a gyro sensor, and a gesture sensor.

[0137] When it is determined in operation **601** that the control information has not been acquired, the electronic device **101** may re-determine whether the control information has been acquired. As an example, the electronic device **101** may perform a control information acquisition operation.

[0138] When it is determined in operation **601** that the control information has been acquired, the electronic device **101** may acquire time information on content in operation **603**. According to various embodiments of the present disclosure, the time information may be associated with an execution time period of the content which is related to a time point of acquiring the control information. For example, the electronic device **101** may acquire a frame number as the time information with respect to content including multiple frames. The electronic device **101** may determine the time point of acquiring the control information on the basis of the time information. Accordingly, when recording data is recorded, the electronic device **101** may determine a time point of outputting the control information on the basis of the time information.

[0139] In operation **605**, the electronic device **101** may determine whether the acquired control information is a touch input.

[0140] When it is determined in operation **605** that the acquired control information is a touch input, the electronic device **101** may additionally acquire a touch position and a touch type in operation **609**. According to an embodiment of the present disclosure, examples of the touch type may include touch (or press), move, release, and the like.

[0141] In operation **607**, the electronic device **101** may store the control information together with the additionally-acquired touch position and touch type, in association with the time information.

[0142] When it is determined in operation **605** that the acquired control information is not a touch input, in operation **607**, the electronic device **101** may store the acquired control information in association with the time information. For example, the electronic device **101** may store tilt information, which has been acquired as the control information of the electronic device **101**, in association with the time information.

[0143] According to various embodiments of the present disclosure, at least one of operations **601** to **609** may be omitted. For example, operations **605** and **609** may be omitted.

[0144] FIG. **7** is a flowchart illustrating an execution process of a method for acquiring response information by the electronic device **101** according to an embodiment of the present disclosure. According to an embodiment of the present disclosure, the electronic device **101** may be the electronic device **201** (shown in FIG. **2**), the processor **120** (shown in FIG. **1**), and the processor **400** (shown in FIG. **4**A).

[0145] According to various embodiments of the present disclosure, the execution process of the method for acquiring response information may be detailed operations of operation **511** illustrated in FIG. **5**.

[0146] Referring to FIG. **7**, in operation **701**, the electronic device **101** may determine whether the response information has been acquired through at least one sensor for acquiring response information. According to an embodiment of the present disclosure, the at least one sensor for acquiring response information may include at least one of a biometric sensor, a magnetic sensor, an acceleration sensor, an inertial sensor, a microphone, and a vibration sensor.

[0147] When it is determined in operation **701** that the response information has not been acquired, the electronic device **101** may re-determine whether the response information has been acquired. As an example, the electronic device **101** may perform a response information acquisition operation.

[0148] When it is determined in operation **701** that the response information has been acquired, the electronic device **101** may acquire time information on content in operation **703**. According to various embodiments of the present disclosure, the time information may be associated with an execution time period of the content which is related to a time point of acquiring the response information.

[0149] In operation **705**, the electronic device **101** may store the acquired response information in association with the time information.

[0150] According to various embodiments of the present disclosure, at least one of operations **701** to **705** (shown in FIG. **7**) may be omitted.

[0151] FIG. **8** is a flowchart illustrating an execution process of a method for acquiring control information and response information by the electronic device **101** according to an embodiment of the present disclosure. According to an embodiment of the present disclosure, the electronic device **101** may be the electronic device **201**, the processor **120**, and the processor **400**. According to various embodiments of the present disclosure, the electronic device **101** may acquire control information and response information, which correspond to an execution time period of content, in a state of storing at least one piece of information among the control information and the response information which are stored in association with an execution time period of pre-designated content.

[0152] Referring to FIG. **8**, in operation **801**, the electronic device **101** may acquire time information on content. For example, the electronic device **101** may acquire information on a frame, which is currently being displayed on the screen, with respect to content including multiple frames.

[0153] In operation **803**, the electronic device **101** may determine whether control information and response information corresponding to the time information are stored in the electronic device **101**. According to another embodiment of the present disclosure, the electronic device **101** may determine whether control information and response information corresponding to the time information are stored in another electronic device with which the electronic device **101** is capable of communicating.

[0154] When it is determined in operation **803** that the control information and the response information corresponding to the time information are not stored, the electronic device **101** may acquire control information and response information according to a pre-designated scheme in operation **807**. According to an embodiment of the present disclosure, the electronic device **101** may acquire control information and response information by using at least one sensor.

[0155] When it is determined in operation **803** that the control information and the response information corresponding to the time information are stored, the electronic device **101** may acquire the stored control information and response information in operation **805**. For example, the electronic device **101** may acquire control information and response information, which correspond to an execution time period among the pre-stored control information and response information, and may record and store the acquired control information and response information together with execution information.

[0156] FIG. **9** is a flowchart illustrating an execution process of a method for reproducing recording data by the electronic device **101** according to various embodiments of the present disclosure. According to an embodiment of the present disclosure, the electronic device **101** may be the electronic device **201** (shown in FIG. **2**), the processor **120** (shown in FIG. **1**), and the processor **400** (shown in FIG. **4**A).

[0157] Referring to FIG. **9**, in operation **901**, the electronic device **101** may determine whether a reproduction request for reproducing recording data has been detected.

[0158] When it is determined in operation **901** that the reproduction request has not been detected, the electronic device **101** may re-determine whether the reproduction request for reproducing recording data has been detected.

[0159] When it is determined in operation **901** that the reproduction request has been detected, the electronic device **101** may determine whether there exist control information and response information associated with the requested recording data in operation **903**.

[0160] When it is determined in operation **903** that the control information and the response information do not exist, the electronic device **101** may reproduce the recording data in operation **909**. According to an embodiment of the present disclosure, the electronic device **101** may display, on the screen, at least one piece of information among image information and audio information included in the recording data.

[0161] When it is determined in operation **903** that the control information and the response information exist, the electronic device **101** may acquire the control information and the response information which are associated with the requested recording data in operation **905**. According to an embodiment of the present disclosure, the electronic device **101** may analyze a header of the recording data and may acquire control information and response information which are separately stored. According to another embodiment of the present disclosure, the electronic device **101** may analyze a header included in the recording data and may acquire control information and response information which exist in the recording data.

[0162] In operation **907**, the electronic device **101** may output the control information and the response information together with the reproduction of the recording data.

[0163] According to various embodiments of the present disclosure, the electronic device **101** may separate a reproduction screen of the recording data from the control information and the response information, and may output the reproduction screen of the recording data separated from the control information and the response information. According to an embodiment of the present disclosure, the electronic device **101** may add a separate layer to the reproduction screen of the recording data, or may generate a separate pop-up screen on the reproduction screen of the recording data, and may output the control information and the response information by using the separate layer or on the separate pop-up screen. According to another embodiment of the present disclosure, the electronic device **101** may divide an active area into multiple areas, may output the recording data on one screen among the divided screens, and may output the control information and the response information on another screen among the divided screens. According to various embodiments of the present disclosure, the screen on which the control information and the response information are output may be controlled by an input. For example, the control may be a change of the location of the screen and a change of the size of the screen. As another example, the control may be the deactivation of an activated screen and the activation of a deactivated screen.

[0164] FIG. **10** is a flowchart illustrating an execution process of a method for reproducing recording data by the electronic device **101** according to various embodiments of the present disclosure. According to an embodiment of the present disclosure, the electronic device **101** may be the electronic device **201** (shown in FIG. **2**), the processor **120** (shown in FIG. **1**), and the processor **400** (shown in FIG. **4**A).

[0165] According to various embodiments of the present disclosure, the execution process of the method for reproducing recording data may be detailed operations of operation **907** illustrated in FIG. **9**.

[0166] Referring to FIG. **10**, in operation **1001**, the electronic device **101** may determine whether the electronic device **101** is in a state of being connected to an external device. According to an embodiment of the present disclosure, the electronic device **101** may determine whether there exists another electronic device to which the electronic device **101** is connected on the basis of a short-range communication scheme. Examples of the external device may include an electronic device capable of contacting at least one part of the body and an electronic device existing around the electronic device **101**.

[0167] When it is determined in operation **1001** that the electronic device **101** is not in the state of being connected to the external device, the electronic device **101** may output control information and response information on the screen of the electronic device **101** in operation **1007**. For example, the electronic device **101** may output the control information and the response information while reproducing the recording data on the screen of the electronic device **101**.

[0168] When it is determined in operation **1001** that the electronic device **101** is in the state of being connected to the external device, the electronic device **101** may reproduce the recording data on the screen of the electronic device **101** in operation **1003**. In addition, in operation **1005**, the electronic device **101** may output the control information and the response information through the external device. In an embodiment of the present disclosure, there is no limit to a method for outputting control information and response information, and the control information and the response information may be output by using various methods. For example, the electronic device **101** may output the control information and the response information on the screen of the electronic device **101**, and may reproduce the recording data through the external device. In addition, the electronic device **101** may output the recording data and the control information on the screen of the electronic device **101**, and may output the response information through the external device. According to various embodiments of the present disclosure, the electronic device **101** may designate an object to be output on the basis of attributes of the control information and the response information. For example, the electronic device **101** may output control information and response information having the form of text through the external device, and may output control information and response information having the form of vibration through the electronic device **101**.

[0169] FIG. **11** is a flowchart illustrating an execution process of a method for reproducing recording data by the electronic device **101** according to various embodiments of the present disclosure. According to an embodiment of the present disclosure, the electronic device **101** (shown in FIG. **1**) may be the electronic device **201** (shown in FIG. **2**), the processor **120** (shown in FIG. **1**), and the processor **400** (shown in FIG. **4**A).

[0170] According to various embodiments of the present disclosure, the execution process of the method for reproducing recording data may be detailed operations of operation **907** illustrated in FIG. **9**.

[0171] Referring to FIG. **11**, in operation **1101**, while the electronic device **101** reproduces the recording data, the

electronic device **101** may determine whether an output scheme change request for changing an output scheme has been detected.

[0172] When it is determined in operation **1101** that the output scheme change request has not been detected, the electronic device **101** may output control information and response information while reproducing the recording data in operation **1105**.

[0173] When it is determined in operation **1101** that the output scheme change request has been detected, the electronic device **101** may stop the output of the control information and the response information in operation **1103**. According to an embodiment of the present disclosure, the electronic device **101** may stop the output of at least one piece of information among the control information and the response information.

[0174] FIG. **12** is a view illustrating a configuration of a screen of the electronic device **101** for processing recording data according to an embodiment of the present disclosure.

[0175] According to various embodiments of the present disclosure, the electronic device **101** may execute at least one piece of content, and may output (as indicated by reference numeral **1200**) execution information on the executed content. According to an embodiment of the present disclosure, according to the execution of the content, the electronic device **101** may output an execution screen on the screen thereof, and may output an effect sound through the speaker. For example, when game content is executed, the electronic device **101** may display execution information including a game execution screen **1202** and a virtual control pad **1204**. The virtual control pad **1204** may include a direction key that controls the movement of at least one object displayed on the game execution screen **1202**, a selection key that selects the at least one object, and the like.

[0176] According to various embodiments of the present disclosure, the electronic device **101** may record and store the output execution information. According to various embodiments of the present disclosure, the electronic device **101** may store control information and response information which are acquired while a recording operation is performed. According to an embodiment of the present disclosure, the electronic device **101** may record information acquired while the recording operation is performed, wherein the information is, for example, information associated with at least one of an input by a user which touches the virtual control pad **1204**, a voice of the user received as input through the microphone, the movement of the electronic device **101** measured on the basis of at least one sensor, and biometric information of the user.

[0177] According to various embodiments of the present disclosure, with reference to FIG. **12**, when the electronic device **101** reproduces recording data, the electronic device **101** may output (as indicated by reference numeral **1210**) control information and response information together with a reproduction screen. According to an embodiment of the present disclosure, when the electronic device **101** reproduces recording data on game content, the electronic device **101** may reproduce, on the screen, a content control situation and a response state of the user which occur while a recording operation is performed, on the basis of the stored information. For example, the electronic device **101** may output control information and response information which are associated with a reproduction time point while reproducing the recording data.

[0178] According to various embodiments of the present disclosure, when the electronic device **101** reproduces the recording data, the electronic device **101** may output (as indicated by reference numeral **1212**) control information and response information on a separate second screen having a size identical to that of a first screen that outputs the recording data. According to an embodiment of the present disclosure, the second screen may be a transparent layer. The electronic device **101** may output the control information on the second screen, and thereby may express (as indicated by reference numeral **1214**) a scheme in which the user controls the virtual control pad when the electronic device **101** performs the recording operation. In addition, the electronic device **101** may output the control information on the second screen, and thereby may express (as indicated by reference numeral **1216**) a scheme in which the user rotates the electronic device **101** when the electronic device **101** performs the recording operation. In addition, the electronic device **101** may output biometric information on the second screen, and thereby may express (as indicated by reference numeral **1218**) a physical change of the user which occurs when the electronic device **101** performs the recording operation.

[0179] According to various embodiments of the present disclosure, with reference to FIG. **12**, when the electronic device **101** reproduces the recording data, the electronic device **101** may divide an output screen into a first screen and a second screen, and may output (as indicated by reference numeral **1220**) the recording data on the first screen and the second screen. According to an embodiment of the present disclosure, the electronic device **101** may output (as indicated by reference numeral **1222**) a reproduction screen of the recording data on the first screen, and may output (as indicated by reference numeral **1224**) the control information and the response information on the second screen.

[0180] According to various embodiments of the present disclosure, when the electronic device **101** reproduces the recording data, the electronic device **101** may output (as indicated by reference numeral **1230**) a separate screen in the form of a pop-up window. According to an embodiment of the present disclosure, the electronic device **101** may output the control information and the response information on a pop-up screen **1234** displayed on a screen **1232** on which the recording data is reproduced.

[0181] FIG. **13** is a view illustrating a configuration of a screen of an electronic device for reproducing recording data according to various embodiments of the present disclosure.

[0182] Referring to FIG. **13**, the electronic device **1300** may reproduce the recording data in a state of forming communication with at least one external device **1310**. According to an embodiment of the present disclosure, the electronic device **1300** may form communication on the basis of at least one of a wired communication scheme and a wireless communication scheme.

[0183] According to various embodiments of the present disclosure, with reference to FIG. **13**, the electronic device **1300** may perform a process for outputting a reproduction screen of the recording data on a screen **1302** of the electronic device **1300**, and may perform a process for outputting control information and response information on a screen **1312** of the external device **1310** with which the electronic device **1300** forms the communication. Without being limited thereto, the electronic device **1300** may per-

form a process for outputting the control information and the response information on the screen **1302** of the electronic device **1300**, and may perform a process for outputting the reproduction screen of the recording data on the screen **1312** of the external device **1310**. According to various embodiments of the present disclosure, the electronic device **1300** may perform a process for outputting the recording data and the control information on the screen **1302** of the electronic device **1300**, and may perform a process for outputting the response information through the external device **1310**. According to various embodiments of the present disclosure, the electronic device **1300** may perform a process for outputting only at least one piece of response information among the multiple pieces of response information through the external device **1310**. For example, in a state of storing vibration information and biometric information as the response information, the electronic device **1300** may perform a process for outputting only the vibration information through the external device **1310**. In addition, when the external device **1310** is not capable of processing the response information having the form of vibration, the external device **1310** may output response information by outputting alternative information. For example, the external device **1310** may convert the response information having the form of vibration into response information having the form of text, an image, and the like, and may output the converted response information.

[0184] An operating method of an electronic device according to various embodiments of the present disclosure may include: executing content; confirming at least one part of the content; recording the at least one part of the content; acquiring additional information collected by at least one sensor while the at least one part of the content is recorded; and storing the collected additional information in association with recording data.

[0185] According to various embodiments of the present disclosure, the additional information collected by the at least one sensor may be associated with at least one piece of information among emotional information of a user, biometric information, touch input information, voice command information, and tilt information of the electronic device.

[0186] According to various embodiments of the present disclosure, the additional information collected by the at least one sensor may include information acquired by an external device that forms communication with the electronic device.

[0187] According to various embodiments of the present disclosure, the storing of the collected additional information in association with the recording data may include: acquiring time information associated with a time point of collecting the additional information; and storing the time information in association with the recording data.

[0188] According to various embodiments of the present disclosure, the time information may be associated with reproduction of the content.

[0189] According to various embodiments of the present disclosure, the operating method of the electronic device may include outputting at least one part of additional information associated with the reproduced recording data when the recording data is reproduced. According to an embodiment of the present disclosure, the operating method of the electronic device may include outputting the at least one part of the additional information, which is associated with the recording data, through an external device. According to an embodiment of the present disclosure, the operating method of the electronic device may include controlling an output of the additional information when the recording data is reproduced.

[0190] According to various embodiments of the present disclosure, the operating method of the electronic device may include recording the additional information collected by the at least one sensor. According to an embodiment of the present disclosure, the recorded additional information is associated with at least one of an input of a user, a voice of the user, a measured movement of the electronic device, and biometric information of the user.

[0191] The term "module" as used herein may, for example, mean a unit including one of hardware, software, and firmware or a combination of two or more of them. The "module" may be interchangeably used with, for example, the term "unit", "logic", "logical block", "component", or "circuit". The "module" may be a minimum unit of an integrated component element or a part thereof. The "module" may be a minimum unit for performing one or more functions or a part thereof. The "module" may be mechanically or electronically implemented. For example, the "module" according to the present disclosure may include at least one of an application-specific integrated circuit (ASIC) chip, a field-programmable gate arrays (FPGA), and a programmable-logic device for performing operations which has been known or are to be developed hereinafter.

[0192] According to various embodiments, at least some of the devices (for example, modules or functions thereof) or the method (for example, operations) according to the present disclosure may be implemented by a command stored in a computer-readable storage medium in a programming module form. The instruction, when executed by a processor (e.g., the processor **120** shown in FIG. **1**), may cause the one or more processors to execute the function corresponding to the instruction. The computer-readable storage medium may be, for example, the memory **130** (shown in FIG. **1**).

[0193] The computer readable recoding medium may include a hard disk, a floppy disk, magnetic media (e.g., a magnetic tape), optical media (e.g., a compact disc rOM (CD-ROM) and a digital versatile disc (DVD)), magneto-optical media (e.g., a floptical disk), a hardware device (e.g., a read only memory (ROM), a random access memory (RAM), a flash memory), and the like. In addition, the program instructions may include high class language codes, which can be executed in a computer by using an interpreter, as well as machine codes made by a compiler. The aforementioned hardware device may be configured to operate as one or more software modules in order to perform the operation of the present disclosure, and vice versa.

[0194] The programming module according to the present disclosure may include one or more of the aforementioned components or may further include other additional components, or some of the aforementioned components may be omitted. Operations executed by a module, a programming module, or other component elements according to various embodiments of the present disclosure may be executed sequentially, in parallel, repeatedly, or in a heuristic manner. Further, some operations may be executed according to another order or may be omitted, or other operations may be added.

[0195] The method for recording an execution screen and the electronic device for processing the same, according to

various embodiments of the present disclosure, can additionally store control information and response information as well as execution information when recording data is generated, and can confirm a content control situation and a response of the user to content in the case of generating the recording data.

[0196] While the present disclosure has been shown and described with reference to various embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the present disclosure as defined by the appended claims and their equivalents.

What is claimed is:

1. An electronic device, comprising:
a memory; and
a processor configured to be electrically connected to the memory,
wherein the processor is configured to control for:
executing content,
confirming at least one part of the content, and
recording the at least one part of the content in association with a haptic effect.

2. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for acquiring haptic information, which corresponds to the haptic effect, from the content.

3. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for acquiring haptic information, which corresponds to the haptic effect, from the electronic device or an external device connected to the electronic device.

4. The electronic device as claimed in claim **1**, wherein the content comprises image information.

5. The electronic device as claimed in claim **1**, wherein the content comprises text information.

6. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for associating the haptic effect based on situation information related to the electronic device or a user of the electronic device.

7. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for associating the haptic effect based on situation information related to an external device connected to the electronic device through a communication module.

8. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for associating the haptic effect in response to a recording command over the at least one part of the content.

9. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for storing haptic information, which corresponds to the haptic effect, as metadata in a file related to the at least one part of the content.

10. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for storing haptic information, which corresponds to the haptic effect, as the at least one part of the content.

11. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for:
confirming an attribute related to the at least one part of the content;
when the attribute is a first designated value, storing first haptic information, which enables the haptic effect to be performed as a first value, as at least one part of haptic information; and
when the attribute is a second designated value, storing second haptic information, which enables the haptic effect to be performed as a second value, as the at least one part of the haptic information.

12. The electronic device as claimed in claim **1**, wherein the processor is further configured to control for:
confirming an attribute related to the at least one part of the content;
when the attribute is a first designated attribute, storing first haptic information, which enables the haptic effect to be performed as a first haptic effect, as at least one part of haptic information; and
when the attribute is a second designated attribute, storing second haptic information, which enables the haptic effect to be performed as a second haptic effect, as the at least one part of the haptic information.

13. A method for recording by an electronic device, the method comprising:
executing content;
confirming at least one part of the content;
recording the at least one part of the content;
acquiring additional information collected by at least one sensor while the at least one part of the content is recorded; and
storing the collected additional information in association with recording data.

14. The method as claimed in claim **13**, wherein the additional information collected by the at least one sensor is associated with at least one piece of information among emotional information of a user, biometric information, touch input information, voice command information, and tilt information of the electronic device.

15. The method as claimed in claim **13**, wherein the additional information collected by the at least one sensor comprises information acquired by an external device that is in communication with the electronic device.

16. The method as claimed in claim **13**, wherein the storing of the collected additional information in association with the recording data comprises:
acquiring time information associated with a time point of collecting the additional information; and
storing the time information in association with the recording data.

17. The method as claimed in claim **16**, wherein the time information is associated with reproduction of the content.

18. The method as claimed in claim **13**, further comprising:
outputting at least one part of additional information associated with the recording data when the recording data is reproduced.

19. The method as claimed in claim **18**, wherein the outputting of the at least one part of the additional information associated with the recording data is through an external device.

20. The method as claimed in claim **18**, further comprising:
controlling an output of the additional information when the recording data is reproduced.

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