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ELECTRONIC DEVICE AND SHOOTING MANAGEMENT METHOD

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.

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Background/Summary

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.

Description

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 software, 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 an 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**, an shooting time field **23**, an 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**, a 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 connection 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.

Claims

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.
