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(54) **ELECTRONIC DEVICE AND SHOOTING  
MANAGEMENT METHOD**

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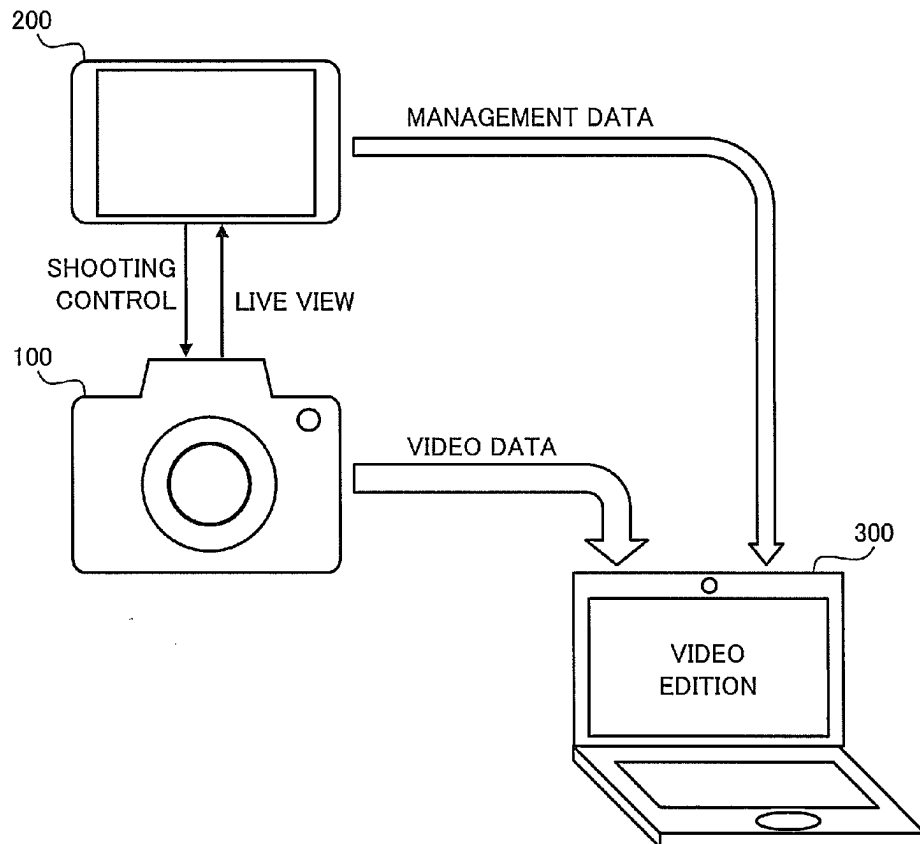
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(57) **ABSTRACT**

An electronic device is provided for managing video shooting with a scenario including a plurality of sections, the electronic device including: a display that displays information; an input interface that inputs a user operation; and a controller that controls the display in accordance with the user operation input from the input interface. The controller causes the display to display a selection screen including the plurality of sections and the input interface to receive the user operation selecting a specific section from the plurality of sections. In response to shooting of a video associated with the specific section, the controller causes the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting the user to rate the video, and the rating information indicating a user rating of the video.

10



*Fig. 1*

10

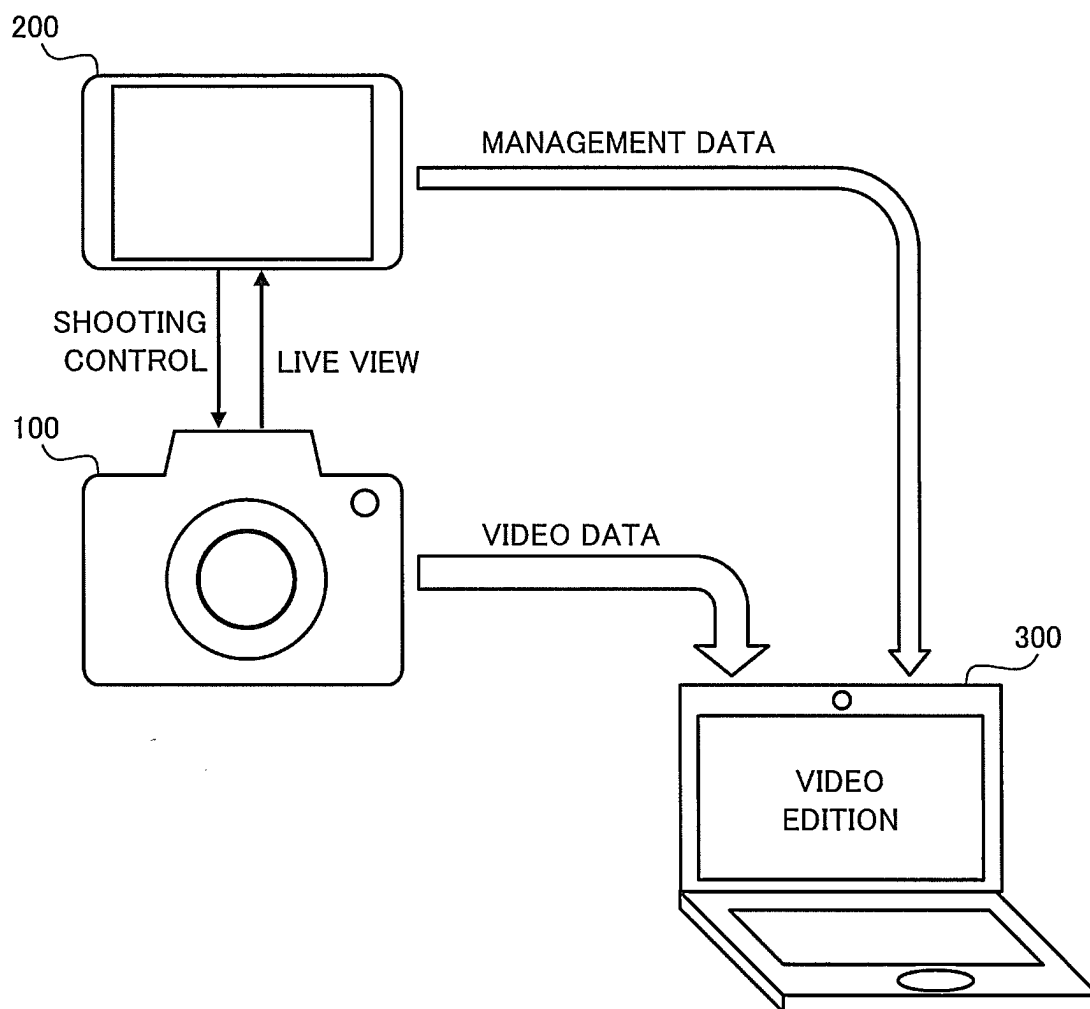
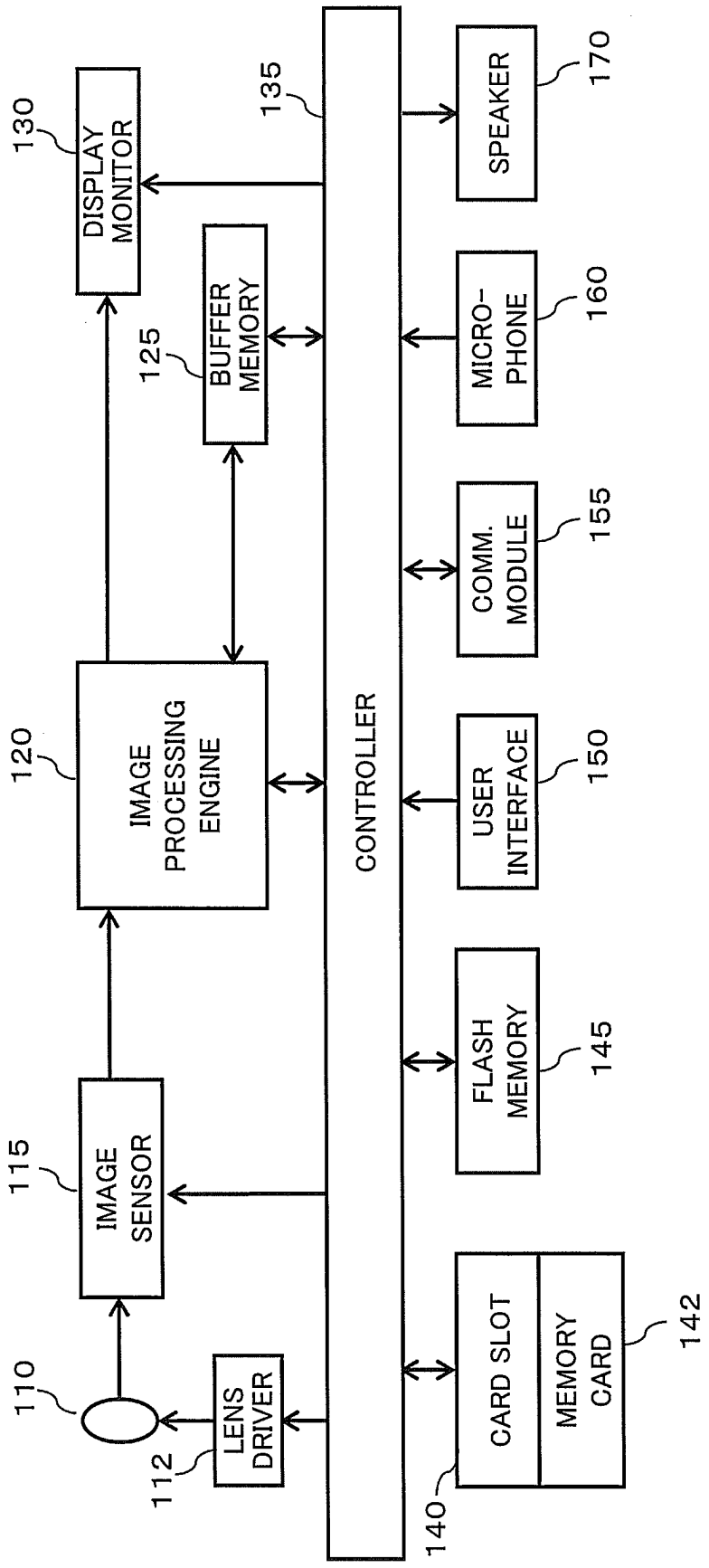
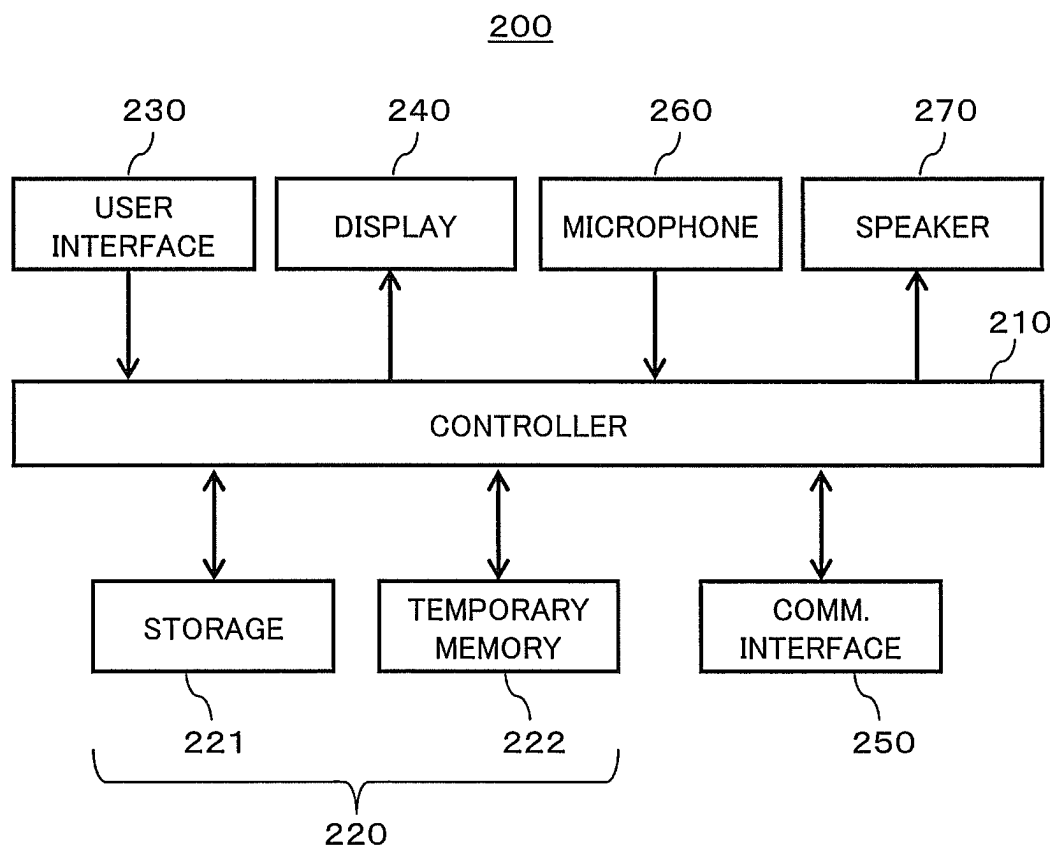


Fig. 2

100



*Fig. 3*

*Fig. 4*

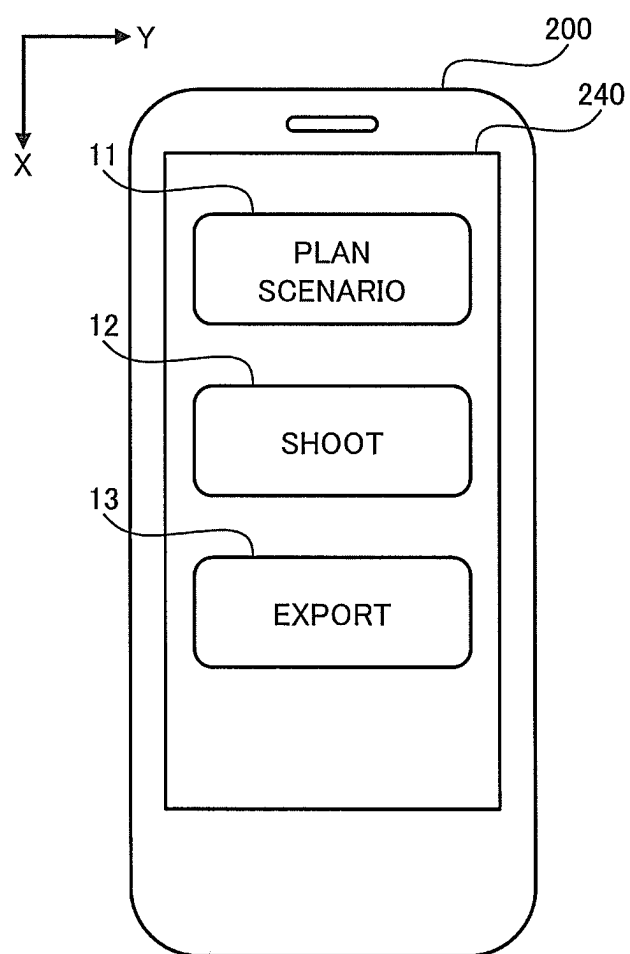


Fig. 5

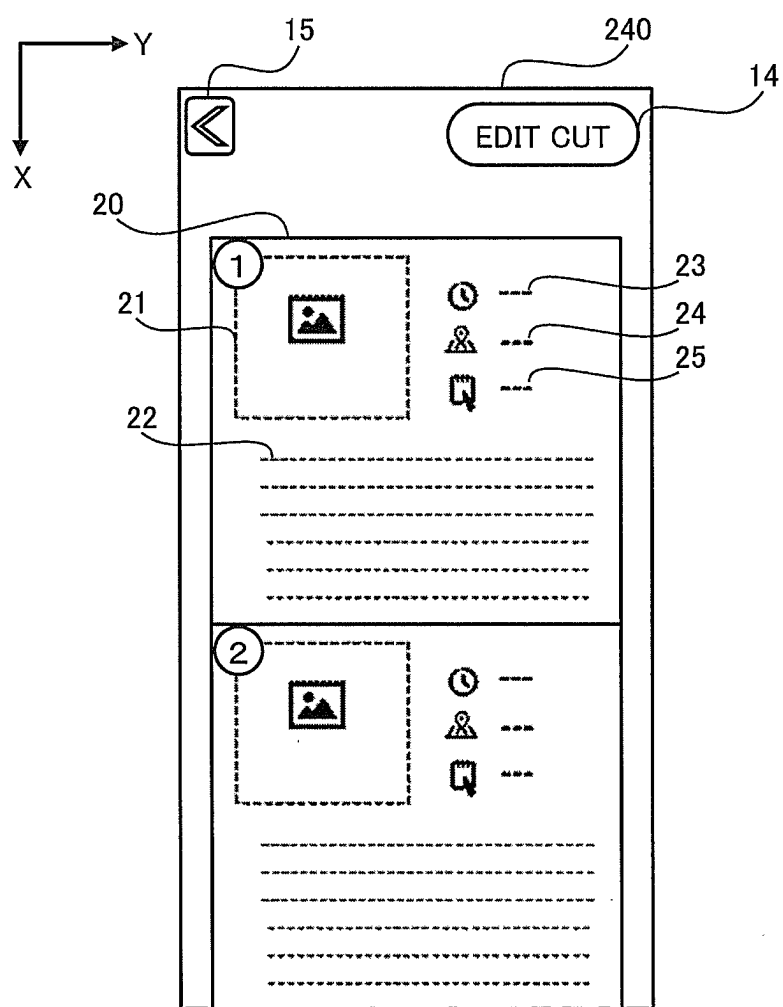


Fig. 6

D1

CUT ALLOCATION DATA								
Cut no.	Script	Comp- osition	Shooting time	Shooting location	Memo	Shooting comp. flag	Video meta- data list	
0001	XXXX	XXXX	XXXX	XXXX	XXXX	OFF(/ON)	—	
0002	XXXX	XXXX	XXXX	XXXX	XXXX	OFF(/ON)	—	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	

Fig. 7

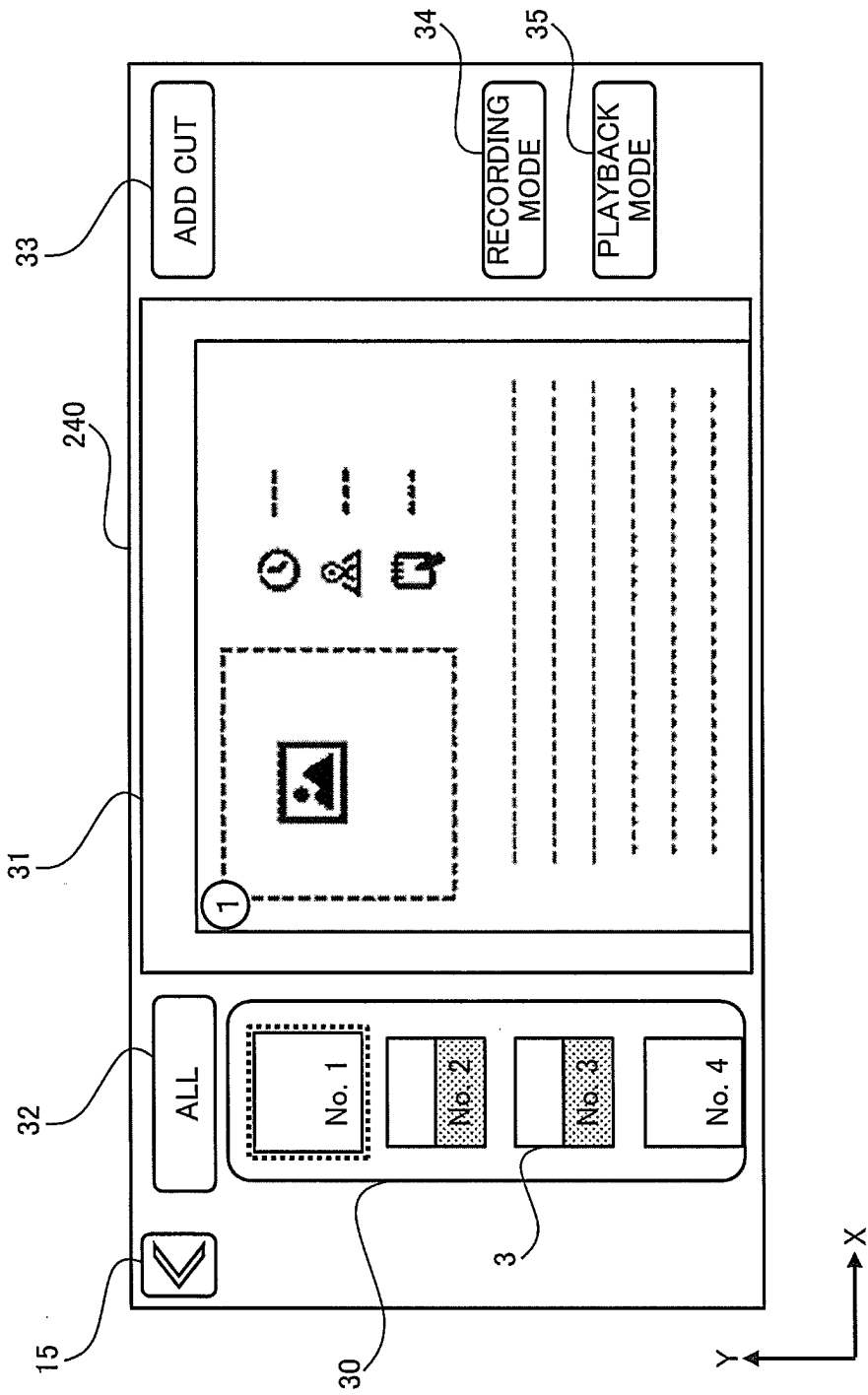
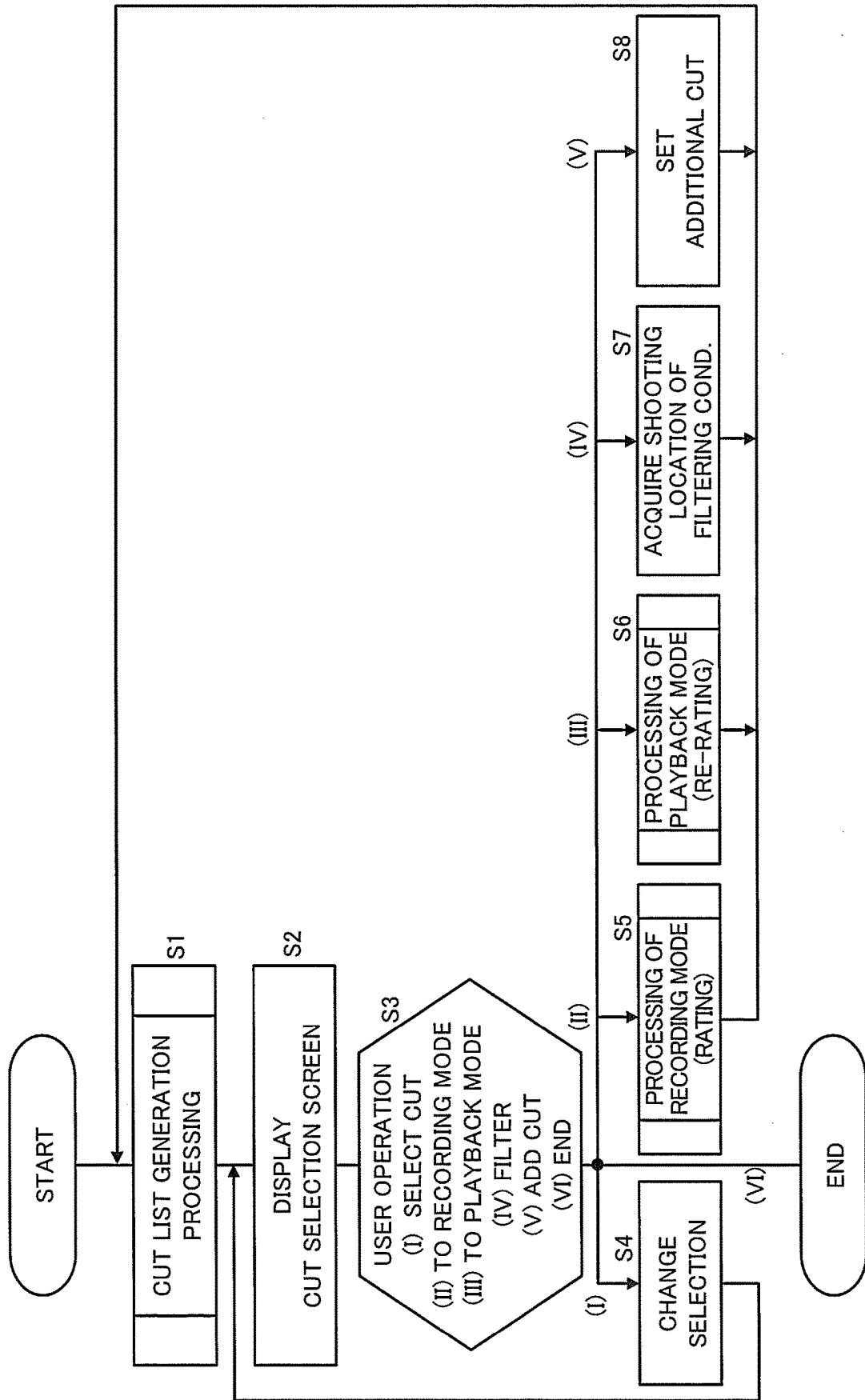




Fig. 8



*Fig. 9*

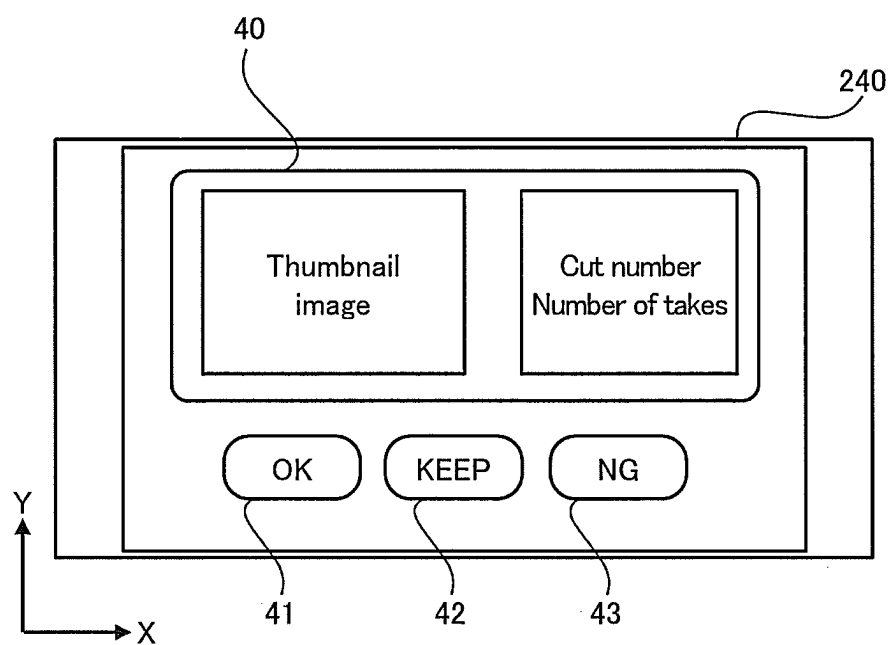
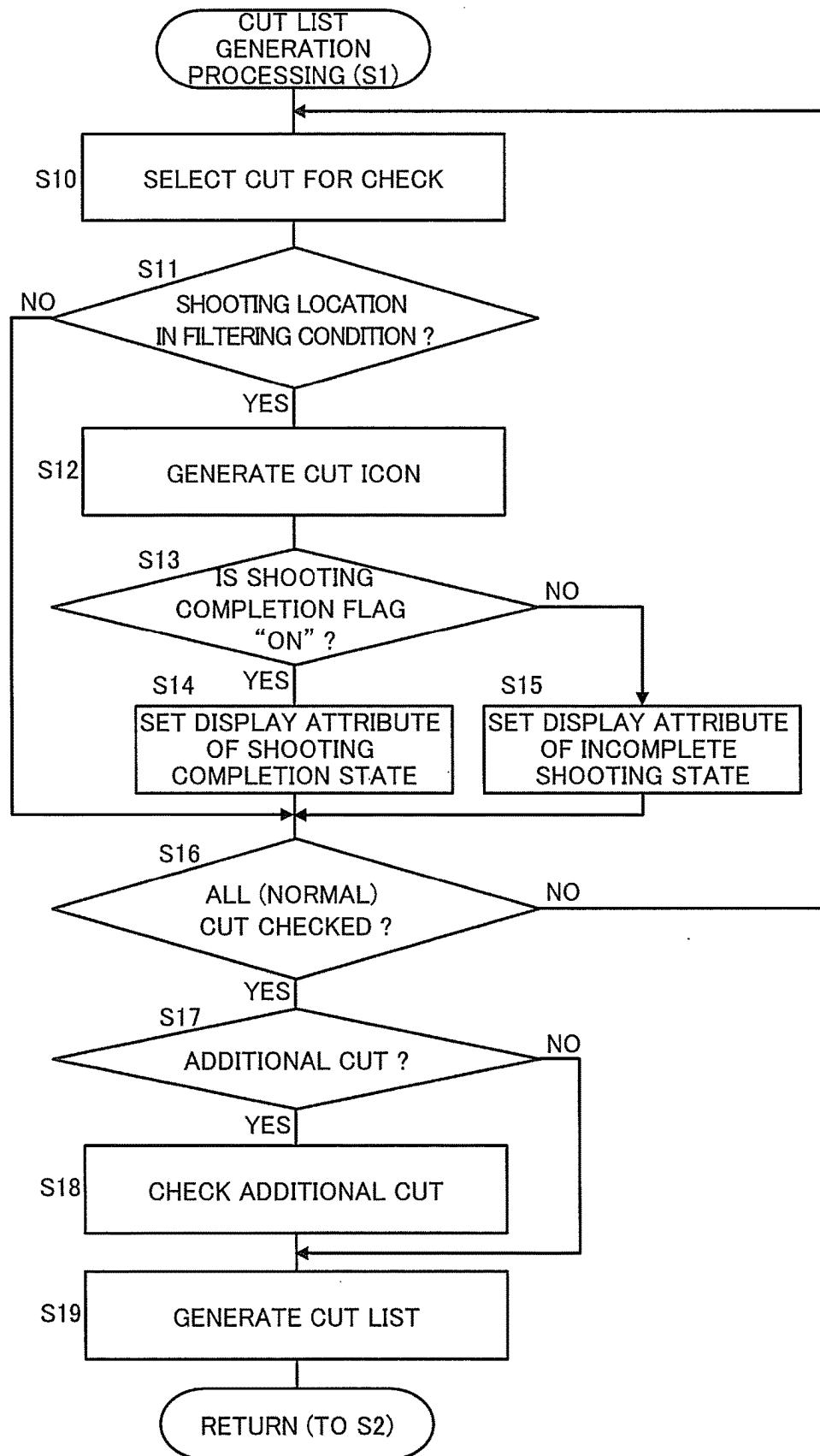


Fig. 10



*Fig. 11*

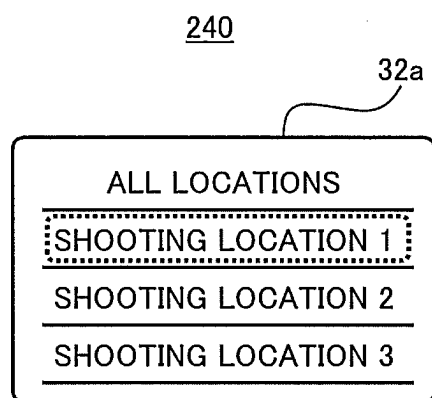


Fig. 12

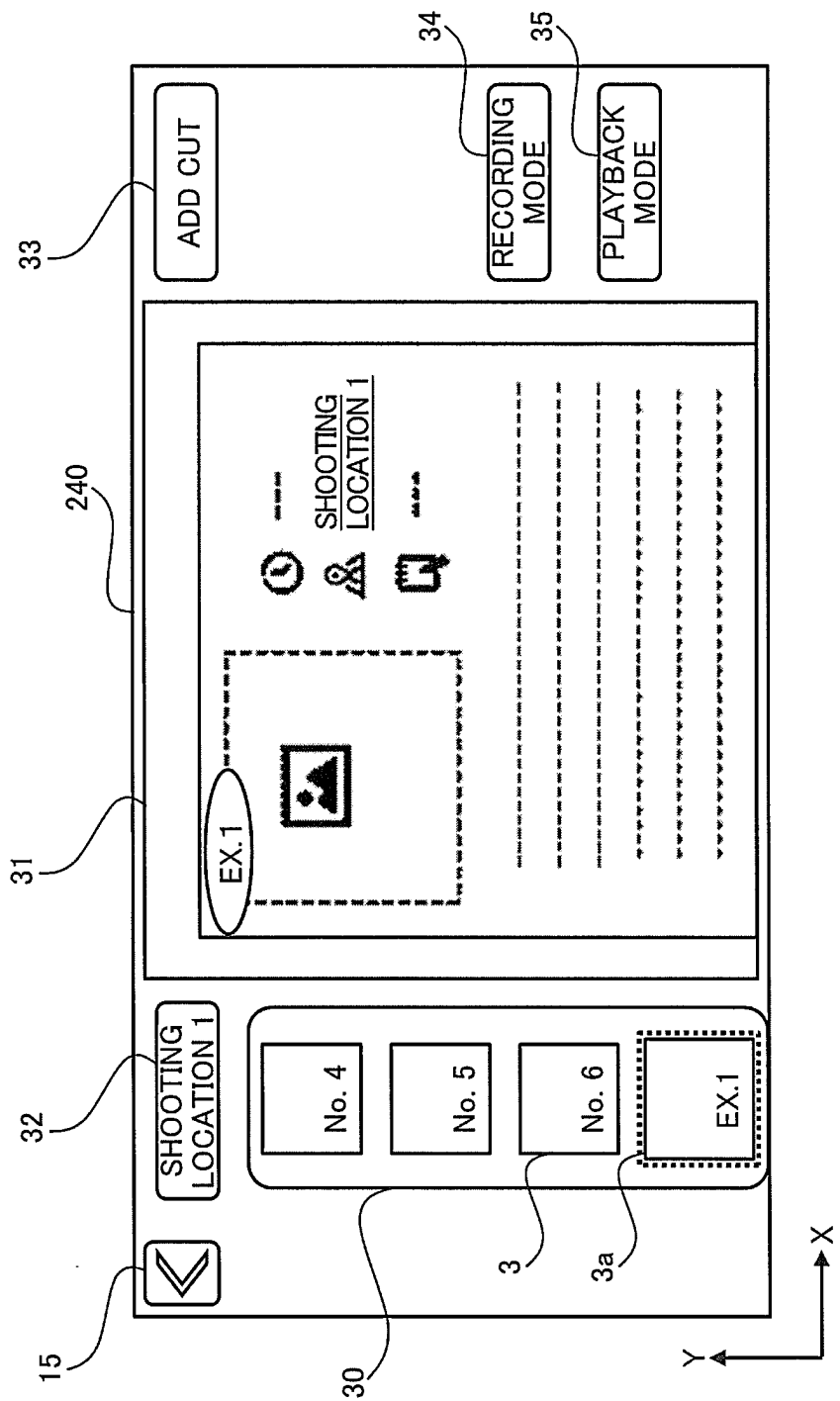


Fig. 13

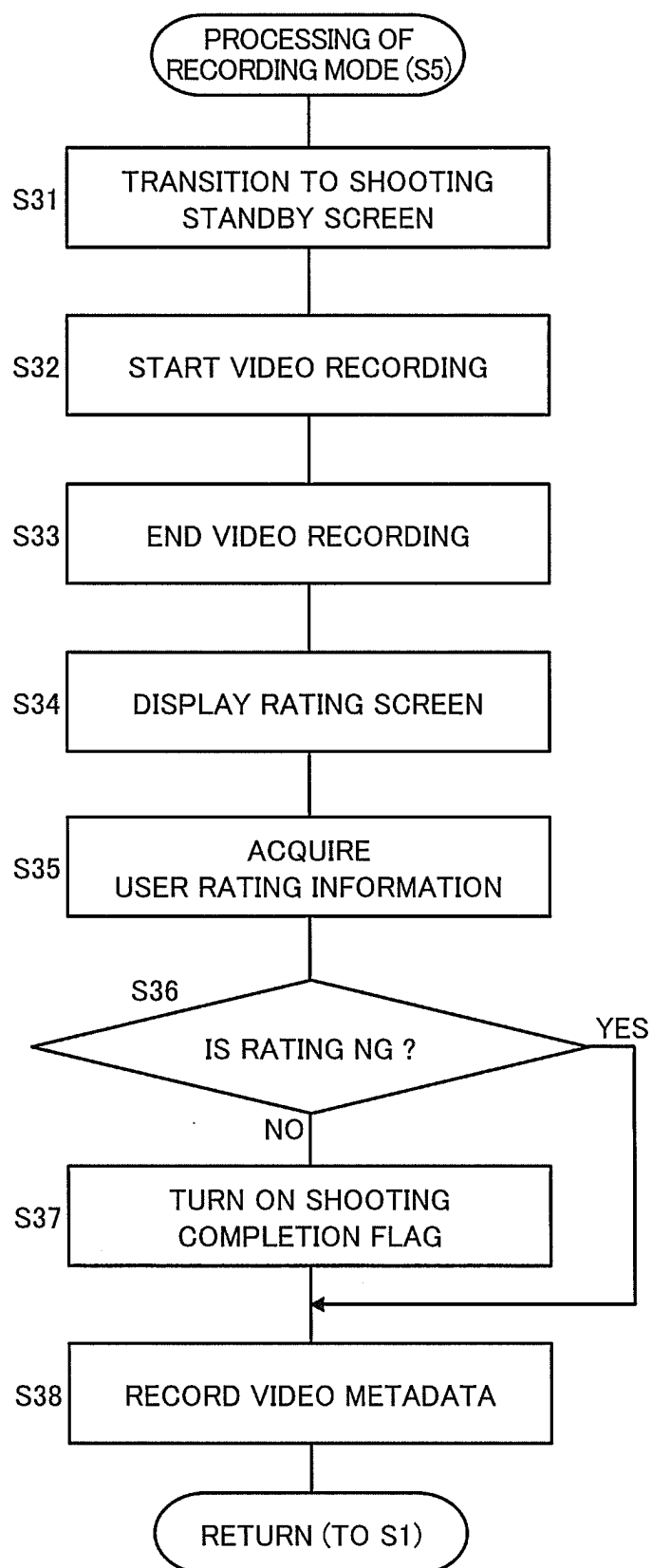


Fig. 14A

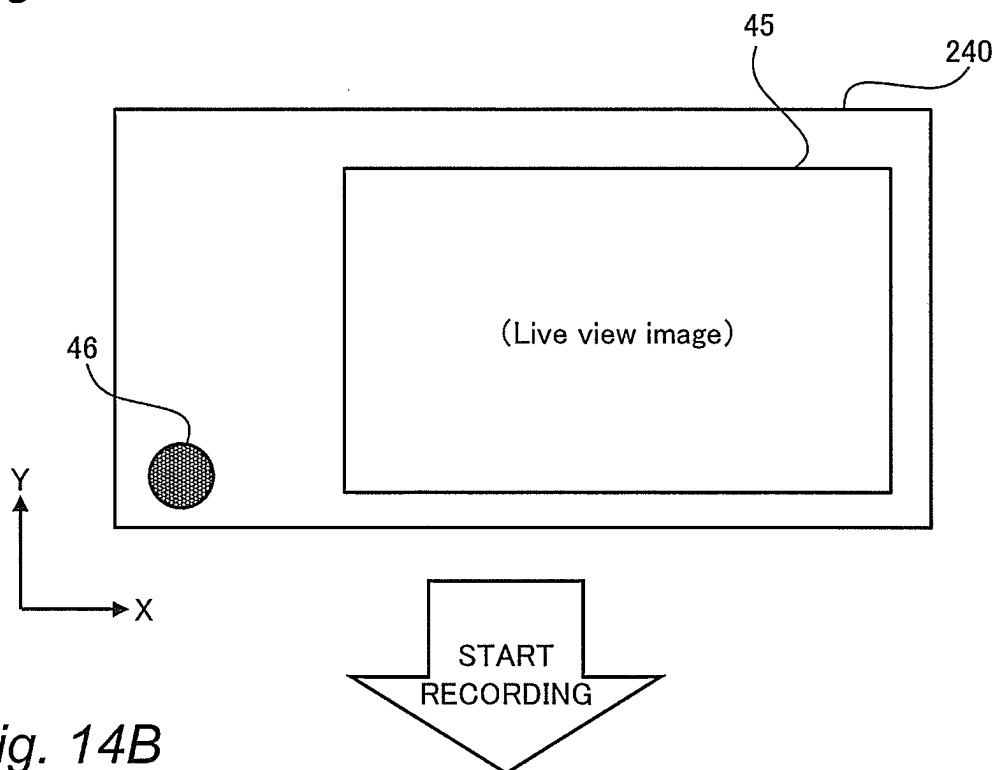


Fig. 14B

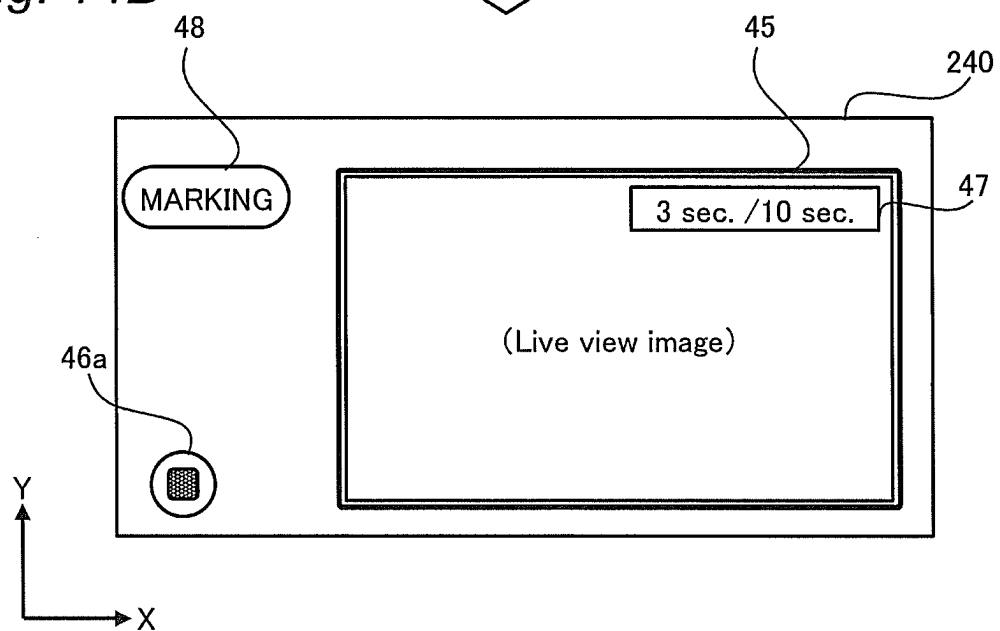


Fig. 15

D2

VIDEO METADATA (CUT NO. N, NUMBER OF TAKES M)	
VIDEO FILE NAME	XXX_N_M
RATING INFORMATION	XXXX
MARKER INFORMATION	XXXX



Fig. 16

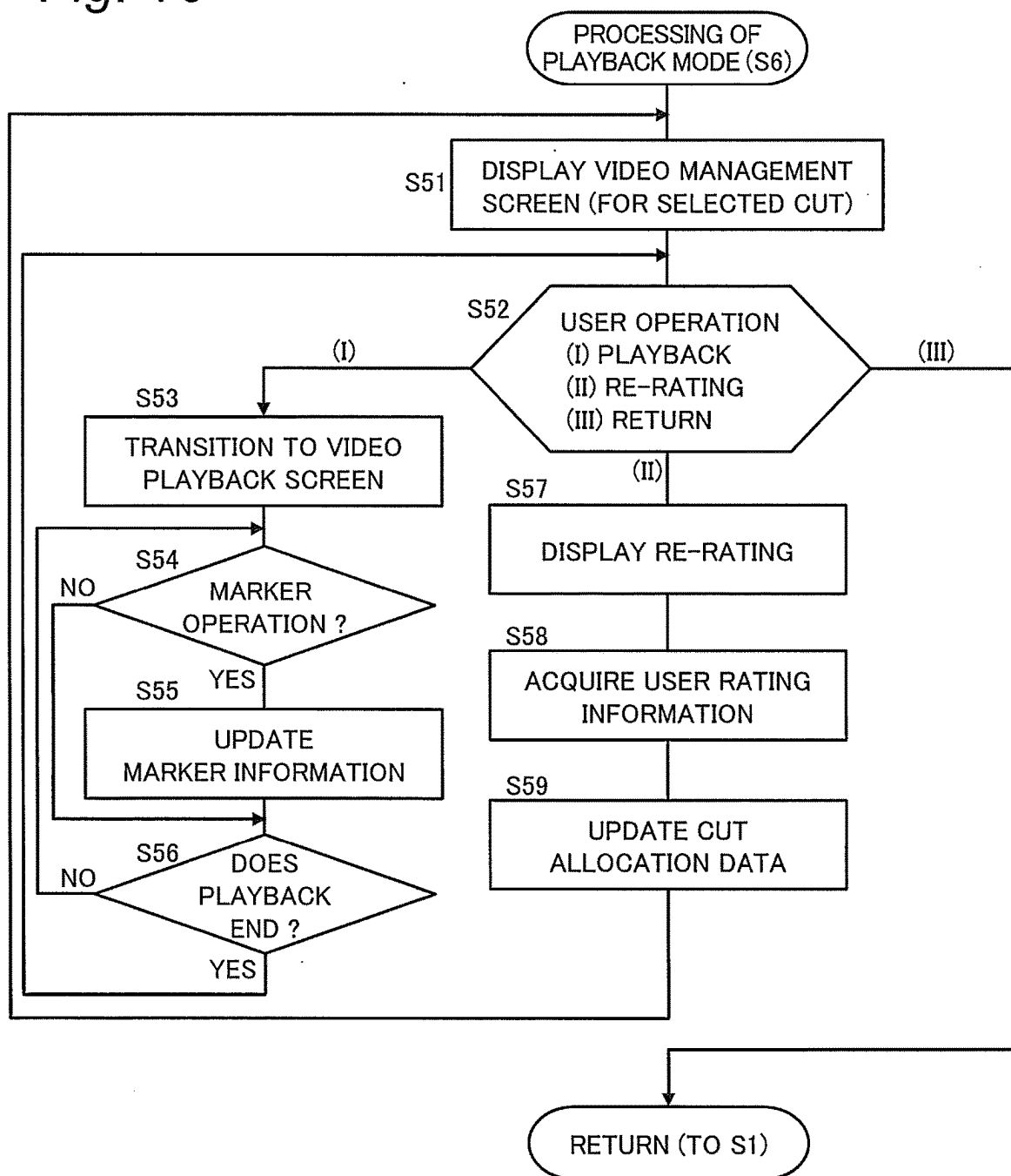


Fig. 17A

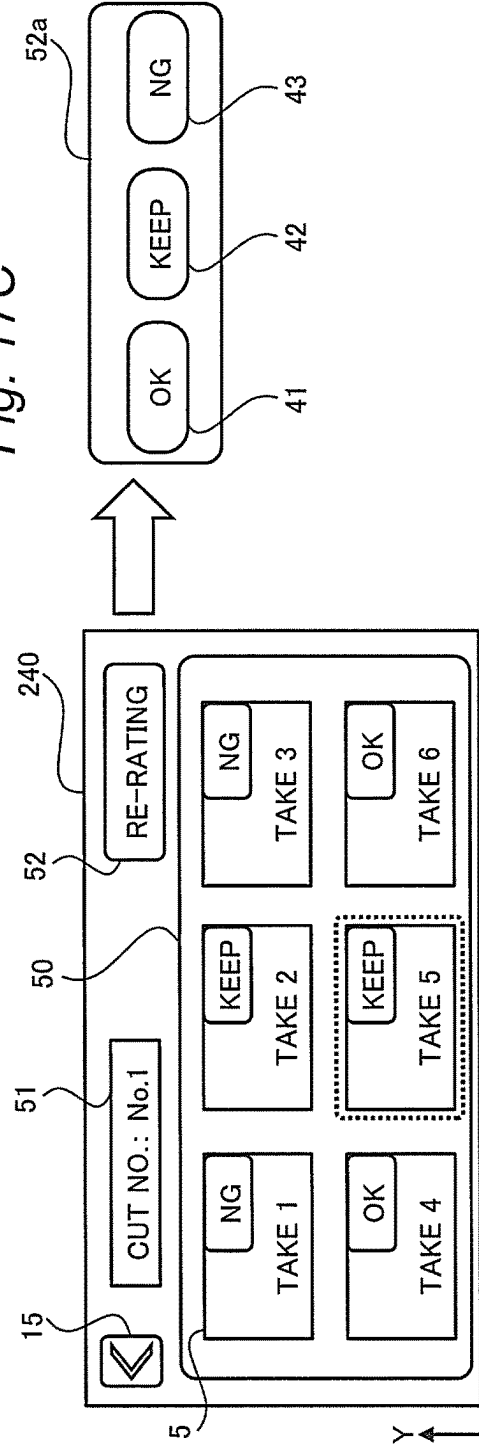


Fig. 17C

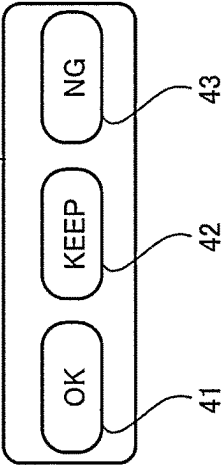
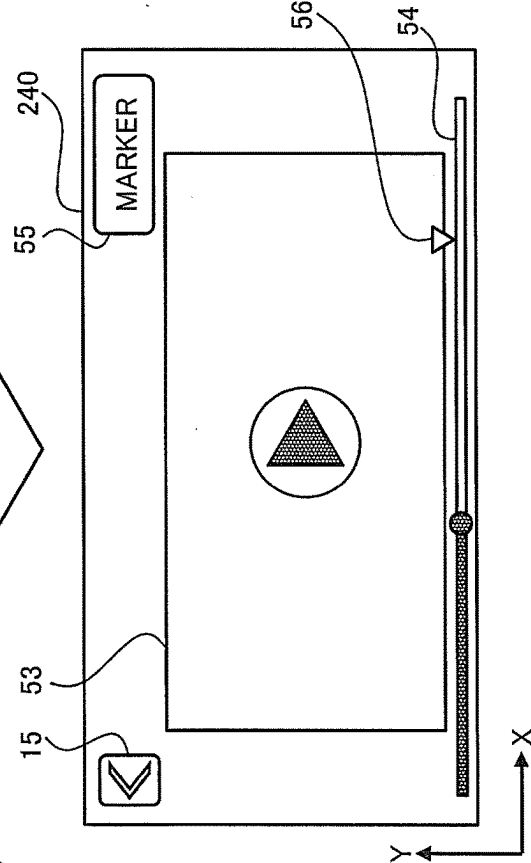
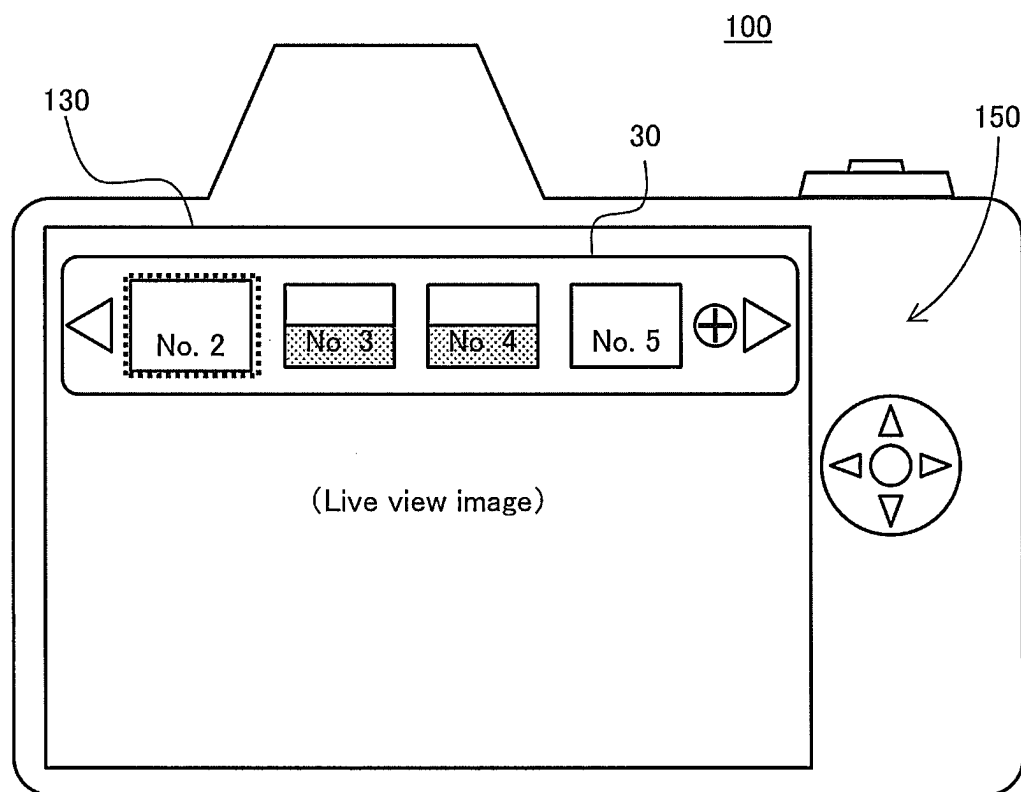


Fig. 17B



*Fig. 18*



## ELECTRONIC DEVICE AND SHOOTING MANAGEMENT METHOD

### TECHNICAL FIELD

[0001] The present disclosure relates to an electronic device and a shooting management method for managing video shooting in a scenario including a plurality of sections such as cuts.

### BACKGROUND ART

[0002] JP 2004-187275 A discloses a video program creation support system that can consistently use a scenario in an electronic file format from a planning construction stage to an editing stage. The video program creation support system includes an imaging apparatus that creates take metadata in configuration table metadata for each take and associates content data of the take and the take metadata with a cut in the program metadata. In this imaging apparatus, when only one take is associated with the selected cut at the end of imaging of the cut, this take is automatically set to OK (adopted). On the other hand, when a plurality of takes are associated with the cut, one take is set to OK and the other takes are set to NG (not adopted) on the basis of the OK/NG selection operation of the camera operator.

### SUMMARY

[0003] The present disclosure provides an electronic device and a shooting management method that can facilitate management of video shooting with a scenario including a plurality of sections.

[0004] In the present disclosure, an electronic device is an electronic device for managing video shooting with a scenario including a plurality of sections, the electronic device including: a display that displays information; an input interface that inputs a user operation; and a controller that controls the display in accordance with the user operation input from the input interface, wherein the controller causes the display to display a selection screen including the plurality of sections and the input interface to receive the user operation selecting a specific section from the plurality of sections, and in response to shooting of a video associated with the specific section, the controller causes the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting the user to rate the video, and the rating information indicating a user rating of the video.

[0005] In the present disclosure, a shooting management method is a method for managing video shooting with a scenario including a plurality of sections, the method including: causing, by a controller of an electronic device, a display to display a selection screen including the plurality of sections and an input interface to receive a user operation selecting a specific section from the plurality of sections; and in response to shooting a video associated with the specific section, causing, by the controller, the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting a user to rate the video, and the rating information indicating user rating of the video.

[0006] According to the electronic device and the shooting management method of the present disclosure, it is possible to facilitate to manage video shooting with a scenario including a plurality of sections.

### BRIEF DESCRIPTION OF DRAWINGS

[0007] FIG. 1 is a diagram illustrating a configuration of an imaging system according to a first embodiment of the present disclosure;

[0008] FIG. 2 is a diagram illustrating a configuration of a digital camera in the imaging system;

[0009] FIG. 3 is a diagram illustrating a configuration of an information support terminal in the imaging system;

[0010] FIG. 4 is a diagram illustrating a display example of a function selection screen in the information support terminal;

[0011] FIG. 5 is a diagram illustrating a display example of a scenario input screen in the information support terminal;

[0012] FIG. 6 is a diagram illustrating a data structure of cut allocation data in the information support terminal;

[0013] FIG. 7 is a diagram illustrating a display example of a cut selection screen in the information support terminal;

[0014] FIG. 8 is a flowchart illustrating an operation of a cut shooting function in the imaging system;

[0015] FIG. 9 is a diagram illustrating a display example of a rating screen in the information support terminal;

[0016] FIG. 10 is a flowchart illustrating cut list generation processing in the imaging system;

[0017] FIG. 11 is a diagram for explaining filtering of a cut list;

[0018] FIG. 12 is a diagram illustrating a cut list in a case with an additional cut;

[0019] FIG. 13 is a flowchart illustrating recording mode processing in the imaging system;

[0020] FIGS. 14A and 14B are diagrams illustrating a display example in the recording mode of the information support terminal;

[0021] FIG. 15 is a diagram illustrating a data structure of video metadata in the information support terminal;

[0022] FIG. 16 is a flowchart illustrating playback mode processing in the imaging system;

[0023] FIGS. 17A to 17C are diagrams illustrating a display example in the playback mode of the information support terminal; and

[0024] FIG. 18 is a diagram for explaining a modification of the digital camera.

### DETAILED DESCRIPTION

[0025] Embodiments will be described in detail below with reference to the drawings as appropriate. However, detailed description of already well-known matters and redundant description of substantially the same configuration may be omitted. Note that the accompanying drawings and the following description are provided for those skilled in the art to fully understand the present disclosure, and are not intended to limit the subject matter described in the claims.

#### First Embodiment

[0026] In a first embodiment of the present disclosure, a system using an electronic device separate from an imaging apparatus that executes video shooting will be described.

## 1. Configuration

[0027] An imaging system according to the first embodiment of the present disclosure will be described with reference to FIG. 1.

[0028] For example, as illustrated in FIG. 1, a system 10 includes a digital camera 100, an information support terminal 200, and a video editing personal computer (PC) 300. In the present system 10, the digital camera 100 and the information support terminal 200 are data-communicably connected by wired communication or wireless communication, for example.

[0029] The present system 10 is applicable to a user creating a desired video work by shooting and editing a plurality of videos with the digital camera 100, for example. For example, the present system 10 provides information support useful for a series of workflows in which a user plans a scenario indicating a concept of a video work, repeatedly shoot a video according to a plurality of cuts that are divided from the scenario, and edits a plurality of shot videos.

[0030] In the present system 10, the information support terminal 200 can manage a scenario of a video work, and control the digital camera 100 so as to manage video shooting for each cut, for example. For example, a live view image in the digital camera 100 can be viewed on the information support terminal 200. The video data of the shooting result of the digital camera 100 is edited in the video editing PC 300. The present system 10 uses data managed by the information support terminal 200 from the viewpoint of facilitating video editing in the video editing PC 300 and the like.

[0031] In the present system 10, the video editing PC 300 may or may not be communicably connected to one or both of the digital camera 100 and the information support terminal 200. For example, data from the digital camera 100 and/or the information support terminal 200 may be input to the video editing PC 300 via a portable recording medium such as a memory card. The present system 10 may not include the video editing PC 300.

### 1.1. Configuration of Digital Camera

[0032] A configuration of the digital camera 100 in the present embodiment will be described with reference to FIG. 2.

[0033] FIG. 2 is a diagram illustrating the configuration of the digital camera 100 in the present system 10. The digital camera 100 is an example of an imaging apparatus in the present embodiment. The digital camera 100 according to the present embodiment includes an image sensor 115, an image processing engine 120, a display monitor 130, and a controller 135. Further, the digital camera 100 includes a buffer memory 125, a card slot 140, a flash memory 145, a user interface 150, a communication module 155, a microphone 160, and a speaker 170. Furthermore, the digital camera 100 includes an optical system 110 and a lens driver 112, for example.

[0034] The optical system 110 includes a focus lens, a zoom lens, an optical image stabilizer (OIS), an aperture diaphragm, a shutter, and the like. The focus lens is a lens for changing a focus state of a subject image formed on the image sensor 115. The zoom lens is a lens for changing

magnification of a subject image formed by the optical system. Each of the focus lens and the like includes one lens or more lenses.

[0035] The lens driver 112 drives the focus lens and the like in the optical system 110. The lens driver 112 includes a motor, to move the focus lens along the optical axis of the optical system 110 under the control of the controller 135. The configuration for driving the focus lens in the lens driver 112 can be realized by a DC motor, a stepping motor, a servo motor, an ultrasonic motor, or the like.

[0036] The image sensor 115 captures a subject image formed via the optical system 110 to generate imaging data. The imaging data constitutes image data indicating an image captured by the image sensor 115. The image sensor 115 generates image data of a new frame at a predetermined frame rate (e.g., 30 frames/second). The generation timing of the imaging data and an electronic shutter operation in the image sensor 115 are controlled by the controller 135. As the image sensor 115, various image sensors such as a CMOS image sensor, a CCD image sensor, or an NMOS image sensor can be used.

[0037] The image sensor 115 performs an operation of capturing a still image, an operation of capturing a through image, and the like. The through image is mainly a video, and is displayed on the display monitor 130 in order for the user to determine a composition for capturing a still image. Each of the through image and the still image is an example of a captured image in the present embodiment. The image sensor 115 is an example of an imager in the present embodiment.

[0038] The image processing engine 120 performs various processing on the imaging data output from the image sensor 115 to generate image data, and performs various processing on the image data to generate an image to be displayed on the display monitor 130. Examples of various processing include white balance correction, gamma correction, YC conversion processing, electronic zoom processing, compression processing, expansion processing, and the like, but the various processing are not limited thereto. The image processing engine 120 may be configured by a hard-wired electronic circuit, or may be configured by a microcomputer using a program, a processor, or the like.

[0039] The display monitor 130 is an example of a display that displays various information. For example, the display monitor 130 displays an image (through image) indicated by image data captured by the image sensor 115 and subjected to image processing by the image processing engine 120. In addition, the display monitor 130 displays a menu screen or the like for the user to perform various settings on the digital camera 100. The display monitor 130 can be configured by a liquid crystal display device or an organic EL device, for example.

[0040] The user interface 150 is a general term for hard keys such as operation buttons and operation levers provided on the exterior of the digital camera 100, operable to receive an operation by the user. For example, the user interface 150 includes a release button, a mode dial, and a touch panel. When the user interface 150 receives an operation by the user, the user interface 150 transmits an operation signal corresponding to the user operation to the controller 135.

[0041] The controller 135 integrally controls the entire operation of the digital camera 100. The controller 135 includes a CPU and the like, and the CPU executes a program (software) to realize a predetermined function. The

controller **135** may include, instead of the CPU, a processor including a dedicated electronic circuit designed to realize a predetermined function. That is, the controller **135** can be realized by various processors such as a CPU, an MPU, a GPU, a DSP, an FPGA, and an ASIC. The controller **135** may include one or more processors. The controller **135** may include one semiconductor chip together with the image processing engine **120** and the like.

[0042] The buffer memory **125** is a recording medium that functions as a work memory of the image processing engine **120** and the controller **135**. The buffer memory **125** is realized by a dynamic random access memory (DRAM) or the like. The flash memory **145** is a nonvolatile recording medium. Although not illustrated, the controller **135** may include various internal memories, and may incorporate a ROM, for example. The ROM stores various programs to be executed by the controller **135**. The controller **135** may incorporate a RAM that functions as a work area of the CPU.

[0043] The card slot **140** is a module into which a removable memory card **142** is inserted. The memory card **142** can be connected to the card slot **140** electrically and mechanically. The memory card **142** is an external memory including a recording element such as a flash memory therein. The memory card **142** can store data such as image data generated by the image processing engine **120**.

[0044] The communication module **155** is a module (circuit) that connects to an external device according to a predetermined communication standard in wired or wireless communication. For example, the predetermined communication standard includes USB, HDMI (registered trademark), IEEE 802.11, Wi-Fi, Bluetooth, and the like. The digital camera **100** can communicate with other devices via the communication module **155**.

[0045] The microphone **160** includes one or more microphone elements incorporated in the digital camera **100**, for example. The microphone **160** outputs a sound signal indicating the collected sound to the controller **135**. An external microphone may be used in the digital camera **100**. The digital camera **100** may include a connector such as a terminal connected to an external microphone instead of or in addition to the built-in microphone **160**.

[0046] The speaker **170** includes one or more speaker elements built in the digital camera **100** and outputs sound to the outside of the digital camera **100** under the control of the controller **135**, for example. In the digital camera **100**, an external speaker, an earphone, or the like may be used. The digital camera **100** may include a connector connected to an external speaker or the like instead of or in addition to the built-in speaker **170**.

## 1.2. Configuration of Information Support Terminal

[0047] A configuration of the information support terminal **200** in the present embodiment will be described with reference to FIG. 3.

[0048] FIG. 3 is a diagram illustrating the configuration of the information support terminal **200**. The information support terminal **200** is an example of an electronic device including a smartphone, a tablet terminal, a PC, or the like, for example. The information support terminal **200** illustrated in FIG. 3 includes a controller **210**, a memory **220**, a user interface **230**, a display **240**, a communication interface **250**, a microphone **260**, and a speaker **270**.

[0049] The controller **210** includes a CPU or an MPU that realizes a predetermined function in cooperation with soft-

ware, for example. The controller **210** controls the overall operation of the information support terminal **200**, for example. The controller **210** reads data and programs stored in the memory **220** and performs various calculation processing to realize various functions.

[0050] For example, the controller **210** executes a program including a command group for realizing each of the above-described functions. The above program may be provided from a communication network such as the Internet, or may be stored in a portable recording medium. The controller **210** may be a hardware circuit such as a dedicated electronic circuit or a reconfigurable electronic circuit designed to realize each of the above-described functions. The controller **210** may include various semiconductor integrated circuits such as a CPU, an MPU, a GPU, a GPGPU, a TPU, a microcomputer, a DSP, an FPGA, and an ASIC.

[0051] The memory **220** is a memory medium that stores programs and data necessary for implementing the functions of the information support terminal **200**. As illustrated in FIG. 3, the memory **220** includes a storage **221** and a temporary memory **222**.

[0052] The storage **221** stores parameters, data, control programs, and the like for realizing a predetermined function. The storage **221** includes an HDD or an SSD, for example. For example, the storage **221** stores the above-described programs, various image data, and the like.

[0053] The temporary memory **222** includes a RAM such as a DRAM or an SRAM, to temporarily store (i.e., hold) data, for example. For example, the temporary memory **222** holds image data in the middle of being edited. In addition, the temporary memory **222** may function as a work area of the controller **210**, and may be configured by a storage area in an internal memory of the controller **210**.

[0054] The user interface **230** is a general term for operation members operated by a user. For example, the user interface **230** is a touch panel superimposed on the display **240** to input various touch operations, and is an example of an input interface of the information support terminal **200**. The input interface may be a connection software unit that is communicably connected to various external input devices and receives an operation signal. The user interface **230** may be a physical button, a switch, or the like provided in the information support terminal **200**, or a keyboard, a mouse, a touch pad, or the like may be used. The user interface **230** may be various GUIs such as virtual buttons and icons, cursors, software keyboards, and objects displayed on the display **240**.

[0055] The display **240** includes a liquid crystal display or an organic EL display, for example. The display **240** may display various information such as various GUIs for operating the user interface **230** and information input from the user interface **230**.

[0056] The communication interface **250** is a module (circuit) that connects to an external device according to a predetermined communication standard in wired or wireless communication. For example, the predetermined communication standard includes USB, HDMI, IEEE 802.11, Wi-Fi, Bluetooth, and the like. The communication interface **250** may connect the information support terminal **200** to a communication network such as the Internet. The communication interface **250** is an example of an input interface that receives various information from an external device or a communication network.

[0057] The microphone 260 includes one or more microphone elements incorporated in the information support terminal 200, for example. The microphone 260 outputs a sound signal indicating the collected sound to the controller 210. The information support terminal 200 may include a connector such as a terminal connected to an external microphone instead of or in addition to the built-in microphone 260.

[0058] The speaker 270 includes one or more speaker elements built in the digital camera 100, and outputs a sound to the outside of the information support terminal 200 under the control of the controller 210, for example. The information support terminal 200 may include a connector connected to an external speaker, an earphone, or the like instead of or in addition to the built-in speaker 270.

[0059] The configuration of the information support terminal 200 as described above is an example, and the configuration of the information support terminal 200 is not limited thereto. For example, various display devices such as a projector and a head mounted display may be used as the display 240 of the information support terminal 200. For example, when an external display device is used, the display 240 of the information support terminal 200 may be an output interface circuit such as a video signal conforming to the HDMI standard or the like.

## 2. Operation

[0060] The operation of the present system 10 configured as described above will be described below.

[0061] In the present system 10, the information support terminal 200 has various functions for sequentially providing information support to the user in the workflow of video production. A display example of a screen for selecting various functions of the information support terminal 200 is illustrated in FIG. 4.

[0062] The display 240 of the information support terminal 200 displays a scenario planning button 11, a shooting button 12, and an export button 13 on the function selection screen illustrated in FIG. 4. Hereinafter, the longitudinal direction on the screen of the display 240 is defined as an X direction, and the width direction is defined as a Y direction.

[0063] The scenario planning button 11 is a virtual button that responds a user operation to execute a function (i.e., a scenario planning function) of performing information support for a process of planning a scenario by the user before shooting a video in the present system 10. The information support terminal 200 of the present system 10 manages various information for each cut such as a shooting section that divides the scenario planned in this way. The cut constitutes a section in a plurality of times of video shooting for a scenario, for example.

[0064] For example, the shooting button 12 is a virtual button for executing a function (i.e., a cut shooting function) of supporting video shooting of each cut in a scenario planned by the scenario planning function. The number of times of shooting a video for one cut is not particularly limited to one take, and may be a plurality of takes. In the present embodiment, the information support terminal 200 controls video shooting by the digital camera 100 in the cut shooting function, and manages a shooting result for each cut.

[0065] The export button 13 is a virtual button for executing a function (i.e., an export function) of performing pre-processing for external output on a management result

of video shooting by the cut shooting function and outputting the result. The pre-processing by the export function provides information support for facilitating a process of editing a video of a plurality of shooting results according to a scenario in the video editing PC 300, for example.

[0066] The information support terminal 200 of the present system 10 can provide comprehensive information support from planning of a scenario to pre-processing of video editing when the user sequentially uses the functions of the scenario planning button 11, the shooting button 12, and the export button 13, for example.

[0067] In the present system 10, the function selection screen of the information support terminal 200 may further include a delete button for deleting various data in the information support as described above. For example, the information support terminal 200 may collectively delete the video files of the same scenario in response to the user operation of the delete button.

### 2.1. Scenario Planning Function

[0068] The scenario planning function in the information support terminal 200 of the present system 10 will be described with reference to FIGS. 5 to 6.

[0069] FIG. 5 illustrates a display example of a scenario input screen in the information support terminal 200. When a user operation such as tapping the scenario planning button 11 on the function selection screen of FIG. 4 is input from the user interface 230, the controller 210 of the information support terminal 200 displays a scenario input screen on the display 240 as illustrated in FIG. 5.

[0070] The scenario input screen is a screen for the user to input a scenario to the information support terminal 200 in the scenario planning function of the present system 10. As illustrated in FIG. 5 the scenario input screen includes a storyboard input field 20 for each cut, a cut edit button 14, and a return button 15, for example. The controller 210 of the information support terminal 200 causes the user interface 230 to receive various user operations related to the scenario input screen displayed on the display 240.

[0071] In the information support terminal 200, the storyboard input field 20 receives a user input of information indicating a storyboard such as an outline of a scenario concept for each cut constituting a scenario. As illustrated in FIG. 5 the storyboard input field 20 for each cut includes a composition field 21, a script field 22, a shooting time field 23, a shooting location field 24, and a memo field 25, for example.

[0072] The composition field 21 receives an input of image information indicating a composition or the like in the video shooting of the cut. The input of the image information may be drawing by user operation or designation of image data. The script field 22 receives a text input such as a script divided for the cut in the scenario.

[0073] The shooting time field 23 receives a numerical value input indicating a rough time length for shooting the video of the cut. The shooting location field 24 receives an input of information indicating a location where the video of the cut is shot. The input of the shooting location may be text input, or data search or the like may be appropriately used. The memo field 25 receives an input of various information desired by the user, such as shooting equipment, with respect to the video shooting of the cut by text input, for example.

[0074] In the example of FIG. 5, the display 240 displays a storyboard input field 20 for two cuts. The controller 210

acquires the storyboard information for each cut according to the user input to the various fields **21** to **25** in the storyboard input field **20** for each cut in the scenario. On the scenario input screen of the information support terminal **200**, the storyboard input field **20** of the cut displayed on the display **240** can be changed according to a swipe operation for scrolling in the X direction in which the storyboard input field **20** for each cut is arranged, for example.

[0075] The cut edit button **14** switches on/off of a state in which various user operations such as addition, deletion, and order change of cuts included in the scenario can be input. For example, by a touch operation in the on state of the cut edit button **14**, the user can arrange the storyboard input fields **20** for a desired number of cuts in order in time series in the scenario.

[0076] The return button **15** responds a user operation to return the screen transition in the information support terminal **200** by one screen. For example, the controller **210** causes the display **240** to transition to the function selection screen (FIG. 4) in response to the user operation of the return button **15** on the scenario input screen (FIG. 5). As an output of such a scenario planning function, the controller **210** according to the present embodiment generates cut allocation data including storyboard information of each cut and stores the cut allocation data in the memory **220**. The cut allocation data at the end of such a scenario planning function is illustrated in FIG. 6.

[0077] For example, as illustrated in FIG. 6, cut allocation data **D1** manages “script”, “composition”, “shooting time”, “shooting location”, “shooting completion flag”, and “video metadata list” in association with each other for each “cut number”. The cut allocation data **D1** is an example of management information in the present embodiment.

[0078] For example, the controller **210** of the information support terminal **200** assigns cut numbers indicating cut identification information in the cut allocation data **D1** in ascending order in the storyboard input field **20** for each cut arranged on the scenario input screen. When the cut order is changed, the controller **210** re-assigns the cut numbers according to the changed order. For each cut, the controller **210** records each piece of information input to the script field **22**, the composition field **21**, the shooting time field **23**, the shooting location field **24**, and the memo field **25** of the storyboard input field **20** in “script”, “composition”, “shooting time”, “shooting location”, and “memo” of the cut allocation data **D1**, respectively.

[0079] In the cut allocation data **D1**, the “shooting completion flag” manages whether the cut is in a state of imaging completion or in a state of imaging incompleteness by ON/OFF. At the end of the scenario planning function, the shooting completion flag is set to OFF for all cuts as an initial setting.

[0080] The “video metadata list” is a list for storing metadata of a video shot in association with the cut. At the end of the scenario planning function, the video metadata list is set to an empty value as an initial setting.

[0081] As described above, according to the scenario planning function in the information support terminal **200** of the present system **10**, by generating the cut allocation data **D1** from the user input on the scenario input screen, the information support of the process of planning the scenario of the video work desired by the user for each cut can be performed.

[0082] The scenario planning function of the information support terminal **200** is not particularly limited to the above. For example, the information support terminal **200** may receive a user instruction for outputting data of the storyboard information of the scenario input on the scenario input screen using a data format (e.g., PDF format) that can be shared by another device, and perform the data output.

## 2.2. Cut Shooting Function

[0083] An outline of an operation of the cut shooting function in the information support terminal **200** of the present system **10** will be described with reference to FIG. 7.

[0084] FIG. 7 illustrates a display example of a cut selection screen on the information support terminal **200**. The cut selection screen is a screen for selecting a cut desired by the user from cuts provided in the scenario planning function in the cut shooting function of the present system **10**, for example. The cut selection screen is an example of a selection screen in the information support terminal **200** according to the present embodiment.

[0085] As illustrated in FIG. 7, the cut selection screen includes a cut list **30**, a storyboard display field **31**, a filter button **32**, a cut addition button **33**, a recording mode button **34**, a playback mode button **35**, and a return button **15**, for example. The cut list **30** is a list listing various cuts as options selectable by the user. The storyboard display field **31** is a display field for displaying storyboard information on the selected cut. Details of the cut selection screen will be described later.

[0086] In the cut shooting function of the present system **10**, the information support terminal **200** provides information support that facilitates the user to comprehensively carry out video shooting of each cut with checking various cuts, by using the cut selection screen illustrated in FIG. 7, for example. The user may perform video shooting in an order different from the cut order in the scenario, or may perform video shooting of a plurality of takes for video shooting of one cut.

[0087] Therefore, the information support terminal **200** of the present system **10** receives the rating by the user of the video for the selected cut at shooting the video of each take, manages whether or not the shooting of the cut is completed, and visualizes the progress status of the video shooting for each cut in the cut list **30** for the user. Hereinafter, details of the operation of the present system **10** will be described.

### 2.2.1. Overall Operation of Cut Shooting Function

[0088] The overall operation of the cut shooting function in the present system **10** will be described with reference to FIGS. 7 to 9.

[0089] FIG. 8 is a flowchart illustrating an operation of the cut shooting function in the present system **10**. Each processing illustrated in the flowchart of FIG. 8 is executed by the controller **210** of the information support terminal **200**, for example. For example, the processing of this flow is started when the shooting button **12** on the function selection screen (FIG. 4) is operated in a state where the cut allocation data **D1** by the scenario planning function is stored in the memory **220** and the communication connection with the digital camera **100** is established in the communication interface **250**.



**[0090]** First, the controller **210** of the information support terminal **200** generates the cut list **30** to be displayed on the cut selection screen (FIG. 7) on the basis of the cut allocation data **D1** (S1). For example, the cut list generation processing (S1) is repeatedly executed in the present system **10** in accordance with the progress status of video shooting and various operations of the user during execution of the cut shooting function, and sequentially updates the cut list **30**. Details of the processing of step S1 will be described later.

**[0091]** Next, the controller **210** causes the display **240** to display a cut selection screen on the basis of the generated cut list **30** and the cut allocation data **D1** as illustrated in FIG. 7, for example (S2).

**[0092]** As illustrated in FIG. 7 the cut list **30** on the cut selection screen includes a plurality of cut icons **3**. Each cut icon **3** indicates an individual cut as an option, for example. The selected cut icon **3** is set to the cut number “1” in the initial state, for example.

**[0093]** For example, the controller **210** controls the display **240** to highlight the cut icon **3** indicating the selected cut (S2). For example, the highlighting of the selected cut icon **3** is a larger display size than that of the other cut icons **3**, a frame enclosure of a highlight color, and the like. Referring to the cut allocation data **D1**, the controller **210** causes the storyboard display field **31** to display the storyboard information about the cut indicated by the selected cut icon **3** (S2).

**[0094]** In the example of FIG. 7, the cut of the cut numbers “1” and “4” is in a state where imaging is not completed, and the cut of the cut numbers “2” and “3” is in a state where imaging is completed. In the cut list **30** according to the present embodiment, the cut icon **3** has a display attribute for identifying a state of imaging completion and a state of imaging incomplete. For example, such a display attribute is set so as to highlight the display mode in which the display mode of the shooting completion state is the imaging incomplete state.

**[0095]** The controller **210** receives various user operations with the user interface **230** such as a touch panel while the display **240** displays the cut selection screen as illustrated in FIG. 7, for example (S3). The target user operation in step S3 includes (I) a cut selection operation, (II) a transition operation to the recording mode, (III) a transition operation to the playback mode, (IV) a filtering operation, (V) a cut addition operation, and (VI) an end operation.

**[0096]** The cut selection operation ((I) in S3) is a user operation of changing the selected cut, and is an operation of tapping the cut icon **3** other than the selected cut icon **3** in the cut list **30** displayed on the cut selection screen, for example. The cut selection operation is not limited thereto, and for example, a swipe operation in the storyboard display field **31** may be input as a cut selection operation of changing the selected cut to an adjacent cut.

**[0097]** When the cut selecting operation is input ((I) in S3), the controller **210** changes the selected cut icon **3** according to the input cut selecting operation (S4), and performs the processing in and after step S2 again. As a result, on the cut selection screen, the selected cut icon **3** is changed, and the storyboard display field **31** is displayed for a new selected cut (S2).

**[0098]** The transition operation to the recording mode ((II) in S3) is a user operation for shifting to the recording mode, which is an operation mode for shooting a video related to the selected cut, and is a tap operation on the recording mode

button **34**, for example. Additionally or alternatively, the transition operation may be a swipe operation in a predetermined one of the  $\pm X$  directions of the cut selection screen. The recording mode button **34** may be omitted.

**[0099]** When the transition operation to the recording mode is input ((II) in S3), the controller **210** executes, as the recording mode, various processing for shooting a video of one take in association with the selected cut (S5). A display example in step S5 is illustrated in FIG. 9.

**[0100]** FIG. 9 illustrates a display example of a rating screen in the information support terminal **200**. The rating screen is a screen for prompting the user to perform a rating for determining the rating of the video of the imaged take. The rating screen is an example of a rating screen in the information support terminal **200** according to the present embodiment.

**[0101]** As illustrated in FIG. 9 the rating screen includes an information display field **40** for a shot video, an OK button **41**, a KEEP button **42**, and an NG button **43** as rating options, for example. The information display field **40** displays information related to the video of the shot take, and includes a thumbnail image of the video of the take, a cut number associated with the take, and the number of takes, for example.

**[0102]** The OK button **41** indicates a rating “OK” indicating that the user has determined to want to adopt the take for the corresponding cut, for example. The KEEP button **42** indicates a rating “KEEP” on which it is difficult for the user to determine whether or not to adopt the take, for example. The NG button **43** indicates a rating “NG (No Good)” in which the user has determined that it is clear that the take is not adopted, for example. In the present embodiment, the rating “NG” is an example of a first rating, and the ratings “OK” and “KEEP” are examples of a second rating.

**[0103]** In the recording mode processing (S5) according to the present embodiment, every time video shooting of one take is performed the rating screen of FIG. 9 is displayed to acquire rating information indicating a rating of the user of the take, for example. On the basis of the rating result of the recording mode processing (S5), the controller **210** performs the cut list generation processing (S1) again as illustrated in FIG. 8 to update the cut list **30**. Details of the processing of step S5 will be described later.

**[0104]** The transition operation to the playback mode ((III) in S3) is a user operation for shifting to the playback mode, which is an operation mode for reproducing and displaying a video shot with respect to the selected cut, and is an operation of the playback mode button **35**, for example. Additionally or alternatively, the transition operation to the playback mode may be a swipe operation in a direction opposite to the transition operation to the recording mode among the  $\pm X$  directions of the cut selection screen. The playback mode button **35** may be omitted.

**[0105]** When the transition operation to the playback mode is input ((III) in S3), the controller **210** executes processing of reproducing videos of various takes related to the selected cut as the playback mode (S6). In a playback mode processing (S6) in the present embodiment, re-rating for changing the rating on the video of each take can be executed. On the basis of the re-rating result of the playback mode processing (S6), the controller **210** performs the cut list generation processing (S1) again to update the cut list **30**. Details of the processing of step S6 will be described later.

[0106] The filtering operation ((IV) in S3) is a user operation for narrowing down the cuts to be displayed in the cut list 30, and is an operation of the filter button 32, for example. When a filtering operation is input ((IV) in S3), the controller 210 acquires a condition for filtering cuts to be displayed in accordance with user's selection (S7).

[0107] The information support terminal 200 according to the present embodiment uses, as a filtering condition for the cut list 30, an shooting location in the illustrated storyboard information of each cut. The controller 210 performs the cut list generation processing (S1) again on the basis of the shooting location acquired as the filtering condition. In this way, the cut list 30 is updated so as to be limited to the cut icon 3 corresponding to the shooting location of the filtering condition (details will be described later).

[0108] The cut adding operation ((V) in S3) is a user operation of adding a new cut in addition to the existing cut in the cut list 30, and is an operation of the cut addition button 33, for example. When the cut adding operation is input ((V) in S3), the controller 210 sets various information on the additional cut (S8) and performs the cut list generation processing (S1) again (details will be described later).

[0109] The end operation ((VI) in S3) is a user operation for ending the cut shooting function, and is an operation of the return button 15 on the cut selection screen (FIG. 7), for example. For example, when an end operation is input ((VI) in S3), the controller 210 causes the display 240 to transition from the cut selection screen to the function selection screen (FIG. 4) and ends the processing illustrated in this flow.

[0110] According to the above processing, the user of the present system 10 can perform video shooting of a desired cut (S5) or perform playback display (S6) with checking various cuts on the cut selection screen (FIG. 7) in the cut shooting function of the information support terminal 200 (S4). In this way, the user can easily manage the video shooting of the plurality of cuts in the scenario.

[0111] On the cut selection screen according to the present embodiment, each of the cut icons 3 is identified and displayed depending on whether or not the imaging is completed, and thus, it is possible to suppress a situation that a cut is forgotten by a user to shoot. As the identification display of whether or not imaging of each cut is completed is performed so as to reflect the rating of the video of each take by the user, it can be facilitated to ensure the video quality according to the intention of the user. Such rating is performed every time a take is shot (S5), and re-rating can be performed in the playback mode (S6). As a result, it is possible to easily realize quality management of video shooting according to the intention of the user.

[0112] The cut selection screen (FIG. 7) according to the present embodiment is not limited to the update of the cut list 30 according to the rating/re-rating of cuts as described above (S5, S6, S1), and can also be updated by filtering or adding cuts to the display target (S7, S8, S1). As a result, the user can efficiently use a desired cut on the cut selection screen at the site of video shooting, and can easily use the cut shooting function of the present system 10, for example.

[0113] In the cut shooting function according to the present embodiment, communication connection with the digital camera 100 may be managed, and for example, a button for managing communication connection may be provided on the cut selection screen. When the communication connec-

tion with the digital camera 100 is not established, the controller 210 may disable the operation to transit to the recording mode ((II) in S3).

### 2.2.2. Cut List Generation Processing

[0114] Details of the cut list generation processing in step S1 of FIG. 8 will be described with reference to FIGS. 10 to 13.

[0115] FIG. 10 is a flowchart illustrating the cut list generation processing (S1) in the present system 10. The processing illustrated in the flow of FIG. 10 is started in response to the operation of the shooting button 12 on the function selection screen (FIG. 4), for example. Alternatively, the processing of this flow is started after the execution of steps S5 to S8 in response to a predetermined user operation ((II) to (V) in S3 of FIG. 8) on the cut selection screen (FIG. 7).

[0116] First, the controller 210 of the information support terminal 200 selects one cut from among all cuts included in the cut allocation data D1 (FIG. 6) as a check target for such as determination whether to provide the cut in the cut list 30 (S10). The selection in step S10 is performed in ascending order for the cut numbers in the cut allocation data D1, for example.

[0117] Next, the controller 210 determines whether the shooting location of the cut to be checked corresponds to the filtering condition on the basis of the shooting location of the cut to be checked in the cut allocation data D1, for example (S11). Such filtering will be described with reference to FIG. 11.

[0118] FIG. 11 illustrates a display example of a selection dialog 32a in step S7 of FIG. 8. For example, when the user taps the filter button 32 on the cut selection screen of FIG. 7 ((IV) in S3), the display 240 displays the selection dialog 32a in step S7. The selection dialog 32a includes options of filtering conditions such as "all locations", "shooting location 1", and "shooting location 2".

[0119] For example, the filtering condition is set to "all locations" as an initial state (see the filter button 32 of FIG. 7), and in this case, the determination in step S11 is "YES". When the user's filtering operation ((IV) in S3 of FIG. 8) selects a specific shooting location as the filtering condition in (S7), the controller 210 determines whether the shooting location of the cut to be checked matches the specific shooting location (S11).

[0120] In step S7 of FIG. 8, the controller 210 displays the selection dialog 32a (FIG. 11) on the basis of various shooting locations included in the cut allocation data D1, and receives a user operation of selecting any option on the selection dialog 32a. For example, when the user taps any option on the selection dialog 32a, the controller 210 acquires an shooting location of the option as a filtering condition (S7), and performs the determination of step S11 of the cut list generation processing (S1) on the basis of the filtering condition.

[0121] Referring back to FIG. 10, when the shooting location to be checked does not correspond to the filtering condition (NO in S11), the controller 210 proceeds to step S16 without performing steps S12 to S15 such as generation of cut icon 3. In this way, a cut different from the shooting location of the filtering condition is excluded from the display target in the cut list 30.

[0122] When the shooting location to be checked corresponds to the filtering condition (YES in S11), the cut is

provided as the display target of the cut list 30. In this case, the controller 210 generates the cut icon 3 corresponding to the cut, for example (S12).

[0123] Next, the controller 210 determines whether or not the shooting completion flag of the cut that has generated the cut icon 3 is ON on the basis of the cut allocation data D1, for example (S13). For example, the shooting completion flag is turned on when the video associated with the cut to be checked includes a video rated as “OK” or “KEEP”, and is turned off otherwise. The determination in step S13 may be made by referring to the rating of each video associated with the cut to be checked instead of using the shooting completion flag.

[0124] When the shooting completion flag of the cut is ON (YES in S13), the controller 210 sets the display attribute of the shooting completion state in the corresponding cut icon 3 (S14).

[0125] On the other hand, when the shooting completion flag of the cut is not ON but OFF (NO in S13), the controller 210 sets the display attribute of the image shooting incomplete state to the corresponding cut icon 3 (S15).

[0126] The controller 210 determines whether all the cuts to which the cut numbers are assigned are checked on the basis of the cut allocation data D1, for example (S16). For example, the determination in step S16 is performed within a range of cut included in the cut allocation data D1 (hereinafter referred to as “normal cut”) from the time of planning the scenario separately from the additional cut.

[0127] When all the normal cuts have not been checked (NO in S16), the controller 210 performs the processing in and after step S11 again for the unchecked normal cut. Thus, the display target of the cut list 30 is sequentially checked for all the normal cuts (YES in S16).

[0128] When all the normal cuts are checked (YES in S16), the controller 210 determines whether or not an additional cut is present, for example (S17). In step S8 of FIG. 8, the additional cut is set so as to be assigned an additional cut number which is identification information different from the cut number in the cut allocation data D1, for example (see FIG. 12).

[0129] When no additional cut is present (NO in S17), the controller 210 generates the cut list 30 on the basis of the check result of the normal cut (S11 to S16) without particularly performing the processing of step S18 (S19). For example, the cut icons 3 to be displayed in the cut list 30 are arranged in ascending order of cut numbers.

[0130] On the other hand, when an additional cut is present (YES in S17), the controller 210 performs various processes of checking the display target of the cut list 30 for the additional cut similarly to the normal cut (S18). The processing of step S18 is performed similarly to the processing of steps S11 to S16 with the range of the additional cut as a check target instead of the normal cut. In this case, based on the check results of the normal cut and the additional cut (S11 to S16, S18), the controller 210 generates the cut list 30 (S19).

[0131] When the cut list 30 is generated in this manner (S19), the controller 210 ends the processing of step S1 of FIG. 8 and proceeds to step S2, for example.

[0132] According to the cut list generation processing (S1) described above, the information support terminal 200 of the present system 10 generates the cut list 30 listing cuts included in the scenario on the basis of the cut allocation data D1 so as to identify and display whether or not the

imaging is in a completion state (S14, S15). Such identification display of the cut list 30 is dynamically updated according to the changed rating when the rating for each take in each cut changes (S5, S6 of FIG. 8). This makes it easy for the user to check the progress status of the video shooting of the plurality of cuts. In the present system 10, the cut list 30 is updated in a timely manner in a state where the setting of the long take group L is visualized, and the user can easily perform the long take shooting.

[0133] In the present system 10, the cut list 30 can be narrowed down using the shooting location as the filtering condition (see S7 of FIG. 8 and S11 of FIG. 10). As a result, the user can use the cut selection screen by selecting the shooting location at the site as the filtering condition to narrow down the cut to be shot at the site, for example.

[0134] In the present system 10, the cut list 30 can also be updated to include additional cuts (see S8 of FIG. 8 and S17 to S18 of FIG. 10). The cut list 30 in a case with an additional cut is illustrated in FIG. 12.

[0135] For example, when the user performs a cut adding operation ((V) in S3 of FIG. 8), the controller 210 sets an additional cut (S8), proceeds to YES in step S17 in the subsequent cut list generation processing (S1), and checks the additional cut (S18). Thus, as illustrated in FIG. 12, the cut list 30 is updated to include the cut icon 3a for the additional cut, for example.

[0136] With such an additional cut of the present system 10, the user can immediately add the cut at the site, for example at the shooting location, without particularly re-editing the scenario. For example, in step S1 after step S8, the cut icon 3a for the additional cut is arranged at the end of the cut list 30 as illustrated in FIG. 12. In a case with a plurality of additional cuts, the additional cuts are arranged in ascending order of the additional cut numbers, for example.

[0137] In step S8 of FIG. 8, the controller 210 automatically sets the shooting location in the illustrated storyboard information of the additional cut according to the filtering condition, for example. Alternatively, the shooting location of the additional cut may be set by a user input. By setting the shooting location of the additional cut, the additional cut can also be subjected to the filtering (S7) similarly to the normal cut. For example, the storyboard information of the additional cut is set to an empty value except for the shooting location. As the composition of the storyboard information, a predetermined image indicating additional cut may be used. The additional cut may be deleted by a predetermined user operation, and for example, the predetermined user operation may be a long press operation of the cut icon 3a for the additional cut.

### 2.2.3. Recording Mode

[0138] Details of the recording mode processing in step S5 of FIG. 8 will be described with reference to FIGS. 13 to 15.

[0139] FIG. 13 is a flowchart illustrating recording mode processing (S5) in the present system 10. The processing illustrated in the flow of FIG. 13 is started when a transition operation to the recording mode is input on the cut selection screen of FIG. 7, for example ((II) in S3).

[0140] First, the controller 210 of the information support terminal 200 shifts to the recording mode and causes the display 240 to transition to a screen for waiting for video shooting (S31). FIG. 14A illustrates a display example of the information support terminal 200 in step S31.

[0141] As illustrated in FIG. 14A, the recording standby screen in step S31 includes a live view image 45, and a recording button 46, for example. The recording button 46 receives a user operation for starting shooting and recording of a video.

[0142] In the present system 10, when shifting to the recording mode, the controller 210 of the information support terminal 200 requests the digital camera 100 to transmit the live view image 45 via the communication interface 250, for example (S31). For example, in the recording mode, the controller 210 sequentially receives the image data of the live view image 45 from the digital camera 100 via the communication interface 250, and displays the live view image 45.

[0143] In response to the user operation on the recording button 46, the controller 210 performs various types of control to start shooting and recording of the video of one take associated with the selected cut (S32). For example, in step S32, the controller 210 instructs the digital camera 100 to start shooting and recording of a video via the communication interface 250. A display example of the information support terminal 200 in step S32 is illustrated in FIG. 14B.

[0144] As illustrated in FIG. 14B, the vide shooting screen in step S32 includes the live view image 45, a time display field 47, a recording stop button 46a, and a marking button 48, for example. For example, highlighting such as frame display indicating that recording is being performed is performed on the live view image 45 on the vide shooting screen. For example, the time display field 47 compares and displays the shooting time of the selected cut in the cut allocation data D1 with the elapsed time from the start of imaging of the video of the take.

[0145] In step S32, the controller 210 controls the display 240 to switch the display from the imaging standby screen (FIG. 14A) to the vide shooting screen (FIG. 14B). The controller 210 records a video file indicating the live view image 45 sequentially received from the digital camera 100 after the operation of the recording button 46 in the memory 220 of the information support terminal 200 (S32).

[0146] The controller 210 determines the file name of the video file on the basis of the cut allocation data D1 and the number of takes that have been shot for the selected cut, for example. The controller 210 may provide the determined file name in the instruction to the digital camera 100. The controller 135 of the digital camera 100 starts shooting of a video in accordance with an instruction from the information support terminal 200 received via the communication module 155, for example. At this time, the controller 135 repeats the imaging operation of the image sensor 115 and records the video data of the shooting result in the memory card 142 via the card slot 140, for example.

[0147] For example, on the vide shooting screen of FIG. 14B, the recording stop button 46a receives a user operation for stopping shooting and recording of a video. The marking button 48 receives a user operation of performing marking at a timing desired by the user during shooting of the video. For example, the user can use the marking button 48 at a timing desired to be referred to at the time of video editing of post-processing.

[0148] Thereafter, the controller 210 performs various types of control so as to stop the shooting and recording of the video in response to the user operation of the recording stop button 46a (S33). For example, in step S33, the controller 210 instructs the digital camera 100 to stop

shooting and recording of a video via the communication interface 250. The controller 210 stops video recording of the live view image 45 in the information support terminal 200 (S33). The controller 135 of the digital camera 100 ends shooting a video in accordance with an instruction from the information support terminal 200.

[0149] For example, in order to prompt the user to rate the video of the take shot as described above, the controller 210 displays a rating screen on the display 240, as illustrated in FIG. 9 (S34).

[0150] The controller 210 receives a user operation of the various buttons 41 to 43 on the rating screen as illustrated in FIG. 9, and acquires the rating of the user as a result of the rating of the video of the shot take, for example (S35). In the present embodiment, every time a video of one take is shot, a user can arbitrarily select a desired rating from the above three types of rating “OK”, “KEEP”, and “NG” for a video shot without interfering with rating of a video of another take in particular.

[0151] The controller 210 determines whether or not the rating is “NG” on the basis of the acquired rating of the user, for example (S36). For example, when the rating of the user is “OK” or “KEEP”, the determination in step S36 is “NO”.

[0152] When the acquired rating of the user is not “NG” (NO in S36), the controller 210 sets the shooting completion flag of the cut associated with the take (i.e., the selected cut) in the cut allocation data D1 to “ON” (S37). For example, in the case where the number of takes of the video is “1”, or the case where a rating of a video of an existing take is “NG” in the number of takes equal to or greater than “2”, the shooting completion flag is switched from “OFF” to “ON” by the execution of step S37.

[0153] On the other hand, when the acquired rating of the user is “NG” (YES in S36), the controller 210 proceeds to step S38 without particularly updating the setting of the shooting completion flag. Thus, when the shooting completion flag of the corresponding cut is in the OFF state when the video having the rating “NG” is shot, the OFF state is kept, for example. For example, when a video of a take shot in the past has “KEEP” or “OK”, and thus the shooting completion flag is in an ON state, the ON state is kept.

[0154] The controller 210 generates metadata of a video of a take shot as described above, and records the metadata in the cut allocation data D1 in the memory 220, for example (S38). Such video metadata D2 is illustrated in FIG. 15.

[0155] For example, as illustrated in FIG. 15, the video metadata D2 includes “video file name”, “rating information”, and “marker information”. The controller 210 provides the video file name determined to reflect the number of takes for the video shot in steps S32 to S33, the rating of the user acquired in step S35 in the video metadata D2. When the user operation of the marking button 48 is performed, the controller 210 specifies the timing of the user operation during the video shooting time and provides the timing in the video metadata D2 as marker information.

[0156] The controller 210 stores the generated video metadata D2 in the video metadata list in the cut associated with the video in the cut allocation data D1 of FIG. 6 (S38). The video metadata D2 is not particularly limited to the above, and may include various types of setting information of long take shooting such as the number of takes in addition to or instead of the video file name, for example.

[0157] For example, the controller 210 ends the recording mode processing (S5) by storing the video metadata D2 (S38), and proceeds to step S1 of FIG. 8.

[0158] According to the recording mode processing (S5) described above, the present system 10 can shoot and record a video of one take of the selected cut and prompt the user to rate the cut (S32 to S35). The present system 10 manages an image shooting completion flag of the cut on the basis of the acquired rating information (S36, S37). In this way, the rating information of the user for each take can be appropriately reflected in the management of whether or not the cut is in the shooting completion state. In addition, according to the recording mode processing (S5) according to the present embodiment, the information support terminal 200 can control the shooting and recording of the video by the digital camera 100 to realize the management of the video shooting.

[0159] In the rating (S34 and S35) of the video of each take, a plurality of takes of the same rating may be present among a plurality of takes associated with the same cut. For example, a video of a plurality of takes for the same cut may have a rating “OK”.

[0160] In addition, the rating screen displayed in step S34 may be displayed as a dialog. For example, the controller 210 may control the display 240 to superimpose and display the dialog of the rating screen on the display screen before and after step S33.

[0161] For example, the recording standby screen in the recording mode (FIG. 14A) may further include a return button 15 for an operation of returning the screen transition to the cut selection screen. The return operation may be a swipe operation in a predetermined one of the  $\pm X$  directions of the video management screen. The information support terminal 200 may shift to the playback mode by a swipe operation in the opposite direction.

#### 2.3.4. Playback Mode

[0162] The playback mode processing in step S6 of FIG. 8 will be described with reference to FIGS. 16 to 18.

[0163] FIG. 16 is a flowchart illustrating the playback mode processing (S6) in the present system 10. For example, the processing illustrated in the flow of FIG. 16 is started when a transition operation to the playback mode is input on the cut selection screen of FIG. 7 ((III) in S3).

[0164] First, the controller 210 of the information support terminal 200 causes the display 240 to transition to a screen for managing a video of a cut on the basis of the video file of the take associated with the selected cut and the cut allocation data D1 (S51). FIG. 17A illustrates a display example of the information support terminal 200 in step S51.

[0165] As illustrated in FIG. 17A, the video management screen in step S51 includes a cut identification field 51, a video list 50, a re-rating button 52, and the return button 15, for example. The cut identification field 51 displays identification information of the selected cut. The video list 50 includes a video icon 5 indicating a video for each take in the selected cut. For example, the video icon 5 is configured by superimposing the rating information on the thumbnail image of the video in the take.

[0166] In step S51 for example, referring to the video metadata list of the cut in the cut allocation data D1, the controller 210 generates each video icon 5 so as to visualize the rating information of each take associated with the cut.

For example, the controller 210 arranges each video icon 5 in ascending order of the number of takes to generate the video list 50 (S51).

[0167] For example, as illustrated in FIG. 17A, the controller 210 receives various user operations via the user interface 230 in a state where the display 240 displays the video management screen (S52). The target user operation in step S52 includes (I) a playback selection operation, (II) a re-rating operation, and (III) a return operation.

[0168] The playback selection operation ((I) in S52) is a user operation of selecting a video file to be played, and is an operation of tapping a desired video icon 5 in the video list 50 displayed on the video management screen, for example.

[0169] The re-rating operation ((II) in S52) is a user operation for re-rating a video file, and is an operation of tapping the re-rating button 52 and then tapping a desired video icon 5, for example.

[0170] The return operation ((III) in S52) is a user operation of returning to the function selection screen from the playback mode, and is an operation of the return button 15 on the video management screen, for example. The return operation in (III) in step S52 may be a swipe operation in a predetermined one of the  $\pm X$  directions of the video management screen, for example. The information support terminal 200 may shift to the recording mode by a swipe operation in the opposite direction.

[0171] When the playback selection operation is input ((I) in S52), the controller 210 causes the display 240 to transition to a screen for reproducing and displaying the selected video file (S53). A display example of the information support terminal 200 in step S53 is illustrated in FIG. 17B.

[0172] As illustrated in FIG. 17B, the playback screen in step S53 includes a playback image 53, a playback control bar 54, a marker button 55, and the return button 15, for example. The controller 210 causes the user interface 230 to receive various user operations related to the playback screen. For example, the user can switch playback/pause of a video by a tap operation on the playback image 53, and change the playback position by a tap operation on the playback control bar 54.

[0173] The playback control bar 54 indicates a playback timing in the time length of the entire video, and the marker 56 is arranged at a position indicating a specific timing. For example, the controller 210 arranges the marker 56 on the playback control bar 54 with reference to the marker information of the video metadata D2.

[0174] On the playback screen of FIG. 17B, the user can newly arrange the marker 56 by operating the marker button 55 or change the arrangement position by drag operation of the marker 56. When receiving such various marker operations (YES in S54), the controller 210 updates the marker information in the video metadata D2 according to the marker operation (S55).

[0175] For example, when a user instruction to end playback of the video is input by operation of the return button 15 (YES in S56), the controller 210 causes the display 240 to transition from the playback screen (FIG. 17B) to the video management screen (FIG. 17A) for example, and returns to step S52.

[0176] When the re-rating operation ((II) in S52) is input on the video management screen (FIG. 17A), the controller 210 causes the display 240 to display a screen for prompting

the user to perform re-rating (S57). A display example in step S57 is illustrated in FIG. 17C.

[0177] FIG. 17C illustrates a re-rating dialog 52a superimposed and displayed on the video management screen by the display 240, for example. Similarly to the rating screen (FIG. 9), the re-rating dialog 52a includes various buttons 41 to 43 as options of the rating of the user. The controller 210 receives user operations of the various buttons 41 to 43 on the re-rating dialog 52a, and acquires rating information indicating a re-rating result for the take of the video icon 5 selected by the user in (II) in step S52 (S58).

[0178] Next, the controller 210 updates the cut allocation data D1 on the basis of the rating information of the re-rating result, for example (S59). For example, the controller 210 rewrites the rating information of the take in the video metadata list of the selected cut, and manages the shooting completion flag of the selected cut in consideration of the re-rating result. For example, when, from a state in which all the pieces of rating information of the takes associated with the selected cut are in a state of “NG”, any of the pieces of rating information is changed to a state of “KEEP” or “OK” by re-rating, the shooting completion flag is switched from OFF to ON.

[0179] Thereafter, the controller 210 returns to step S51 and updates the video list 50 on the video management screen so as to reflect the re-rating result on the video icon 5 of the take.

[0180] For example, when the return operation ((III) in S52) is input on the video management screen (FIG. 17A), the controller 210 ends the playback mode processing (S6) and returns to step S1 of FIG. 8. When re-rating is performed in the playback mode (S58), the cut list 30 is updated to reflect new rating information in the subsequent cut list generation processing (S1).

[0181] According to the playback mode processing (S6) described above, the user can check the videos of various takes related to the selected cut in the playback display (S53 to S56), and perform the rating again according to the check result (S57 to S58). The user can arrange the marker 56 at a desired timing at the time of checking the video, and can easily perform subsequent video editing and the like.

### 3. Review

[0182] As described above, in the present embodiment, the information support terminal 200 as an example of an electronic device manages video shooting with a scenario including a plurality of cuts each an example of a section. The information support terminal 200 includes: a display 240 that displays information; a user interface 230 as an example of an input interface that inputs a user operation; and a controller 210 that controls the display 240 in accordance with the user operation input from the user interface 230. The controller 210 causes the display 240 to display a cut selection screen (FIG. 7) as an example of a selection screen including the plurality of sections and the user interface 230 to receive the user operation selecting a specific section from the plurality of sections (S1 to S3). In response to shooting of a video associated with the specific section, the controller 210 causes the display 240 to display a rating screen (FIG. 9) as an example of a rating screen to acquire rating information from the user interface 230 (S32 to S35), the rating screen prompting the user to rate the video, and the rating information indicating a user rating of the video.

[0183] According to the above information support terminal 200, it is possible to facilitate management of video shooting with the scenario including the plurality of cuts, by acquiring the user rating of the video in response to shooting of the video for a take associated with the specific cut selected by the user.

[0184] In the information support terminal 200 according to the present embodiment, the controller 210 updates the cut list 30 in the cut selection screen in accordance with the acquired rating information, to identify whether the video shooting of the specific cut is completed or not (S5, S1), the specific cut being associated with the video of which the user rating is indicated by the rating information (see FIG. 7). According to this, it is possible to suppress a situation that the user forgets to shoot a video by visualizing on the cut selection screen whether the video shooting is completed or not for each cut.

[0185] In the information support terminal 200 according to the present embodiment, when the rating information for every video associated with the specific cut indicates a rating “NG” as an example of a first rating, the controller 210 identifies that the video shooting of the specific cut is not completed (YES in S36, NO in S13, S15). When the rating information for at least one video associated with the specific cut indicates a rating “OK” or “KEEP” each as an example of a second rating different from the first rating, the controller 210 identifies that the video shooting of the specific cut is completed (NO in S36, YES in S13, S14). According to this, the completion of the video shooting can facilitate to manage along with the user’s intention, by identifying incomplete video shooting for a cut associated with only a video of a take for which the user rating is “NG”.

[0186] In the information support terminal 200 according to the present embodiment, the controller 210 has a playback mode to play a shot video on the display 240 (see FIG. 17). The controller 210 receives, by the user interface 230, the user operation changing a rating of a playable video in the playback mode (see FIG. 17), to update the cut selection screen in accordance with the changed rating (S6, S1). According to this, the user can change the rating at the shooting as a result of checking the playback of the video after shooting, thereby it is possible to facilitate to manage video shooting for each cut.

[0187] In the information support terminal 200 according to the present embodiment, the controller 210 receives, by the user interface 230, the user operation selecting a shooting location for the video shooting (see FIG. 11), and updates the cut selection screen to narrow down the plurality of cuts in accordance with the selected shooting location (S7, S1). Accordingly, the management of the video shooting can be facilitated as the user can use the cut selection screen with narrowing down into the desired shooting location.

[0188] In the information support terminal 200 according to the present embodiment, the controller 210 receives the user operation providing an additional cut from the plurality of cuts in the scenario by the user interface 230, and updates the cut selection screen to include the additional cut (S8, S1; see FIG. 12). Accordingly, the cut shooting function can be facilitated to use, as the user can use the cut selection screen with adding the cut that out of the scenario.

[0189] In the present embodiment, the information support terminal 200 further includes a memory 220 that stores the cut allocation data D1 as an example of the management

information managing the video associated with each cut of the plurality of cuts in the scenario. The controller 210 causes the display 240 to display the cut selection screen, based on the cut allocation data D1. Accordingly, the management of the video shooting for each cut can be facilitated in accordance with the cut allocation data D1.

[0190] In the present embodiment, the information support terminal 200 further includes a communication interface 250 that communicates data with a digital camera 100 as an example of an imaging apparatus for shooting the video. The controller 210 manages the video shot by the digital camera 100, based on the data communication via the communication interface 250. Accordingly, the management of the video shooting for each cut can be facilitated in the information support terminal 200 that is separate from the digital camera 200.

[0191] In the present embodiment, a shooting management method is provided for managing video shooting with a scenario including a plurality of cuts. The method includes: causing, by the controller 210 of the information support terminal 200, the display 230 to display a selection screen including the plurality of cuts and the user interface 230 to receive a user operation selecting a specific cut from the plurality of cuts (S1 to S3). In response to shooting a video associated with the specific cut, the controller 210 causes the display 240 to display a rating screen to acquire rating information from the user interface 230 (S32 to S35), the rating screen prompting a user to rate the video, and the rating information indicating user rating of the video.

[0192] In the present embodiment, a program or a non-transitory computer-readable recording medium storing the program is provided for causing the controller 210 to execute the shooting management method as the above. According to the shooting management method, it is possible to facilitate management of video shooting with the scenario including the plurality of cuts.

#### Other Embodiments

[0193] As described above, the first embodiment has been described as an example of the technology disclosed in the present application. However, the technique in the present disclosure is not limited thereto, and can also be applied to embodiments in which changes, substitutions, additions, omissions, and the like are made as appropriate. In addition, it is also possible to combine the components described in the above embodiments to form a new embodiment.

[0194] In the first embodiment described above, the information support terminal 200 has been described as an example of an electronic device different from the imaging apparatus, but the present disclosure is not limited thereto. The electronic device according to the present embodiment may be integrated with an imaging apparatus that performs video shooting. Such a modification will be described with reference to FIG. 18.

[0195] FIG. 18 illustrates a modification of the digital camera 100. In the present embodiment, the digital camera 100 has various functions such as the above-described cut shooting function of the information support terminal 200. For example, as illustrated in FIG. 18, the controller 135 of the digital camera 100 displays a cut selection screen including a plurality of cuts by the cut list 30 on the display monitor 130, and receives the cut selection by the user through the user interface 150 such as a touch panel or an operation button.

[0196] In the example of FIG. 18, the display monitor 130 superimposes and displays the cut list 30 on the live view image. The controller 135 of the digital camera 100 generates video data by an imaging operation of the image sensor 115, for example. When a video of the selected cut is shot, the controller 135 of the digital camera 100 displays a rating screen (FIG. 9) on the display monitor 130 to acquire rating information of the user, similarly to the recording mode processing of the first embodiment (FIG. 13). Similarly to the first embodiment, the digital camera 100 can also provide the user with the information support by the cut shooting function and the export function.

[0197] As described above, in the present embodiment, the digital camera 100 as an example of an electronic device further includes the image sensor 115 as an example of an image sensor that captures a subject image and generates image data. The controller 135 manages a video including image data generated by the image sensor 115. Consequently, the digital camera 100 can easily manage the video shooting for each cut.

[0198] In the above embodiments, the cut selection screen including the cut list 30 has been exemplified, but the selection screen of the present disclosure is not limited thereto. The selection screen according to the present embodiment may not include the cut list 30, and may include a plurality of cuts in a display mode different from the cut icon 3. In addition, the selection screen according to the present embodiment may be a dialog display, or may be superimposed and displayed on various display screens. In the present embodiment, the cut list 30 may be an example of the selection screen. In the present embodiment, the selection screen of the information support terminal 200 may identify and display whether or not the video shooting has been completed for each cut in various display modes other than the above-described example.

[0199] In the above embodiments, three types of examples in which the rating information is “OK”, “KEEP”, and “NG” have been described, but the rating information is not particularly limited thereto. In the present embodiment, the rating information may be three types of rating different from the above, and is not particularly limited to three types, and may be two types or four or more types. In the present embodiment, the rating information may be a score of a continuous value. The electronic device according to the present embodiment may receive a user input of such various types of rating information and manage video shooting for each cut. For example, the identification display can be performed by appropriately providing a criterion as to whether or not the video shooting of the cut is completed.

[0200] In the above embodiments, the digital camera 100 including the optical system 110 and the lens driver 112 has been exemplified. The imaging apparatus according to the present embodiment may not particularly include the optical system 110, the lens driver 112, and the like, and may be an interchangeable lens type camera, for example.

[0201] In the above embodiments, the digital camera has been described as an example of the imaging apparatus, but the present disclosure is not limited thereto. The imaging apparatus of the present disclosure has only to be an electronic device having an imaging function (e.g., a video camera, a smartphone, a tablet terminal, or the like). The electronic device of the present disclosure does not particularly need to have an image imaging function, and may be various electronic devices.

## Aspect Examples

**[0202]** Hereinafter, various aspects of the present disclosure will be exemplified.

**[0203]** A first aspect according to the present disclosure is an electronic device for managing video shooting with a scenario including a plurality of sections. The electronic device includes: a display that displays information; an input interface that inputs a user operation; and a controller that controls the display in accordance with the user operation input from the input interface. The controller causes the display to display a selection screen including the plurality of sections and the input interface to receive the user operation selecting a specific section from the plurality of sections. In response to shooting of a video associated with the specific section, the controller causes the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting the user to rate the video, and the rating information indicating a user rating of the video.

**[0204]** A second aspect is the electronic device according to the first aspect, wherein the controller updates the selection screen in accordance with the acquired rating information, to identify whether the video shooting of the specific section is completed or not, the specific section being associated with the video of which the user rating is indicated by the rating information.

**[0205]** A third aspect is the electronic device according to the first or second aspect, wherein when the rating information for every video associated with the specific section indicates a first rating, the controller identifies that the video shooting of the specific section is not completed. When the rating information for at least one video associated with the specific section indicates a second rating different from the first rating, the controller identifies that the video shooting of the specific section is completed.

**[0206]** A fourth aspect is the electronic device according to any one of the first to third aspects, wherein the controller has a playback mode to play a shot video on the display. The controller receives, by the input interface, the user operation changing a rating of a playable video in the playback mode, to update the selection screen in accordance with the changed rating.

**[0207]** A fifth aspect is the electronic device according to any one of the first to fourth aspects, wherein the controller receives, by the input interface, the user operation selecting a shooting location for the video shooting, and updates the selection screen to narrow down the plurality of sections in accordance with the selected shooting location.

**[0208]** A sixth aspect is the electronic device according to any one of the first to fifth aspects, wherein the controller receives the user operation providing an additional section from the plurality of sections in the scenario by the input interface, and updates the selection screen to include the additional section.

**[0209]** A seventh aspect is the electronic device according to any one of the first to sixth aspects, further including a memory that stores management information managing the video associated with each section of the plurality of sections in the scenario. The controller causes the display to display the selection screen, based on the management information.

**[0210]** An eighth aspect is the electronic device according to any one of the first to seventh aspects, further including a communication interface that communicates data with an

imaging apparatus for shooting the video. The controller manages the video shot by the imaging apparatus, based on the data communication via the communication interface.

**[0211]** A ninth aspect is the electronic device according to any one of the first to seventh aspects, further including an image sensor that captures a subject image to generate image data. The controller manages the video including the image data generated by the image sensor.

**[0212]** A tenth aspect is a shooting management method for managing video shooting with a scenario including a plurality of sections. The method includes: causing, by a controller of an electronic device, a display to display a selection screen including the plurality of sections and an input interface to receive a user operation selecting a specific section from the plurality of sections; and in response to shooting a video associated with the specific section, causing, by the controller, the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting a user to rate the video, and the rating information indicating user rating of the video.

**[0213]** An eleventh aspect is a non-transitory computer-readable recording medium storing a program that causes the controller to execute the shooting management method according to the tenth aspects.

**[0214]** As described above, the embodiments have been described as an example of the technology in the present disclosure. For this purpose, the accompanying drawings and the detailed description have been provided. Accordingly, some of the components described in the accompanying drawings and the detailed description may include not only essential components for solving the problem but also components which are not essential for solving the problem in order to describe the above technology.

**[0215]** The present disclosure is applicable to various uses for shooting a video including a plurality of cuts.

1. An electronic device for managing video shooting with a scenario including a plurality of sections, the electronic device comprising:

- a display that displays information;
- an input interface that inputs a user operation; and
- a controller that controls the display in accordance with the user operation input from the input interface, wherein

the controller causes the display to display a selection screen including the plurality of sections and the input interface to receive the user operation selecting a specific section from the plurality of sections, and

in response to shooting of a video associated with the specific section, the controller causes the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting the user to rate the video, and the rating information indicating a user rating of the video.

2. The electronic device according to claim 1, wherein the controller updates the selection screen in accordance with the acquired rating information, to identify whether the video shooting of the specific section is completed or not, the specific section being associated with the video of which the user rating is indicated by the rating information.

3. The electronic device according to claim 1, wherein when the rating information for every video associated with the specific section indicates a first rating, the



controller identifies that the video shooting of the specific section is not completed, and

when the rating information for at least one video associated with the specific section indicates a second rating different from the first rating, the controller identifies that the video shooting of the specific section is completed.

4. The electronic device according to claim 1, wherein the controller has a playback mode to play a shot video on the display, and

the controller receives, by the input interface, the user operation changing a rating of a playable video in the playback mode, to update the selection screen in accordance with the changed rating.

5. The electronic device according to claim 1, wherein the controller

receives, by the input interface, the user operation selecting a shooting location for the video shooting, and

updates the selection screen to narrow down the plurality of sections in accordance with the selected shooting location.

6. The electronic device according to claim 1, wherein the controller receives the user operation providing an additional section from the plurality of sections in the scenario by the input interface, and updates the selection screen to include the additional section.

7. The electronic device according to claim 1, further comprising

a memory that stores management information managing the video associated with each section of the plurality of sections in the scenario, wherein

the controller causes the display to display the selection screen, based on the management information.

8. The electronic device according to claim 1, further comprising

a communication interface that communicates data with an imaging apparatus for shooting the video, wherein the controller manages the video shot by the imaging apparatus, based on the data communication via the communication interface.

9. The electronic device according to claim 1, further comprising

an image sensor that captures a subject image to generate image data, wherein

the controller manages the video including the image data generated by the image sensor.

10. A shooting management method for managing video shooting with a scenario including a plurality of sections, the method comprising:

causing, by a controller of an electronic device, a display to display a selection screen including the plurality of sections and an input interface to receive a user operation selecting a specific section from the plurality of sections; and

in response to shooting a video associated with the specific section, causing, by the controller, the display to display a rating screen to acquire rating information from the input interface, the rating screen prompting a user to rate the video, and the rating information indicating user rating of the video.

11. A non-transitory computer-readable recording medium storing a program that causes the controller to execute the shooting management method according to claim 10.

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