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(72) Inventors:

(74) Agent: RUGGIERO, Charles, N.J.; Ohlandt, Greeley, Ruggiero & Perle, L.L.P., One Landmark Square, 10th Floor, Stamford, CT 06901-2682 (US).

(54) Title: ASSISTING A USER OF A VIDEO RECORDING DEVICE IN RECORDING A VIDEO

(57) Abstract: There is provided a system that includes a processor and a memory having data encoded thereon. The data is readable by the processor and includes a template that contains (i) a first message that instructs a person to include first content in a first segment of a video, and (ii) a second message that instructs a person to include second content in a second segment of the video. The data also includes instructions that control the processor to (i) send the first message from the template to the user interface of a video recording device to facilitate recording of the first segment on the video recording device, and (ii) send the second message from the template to the user interface to facilitate recording of the second segment on the video recording device.
ASSISTING A USER OF A VIDEO RECORDING DEVICE
IN RECORDING A VIDEO

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BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The present disclosure relates to recording of a video, and more particularly, to technique that assists a user of a video recording device in the recording of the video.

2. Description of the Related Art

[0003] The approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived or pursued. Therefore, unless otherwise indicated, the approaches described in this section may not be prior art to the claims in this application and are not admitted to be prior art by inclusion in this section.

[0004] A person making a video may give little or no thought as to what content to include in a video, or as to how the content should be presented in the video. For example, a home movie is often little more that a recording of activities of members of a family, with little consideration being given as to what subject matter should be included in the home movie in order to make it interesting, or to a least convey an coherent story. Consequently, the home movie fails to convey a coherent story, and is of
little interest to anyone but the immediate family. The percentage of videos that would be considered quality productions with regard to their content is probably very low. Thus, much time is likely wasted on making videos of little or no value to anyone other than the person recording the video. Video recordings of other topics and subjects often suffer from similar deficiencies.

[0005] A video editing application may allow a user of a video playback device to edit a video that is already recorded. For example the user may be allowed to delete a segment of the video, relocate a segment of the video, and add effects such as fade-out and fade-in. However, such a video editing application does not provide any guidance as to what content should be included in the video.

[0006] There may also be some literature that describes an appropriate manner of making a video, and of including certain types of content in the video. However, such literature is most likely not readily available to a user of a video recording device at the time that the user wishes to record a video.

[0007] A video that is made without regard to its content presents a technical problem in that it must be edited after the recording is made, or worse yet, cannot be satisfactorily edited because it does not even include worthwhile content. Thus, there is a need for a technique that assists a user of a video recording device in the recording of a video, so that the video contains relevant content organized in a coherent manner.

SUMMARY OF THE INVENTION

[0008] There is provided a system that includes a processor and a memory having data encoded thereon. The data is readable by the processor and includes a template that contains (i) a first message that instructs a person to include first content in a first segment of a video, and (ii) a second message that instructs a person to include second content in a second segment of the video. The data also includes instructions that control the processor to (i) send the first message from the template to a user interface of
a video recording device to facilitate recording of the first segment on the video recording device, and (ii) send the second message from the template to the user interface to facilitate recording of the second segment on the video recording device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a block diagram of a data communications system that includes a video recording device.

[0010] FIG. 2 is a block diagram that shows functionality provided by several components installed in a memory of the video recording device in FIG. 1.

[0011] FIG. 3 is a flowchart of a video acquisition process performed by components of the video recording device in FIG. 1.

[0012] FIG. 4 is an illustration that shows several interfaces presented on a display of the video recording device in FIG. 1.

[0013] FIG. 5 is an illustration that shows several additional interfaces presented on a display of the video recording device in FIG. 1.

[0014] A component or a feature that is common to more than one drawing is indicated with the same reference number in each of the drawings.

DESCRIPTION OF THE INVENTION

[0015] We are describing herein an application referred to as a video assistant, implemented on an Internet-connected video recording device. The video assistant helps a user record high-quality video segments by advising the user as to what content to include in each of the segments. The video assistant guides the user through a sequence of steps to shoot, record, edit and synthesis video clips into a high-quality
video that is ready for distribution to various consumer Internet sites and services. The video assistant is an interactive application that is available to the user at the time that the user is recording the video.

[0016] The video assistant is employed in conjunction with a template. The template is, effectively, an outline for the making of a video, and is designed for a particular theme. Examples of themes include (A) reviewing a movie, (B) reviewing a sporting event, (C) reviewing a news event, and (D) preparing a resume, but any theme may be considered. The template defines the video as having a plurality of video segments, and for each segment, contains one or more messages for presentation to the user. The one or more messages for a segment instruct the user to include certain content in the segment.

[0017] For example, the template for reviewing a movie may include four segments. For the first segment, the message may instruct the user to introduce herself and the movie that she is reviewing. For the second segment the message may instruct the user to provide a plot summary of the movie. For the third segment the message may instruct the user to provide her opinion of the movie. For the fourth segment the message may instruct the user to provide a conclusion and a final rating for the movie.

[0018] The template may also include some intelligence in the form of real-time audio and video monitoring programs to improve the capture of content. Such a template, in addition to guiding the user through a sequence of steps, evaluates an attribute of the video and branches to a sub-template based on the evaluation.

[0019] The video assistant also has a mode for capturing "highlights" of an event. That is, when an event of interest is tagged, the video assistant allows the user to save a video that shows activity for some period of time immediately preceding the event of interest.

[0020] FIG. 1 is a block diagram of a data communications system, hereinafter designated as system 100. System 100 includes a video recording device 110, a video archive server 155 and a template archive server 165, coupled for communication with one another via a data communications network, herein designated as the Internet 150.
A user 105 uses video recording device 110. User 105 wishes to record sounds and images to produce a high-quality video.

[0021] Video recording device 110 is an apparatus having a capability of recording a video, i.e., images and audio. Video recording device includes a camera 115, a display 120, a speaker 125, a video recorder 128, a processor 130, a memory 135 and a microphone 148.

[0022] Camera 115 captures images, and microphone 148 captures audio. Speaker 125 produces audio that can be heard by user 105. Display 120 displays images that can be viewed by user 105. Video recording device 110 also includes a keypad 122, which may be provided in the form of a touch-sensitive keypad on display 120.

[0023] Display 120, keypad 122, speaker 125, and microphone 148 serve as a user interface through which user 105 and video recording device 110 can communicate with one another. For example, (a) via microphone 148, user 105 can provide spoken instructions to video recording device 110, (b) via keypad 122, user 105 can input text, numbers and symbols, and (c) via display 120 or speaker 125, video recording device 110 can present messages to user 105.

[0024] In FIG. 1, camera 115 is shown on the front side of video recording device 110, i.e., on the same side as display 120, so that user 105 can view display 120 while images of user 105 are captured by camera 115. In an alternative embodiment, camera 115 can be on different side of video recording device 110, or video recording device can include a second camera (not shown) so that user 105 can select either of the two cameras to capture images.

[0025] Video recorder 128 receives images from camera 115 and audio from microphone 148, formats the images and audio into video data for storage in memory 135.
[0026] Processor 130 is a device configured of logic circuitry that responds to and executes instructions. Processor 130 may be implemented, for example, as microprocessor.

[0027] Memory 135 is a storage medium having data encoded thereon that is readable by processor 130. Memory 135 may be implemented in a random access memory (RAM), a hard drive, a read only memory (ROM), or a combination thereof. The data in memory 135 includes computer program modules that are designated herein as a video assistant 140 and a template 145, and that, when read by processor 130, control operations of processor 130. The term "module" is used herein to denote a functional operation that may be embodied either as a stand-alone component or as an integrated configuration of a plurality of sub-ordinate components. Memory 135 can accommodate a plurality of templates, but in FIG. 1, only one such template, i.e., template 145, is shown.

[0028] In operation, video assistant 140 and template 145 control processor 130 to assist user 105 in the recording of a video. Template 145, as will be explained further below, includes a plurality of messages that are presented to user 105, and instruct user 105 to include some particular content in the video. In this regard, template 145 contains (i) a first message that instructs user 105 to include some content in a first segment of the video, and (ii) a second message that instructs user 105 to include some content in a second segment of the video. Video assistant 140 and/or template 145 also contain instructions that when read by processor 130, control processor 130 to (i) send the first message from template 145 to a user interface, e.g., display 120, of video recording device 110 to facilitate recording of the first segment on video recording device 110, and (ii) send the second message from template 145 to the user interface, e.g., display 120, to facilitate recording of the second segment on video recording device 110. The presentation of the messages thus coaches user 105 in the making of the video.

[0029] Video recording device 110 can send the recorded video, via the Internet 150, to video archive server 155, for storage in a database 160. User 105 can also download videos from database 160 into video recording device 110.
[0030] Template 145 is designed to assist user 105 in the recording of a video in accordance with a particular theme or topic. For example, the video may be (a) a review of a movie, or (b) a report of a news event. Accordingly, in system 100, there is a plurality of templates that may be used as template 145. The templates are stored on a database 170, and user 105 can download a desired template from database 170, via the Internet 150, into video recording device 110.

[0031] Although system 100 is described herein as having video assistant 140 and template 145 installed into memory 135, either or both of video assistant 140 and template 145 can be embodied on an external computer-readable storage medium, e.g., storage medium 175, for subsequent loading into memory 135. Storage medium 175 can be any conventional storage media, including, but not limited to, a floppy disk, a compact disk, a magnetic tape, a read only memory, an optical storage media, universal serial bus (USB) flash drive, a digital versatile disc, or a zip drive. Storage medium 175 could also be a random access memory, or other type of electronic storage, located on a remote storage system and coupled to memory 135.

[0032] Moreover, although video assistant 140 and template 145 are described herein as being installed in memory 135, and therefore being implemented in software, they could be implemented in any of hardware (e.g., electronic circuitry), firmware, software, or a combination thereof.

[0033] FIG. 2 is a block diagram that shows functionality provided by several components installed in memory 135, and in particular, video assistant 140 and template 145. In addition to video assistant 140 and template 145, memory 135 includes a video storage 205.

[0034] Video storage 205 receives and stores video data 201, which has been captured by video recorder 128. Video storage 205 includes a local archive 206.

[0035] Video assistant 140 includes user interface processing 230, a video storage interface 232, a highlight controller 234, an email/network storage interface 236, an
environmental evaluator 240, a template archive interface 255, a director 265, and a timer 260.

[0036] User interface processing 230 receives data that user 105 inputs via microphone 148 and keypad 122. User interface processing 230 forwards the data to appropriate components of video assistant 140 and template 145.

[0037] Video storage interface 232 is an interface between video storage 205 and other components of video assistant 140. Video storage interface 232 sends control signals 207 to video storage 205 to access and receive video data 208.

[0038] Highlight controller 234 includes a highlight buffer 235, and provides functionality for a Highlight Mode of operation, which is described in greater detail below, in association with FIG. 5.

[0039] Email/network storage interface 236 is an interface between video assistant 140 and (a) video archive server 155 and (b) an email application (not shown). For example, when user 105 wishes to store a video into database 160, email/network storage interface 236 obtains video data from video storage 205, via video storage interface 232, in the form of video data 233, and sends the video data to video archive server 155, via the Internet 150, in the form of video data 237. Similarly, for a case where user 105 wishes to attach the video to an email, email/network storage interface 236 sends video data 237 to the email application.

[0040] Environmental evaluator 240 receives video data from video storage 205 via video storage interface 232, in the form of video data 242, and evaluates environmental aspects of the video data. In this regard, environmental evaluator 240 includes image processing 245 and audio processing 250.

[0041] Image processing 245 analyzes image characteristics in video data 242. Image processing 245 detects attributes such as illumination level and focus, and includes image recognition capabilities to identify shapes and subjects.
Audio processing 250 analyzes audio characteristics in video data 242. Audio processing 250 detects attributes such as noise, frequency and volume, and includes speech recognition capabilities to recognize words and determine a meaning of speech.

Environmental evaluator 240, as a result of the processes performed by image processing 245 and audio processing 250 yields a detected attribute 256.

Template archive interface 255 interfaces with template archive server 165. Template archive interface 255 receives template data 209 from database 170, via template archive server 165 and the Internet 150, and stores the template data into memory 135 as template 145.

Template 145 includes a basic template 210 and intelligent processing 220.

Basic template 210 contains messages organized into segments 215 that correspond to segments of a video recording. Basic template 210 also includes transitions 217 and soundtracks 218. Segments 215, transitions 217 and soundtracks 218 are described in greater detail below, in association with FIG. 3.

Intelligent processing 220 includes a shot analyzer 222 and sub-templates 225. Shot analyzer 222 and sub-templates 225 are described in greater detail, below.

Director 265 receives detected attribute 256, and in turn sends it as detected attribute 257 to template 145. Director 265 also receives from timer 260, time data 262, which represents time. From template 145, director 265 receives instructions 258, which include messages for presentation to user 105. Director 265 sends the messages to display 120 in the form of text narrative 270 and video shot instructions 275. Text narrative 270 instructs user 105 to say something in particular, e.g., on display 120 present a scrolling narrative to be read aloud for inclusion in the video, or to discuss a particular subject, e.g., "describe the whether." Video shot instructions 275 instruct user 105 to employ a particular video effect, e.g., zoom in, or to capture an image of a particular subject, e.g., "show landscape." Director 265 also sends messages to speech.
synthesizer 280, where such messages are converted to speech that is presented to user 105 via speaker 125.

[0049] FIG. 3 is a flowchart of a video acquisition process, referred to herein as method 300, performed by processor 130, pursuant to instructions in video assistant 140. FIG. 3 also shows exemplary interfaces, 335, 340, 345, 350, 355 and 360 being presented to user 105 on display 120. Method 300 commences with step 305.

[0050] In step 305, video assistant 140 accesses templates that are stored in memory 135, lists the templates on interface 335, and prompts user 105 to select a template from the list. In this example, interface 335 is displaying three templates. Each of the templates is for a particular theme. Any theme may be considered, but for the present example, assume that the three themes are (A) reviewing a movie, (B) reviewing a sporting event, and (C) reviewing a news event. User 105 selects a template, for example assume "(A) reviewing a movie".

[0051] Although in the present example, for step 305 we are describing the templates as being stored in memory 135, and thus, within video recording device 110, the templates can be located on a remote memory device, such as database 170, and presented to user 105 in a catalogue, and upon selection, downloaded into memory 135.

[0052] From step 305, method 300 progresses to step 310.

[0053] In step 310, video assistant 140 accesses segments from the selected template, presents the segments on interface 340, and prompts user 105 to select a segment. The segments correspond to segments of the video that is to be recorded. Each of the segments specifies a duration of time, and for each segment, the template will provide instructions to user 105 to include some content in the video. Any number of segments can be included, but in the present example, interface 340 is displaying four segments. Assume that the four segments are: (A) introduction, 15 seconds; (B) plot summary, 30 seconds; (C) opinion, 30 seconds; and (D) conclusion, 15 seconds. User 105 selects a segment, and from step 310, method 300 progresses to step 315.
In step 315, video assistant 140 presents interface 345, and runs the selected segment. Referring to FIG. 2, director 265 obtains instructions 258, and sends the instructions to display 120 in the form of text narrative 270 and video shot instructions 275. Director 265 may also send the instructions to speech synthesizer 280, which in turn presents the instructions in spoken form via speaker 125. Director 265 runs a recording for the duration specified in the segment, based on time provided by timer 260. The recorded video is stored in video storage 205. Referring again to FIG. 3, the text narrative is presented as text narrative 347, and the video shot instructions are presented as video shot instructions 348. User 105 reviews the instructions, and records the video segment, while the video is presented in a video capture display area 346.

For example, for segment "(A) introduction, 15 seconds", video shot instructions may say, "Close-up shot of reviewer", and text narrative 347 may say, "(1) Introduce yourself; (2) introduce the movie by title and genre, and mention the actors that are in the main roles."

Steps 310 and 315 are repeated for each of the segments. After the segments are completed, method 300 progresses from step 315 to step 320.

In step 320, video assistant 140 accesses transitions that are stored in the template (see FIG. 2, transitions 217), and presents the transitions on interface 350 as transition elements 352. Transition elements 352 are video snippets or effects that can be inserted in the video to provide for a logical or visually interesting progression between video segments. An example is a fade out from a first video segment, to a fade in to a second video segment. On interface 350, user 105 scrolls through the recorded video timeline using controls 351, and selects and inserts transition elements 352. From step 320, method 300 progresses to step 325.

In step 325, video assistant 140 accesses soundtracks that are stored in the template (see FIG. 2, soundtracks 218), and presents the soundtracks on interface 355 as soundtrack elements 357. Soundtrack elements 357 are audio snippets or effects that can be added to the recorded video. Soundtrack elements 357 are merged with sounds
that are already captured in the video, to create a final video having an audio track. On interface 355, user 105 views the video in a video display area 356, and selects soundtrack elements 357. From step 325, method 300 progresses to step 330.

[0059] In step 330, video assistant 140 presents interface 360, with which user 105 can review the recorded video. Interface 360 includes a video display area 363, a play control 361, a timeline slide control 364, and a done button 362.

[0060] FIG. 4 is an illustration that shows several interfaces that video assistant 140 presents on display 120 for post-acquisition processes 400, namely, sharing, sending and saving a video. More specifically, user 105 can chose to share a video with a video website, e.g., database 160, send the video in an email, or save the video to local archive 206.

[0061] Interface 405 provides a video display area 410, a SHARE button 415, a SEND button 420 and a SAVE button 425. In video display area 410, user 105 can view a recorded video that is stored in video storage 205. User 105 can chose to share the video by selecting SHARE button 415, and accordingly, video assistant 140 will present interface 430. User 105 can chose to send the video by selecting SEND button 420, and accordingly, video assistant 140 will present interface 440. User can chose to save the video by selecting SAVE button 425, and accordingly, video assistant 140 will present interface 455.

[0062] Interface 430 is presented when user 105 chooses to share the video. Interface 430 includes areas for user 105 to enter a user name and a password, and a PUBLISH button 435. After user 105 provides the user name and the password, user 105 selects PUBLISH button 435. For this sharing process, video assistant 140 utilizes functionality of email/network storage interface 236, and sends the video from video storage 205 to database 160. Other users can thereafter access database 160 to view the video. Video services available with which to share a video with may be specific to a particular template that user 105 used when making the video.
[0063] Interface 440 is presented when user 105 chooses to send the video in an email. Interface 440 includes an area 445 for the email address of a recipient, and an area 450 for a video attachment. For this sending process, video assistant 140 utilizes functionality of email/network storage interface 236, and sends the video from video storage 205 to an email server (not shown).

[0064] Interface 455 is presented when user 105 chooses to save the video. User 105 uses controls on interface 455 to save the video in local archive 206.

[0065] Consider a case where user 105 wishes to review the latest blockbuster movie and share the review with friends and family. User 105 brings up video assistant 140 on video recording device 110 and selects a Movie Review Video Template. The template consists of four video segments that will instruct user 105 to record; (i) an introduction, (2) a plot summary, (3) an opinion of the experience, and (4) a conclusion and final rating.

[0066] User 105 first chooses to record the introduction. Video assistant 140, using the template, suggests through a scrolling of text of display 120, that user 105 state the movie's title, director, and main actors. Video assistant 140 suggests that user 105 shoot a shot of the movie poster or movie theater showing the movie, and then shoot a shot of user 105. User 105 does as suggested, and moves on to the other video segments.

[0067] Once the segments have all been recorded, user 105 then moves into the transitions and soundtrack processes (see FIG. 3, steps 320 and 325). User 105 adds basic fade in/fade out transitions between the segments and selects a basic dance beat in for the soundtrack. User 105 then previews the full synthesis of the video segments, transitions and soundtrack. Satisfied with the result, user 105 then wishes to send the final video to a popular video site, e.g., video archive server 155 and database 160, by way of an application interface to the popular video website.

[0068] User 105 invokes interface 405, and selects SHARE button 415. Video assistant 140 presents interface 430, and user 105 enters their existing video site account details,
i.e., user name and password. Video assistant 140 then sends the video to the video site, e.g., video archive server 155 and database 160, from which other users can view it.

[0069] FIG. 5 is an illustration of interfaces that video assistant 140 presents on display 120 during a highlight mode 500. Highlight mode 500 is a mode for capturing "highlights" of an event. More specifically, video assistant 140 allows user 105 to save a video that shows activity for some period of time immediately preceding the event. In highlight mode 500, video assistant 140 utilizes functionality of highlight controller 234.

[0070] Interface 505 includes a video display area 510, a HIGHLIGHT button 515, and a timeline slide control 520. User 105 records video that is displayed in display area 510. The video is also being directed by video storage interface 232, from video storage 205 to highlight buffer 235. Highlight buffer 235 is a first-in-first-out (FIFO) storage device that stores some duration of the most recent video that was recorded. For example, assume that highlight buffer 235 stores the most recent 30 seconds of video. When user 105 recognizes an event that user 105 wishes to capture as a highlight, user 105 tags the event by pressing HIGHLIGHT button 515. User 105 can then use timeline slide control 520 to review the video in highlight buffer 235, and delimit a portion of the video that user 105 wishes to save. For example, user 105 may wish to save only the most recent 15 seconds of the video.

[0071] Interface 525 is presented when user 105 chooses to save the video. User 105 uses controls on interface 525 to save the video in local archive 206. The saved video, from local archive 206, may be used in video assistant projects.

[0072] For example, assume that a father is recording a soccer game in which his daughter scores a goal. The father invokes highlight mode 500, and keeps camera 115 trained on her during the game. At some point she kicks the ball into the goal. Highlight controller 234 will allow the father to save the video recorded during 15 seconds that immediately preceded the time of the goal so that he captures the action leading up to his daughter's shot and the celebration immediately following. Later, after
the game, the father includes the highlight of the goal in a Soccer Match Review Video Template.

[0073] Refer again to FIG. 2, and in particular template 145, and more particularly intelligent processing 220. As noted above, intelligent processing 220 includes shot analyzer 222 and sub-templates 225. In the present example, there are three sub-templates, namely sub-templates 225A, 225B and 225C. Each of sub-templates 225A, 225B and 225C contains segments, similarly to basic template 210.

[0074] Intelligent processing 220 gives template 145 some processing capability. For example, the intelligent template may (i) evaluates the user's content, an aspect of the image or the audio, or an environmental condition, (ii) suggests an improvement, and (iii) branches to a sub-template based on the content. In other words, template 145 in addition to providing messages for guiding user 105 through a sequence of steps, evaluates an attribute of the video and branches to a sub-template 225A, 225B or 225C based on the evaluation. More specifically, shot analyzer 222 analyzes detected attribute 257, and based on a result of the analysis, accesses one of sub-templates 225A, 225B or 225C, and sends messages from that sub-template to director 265.

[0075] For example, assume user 105 is making a video in which user 105 is interviewing a subject. Assume also that in accordance with a message in one of segments 215, director 265 instructed user 105 to present a question to the subject, and that the subject provided an answer in the form of speech. As mentioned above, audio processing 250 includes speech recognition capabilities. Accordingly, audio processing 250 recognizes the speech and presents the speech as detected attribute 256 to director 265, which in turn presents the speech to template 145 as detected attribute 257. Shot analyzer 222 determines whether the speech has a particular meaning. If the speech has the particular meaning, shot analyzer 222 accesses an appropriate sub-template, e.g., sub-template 225A, and sends messages from sub-template 22A to director 265.

[0076] Shot analyzer 222 can be configured to evaluate any relevant image attribute, including an audio characteristic of the video, an image characteristic of the video, and a
combination thereof. Based on the attribute, shot analyzer 222 determines an action to be performed. Exemplary actions include (a) changing a zoom setting of video recording device 110, (b) panning, e.g., rotating camera 115 horizontally, as to get a panoramic effect or to follow a moving object, (c) focussing on a particular subject in the video, (d) adjusting an image recording parameter, e.g., illumination intensity, (e) adjusting an audio recording parameter, e.g., squelch, and a combination thereof. Video assistant 140 may either (1) send additional information from template 145 to display 120 that instructs user 105 to perform the action, e.g., pan left, or (2) send an instruction to video recording device 110, for video recording device 110 to perform the action, e.g., automatically zoom in.

Pursuant to instructions presented by intelligent processing 220, video assistant 140 may scroll text narrative 270 that is being read by user 105, and by way of the speech-recognition module in audio processing 250, (1) evaluate the rate at which user 105 is talking, and accordingly, adjust a rate at which text narrative 270 is scrolled, (2) evaluate the volume at which user 105 is speaking, and coach or alert user 105 to increase or decrease the volume, or to emphasis certain words or phrases, and (3) evaluate grammar and suggest alternatives.

Below, we are presenting some examples of usage of video recording device 110. The examples are directed to cases where template 145 is an intelligent template, i.e., it includes intelligent processing 220. Assume that user 105 has already selected a template of an appropriate theme.

Consider a case where user 105 wishes to prepare a video resume. Shot analyzer 222 would query user 105 as to the type of job that user 105 is seeking. Shot analyzer 222 would thereafter utilize sub-template 225A of a first format if user 105 is seeking a job as an accountant, and utilize sub-template 225B of a second format user 105 is seeking a job as an actor.

Consider a case where user 105 wishes to make a video of a subject other than user 105, for example user 105’s daughter at a dance recital. Shot analyzer 222 would
prompt user 105 to identify user 105's daughter, e.g., in a cross-hair on display 120. Image processing 245 would thereafter recognize the image of user 105's daughter. Shot analyzer 222 would receive the image in detected attribute 257, and then, based on activities of user 105's daughter, suggest that user 105 zoom in or zoom out.

[0081] Consider a case where user 105 whishes to interview a subject. Shot analyzer 222 presents user 105 with a question for the subject. Thereafter, shot analyzer 222 evaluates the subject's answer to the question (through speech-recognition), and suggest a follow-up question.

[0082] Consider a case where user 105 is making a video of several subjects. Based on attributes detected by image processing 245 and speech recognition in audio processing 250, shot analyzer 222 evaluates the behavior of the subjects, and prompt user 105 to zoom in or center on a particular one of the subjects, or zoom out to capture all of the subjects.

[0083] Consider a case where user 105 is making a video in an environment of varying lighting conditions. Image processing 245 detects the lighting conditions and reports them as detected attribute 256. Shot analyzer 222 receives the lighting conditions in detected attribute 257, evaluates the lighting conditions, and based thereon, sends instructions to video recording device 110 to automatically adjusts a setting of camera 115, and sends instructions to director 265, which in turn sends instructions to display 120, instructing user 105 to zoom in, zoom out, or move left or right.

[0084] Consider a case where user 105 is making a video of a subject in an environment that may be noisy. Audio processing 250 detects the noise and reports it as detected attribute 256. Shot analyzer 222 is apprised of the noise in detected attribute 257, evaluates the noise, and in a noisy environment, sends instructions to director 265, which in turn sends instructions to display 120, instructing user 105 to move closer to the subject.

[0085] Although the present document describes video assistant 140 as performing certain functions, and template 145 as performing certain functions, either or both of
video assistant 140 and template 145 can be configured to perform any the functions. For example, the functions of environmental evaluator 240 can be embedded in intelligent processing 220, and the functions of shot analyzer 222 can be embedded in video assistant 140.

[0086] Video recording device 110 may be implemented, for example, as a component of an apparatus that already has a video recording capability, such as a video camera, a personal digital assistant, a telephone, a laptop computer or a desktop computer. Accordingly, either or both of video assistant 140 and template 145 may be installed as an application on such an apparatus.

[0087] Moreover, video assistant 140 and template 145 need not necessarily be installed locally in video recording device 110. Instead, either or both of video assistant 140 and template 145 can be installed and executed on a remote processing device (not shown) that communicates with a video recording device. For example, a cellular telephone having Internet capability can communicate with the remote processing device, and thereby interface with video assistant 140 and template 145.

[0088] Video assistant 140 and template 145 may be configured as a special-purpose application, for example where template 145 is not interchangeable, but is instead, a fixed template. Such a special-purpose application may be suitable, for example, where the video is to be sent to a particular website that requires videos in a particular format, e.g., a website that accepts videos that are reporting news events. Template 145 may also include special-purpose meta-data with the video, or other specific information, such as an agreement to a release of rights by user 105 accompanied by a digital signature of user 105.

[0089] The techniques described herein are exemplary, and should not be construed as implying any particular limitation on the present disclosure. It should be understood that various alternatives, combinations and modifications could be devised by those skilled in the art. For example, steps associated with the processes described herein can be performed in any order, unless otherwise specified or dictated by the steps.
themselves. The present disclosure is intended to embrace all such alternatives, modifications and variances that fall within the scope of the appended claims.

[0090] The terms "comprises" or "comprising" are to be interpreted as specifying the presence of the stated features, integers, steps or components, but not precluding the presence of one or more other features, integers, steps or components or groups thereof.
WHAT IS CLAIMED IS:

1. A system comprising:
   a processor; and
   a memory having data encoded thereon, wherein said data is readable by said processor and includes:
   (a) a template that contains (i) a first message that instructs a person to include first content in a first segment of a video, and (ii) a second message that instructs a person to include second content in a second segment of said video; and
   (b) instructions that when read by said processor, control said processor to:
      send said first message from said template to a user interface of a video recording device to facilitate recording of said first segment on said video recording device; and
      send said second message from said template to said user interface to facilitate recording of said second segment on said video recording device.

2. The system of claim 1, wherein said user interface includes a display, and
   wherein at least one of said first or second messages is in text format, and includes a narrative to be read aloud for inclusion in said video.

3. The system of claim 1, wherein said instructions further control said processor to:
   detect an attribute selected from the group consisting of an audio characteristic of said video, an image characteristic of said video, and a combination thereof, thus yielding a detected attribute; and
   determine, based on said detected attribute, an action to be performed.
4. The system of claim 3, wherein said action is selected from the group consisting of (a) changing a zoom setting of said video recording device, (b) panning, (c) focusing on a particular subject in said video, (d) adjusting an image recording parameter, (e) adjusting an audio recording parameter, and a combination thereof.

5. The system of claim 3, wherein said instructions further control said processor to send additional information to said user interface, wherein said additional information advises a user of said video recording device to perform said action.

6. The system of claim 3, wherein said instructions further control said processor to send to said video recording device, an instruction for said video recording device to perform said action.

7. The system of claim 1, wherein said template also contains a sub-template that contains a sub-template message, and wherein said instructions further control said processor to:
   recognize speech that is in said video;
   determine whether said speech has a first meaning; and
   access said sub-template and send said sub-template message to said user interface if said speech has said first meaning.

8. A method comprising:
   accessing a template in a memory, wherein said template contains (i) a first message that instructs a person to include first content in a first segment of a video, and (ii) a second message that instructs a person to include second content in a second segment of said video;
sending said first message to a user interface of a video recording device to
facilitate a recording of said first segment on said video recording device;
and

sending said second message to said user interface to facilitate a recording of said
second segment on said video recording device.

9. The method of claim 8,
wherein said user interface includes a display, and
wherein at least one of said first or second messages is in text format, and includes
a narrative to be read aloud for inclusion in said video.

10. The method of claim 8, further comprising:
detecting an attribute selected from the group consisting of an audio characteristic
of said video, an image characteristic of said video, and a combination
thereof, thus yielding a detected attribute; and
determining, based on said detected attribute, an action to be performed.

11. The method of claim 10, wherein said action is selected from the group
consisting of (a) changing a zoom setting of said video recording device, (b) panning,
(c) focussing on a particular subject in said video, (d) adjusting an image recording
parameter, (e) adjusting an audio recording parameter, and a combination thereof.

12. The method of claim 10, wherein said method further comprises sending
additional information to said user interface, wherein said additional information
advises a user of said video recording device to perform said action.

13. The method of claim 10, wherein said method further comprises sending to
said video recording device, an instruction for said video recording device to perform
said action.
14. The method of claim 8,
wherein said template also contains a sub-template that contains a sub-template
message, and
wherein said method further comprises:
recognizing speech that is in said video;
determining whether said speech has a first meaning; and
accessing said sub-template and sending said sub-template message to said
user interface if said speech has said first meaning.

15. A storage medium comprising data encoded thereon, wherein said data is
readable by a processor and includes:
(a) a template that contains (i) a first message that instructs a person to include
first content in a first segment of a video, and (ii) a second message that
instructs a person to include second content in a second segment of said
video; and
(b) instructions that when read by said processor, control said processor to:
send said first message from said template to a user interface of a
video recording device to facilitate recording of said first
segment on said video recording device; and
send said second message from said template to said user interface to
facilitate recording of said second segment on said video
recording device.

16. The storage medium of claim 15, wherein said instructions further control said
processor to:
detect an attribute selected from the group consisting of an audio characteristic of
said video, an image characteristic of said video, and a combination thereof,
thus yielding a detected attribute; and
determine, based on said detected attribute, an action to be performed.
17. The storage medium of claim 16, wherein said action is selected from the group consisting of (a) changing a zoom setting of said video recording device, (b) panning, (c) focusing on a particular subject in said video, (d) adjusting an image recording parameter, (e) adjusting an audio recording parameter, and a combination thereof.

18. The storage medium of claim 16, wherein said instructions further control said processor to send additional information to said user interface, wherein said additional information advises a user of said video recording device to perform said action.

19. The storage medium of claim 16, wherein said instructions further control said processor to send to said video recording device, an instruction for said video recording device to perform said action.

20. The storage medium of claim 19, wherein said template also contains a sub-template that contains a sub-template message, and wherein said instructions further control said processor to:
   recognize speech that is in said video;
   determine whether said speech has a first meaning; and
   access said sub-template and send said sub-template message to said user interface if said speech has said first meaning.
**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US 10/48258

### A. CLASSIFICATION OF SUBJECT MATTER

- **IPC(8)** - G09B 5/00*(2010.01)
- **USPC** - 434/308

According to International Patent Classification (IPC) or to both national classification and IPC.

### B. FIELDS SEARCHED

- **Minimum documentation searched** (classification system followed by classification symbols):  
  USPC: 434/308

- **Documentation searched other than minimum documentation** to the extent that such documents are included in the fields searched:  
  USPC: 434/308; 348/207.99; 725/32; 709/217 (text search)

- **Electronic data base consulted during the international search** (name of data base and, where practicable, search terms used):
  1. PubWest (PGPB, USPT, EPAB, JPAB, Google).
  2. Search terms used: video, edit, application, assist, template, record, mak, outline, outline, captur, assistant, assisting, user, interface, gui, theme, messag, instruct, home

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
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<tbody>
<tr>
<td>X</td>
<td>US 2006/0002629 A1 (Paulsen et al.) 02 February 2006 (02.02.2006), para [0037], [0046], [0066], [0099]</td>
<td>1-20</td>
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<tr>
<td>A</td>
<td>US 2010/00153520 A1 (Daun et al.) 17 June 2010 (17.06.2010), entire document</td>
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<tr>
<td>A</td>
<td>US 2003/0001846 A1 (Davis et al.) 02 January 2003 (02.01.2003), entire document</td>
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<tr>
<td>A</td>
<td>US 2003/0027121 A1 (Grudinski et al.) 06 February 2003 (06.02.2003), entire document</td>
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Further documents are listed in the continuation of Box C.

- * Special categories of cited documents:  
  - **A** document defining the general state of the art which is not considered to be of particular relevance  
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  - **P** document published prior to the international filing date but later than the priority date claimed  

- **T** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  

- **X** document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  

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**Date of the actual completion of the international search**  
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Mail Stop PCT, Attn: ISA/US, Commissioner for Patents  
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**Authorized officer:** Lee W. Young

PCT Helpdesk: 571-272-4300
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