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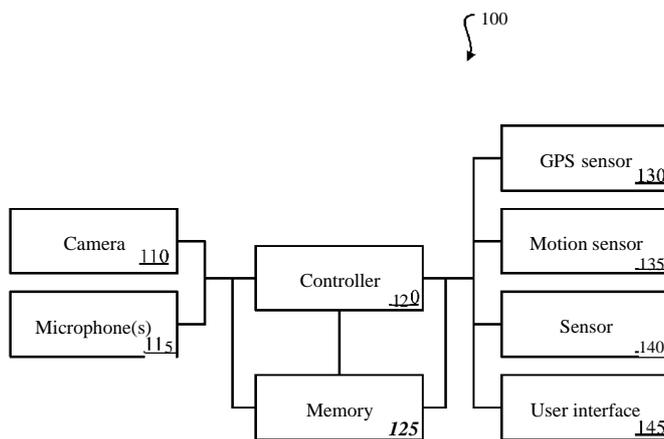


Figure 1

(57) **Abstract:** Embodiments described herein include systems and methods for organizing and displaying images (or videos or stacks of images) by day, week, month and/or holiday regardless of the current year or the year the images were captured. For example, a method for displaying images may include determining a current day of a current year using a processor of an electronic device; selecting a first plurality of images stored in a memory having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and displaying the first plurality of images through a user interface of the electronic device.



## IMAGE ORGANIZATION BY DATE

### FIELD

This disclosure relates generally to organizing images by date.

### BACKGROUND

5 Digital video is becoming as ubiquitous as photographs. The reduction in size and the increase in quality of video sensors have made video cameras more and more accessible for any number of applications. Mobile phones with video cameras are one example of video cameras being more accessible and usable. Small portable video cameras that are often wearable are another example. The advent of YouTube, Instagram, and other social  
10 networks has increased users' ability to share video with others.

### SUMMARY

These illustrative embodiments are mentioned not to limit or define the disclosure, but to provide examples to aid understanding thereof. Additional embodiments are discussed in the Detailed Description, and further description is provided there. Advantages  
15 offered by one or more of the various embodiments may be further understood by examining this specification or by practicing one or more embodiments presented.

Embodiments described herein include systems and methods for organizing and displaying images (or videos or stacks of images) by day, week, month and/or holiday regardless of the current year or the year the images were captured. For example, a method  
20 for displaying images may include determining a current day of a current year using a processor of an electronic device; selecting a first plurality of images stored in a memory having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and displaying the first plurality of images through a user interface of the electronic device. The time period, for example, may  
25 include half a day, a day, half a week, a week, half a month, and/or a month, etc.

### BRIEF DESCRIPTION OF THE FIGURES

These and other features, aspects, and advantages of the present disclosure are better understood when the following Detailed Description is read with reference to the accompanying drawings.

30 Figure 1 illustrates an example camera system according to some embodiments described herein.

Figure 2 illustrates an example data structure according to some embodiments

described herein.

Figure 3 illustrates an example data structure according to some embodiments described herein.

5 Figure 4 illustrates another example of a packetized video data structure that includes metadata according to some embodiments described herein.

Figure 5 illustrates an example flowchart of a process for creating a compilation video according to some embodiments described herein.

Figure 6 illustrates an example flowchart of a process for creating a compilation video according to some embodiments described herein.

10 Figure 7 illustrates an example flowchart of a process for creating a compilation video according to some embodiments described herein.

Figure 8 illustrates an example flowchart of a process for creating a compilation video using music according to some embodiments described herein.

15 Figure 9 illustrates an example flowchart of a process for creating a compilation video from an original video using music according to some embodiments described herein.

Figure 10 illustrates a display that may be used to display images and/or videos with a compilation video according to some embodiments described herein.

Figure 11 illustrates a display that may be used to display images and/or videos according to some embodiments described herein.

20 Figure 12 is a flowchart of an example process of determining a distribution strategy for distributing data to storage blocks of a storage network, according to at least one embodiment described herein.

Figure 13 shows an illustrative computational system for performing functionality to facilitate implementation of embodiments described herein.

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#### DETAILED DESCRIPTION

Systems and methods are disclosed to organize and/or display images (or videos) by day, week, month and/or holiday regardless of the current year or the year the images were captured. For example, images or a number of stacks of images stored on a computational device, a network device, or in cloud storage location and captured on May third of any year  
30 may be displayed to a user through a user interface. As another example, all the images or

stacks of images captured on Halloween of any year may be displayed to a user through a user interface. As yet another example, all the images may be displayed that were captured during the week of April twenty-sixth of the current year or any year. Further examples are provided below.

5           As used herein the term "image" may include any digital photograph, image, graphic, photo, video, video clip, video frame, etc. that can be displayed on a display. A stack (or stack of images) may refer to a group or collection of images having similar characteristics such as being captured, recorded or created on the same date, captured, recorded or created within the same week, including the same faces, captured, recorded or  
10       created in the same location, etc. In some embodiments, a single image may be used to represent the stack of images. Moreover, in some embodiments, a user may select a stack in order to view the various images within the stack. Once selected the images with the stack may be displayed in any number of ways.

          With the advent of smartphones having cameras image and photograph management  
15       has become increasingly acute. The sheer number of photographs taken by users can be staggering making it difficult for users to view and enjoy previously taken photographs. Embodiments of the invention seek to solve this problem by displaying photographs and/or videos based on the day of the year regardless of the year the photograph was taken. Embodiments of the invention require computer technology to search and display images in  
20       a specific way.

          Furthermore, embodiments described herein include methods and/or systems for creating a compilation video from one or more original videos. A compilation video is a video that includes more than one video clip selected from portions of one or more original video(s) and joined together to form a single video. A compilation video may also be  
25       created based on the relevance of metadata associated with the original videos. The relevance may indicate, for example, the level of excitement occurring with the original video as represented by motion data, the location where the original video was recorded, the time or date the original video was recorded, the words used in the original video, the tone of voices within the original video, and/or the faces of individuals within the original video,  
30       among others.

          An original video is a video or a collection of videos recorded by a video camera or multiple video cameras. An original video may include one or more video frames (a single

video frame may be a photograph) and/or may include metadata such as, for example, the metadata shown in the data structures illustrated in Figure 2 and Figure 3. Metadata may also include other data such as, for example, a relevance score.

5 A video clip is a collection of one or more continuous or contiguous video frames of an original video. A video clip can include a single video frame and may be considered a photo or an image. A compilation video is a collection of one or more video clips that are combined into a single video.

10 In some embodiments, a compilation video may be automatically created from one or more original videos based on relevance scores associated with the video frames within the one or more original videos. For instance, the compilation video may be created from video clips having video frames with the highest or high relevance scores. Each video frame of an original video or selected portions of an original video may be given a relevance score based on any type of data. This data may be metadata collected when the video was recorded or created from the video (or audio) during post processing. The video  
15 clips may then be organized into a compilation video based on these relevance scores.

In some embodiments, a compilation video may be created for each original video recorded by a camera. These compilation videos, for example, may be used for preview purposes like an image thumbnail and/or the length of each of the compilation videos may be shorter than the length of each of the original videos.

20 Figure 1 illustrates an example block diagram of a camera system 100 that may be used to record original video and/or create compilation videos based on the original video according to some embodiments described herein. The camera system 100 includes a camera 110, a microphone 115, a controller 120, a memory 125, a GPS sensor 130, a motion sensor 135, sensor(s) 140, and/or a user interface 145. The controller 120 may  
25 include any type of controller, processor, or logic. For example, the controller 120 may include all or any of the components of a computational system 1300 shown in Figure 13. The camera system 100 may be a smartphone or tablet.

30 The camera 110 may include any camera known in the art that records digital video of any aspect ratio, size, and/or frame rate. The camera 110 may include an image sensor that samples and records a field of view. The image sensor, for example, may include a CCD or a CMOS sensor. For example, the aspect ratio of the digital video produced by the camera 110 may be 1:1, 4:3, 5:4, 3:2, 16:9, 10:7, 9:5, 9:4, 17:6, etc., or any other aspect

ratio. As another example, the size of the camera's image sensor may be 9 megapixels, 15 megapixels, 20 megapixels, 50 megapixels, 100 megapixels, 200 megapixels, 500 megapixels, 1000 megapixels, etc., or any other size. As another example, the frame rate may be 24 frames per second (fps), 25 fps, 30 fps, 48 fps, 50 fps, 72 fps, 120 fps, 300 *fps*, etc., or any other frame rate. The frame rate may be an interlaced or progressive format. Moreover, the camera 110 may also, for example, record 3-D video. The camera 110 may provide raw or compressed video data. The video data provided by the camera 110 may include a series of video frames linked together in time. Video data may be saved directly or indirectly into the memory 125.

The microphone 115 may include one or more microphones for collecting audio. The audio may be recorded as mono, stereo, surround sound (any number of tracks), Dolby, etc., or any other audio format. Moreover, the audio may be compressed, encoded, filtered, compressed, etc. The audio data may be saved directly or indirectly into the memory 125. The audio data may also, for example, include any number of tracks. For example, for stereo audio, two tracks may be used. And, for example, surround sound 5.1 audio may include six tracks.

The controller 120 may be communicatively coupled with the camera 110 and the microphone 115 and/or may control the operation of the camera 110 and the microphone 115. The controller 120 may also be used to synchronize the audio data and the video data. The controller 120 may also perform various types of processing, filtering, compression, etc. of video data and/or audio data prior to storing the video data and/or audio data into the memory 125.

The GPS sensor 130 may be communicatively coupled (either wirelessly or wired) with the controller 120 and/or the memory 125. The GPS sensor 130 may include a sensor that may collect GPS data. In some embodiments, the GPS data may be sampled and saved into the memory 125 at the same rate as the video frames are saved. Any type of the GPS sensor may be used. GPS data may include, for example, the latitude, the longitude, the altitude, a time of the fix with the satellites, a number representing the number of satellites used to determine GPS data, the bearing, and speed. The GPS sensor 130 may record GPS data into the memory 125. For example, the GPS sensor 130 may sample GPS data at the same frame rate as the camera records video frames and the GPS data may be saved into the memory 125 at the same rate. For example, if the video data is recorded at 24 fps, then the GPS sensor 130 may be sampled and stored 24 times a second. Various other sampling

times may be used. Moreover, different sensors may sample and/or store data at different sample rates.

The motion sensor 135 may be communicatively coupled (either wirelessly or wired) with the controller 120 and/or the memory 125. The motion sensor 135 may record motion data into the memory 125. The motion data may be sampled and saved into the memory 125 at the same rate as video frames are saved in the memory 125. For example, if the video data is recorded at 24 fps, then the motion sensor may be sampled and stored in data 24 times a second.

The motion sensor 135 may include, for example, an accelerometer, gyroscope, and/or a magnetometer. The motion sensor 135 may include, for example, a nine-axis sensor that outputs raw data in three axes for each individual sensor: acceleration, gyroscope, and magnetometer, or it can output a rotation matrix that describes the rotation of the sensor about the three Cartesian axes. Moreover, the motion sensor 135 may also provide acceleration data. The motion sensor 135 may be sampled and the motion data saved into the memory 125.

Alternatively, the motion sensor 135 may include separate sensors such as a separate one-, two-, or three-axis accelerometer, a gyroscope, and/or a magnetometer. The raw or processed data from these sensors may be saved in the memory 125 as motion data.

The sensor(s) 140 may include any number of additional sensors communicatively coupled (either wirelessly or wired) with the controller 120 such as, for example, an ambient light sensor, a thermometer, barometric pressure, heart rate, pulse, etc. The sensor(s) 140 may be communicatively coupled with the controller 120 and/or the memory 125. The sensor(s), for example, may be sampled and the data stored in the memory at the same rate as the video frames are saved or lower rates as practical for the selected sensor data stream. For example, if the video data is recorded at 24 fps, then the sensor(s) may be sampled and stored 24 times a second and GPS may be sampled at 1 fps.

The user interface 145 may be communicatively coupled (either wirelessly or wired) and may include any type of input/output device including buttons and/or a touchscreen. The user interface 145 may be communicatively coupled with the controller 120 and/or the memory 125 via wired or wireless interface. The user interface may provide instructions from the user and/or output data to the user. Various user inputs may be saved in the memory 125. For example, the user may input a title, a location name, the names of

individuals, etc. of an original video being recorded. Data sampled from various other devices or from other inputs may be saved into the memory 125. The user interface 145 may also include a display that may output one or more compilation videos.

Figure 2 is an example diagram of a data structure 200 for video data that includes video metadata that may be used to create compilation videos according to some embodiments described herein. The data structure 200 shows how various components are contained or wrapped within the data structure 200. In Figure 2, time runs along the horizontal axis and video, audio, and metadata extends along the vertical axis. In this example, five video frames 205 are represented as Frame X, Frame X+1, Frame X+2, Frame X+3, and Frame X+4. These video frames 205 may be a small subset of a much longer video clip. Each video frame 205 may be an image that when taken together with the other video frames 205 and played in a sequence comprises a video clip.

The data structure 200 may also include four audio tracks 210, 211, 212, and 213. Audio from the microphone 115 or other source may be saved in the memory 125 as one or more of the audio tracks. While four audio tracks are shown, any number may be used. In some embodiments, each of these audio tracks may comprise a different track for surround sound, for dubbing, etc., or for any other purpose. In some embodiments, an audio track may include audio received from the microphone 115. If more than one of the microphones 115 is used, then a track may be used for each microphone. In some embodiments, an audio track may include audio received from a digital audio file either during post processing or during video capture.

The audio tracks 210, 211, 212, and 213 may be continuous data tracks according to some embodiments described herein. For example, the video frames 205 are discrete and have fixed positions in time depending on the frame rate of the camera. The audio tracks 210, 211, 212, and 213 may not be discrete and may extend continuously in time as shown. Some audio tracks may have start and stop periods that are not aligned with the video frames 205 but are continuous between these start and stop times.

An open track 215 is a track that may be reserved for specific user applications according to some embodiments described herein. The open track 215 in particular may be a continuous track. Any number of open tracks may be included within the data structure 200.

A motion track 220 may include motion data sampled from the motion sensor 135

according to some embodiments described herein. The motion track 220 may be a discrete track that includes discrete data values corresponding with each video frame 205. For instance, the motion data may be sampled by the motion sensor 135 at the same rate as the frame rate of the camera and stored in conjunction with the video frames 205 captured (or recorded) while the motion data is being sampled. The motion data, for example, may be processed prior to being saved in the motion track 220. For example, raw acceleration data may be filtered and or converted to other data formats.

The motion track 220, for example, may include nine sub-tracks where each sub-track includes data from a nine-axis accelerometer-gyroscope sensor according to some embodiments described herein. As another example, the motion track 220 may include a single track that includes a rotational matrix. Various other data formats may be used.

A geolocation track 225 may include location, speed, and/or GPS data sampled from the GPS sensor 130 according to some embodiments described herein. The geolocation track 225 may be a discrete track that includes discrete data values corresponding with each video frame 205. For instance, the motion data may be sampled by the GPS sensor 130 at the same rate as the frame rate of the camera and stored in conjunction with the video frames 205 captured (or recorded) while the motion data is being sampled.

The geolocation track 225, for example, may include three sub-tracks where each sub-track represents the latitude, longitude, and altitude data received from the GPS sensor 130. As another example, the geolocation track 225 may include six sub-tracks where each sub-track includes three-dimensional data for velocity and position. As another example, the geolocation track 225 may include a single track that includes a matrix representing velocity and location. Another sub-track may represent the time of the fix with the satellites and/or a number representing the number of satellites used to determine GPS data. Various other data formats may be used.

Another sensor track 230 may include data sampled from the sensor 140 according to some embodiments described herein. Any number of additional sensor tracks may be used. The other sensor track 230 may be a discrete track that includes discrete data values corresponding with each video frame 205. The other sensor track may include any number of sub-tracks.

An open discrete track 235 is an open track that may be reserved for specific user or third-party applications according to some embodiments described herein. The open

discrete track 235 in particular may be a discrete track. Any number of open discrete tracks may be included within the data structure 200.

A voice tagging track 240 may include voice-initiated tags according to some embodiments described herein. The voice tagging track 240 may include any number of sub-tracks; for example, sub-track may include voice tags from different individuals and/or for overlapping voice tags. Voice tagging may occur in real time or during post processing. In some embodiments, voice tagging may identify selected words spoken and recorded through the microphone 115 and save text identifying such words as being spoken during the associated frame. For example, voice tagging may identify the spoken word "Go!" as being associated with the start of action (e.g., the start of a race) that will be recorded in upcoming video frames. As another example, voice tagging may identify the spoken word "Wow!" as identifying an interesting event that is being recorded in the video frame or frames. Any number of words may be tagged in the voice tagging track 240. In some embodiments, voice tagging may transcribe all spoken words into text and the text may be saved in the voice tagging track 240.

A motion tagging track 245 may include data indicating various motion-related data such as, for example, acceleration data, velocity data, speed data, zooming out data, zooming in data, etc. Some motion data may be derived, for example, from data sampled from the motion sensor 135 or the GPS sensor 130 and/or from data in the motion track 220 and/or the geolocation track 225. Certain accelerations or changes in acceleration that occur in a video frame or a series of video frames (e.g., changes in motion data above a specified threshold) may result in the video frame, a plurality of video frames, or a certain time being tagged to indicate the occurrence of certain events of the camera such as, for example, rotations, drops, stops, starts, beginning action, bumps, jerks, etc. Motion tagging may occur in real time or during post processing.

A people tagging track 250 may include data that indicates the names of people within a video frame as well as rectangle information that represents the approximate location of the person (or person's face) within the video frame. The people tagging track 250 may include a plurality of sub-tracks. Each sub-track, for example, may include the name of an individual as a data element and the rectangle information for the individual. In some embodiments, the name of the individual may be placed in one out of a plurality of video frames to conserve data.

The rectangle information, for example, may be represented by four comma-delimited decimal values, such as "0.25, 0.25, 0.25, 0.25." The first two values may specify the top-left coordinate; the final two specify the height and width of the rectangle. The dimensions of the image for the purposes of defining people rectangles are normalized to 1, which means that in the "0.25, 0.25, 0.25, 0.25" example, the rectangle starts 1/4 of the distance from the top and 1/4 of the distance from the left of the image. Both the height and width of the rectangle are 1/4 of the size of their respective image dimensions.

People tagging can occur in real time as the original video is being recorded or during post processing. People tagging may also occur in conjunction with a social network application that identifies people in images and uses such information to tag people in the video frames and adding people's names and rectangle information to the people tagging track 250. Any tagging algorithm or routine may be used for people tagging.

Data that includes motion tagging, people tagging, and/or voice tagging may be considered processed metadata. Other tagging or data may also be processed metadata. Processed metadata may be created from inputs, for example, from sensors, video, and/or audio.

In some embodiments, discrete tracks (e.g., the motion track 220, the geolocation track 225, the other sensor track 230, the open discrete track 235, the voice tagging track 240, the motion tagging track 245, and/or the people tagging track 250) may span more than one video frame. For example, a single GPS data entry may be made in the geolocation track 225 that spans five video frames in order to lower the amount of data in the data structure 200. The number of video frames spanned by data in a discrete track may vary based on a standard or be set for each video segment and indicated in metadata within, for example, a header.

Various other tracks may be used and/or reserved within the data structure 200. For example, an additional discrete or continuous track may include data specifying user information, hardware data, lighting data, time information, temperature data, barometric pressure, compass data, clock, timing, time stamp, etc.

Although not illustrated, the audio tracks 210, 211, 212, and 213 may also be discrete tracks based on the timing of each video frame. For example, audio data may also be encapsulated on a frame-by-frame basis.

Figure 3 illustrates a data structure 300, which is somewhat similar to the data

structure 200, except that all data tracks are continuous tracks according to some embodiments described herein. The data structure 300 shows how various components are contained or wrapped within the data structure 300. The data structure 300 includes the same tracks. Each track may include data that is time stamped based on the time the data  
5 was sampled or the time the data was saved as metadata. Each track may have different or the same sampling rates. For example, motion data may be saved in the motion track 220 at one sampling rate, while geolocation data may be saved in the geolocation track 225 at a different sampling rate. The various sampling rates may depend on the type of data being sampled, or set based on a selected rate.

10 Figure 4 shows another example of a packetized video data structure 400 that includes metadata according to some embodiments described herein. The data structure 400 shows how various components are contained or wrapped within the data structure 400. The data structure 400 shows how video, audio, and metadata tracks may be contained within a data structure. The data structure 400, for example, may be an extension and/or  
15 include portions of various types of compression formats such as, for example, MPEG-4 part 14 and/or Quicktime formats. The data structure 400 may also be compatible with various other MPEG-4 types and/or other formats.

The data structure 400 includes four video tracks 401, 402, 403, and 404, and two audio tracks 410 and 411. The data structure 400 also includes a metadata track 420, which  
20 may include any type of metadata. The metadata track 420 may be flexible in order to hold different types or amounts of metadata within the metadata track. As illustrated, the metadata track 420 may include, for example, a geolocation sub-track 421, a motion sub-track 422, a voice tag sub-track 423, a motion tag sub-track 424, and/or a people tag sub-track 425. Various other sub-tracks may be included.

25 The metadata track 420 may include a header that specifies the types of sub-tracks contained within the metadata track 420 and/or the amount of data contained within the metadata track 420. Alternatively and/or additionally, the header may be found at the beginning of the data structure or as part of the first metadata track.

30 Figure 5 illustrates an example flowchart of a process 500 for creating a compilation video from one or more original videos according to some embodiments described herein. The process 500 may be executed by the controller 120 of the camera 110 or by any computing device such as, for example, a smartphone and/or a tablet. The process 500 may

start at block 505.

At block 505 a set of original videos may be identified. For example, the set of original videos may be identified by a user through a user interface. A plurality of original videos or thumbnails of the original videos may be presented to a user and the user may identify those to be used for the compilation video. In some embodiments, the user may select a folder, or playlist of videos. As another example, the original videos may be organized and presented to a user and/or identified based on metadata associated with the various original videos such as, for example, the time and/or date each of the original videos were recorded, the geographical region where each of the original videos were recorded, one or more specific words and/or specific faces identified within the original videos, whether video clips within the one or more original videos have been acted upon by a user (e.g., cropped, played, e-mailed, messaged, uploaded to a social network, etc.), the quality of the original videos (e.g., whether one or more video frames of the original videos is over or under exposed, out of focus, videos with red eye issues, lighting issues, etc.), etc. For example, any of the metadata described herein may be used. Moreover, one or more metadata may be used to identify videos. As another example, any of the parameters discussed below in conjunction with block 610 of process 600 in Figure 6 may be used.

At block 510 a music file may be selected from a music library. For example, the original videos may be identified in block 505 from a video (or photo) library on a computer, laptop, tablet, or smartphone and the music file in block 510 may also be identified from a music library on the computer, laptop, tablet, or smartphone. The music file may be selected based on any number of factors such as, for example, a rating or a score of the music provided by the user; the number of times the music has been played; the number of times the music has been skipped; the date the music was played; whether the music was played on the same day as one or more original videos; the genre of the music; the genre of the music related to the original videos; how recent the music was last played; the length of the music; an indication of a user through the user interface, etc. Various other factors may be used to automatically select the music file.

At block 515 video clips from the original videos may be organized into a compilation video based on the selected music and/or metadata associated with the original videos. For example, one or more video clips from one or more of the original videos in the set of original videos may be copied and used as a portion of the compilation video. The one or more video clips from one or more of the original videos may be selected based on

metadata. The length of the one or more video clips from one or more of the original videos may also be based on metadata. Alternatively or additionally, the length of the one or more video clips from one or more of the original videos may be based on a selected period of time. As another example, the one or more video clips may be added in an order roughly  
5 based on the time order the original videos or the video clips were recorded, and/or based on the rhythm or beat of the music. As yet another example, a relevance score of each of the original videos or each of the video clips may be used to organize the video clips that make up the compilation video. As another example, a photo may be added to the compilation video to run for a set period of time or a set number of frames. As yet another example, a  
10 series of photos may be added to the compilation video in time progression for a set period of time. As yet another example, a motion effect may be added to the photo such as, for example, Ken Burns effects, panning, and/or zooming. Various other techniques may be used to organize the video clips (and/or photos) into a compilation video. As part of organizing the compilation video, the music file may be used as part of or as all of one or  
15 more soundtracks of the compilation video.

At block 520 the compilation video may be output, for example, from a computer device (e.g., a video camera) to a video storage hub, computer, laptop, tablet, phone, server, etc. The compilation video, for example, may also be uploaded or sent to a social media server. The compilation video, for example, may also be used as a preview presented on the  
20 screen of a camera or smartphone through the user interface 145 showing what a video or videos include or represent a highlight reel of a video or videos. Various other outputs may also be used.

In some embodiments, the compilation video may be output after some action provided by the user through the user interface 145. For example, the compilation video  
25 may be played in response to a user pressing a button on a touch screen indicating that they wish to view the compilation video. Or, as another example, the user may indicate through the user interface 145 that they wish to transfer the compilation video to another device.

In some embodiments, the compilation may be output to the user through the user interface 145 along with a listing or showing (e.g., through thumbnails or descriptors) of the  
30 one or more original videos (e.g., the various video clips, video frames, and/or photos) that were used to create the compilation video. The user, through the user interface, may indicate that video clips from one or more original videos should be removed from the compilation video by making a selection through the user interface 145. When one of the

video clips is deleted or removed from the compilation video, then another video clip from one or more original videos may automatically be selected based on its relevance score and used to replace the deleted video clip in the compilation video.

5 In some embodiments, video clips may be output at block 520 (or at any other output block described in various other processes herein) by saving a version of the compilation video to a hard drive, to the memory 125 or to a network-based storage location.

10 Figure 6 illustrates an example flowchart of the process 600 for creating a compilation video from one or more original videos according to some embodiments described herein. The process 600 may be executed by the controller 120 of the camera 110 or by any computing device. The process 600 may start at block 605.

15 At block 605, the length of the compilation video may be determined. This may be determined in a number of different ways. For example, a default value representing the length of the compilation video may be stored in memory. As another example, the user may enter a value representing a compilation video length through the user interface 145 and have the compilation video length stored in the memory 125. As yet another example, the length of the compilation video may be determined based on the length of a song selected or entered by a user.

20 At block 610 parameters specifying the types of video clips (or video frames or photos) within the one or more original videos that may be included in the compilation video may be determined. And at block 615 the video clips within the original video may be given a relevance score based on the parameter(s) determined in block 610. Any number and/or type of parameter may be used. These parameters, for example, may be selected and/or entered by a user via the user interface 145.

25 In some embodiments, these parameters may include time or date-based parameters. For example, at block 610 a date or a date range within which video clips were recorded may be identified as a parameter. Video frames and video clips of the one or more original videos may be given a relevance score at block 615 based on the time it was recorded. The relevance score, for example, may be a binary value indicating that the video clips within  
30 the one or more original videos were taken within a time period provided by the time period parameter.

In some embodiments, the geolocation where the video clip was recorded may be a

parameter identified at block 610 and used in block 615 to give a relevance score to one or more video clips of the original videos. For example, a geolocation parameter may be determined based on the average geolocation of a plurality of video clips and/or based on a geolocation valued entered by a user. The video clips within one or more original videos  
5 taken within a specified geographical region may be given a higher relevance score. As another example, if the user is recording original videos while on vacation, those original videos recorded within the geographical region around and/or near the vacation location may be given a higher relevance score. The geographical location, for example, may be determined based on geolocation data of an original video in the geolocation track 225. As  
10 yet another example, video clips within the original videos may be selected based on geographical location and a time period.

As another example, video frames within the one or more original videos may be given a relevance score based on the similarity between geolocation metadata and a geolocation parameter provided at block 610. The relevance score may be, for example, a  
15 binary value indicating that the video clips within the one or more original videos were taken within a specified geolocation provided by the geolocation parameter.

In some embodiments, motion may be a parameter identified at block 610 and used in block 615 to score video clips of the one or more original videos. A motion parameter may indicate motion indicative of high excitement occurring within a video clip. For  
20 example, a relevance score may be a value that is proportional to the amount of motion associated with the video clip. The motion may include motion metadata that can include any type of motion data. In some embodiments, video clips within the one or more original videos that are associated with higher motion metadata may be given a higher relevance score; and video clips within the one or more original videos that are associated with lower  
25 motion metadata may be given a lower relevance score. In some embodiments, a motion parameter may indicate a specific type of motion above or below a threshold value.

In some embodiments, voice tags, people tags, and/or motion tags may be a parameter identified at block 610 and used in block 615 to score the video clips within the one or more original videos. The video clips within the one or more original videos may  
30 also be determined based on any type of metadata such as, for example, based on voice tag data within the voice tagging track 240, motion data within the motion tagging track 245, and/or people tag data based on the people tagging track 250. In some embodiments, the relevance score may be a binary value indicating that the video clips within the one or more

original videos are associated with a specific voice tag parameter, a specific motion, and/or include a specific person. In some embodiments, the relevance score may be related to the relative similarity of voice tags associated with the video clips within the one or more original videos with a voice tag parameter. For instance, voice tags that are the same as the voice tag parameter may be given one relevance score, and voice tags that are synonymous with the voice tag parameter may be given another, lower relevance score. Similar relevance scores may be determined for motion tags and/or people tags.

In some embodiments, a voice tag parameter may be used that associates a video clip within the one or more original videos with exclamatory words such as "sweet," "awesome," "cool," "wow," "holy cow," "no way," etc. Any number of words can be used as a parameter for a relevance score. The voice tag parameter may indicate that the video clips within the one or more original videos may be selected based on words recorded in an audio track of the original video. New or additional words may be entered by the user through the user interface 145. Moreover, new or additional words may be communicated to the camera (or another system) wirelessly through Wi-Fi or Bluetooth.

In some embodiments, a voice tone parameter may also be used that indicates voice tone within one or more of the audio tracks. The voice tone parameter may indicate that video clips within the one or more original videos may be selected based on how excited the tone of voice is in an audio track of the original video versus the words used. As another example, both the tone and the word may be used.

In some embodiments, a people tag parameter may be indicated in block 610 and used in block 615 to score the video clips within the one or more original videos. The people tag parameter can identify video clips within the one or more original videos with specific people in the video clips.

In some embodiments, video frame quality may be a parameter determined in block 610 and used in 615 for a relevance score. For example, video clips within the one or more original videos that are under exposed, over exposed, out of focus, have lighting issues, and/or have red eye issues may be given a lower score at block 615.

In some embodiments, a user action performed on video clips within the one or more original videos may be a parameter identified at block 610. For example, video clips within the one or more original videos that have been acted upon by a user such as, for example, video clips within the one or more original videos that have been edited, corrected, cropped,

improved, viewed or viewed multiple times, uploaded to a social network, e-mailed, messaged, etc. may be given a higher score at block 615 than other video clips. Moreover, various user actions may result in different relevance scores.

5 In some embodiments, data from a social network may be used as a parameter at block 610. For example, the relevance score determined at block 615 for the video clips within the one or more original videos may depend on the number of views, "likes," and/or comments related to the video clips. As another example, the video clips may have an increased relevance score if they have been uploaded or shared on a social network.

10 In some embodiments, the relevance score may be determined using off-line processing and/or machine learning algorithms. Machine learning algorithms, for example, may learn which parameters within the data structure 200 or 300 are the most relevant to a user or group of users while viewing videos. This may occur, for example, by noting the number of times a video clip is watched, for how long a video clip is viewed, or whether a video clip has been shared with others. These learned parameters may be used to determine  
15 the relevance of the metadata associated with the video clips within the one or more original videos. In some embodiments, these learned parameters may be determined using another processing system or a server, and may be communicated to the camera 110 through a Wi-Fi or other connection.

20 In some embodiments, more than one parameter may be used to score the video clips within the one or more original videos. For example, the compilation video may be made based on people recorded within a certain geolocation and recorded within a certain time period.

25 At block 620, a compilation video may be created from the video clips having the metadata with the highest relevance scores. The compilation video may be created by digitally splicing copies of the video clips together. Various transitions may be used between one video clip and another. In some embodiments, video clips can be arranged in order based on the highest scores found in block 615. In other embodiments, the video clips may be placed within the compilation video in a random order. In other embodiments, the video clips may be placed within the compilation video in a time series order.

30 In some embodiments, metadata may be added as text to portions of the compilation video. For example, text may be added to any number of frames of the compilation video stating the people in the video clips based on information in the people tagging track 250,

geolocation information based on information in the geolocation track 225, etc. In some embodiments, the text may be added at the beginning or the end. Various other metadata may also be presented as text.

In some embodiments, each video clip may be expanded to include head and/or tail video frames based on a specified head video clip length and/or a tail video clip length. The head video clip length and/or the tail video clip length may indicate, for example, the number of video frames before and/or after a selected video frame or frames that may be included as part of a video clip. For example, if the head and tail video clip length is 96 video frames (4 seconds for a video recorded with 24 frames per second), and if the parameters indicate that video frames 1004 through 1287 have a high relevance score, then the video clip may include video frames 908 through frames 1383. In this way, for example, the compilation video may include some video frames before and after the desired action. The head and tail video clip length may also be indicated as a value in seconds. Moreover, in some embodiments, a separate head video clip length and a separate tail video clip length may be used. The head and/or tail video clip length may be entered into the memory 125 via the user interface 145. Moreover, a default head and/or tail video clip length may be stored in memory.

Alternatively or additionally, a single head video clip length and/or a single tail video clip length may be used. For example, if the parameters indicate that a single video frame has a high relevance score, then a longer head and/or tail may be needed to create a video clip. If both the single head video clip length and the single tail video clip length are 60 frames, then frames 960 through 1060 may be used as the video clip. Any value may be used for the single tail video clip length and/or the single head video clip length.

Alternatively or additionally, a minimum video clip length may be used. For example, if the parameters indicate an original video clip that is less than the minimum video clip length, then additional video frames may be added before or after the original video clip length. In some cases, the original video clip may be centered within the video clip. For example, if the parameters indicate that video frames 1020 through 1080 have a high relevance score, and a minimum video clip length of 100 video frames is required, then video frames 1000 through 1100 may be used to create the video clip from the original video.

In some embodiments, each video clip being used to create the compilation video

may also be lengthened to ensure that the video clip has a length above a selected and/or predetermined minimum video clip length. In some embodiments, photos may be entered into the compilation video for the minimum video clip length or another value.

At block 625, the compilation video may be output as described above in  
5 conjunction with block 520 of the process 500 shown in Figure 5.

In some embodiments, at least a subset of the video clips used to create the compilation video may be discontinuous relative one to another in a single original video. For example, a first video clip and a second video clip may not have the same video frames. As another example, the first video clip and the second video clip may be located in  
10 different portions of the original video.

Figure 7 illustrates an example flowchart of a process 700 for creating a compilation video from one or more original videos according to some embodiments described herein. The process 700 may be executed by the controller 120 of the camera 110 or by any computing device. In some embodiments, block 620 of the process 600 shown in Figure 6  
15 may include all or many of the blocks of the process 700. The process 700 starts at block 705.

At block 705, the video frames associated with the highest relevance score may be selected. The selected frame(s) may include a single frame or a series of frames. If multiple frames have the same relevance score and are not linked together in time series  
20 (e.g., the multiple frames do not include a continuous or mostly continuous video clip), then one of these highest scoring frames are selected either randomly or based on being first in time.

At block 710, the length of a video clip is determined. For example, the length of the video clip may be determined based on the number of video frames in time series that  
25 are selected as a group or have similar relevance scores or have relevance scores within a threshold. It may also include, for example, video frames that are part of head video frames or tail video frames. The length of the video clip may be based at least in part on metadata. The length of the video clip may be determined by referencing a default video clip length stored in memory.

At block 715 it may be determined whether the sum of all the video clip lengths is  
30 greater than the compilation video length. For example, at block 715, it may be determined whether there is room in the compilation video for the selected video clip. If there is room,

then the video clip is added to the compilation video at block 720. For example, the video clip may be added at the beginning, the end, or somewhere in between other video clips of the compilation video. At block 725, video frames with the next highest scores are selected and the process 700 proceeds to block 710 with the newly selected video clips.

5 If, however, at block 715 it is determined that there is no room for the video clip in the compilation video, then the process 700 proceeds to block 730 where the video clip is not entered into the compilation video. At block 735, the length of one or more video clips in the compilation video may be expanded to ensure the length of the compilation video is the same as the desired length of the compilation video. For example, if the difference  
10 between the length of the compilation video and the desired length of the compilation video is five seconds, which equals 120 frames at 24 frames per second, and if the compilation video comprises ten video clips, then each of the ten video clips may be expanded by 12 frames. The six preceding frames from the original video may be added to the front of each video clip in the compilation video and the six following frames from the original  
15 video may be added to the end of each video clip in the compilation video. Alternatively or additionally, frames may only be added to the front or the back end of a video clip.

In some embodiments block 735 may be skipped and the compilation video length may not equal the desired compilation video length. In other embodiments, rather than expanding the length of various video clips, the process 700 may search for a highly scored  
20 video clip within the original video(s) having a length that is less than or equal to the difference between the compilation video length and the desired compilation video length. In other embodiments, the selected video clip may be shortened in order to fit within the compilation video.

At block 740 the compilation video may be output as described above in conjunction  
25 with block 520 of the process 500 shown in Figure 5.

Figure 8 illustrates an example flowchart of a process 800 for creating a compilation video from an original video using music according to some embodiments described herein. The process 800 may be executed by the controller 120 of the camera 110 or by any other computing device. The process 800 may start at block 805.

30 At block 805, a selection of music for the compilation video may be received. The selection of the music may be received, for example, from a user through the user interface 145. The selection of music may include a digital audio file of the music indicated by the

selection of music. The digital audio file may be uploaded or transferred via any wireless or wired method, for example, using a Wi-Fi transceiver.

At block 810, lyrics for the selection of music may be determined and/or received. For example, the lyrics may be received from a lyric database over a computer network. 5 The lyrics may also be determined using voice recognition software. In some embodiments, all the lyrics of the music may be received. In other embodiments only a portion of the lyrics of the music may be received. And, in yet other embodiments, instead of lyrics being received, keywords associated with the music may be determined and/or received.

At block 815, the process 800 may search for word tags in the metadata that are 10 related to lyrics of the music. The word tags, for example, may be found as metadata in the voice tagging track 240. Alternatively and/or additionally, one or more audio tracks may be voice-transcribed and the voice transcription may be searched for words associated with one or more words in the lyrics or keywords associated with the lyrics. Alternatively and/or additionally, keywords related to the song or words within the title of the music lyrics may 15 be used to find word tags in the metadata.

At block 820 a compilation video may be created using one or more video clips having word tags related to the lyrics of the music. All or portions of the process 600 may be used to create the compilation video. Various other techniques may be used. At block 825 the compilation video may be output as described above in conjunction with block 520 20 of the process 500.

In some embodiments, the original videos discussed in processes 500, 600, 700, and/or 800 may include video clips, full length videos, video frames, thumbnails, images, photos, drawings, etc.

In processes 500, 600, 700, and/or 800 original videos, images, photos, and/or music 25 may be selected using a number of parameters. For example, a photo (image or video frame) may be selected based on the interestingness (or relevance or relevance score) of the photo. A number of factors may be used to determine the interestingness of photo such as, for example, user interaction with the photo (e.g., the user cropped, rotated, filtered, performed red-eye reduction, etc. on the photo), user ratings of the photo (e.g., IPTC rating, star rating, or thumbs up/down rating), face detection, face recognition, photo quality, focus, 30 exposure, saturation, etc.

As another example, a video (or video clip) may be selected based on the

interestingness (or relevance or relevance score) of the video. A number of factors may be used to determine the interestingness of the video such as, for example, telemetry changes in the video (e.g., accelerations, jumps, crashes, rotations, etc.), user tagging (e.g., the user may press a button on the video recorder to tag a video frame or a set of frames as  
5 interesting), motion detection, face recognition, user ratings of the video (e.g., IPTC rating, star rating, or thumbs up/down rating), etc.

As another example, a music track may be selected based on the interestingness (or relevance or relevance score) of the music track. A number of factors may be used to determine the interestingness of the music track such as, for example, whether the music is  
10 stored locally or whether it can be streamed from a server, the duration of the music track, the number of times the music has been played, whether the music track has been selected previously, user rating, skip count, the number of times the music track has been played since it has been released, how recently the music has been played, whether the music was played at or near recording the original video, etc.

15 Figure 9 illustrates an example flowchart of a process 900 for creating a compilation video from an original video using music according to some embodiments described herein. The process 900 may be executed by the controller 120 of the camera 110 or by any other computing device. The process 900 may start at block 905.

At block 905, a music track may be selected for the compilation video. The music  
20 track may be selected, for example, in a manner similar to that described in block 805 of process 800 or block 510 of process 500. The music may be selected, for example, based on how interesting the music is as described above. The music track, for example, may be selected based on a relevance score of the music track.

At block 910 a first photo may be selected for the compilation video. The first  
25 photo, for example, may be selected from a set of photos based on a relevance score of the photo.

At block 915 a duration may be determined for the first photo. The duration may affect the size or lengths of pans for Ken Burns effects. A shorter duration may speed up Ken Burns effects and a longer duration may allow for slower Ken Burns effects. The  
30 duration may be selected based on the number of photos from which the first photo was selected, the relevance score of the first photo, the length of the music track, or a number pulled from memory.

At block 920 faces may be found in the photo using facial detection techniques. A frame may be generated around any or all faces found in the photo. This frame may be used to keep the faces displayed during compilation video.

At block 925 a playback screen size may be determined from the frame generated  
5 around the faces. The playback screen size may also be determined based on a function of the screen size of the device and/or the orientation of the device screen.

At block 930 the photo may be animated with Ken Burns effects and displayed to the user with the music track. The Ken Burns effects may vary from photo to photo based on any number factors such as, for example, random numbers, the relevance score of the photo,  
10 the playback screen size, the duration, a set number, etc. The photo may be animated and played with the music track.

Simultaneously while the photo is being animated and displayed, process 900 proceeds to block 935 where it is determined whether the end of the music will be reached while the photo is being displayed. If so, then process 900 ends at the end of the music  
15 track at block 940. Alternatively and/or additionally, rather than ending at block 940, process 900 may return to block 905 where another music track is selected and process 900 repeats.

If, however, the end of the music track will not be reached while the photo is being displayed, then process 900 proceeds to block 945 where the next photo may be selected for  
20 the compilation video.

In some embodiments, photos may be sorted and/or ranked based on their relevance score. At block 945, for instance, the next relevance photo may be selected. In some embodiments, the relevance score may be dynamically updated as information changes and/or as photos are added to the photo set of photos such as, for example, when a photo is  
25 downloaded from a remote server or transferred from remote server, etc.

Process 900 may then proceed to block 915 with the next photo. Blocks 920, 925 and 930 may then act on the next photo as described above. In some embodiments, blocks 935, 945, 915, 920, and 925 may act on one photo while at block 930 another photo is being animated and displayed. In this way, for example, the compilation video may be animated  
30 and displayed in real time. Moreover, in some embodiments, blocks 915, 920 and 925 may occur simultaneously or in any order.

In some embodiments, the user may request that the music track selected in block

905 be replaced with another music track such as, for example, the next most relevant music track. The user, for example, may interact with user interface 145 (e.g., by pressing a button or swiping a touch screen) and in response another music track will be selected and played at block 930. Moreover, In some embodiments, the user may request that a photo is  
5 no longer animated and displayed at block 930 such as, for example, by interacting with user interface 145 (e.g., by pressing a button or swiping a touch screen).

Figure 10 illustrates a display 1005 that may be used to display images and/or videos with a compilation video 1010 according to some embodiments described herein. The compilation video 1010, for example, may be displayed in one portion of the display 1005  
10 and the images and/or videos may be displayed elsewhere.

As shown in the figure, stacks of images or images may be displayed in a portion of the display 1005 below the compilation video 1010. Some portions of the display 1005 shown in the figure may not be visible to a user unless the user scrolls upward or downward to view other portions of the display 1005. The various images and/or videos may be  
15 arranged, in this example, based on the day, week, and/or month the image and/or video are captured (or recorded).

Figure 11 illustrates a display 1105 that is similar to display 1005 but does not include the compilation video 1010 according to some embodiments described herein. The display 1005 includes various images and/or videos arranged, in this example, based on the  
20 date or month the image and/or video are captured (or recorded).

The display 1005 and/or 1105 in Figure 10 and Figure 11 respectively can display stacks of images (or individual images) based on the day, week or month the image was captured (or taken). In some embodiments, a one or more day stack of images 1015 may be displayed that includes images that were captured (or recorded) on the day the images are  
25 being viewed but in any year. For example, if the current date is April 26, 2014, then images from the memory (e.g., the memory 125) may be retrieved and displayed that were captured on April 26 in other years such as, for example, April 26, 2013, April 26, 2012, and/or April 26, 2009, etc.

In some embodiments, if the current date is associated with a holiday, then stacks of  
30 images may also be displayed that were taken during the holiday or dates near the holiday when the holiday is celebrated in the current year or in previous years. These stacks of images associated with a holiday may be displayed on display 1005 in addition to or in

place of any of the day stack of images 1015, the week stack of images 1020, and/or the month stack of images 1025.

The compilation video 1010 may be created from images within the day stack of images 1015, the week stack of images 1020 and/or the month stack of images 1025. The compilation video may be created from these images using any embodiment described here or in any other way.

In some embodiments, if the metadata includes information specifying the time of day that the image was captured (or recorded), then the images may be displayed as part of the day stack of images 1015 that were captured (or recorded) within twelve hours before and twelve hours following the current time on the current date in in the present and/or previous years. For example, if the current time is 10:00 PM on April 26, 2014, then images may be displayed as part of the day stack of images 1015 that were captured (or recorded) between 10:00 AM April 26 and 10:00 AM April 27 of any year.

The day stack of images 1015 may be displayed in any number of ways. For example, each stack may include images from a specific year. For example, a first day stack of images 1015a may include images captured (or recorded) on April 26, 2013; a second day stack of images 1015b may include images captured (or recorded) on April 26, 2012; and a third day stack of images 1015c may include images captured (or recorded) on April 26, 2009, etc. In some embodiments, the first day stack of images 1015a may include 15 images and 3 videos captured on April 26, 2013; the second day stack of images 1015b may only include a single image captured on April 26, 2012; and the third day stack of images 1015c may include 10 images take on April 26, 2009. More than three days stacks of images 1015 may be displayed. Alternatively and/or additionally, images captured (or recorded) on the current day in the present and/or previous may be displayed individually without being displayed in an image stack.

In some embodiments, one or more week stack of images 1020 may be displayed that includes images that were captured (or recorded) the same week as the current week but in a different year. For example, if the current date is May 3, 2014, then images from the memory (e.g., the memory 125) may be retrieved and displayed that were captured the week surrounding May 3 in any year such as, for example, surrounding May 3, 2013, May 3, 2012, and/or May 3, 2009, etc.

Alternatively and/or additionally, in some embodiments, images may be displayed

as part of the week stack of images 1020 that were captured (or recorded) the previous three days before the current day and the following three days from the current day in the present and/or previous years. For example, if the current date is May 3, 2014, then images may be displayed as part of the month stack of images 1020 that were captured (or recorded) between April 30 and May 6 of any year.

The week stack of images 1020 may be displayed in any number of ways. For example, each stack may include images from a specific year. For example, a first week stack of images 1020a may include images captured (or recorded) the week of May 3, 2013; a second week stack of images 1020b may include images captured (or recorded) the week of May 3, 2011; and a third week stack of images 1020c may include images captured (or recorded) the week of May 3, 2008, etc. In some embodiments, the first week stack of images 1020a may include a video captured (or recorded) on May 3, 2013; the second week stack of images 1020b may include six images captured (or recorded) on May 3, 2012; and the third week stack of images 1020c may include 4 images captured (or recorded) on May 3, 2009. More than three week stacks of images 1020 may be displayed. Alternatively and/or additionally, images captured (or recorded) within the current week in the present and/or previous years may be displayed individually without being displayed in an image stack.

In some embodiments, one or more month stack of images 1025 may be displayed that includes images that were captured (or recorded) the same month as the current month but in a different year. For example, if the current date is July 3, 2014, then images from the memory (e.g., the memory 125) may be retrieved and displayed that were captured in July in any year such as, for example, July, 2013, July, 2012, and/or July, 2009, etc.

Alternatively and/or additionally, in some embodiments, images may be displayed as part of the month stack of images 1025 that were captured (or recorded) within fifteen days before and fifteen days following the current date in the present and/or previous years. For example, if the current date is July 3, 2014, then images may be displayed as part of the month stack of images 1025 that were captured (or recorded) between June 18 and July 18 of any year.

The month stack of images 1025 may be displayed in any number of ways. For example, each stack may include images from a certain time period of a certain month of a certain year. For example, assuming the current date is July 3, 2014, a first month stack of

images 1025a may include images captured (or recorded) between June 18, 2014 and June 25, 2014. A second month stack of images 1025b may include images captured (or recorded) between June 26, 2014 and July 3, 2014. A third month stack of images 1025c may include images captured (or recorded) between June 18, 2013 and June 25, 2013. A  
5 fourth month stack of images 1025d may include images captured (or recorded) between June 26, 2013 and July 3, 2013. A fifth month stack of images 1025e may include images captured (or recorded) between July 4, 2013 and July 11, 2013. A sixth month stack of images 1025f may include images captured (or recorded) between July 12, 2013 and July 19, 2013. A seventh month stack of images 1025g may include images captured (or  
10 recorded) between June 18, 2012 and June 25, 2012. An eighth month stack of images 1025h may include images captured (or recorded) between June 26, 2012 and July 3, 2012. A ninth month stack of images 1025i may include images captured (or recorded) between July 4, 2012 and July 11, 2013. A tenth month stack of images 1025j may include images captured (or recorded) between July 4, 2011 and July 11, 2011. Other stacks may display  
15 images and/or image stacks from other years that may be organized in stacks with any number of images. Moreover, various other images and/or image stacks may be used in any combination and/or in any order. Alternatively and/or additionally, images captured (or recorded) within the current month in the present and/or previous years may be displayed individually without being displayed in an image stack.

20 If the current date is a holiday or during a holiday season, any of the day stack of images 1015, the week stack of images 1020, and/or the month stack of images 1025 may be used or replaced to display stacks of images captured on the holiday or near the holiday in the present year or in previous years. For example, if the current date is Halloween, then images may be displayed, for example, in stacks, from the current year and/or previous  
25 years that were captured (or recorded) on Halloween. As another example, some holidays are celebrated for more than a single day. On such holidays, images may be displayed that were captured (or recorded) on dates in the current and/or previous years when the holiday is celebrated. For example, if the current date is New Year's Day or New Year's Eve, images may be displayed that were captured (or recorded) on either or both days in any  
30 year. For example, if the current date is a day occurring during the weekend of Thanksgiving (e.g., Wednesday through Sunday), images may be displayed that were captured (or recorded) during the weekend of Thanksgiving in any year. Labor Day, Memorial Day, Easter, President's Day and/or Martin Luther King Day are often celebrated

in conjunction with a long weekend. Thus, if the current date is one of the days during this long weekend, then images may be displayed that were captured (or recorded) during the long weekend in any year. As yet another example Christmas is often celebrated for a couple of weeks surrounding the actual Christmas Holiday. Thus, if the current date is  
5 Christmas or one of the one to seven days before or after Christmas (e.g., the user may set the number of days and/or be asked to select this parameter), then images may be displayed that were captured (or recorded) during the one to seven days before or after Christmas in any year.

In some embodiments, birthdays or anniversaries may be used as a date with which  
10 to display images in other years. These dates may be pulled from contact information and/or social networking sites such as, for example, Facebook. Moreover, life events may also be used. These life events may be pulled from a social networking site such as, for example, Facebook, or any other data location. These life events may include, for example, graduation days, first dates, starting a new job, etc.

Figure 12 is a flowchart of an example the process 1200 of determining a  
15 distribution strategy for distributing data to storage blocks of a storage network, according to at least one embodiment described herein. One or more steps of the process 1200 may be implemented, in some embodiments, by one or more components of camera system 100 of Figure 1, such as a mobile phone and/or tablet. Although illustrated as discrete blocks,  
20 various blocks may be divided into additional blocks, combined into fewer blocks, and/or eliminated, depending on the desired implementation.

The process 1200 begins at block 1205 where the current time, day and/or month is determined. This can be done in any number of ways. For example, most operating systems have a command that may be used to retrieve the current time and/or date.  
25 Moreover, there are various network services that can be used to return the current time and/or date.

At block 1210 it may be determine whether the current date is a holiday or on a date  
30 a holiday is commonly celebrated (e.g., within a 1, 2, 3, 4, 6, 7, or more days near the holiday). A holiday lookup table may be used that may include the name of the holiday, the dates of the holiday in the current year or in previous years, and/or the dates the holiday is celebrated. In some embodiments, the lookup table may also include data specifying the holidays a user may wish to have images presented in display 1005. The holiday lookup

table may be updated from time to time through the network, for example, the Internet, and/or through the user interface. In some embodiments, a user may be able to select or deselect some holidays and/or select the days the holiday is celebrated through the user interface. For example, the user may not celebrate Christmas and may choose to not have  
5 images related to this holiday displayed. If the current date is associated with a holiday, then the process 1200 proceeds to block 1235. Otherwise, the process 1200 proceeds to block 1215.

At block 1235 the date of the holiday in previous years and/or the current year may be determined. These dates may be determined, for example, using the holiday lookup  
10 table, which may include the date(s) of holidays in the current year and/or previous years. Some holidays such as, for example, the Fourth of July, Halloween, New Years, and Christmas, are celebrated on the same day of the year while others occur from year to year on different days of the month such as for example, Thanksgiving, Labor Day, Easter, Passover, Ramadan, and Hanukah, Memorial Day.

At block 1240 images captured (or recorded) on a date that includes the date of the  
15 holiday in previous years and/or the current year may be found within memory such as, for example, the memory 125. At block 1240, for example, the metadata associated with the images stored in memory may be searched to find dates associated with the date of the holiday in any year. As another example, a lookup table may include the date and/or the  
20 time each image in the memory was captured (or recorded). The lookup table may also include a pointer or a link to the image location in memory.

At block 1215 images captured (or recorded) on a date corresponding with the  
current date and captured (or recorded) in the current year or in previous years may be found within memory such as, for example, the memory 125. At block 1215, for example,  
25 the metadata associated with images stored in memory may be searched to find dates in the current year or in previous years that correspond to the current date (or any period having a length near the length of a day such as, for example, 12, 18, 24, 30, 36, or 42 hours). As another example, a lookup table may include the date each image in the memory was captured (or recorded) and a pointer or link to the image stored in memory.

At block 1220 images captured (or recorded) on a date corresponding with the  
30 current week and captured (or recorded) in the current year or in previous years may be found within memory such as, for example, the memory 125. At block 1220, for example,

the metadata associated with images stored in memory may be searched to find dates in the current year or in previous years that correspond to the current week (or any period having a length near the length of a week such as, for example, 4, 5, 6, 7, 8, 9, or 10 days). As another example, a lookup table may include the date each image in the memory was captured (or recorded) and a pointer or link to the image stored in memory.

At block 1225 images captured (or recorded) on a date corresponding with the current month and captured (or recorded) in the current year or in previous years may be found within memory such as, for example, the memory 125. At block 1220, for example, the metadata associated with images stored in memory may be searched to find dates in the current year or in previous years that correspond to the current month (or any period having a length near the length of a month such as, for example, 15, 20, 25, 30, 35, 40, 45, or 50 days). As another example, a lookup table may include the date each image in the memory was captured (or recorded) and a pointer or link to the image stored in memory.

At block 1230 the photos found in blocks 1240, 1215, 1220, and/or 1225 may be displayed to a user such as, for example, through the user interface 145 as display 1005 and/or display 1105. The images may be displayed in accordance with any embodiment or embodiments described herein either singularly or in combination. In some embodiments, the images may be displayed as stacks of images. In some embodiments, the images may be displayed in any order or in any combination. In some embodiments, any of the images found in blocks 1240, 1215, 1220, and/or 1225 may not be displayed. Indeed, any of blocks 1240, 1215, 1220, and/or 1225 may be skipped or omitted from process 1200.

A computational system 1300 (or processing unit) illustrated in Figure 13 can be used to perform any of the embodiments of the invention. For example, the computational system 1300 can be used alone or in conjunction with other components to execute all or parts of the processes 500, 600, 700, 800, 900 and/or 1200. As another example, the computational system 1300 can be used to perform any calculation, solve any equation, perform any identification, and/or make any determination described here. The computational system 1300 includes hardware elements that can be electrically coupled via a bus 1305 (or may otherwise be in communication, as appropriate). The hardware elements can include one or more processors 1310, including, without limitation, one or more general purpose processors and/or one or more special purpose processors (such as digital signal processing chips, graphics acceleration chips, and/or the like); one or more input devices 1315, which can include, without limitation, a mouse, a keyboard, and/or the

like; and one or more output devices 1320, which can include, without limitation, a display device, a printer, and/or the like.

The computational system 1300 may further include (and/or be in communication with) one or more storage devices 1325, which can include, without limitation, local and/or network-accessible storage and/or can include, without limitation, a disk drive, a drive array, an optical storage device, a solid-state storage device, such as random access memory ("RAM") and/or read-only memory ("ROM"), which can be programmable, flash-updateable, and/or the like. The computational system 1300 might also include a communications subsystem 1330, which can include, without limitation, a modem, a network card (wireless or wired), an infrared communication device, a wireless communication device, and/or chipset (such as a Bluetooth device, an 802.6 device, a Wi-Fi device, a WiMAX device, cellular communication facilities, etc.), and/or the like. The communications subsystem 1330 may permit data to be exchanged with a network (such as the network described below, to name one example) and/or any other devices described herein. In many embodiments, the computational system 1300 will further include a working memory 1335, which can include a RAM or ROM device, as described above. The memory 125 shown in Figure 1 may include all or portions of the working memory 1335 and/or the storage device(s) 1325.

The computational system 1300 also can include software elements, shown as being currently located within the working memory 1335, including an operating system 1340 and/or other code, such as one or more application programs 1345, which may include computer programs of the invention and/or may be designed to implement methods of the invention and/or configure systems of the invention, as described herein. For example, one or more procedures described with respect to the method(s) discussed above might be implemented as code and/or instructions executable by a computer (and/or a processor within a computer). A set of these instructions and/or codes might be stored on a computer-readable storage medium, such as the storage device(s) 1325 described above.

In some cases, the storage medium might be incorporated within the computational system 1300 or in communication with the computational system 1300. In other embodiments, the storage medium might be separate from the computational system 1300 (e.g., a removable medium, such as a compact disk, etc.), and/or provided in an installation package, such that the storage medium can be used to program a general purpose computer with the instructions/code stored thereon. These instructions might take the form of

executable code, which is executable by the computational system 1300 and/or might take the form of source and/or installable code, which, upon compilation and/or installation on the computational system 1300 (e.g., using any of a variety of generally available compilers, installation programs, compression/decompression utilities, etc.), then takes the form of  
5 executable code.

Numerous specific details are set forth herein to provide a thorough understanding of the claimed subject matter. However, those skilled in the art will understand that the claimed subject matter may be practiced without these specific details. In other instances, methods, apparatuses, or systems that would be known by one of ordinary skill have not  
10 been described in detail so as not to obscure claimed subject matter.

Some portions are presented in terms of algorithms or symbolic representations of operations on data bits or binary digital signals stored within a computing system memory, such as a computer memory. These algorithmic descriptions or representations are examples of techniques used by those of ordinary skill in the data processing art to convey  
15 the substance of their work to others skilled in the art. An algorithm is a self-consistent sequence of operations or similar processing leading to a desired result. In this context, operations or processing involves physical manipulation of physical quantities. Typically, although not necessarily, such quantities may take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, or otherwise manipulated. It has  
20 proven convenient at times, principally for reasons of common usage, to refer to such signals as bits, data, values, elements, symbols, characters, terms, numbers, numerals, or the like. It should be understood, however, that all of these and similar terms are to be associated with appropriate physical quantities and are merely convenient labels. Unless specifically stated otherwise, it is appreciated that throughout this specification discussions  
25 utilizing terms such as "processing," "computing," "calculating," "determining," and "identifying" or the like refer to actions or processes of a computing device, such as one or more computers or a similar electronic computing device or devices, that manipulate or transform data represented as physical, electronic, or magnetic quantities within memories, registers, or other information storage devices, transmission devices, or display devices of  
30 the computing platform.

The system or systems discussed herein are not limited to any particular hardware architecture or configuration. A computing device can include any suitable arrangement of components that provides a result conditioned on one or more inputs. Suitable computing

devices include multipurpose microprocessor-based computer systems accessing stored software that programs or configures the computing system from a general purpose computing apparatus to a specialized computing apparatus implementing one or more embodiments of the present subject matter. In particular, for example, a computing device  
5 may include a smart device such as, for example, a smart phone, a tablet, a mobile phone, a watch, etc. Any suitable programming, scripting, or other type of language or combinations of languages may be used to implement the teachings contained herein in software to be used in programming or configuring a computing device.

Embodiments of the methods disclosed herein may be performed in the operation of  
10 such computing devices. The order of the blocks presented in the examples above can be varied—for example, blocks can be re-ordered, combined, and/or broken into sub-blocks. Certain blocks or processes can be performed in parallel.

The use of "adapted to" or "configured to" herein is meant as open and inclusive language that does not foreclose devices adapted to or configured to perform additional  
15 tasks or steps. Additionally, the use of "based on" is meant to be open and inclusive, in that a process, step, calculation, or other action "based on" one or more recited conditions or values may, in practice, be based on additional conditions or values beyond those recited. Headings, lists, and numbering included herein are for ease of explanation only and are not meant to be limiting.

While the present subject matter has been described in detail with respect to specific  
20 embodiments thereof, it will be appreciated that those skilled in the art, upon attaining an understanding of the foregoing, may readily produce alterations to, variations of, and equivalents to such embodiments. Accordingly, it should be understood that the present disclosure has been presented for purposes of example rather than limitation, and does not  
25 preclude inclusion of such modifications, variations, and/or additions to the present subject matter as would be readily apparent to one of ordinary skill in the art.

**CLAIMS**

That which is claimed:

1. A mobile device comprising:  
a display;  
5 a memory storing a plurality of images; and  
a processor communicatively coupled with the display and the memory, the processor configured to:  
determine a current day and a current year;  
search metadata associated with the plurality of images in the  
10 memory for at least a first image having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and  
present the first subset of the plurality of images on the display.
2. The mobile device according to claim 1, wherein the first time period  
15 comprises a time period selected from the group consisting of half a day, a day, half a week, a week, half a month, and a month
3. The mobile device according to claim 1, wherein the capture day and the capture year are associated with the date the image was recorded.
4. The mobile device according to claim 1, wherein the images  
20 comprise digital files selected from the list consisting of photos, digital images, videos, video clips, and video frames.
5. The mobile device according to claim 1, wherein the at least one first image includes a first plurality of images, and at least a first subset of the first plurality of images are displayed as a stack of images.
- 25 6. The mobile device according to claim 1, wherein the processor is further configured to:  
select a second plurality of images from the memory having a capture day that is within a second time period surrounding the current day and a capture year that is different than the current year, wherein the second time period is longer than the first time  
30 period; and

present the second subset of the plurality of images on the display.

7. The mobile device according to claim 6, wherein the processor is further configured to:

5 select a third plurality of images from the memory having a capture day that is within a third time period surrounding the current day and a capture year that is different than the current year, wherein the third time period is longer than the first time period and longer than the first period of time; and

present the third subset of the plurality of images on the display.

10 8. The mobile device according to claim 1, wherein the processor is further configured to:

determine whether the current day of the current year is associated with a holiday;

select a fourth plurality of images from the memory having a capture day and/or a capture year that is associated with the holiday; and

15 present the fourth subset of the plurality of images on the display.

9. A method comprising:

determining a current day of a current year using a processor of an electronic device;

20 searching metadata of a plurality of images stored in memory of the electronic device for one or more images having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and

displaying the first plurality of images through a user interface of the electronic device.

25 10. The method according to claim 9, wherein the first time period comprises a time period selected from the group consisting of half a day, a day, half a week, a week, half a month, and a month.

11. The method according to claim 9, wherein the capture day and the capture year are associated with the date the image was recorded.

30 12. The method according to claim 9, wherein the images comprise

digital files selected from the list consisting of photos, digital images, videos, video clips, and video frames.

13. The method according to claim 9, wherein at least a first subset of the first plurality of images are displayed as a stack of images.

5 14. The method according to claim 9, further comprising:  
searching metadata of the plurality of images stored in the memory of the electronic device for one or more second images having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and  
10 displaying the one or more second images through a user interface of the electronic device.

15 15. The method according to claim 14, further comprising:  
searching metadata of the plurality of images stored in the memory of the electronic device for one or more third images having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and  
displaying the one or more third images through a user interface of the electronic device.

20 16. The method according to claim 9, further comprising:  
determining whether the current day of the current year is associated with a holiday using the processor of the electronic device;  
searching metadata of the plurality of images stored in the memory of the electronic device for one or more fourth images having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and  
25 displaying the one or more fourth images through a user interface of the electronic device.

17. A non-transitory computer-readable medium having encoded therein programming code executable by a processor to perform operations comprising:  
30 determining a current day of a current year using a processor of an electronic device;

searching metadata of the plurality of images stored in the memory of the electronic device for one or more second images having a capture day that is within a first time period surrounding the current day and a capture year that is different than the current year; and

5 displaying the one or more second images through a user interface of the electronic device.

18. The non-transitory computer-readable medium according to claim 17, wherein the first time period comprises a time period selected from the group consisting of half a day, a day, half a week, a week, half a month, and a month

10 19. The non-transitory computer-readable medium according to claim 17, wherein the capture day and the capture year are associated with the date the image was recorded.

20. The non-transitory computer-readable medium according to claim 17, wherein the images comprise digital files selected from the list consisting of photos, digital  
15 images, videos, video clips, and video frames.

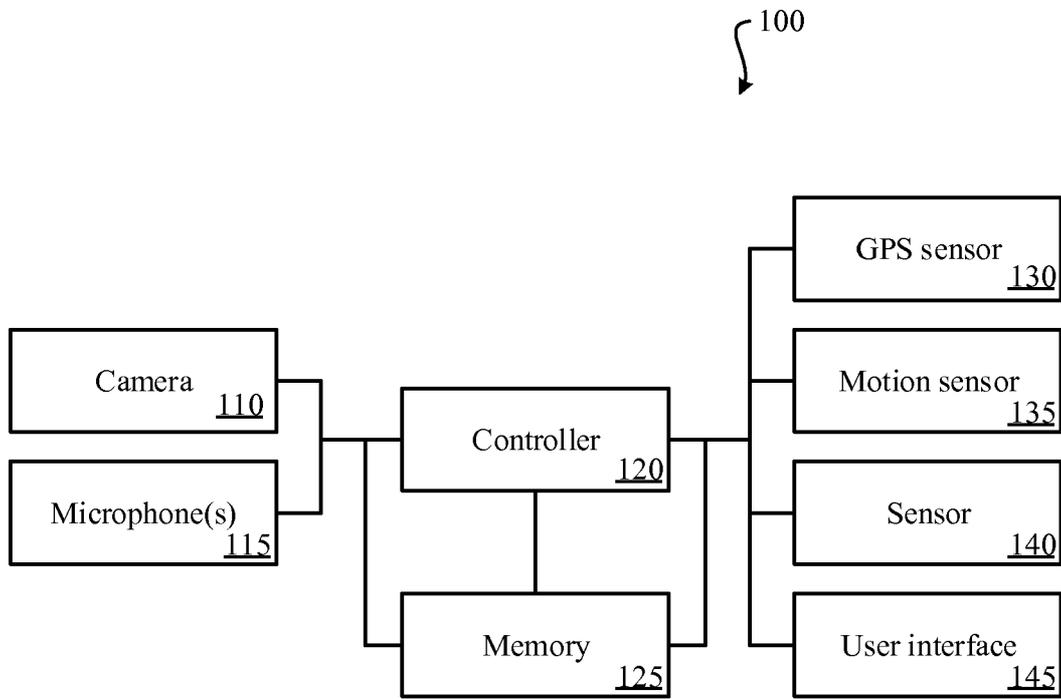


Figure 1

200 ↘

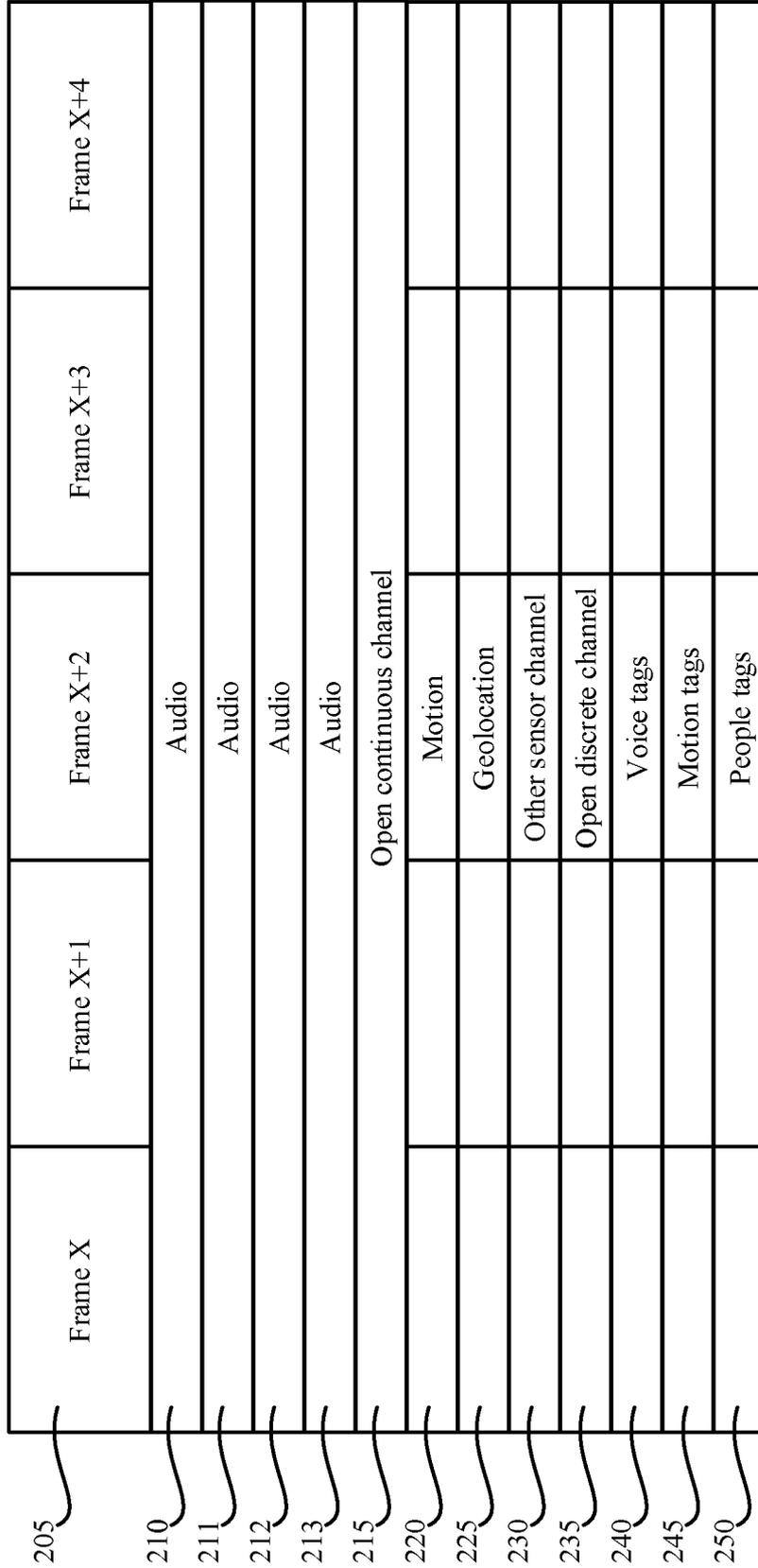
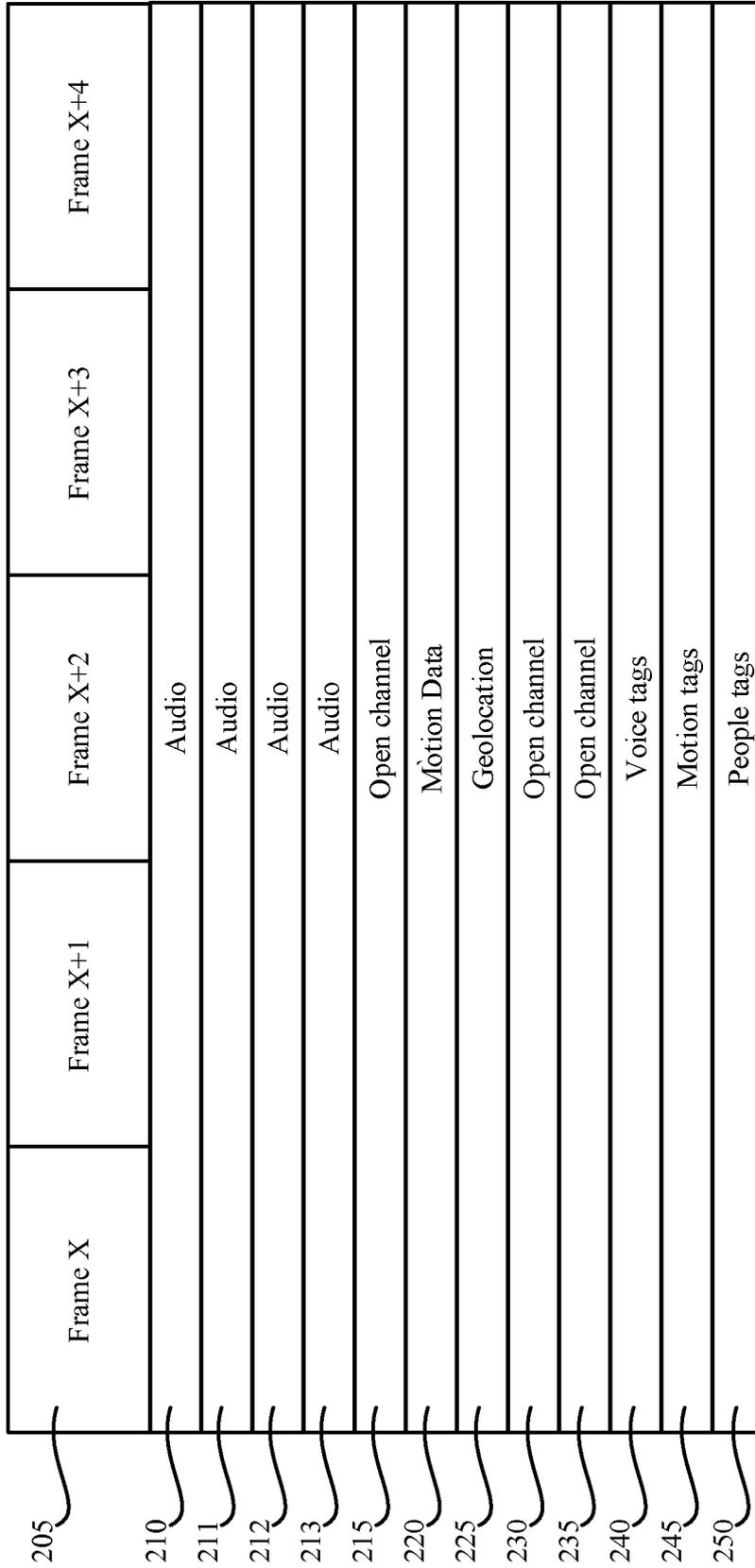


Figure 2

300



Time

Figure 3

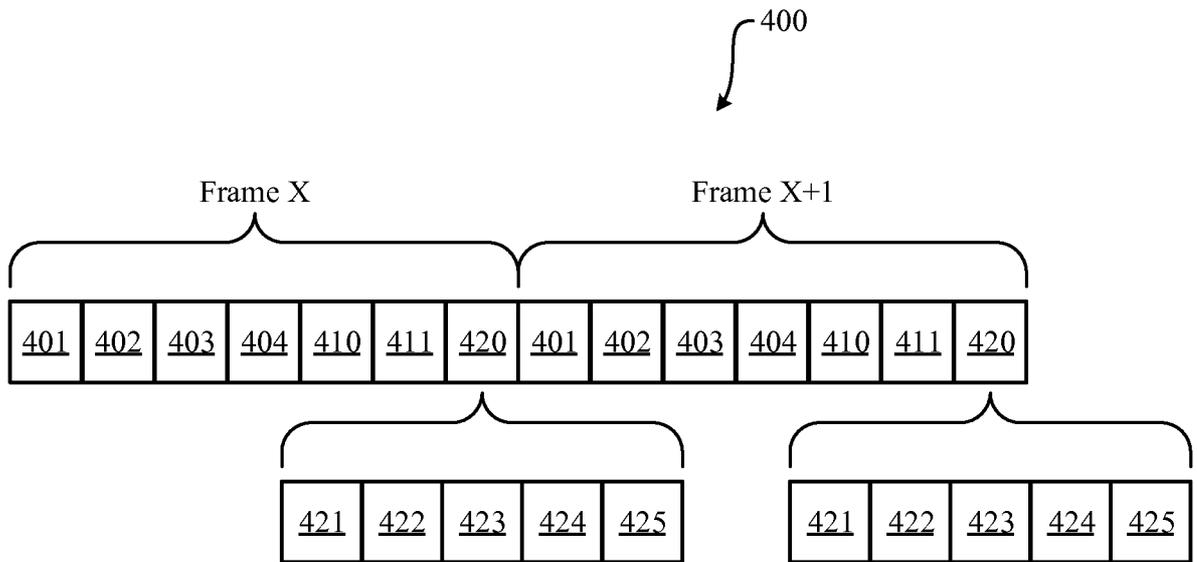


Figure 4



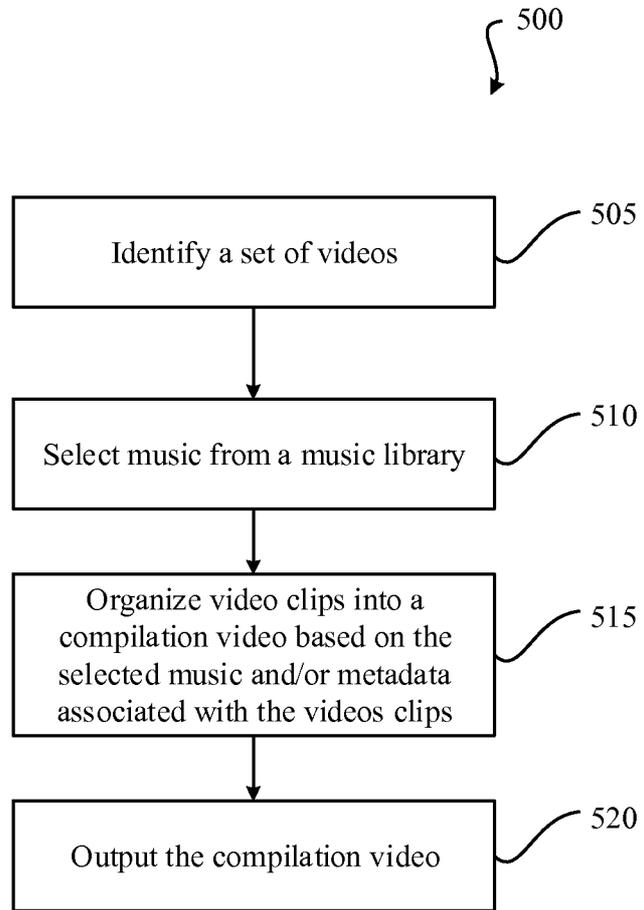


Figure 5

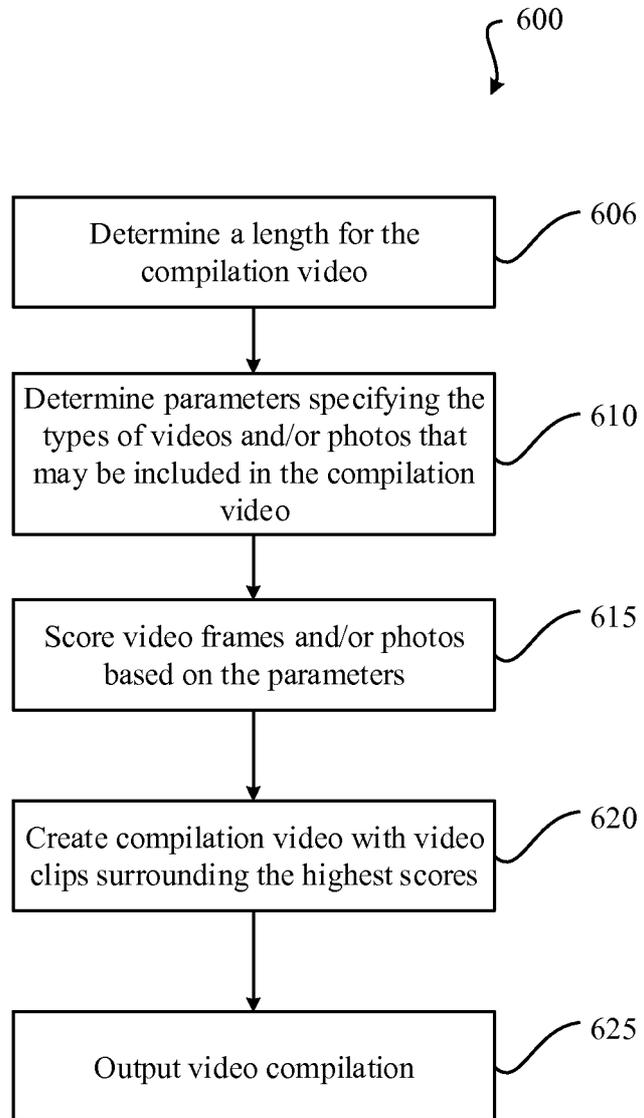


Figure 6

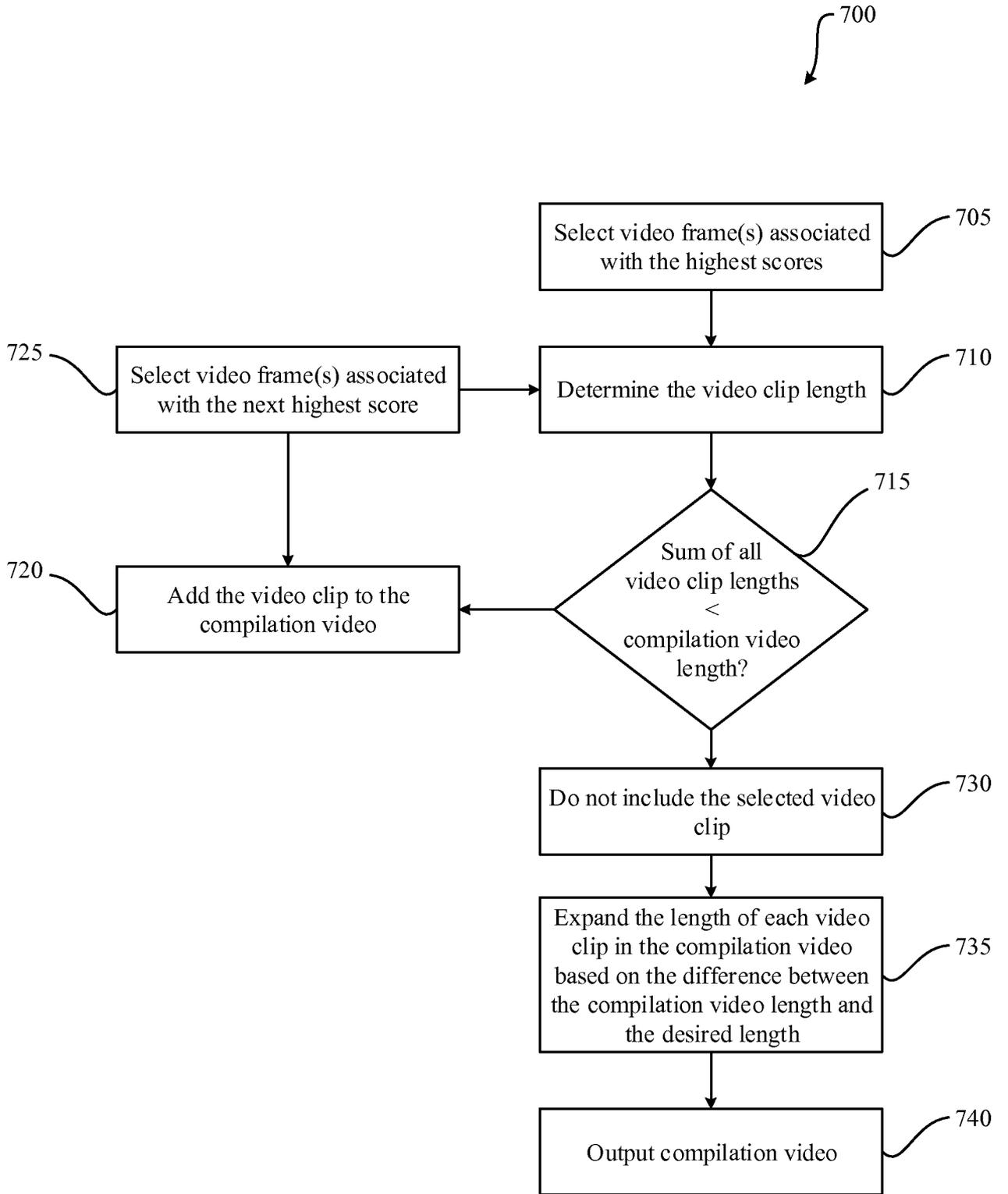


Figure 7

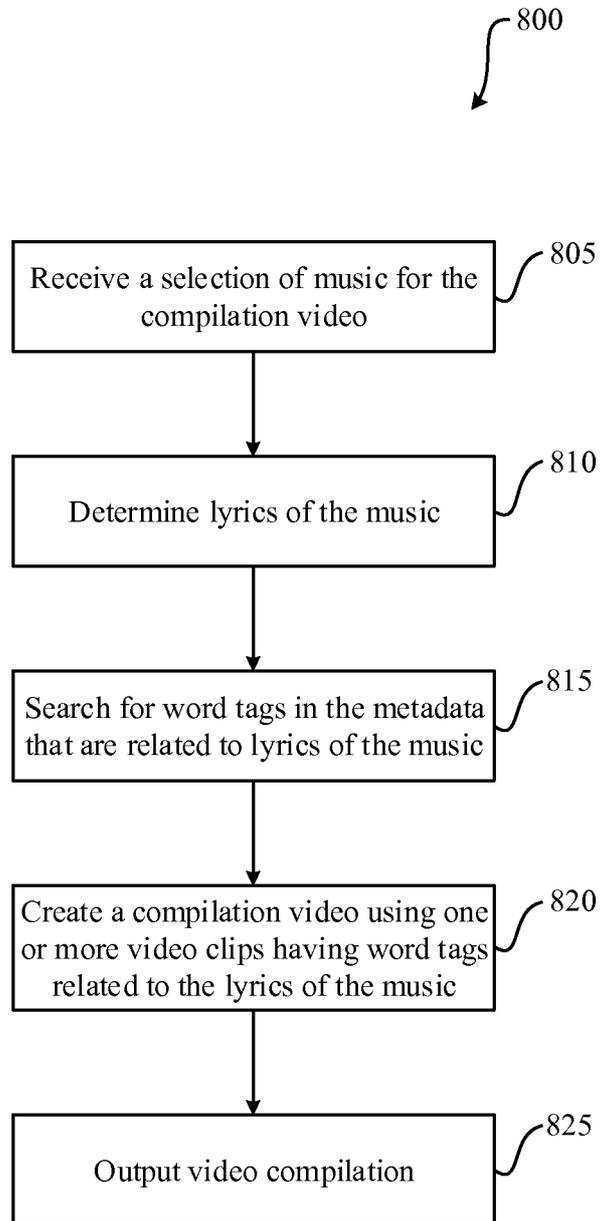


Figure 8

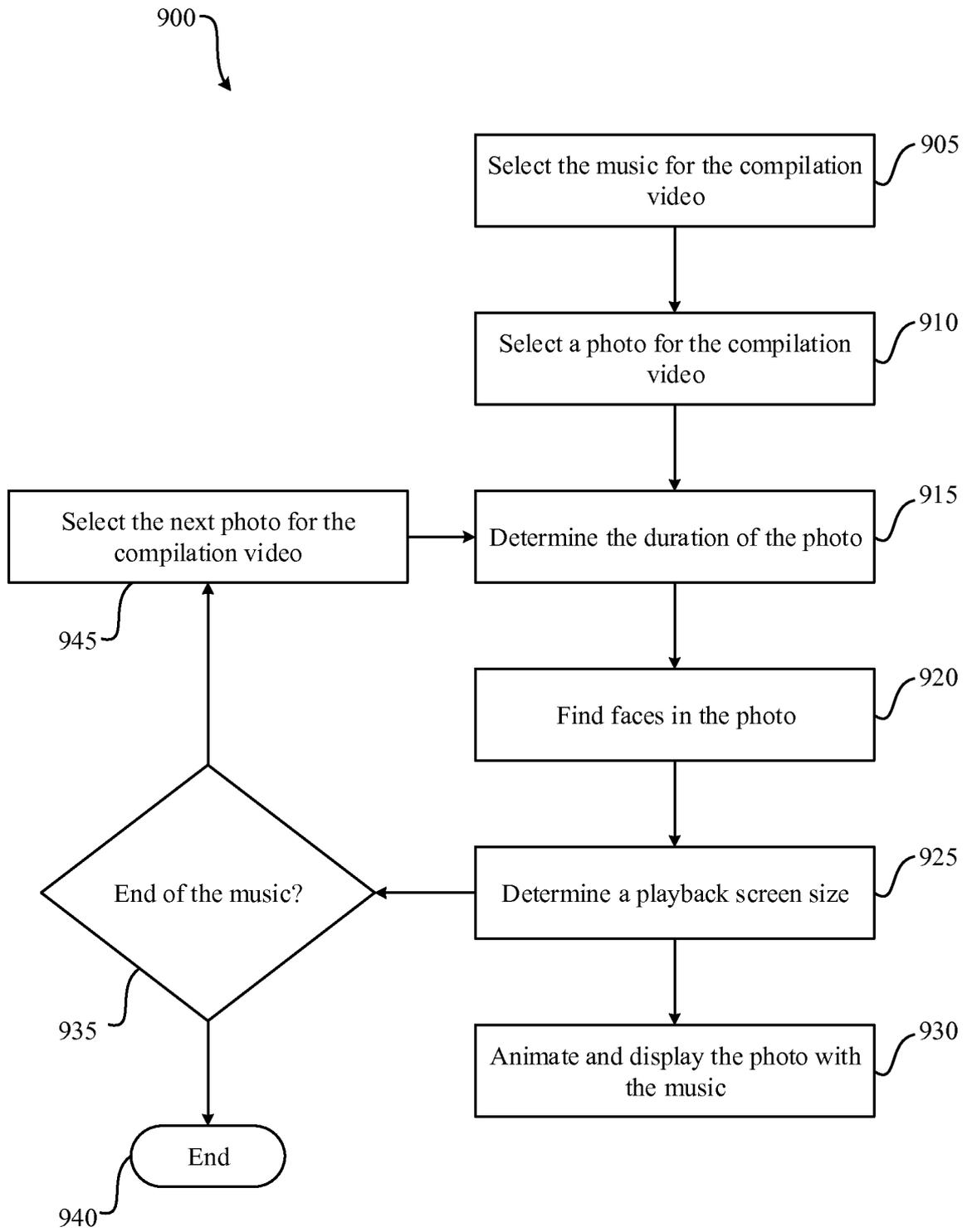


Figure 9

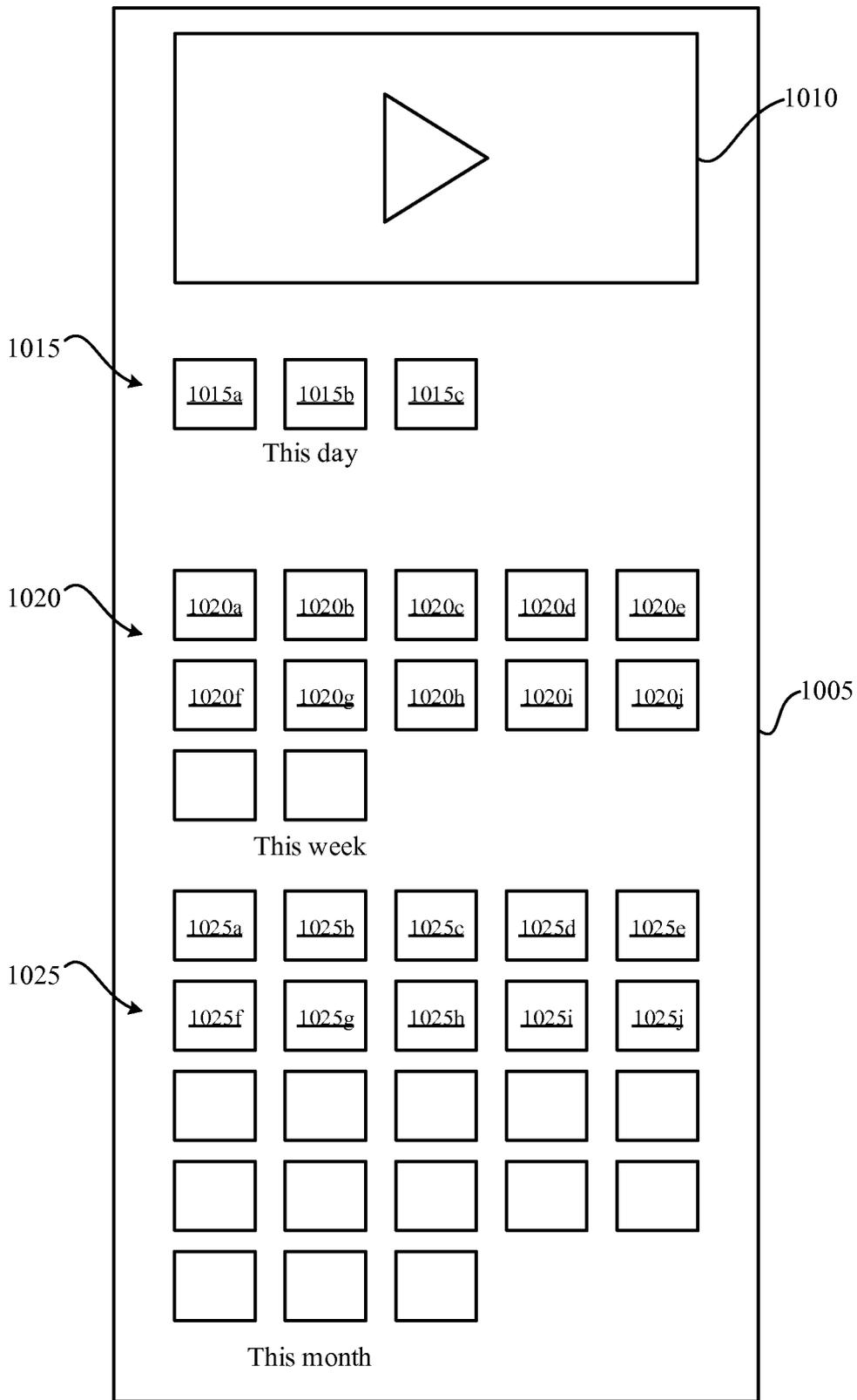


Figure 10

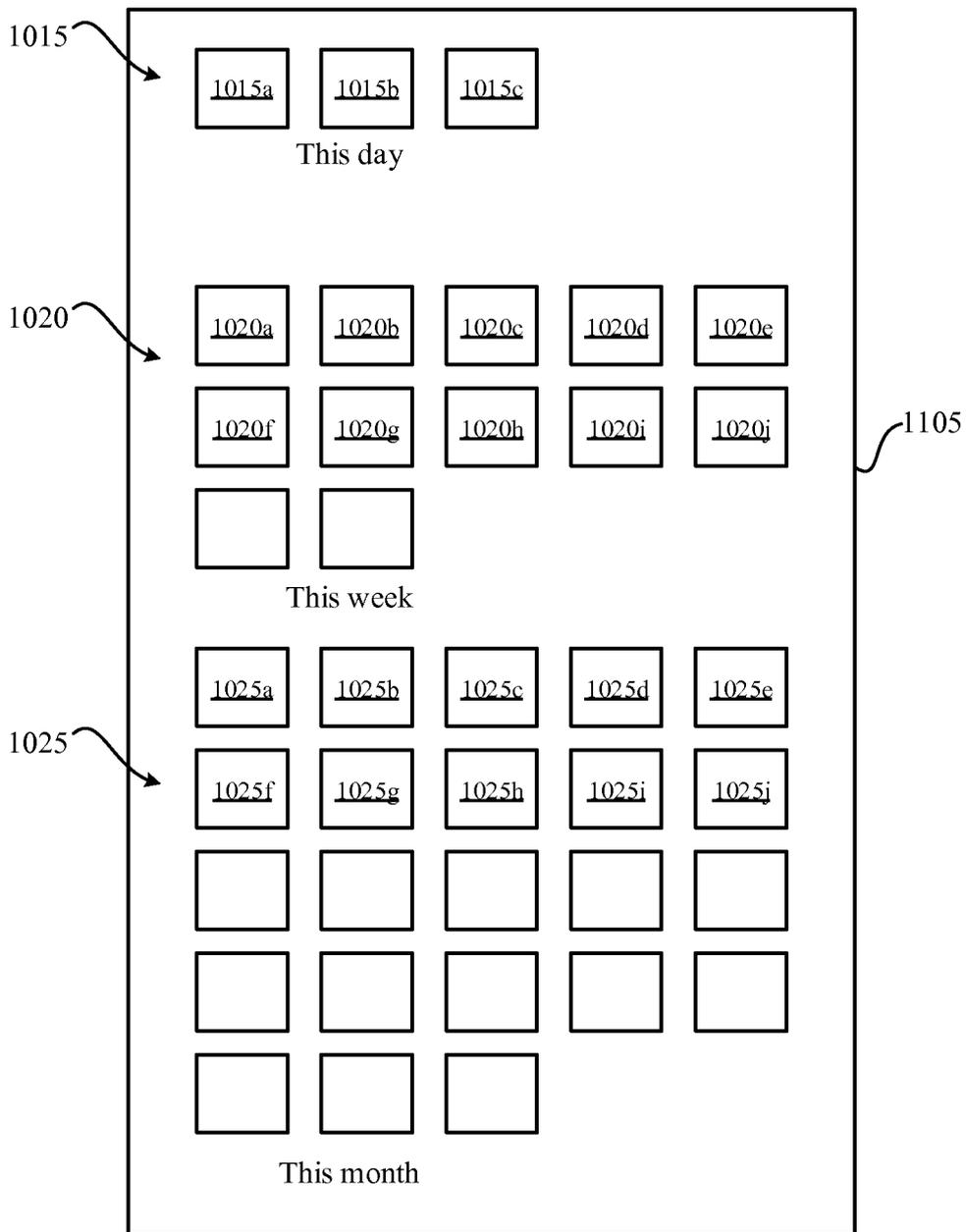


Figure 11



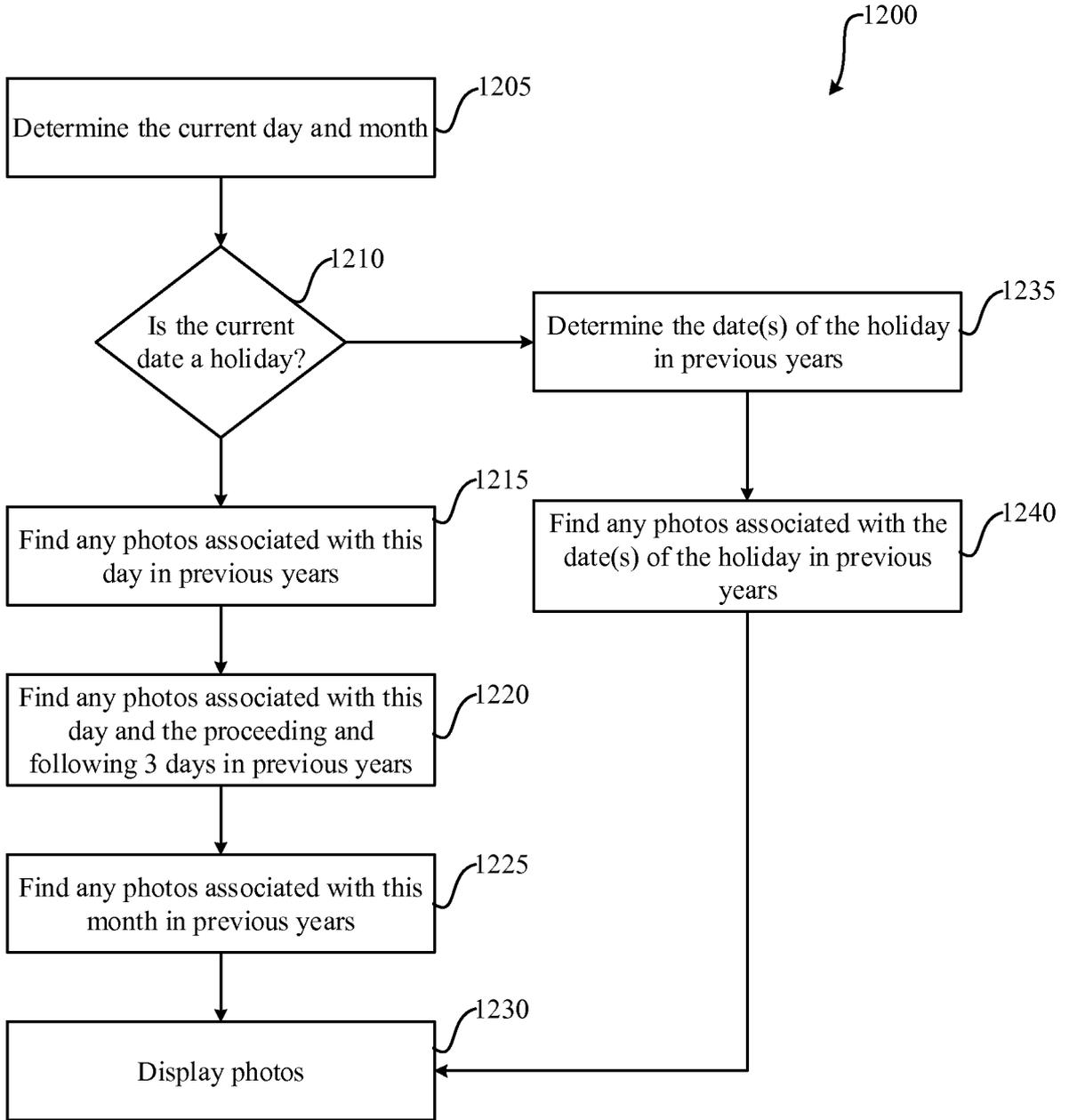


Figure 12

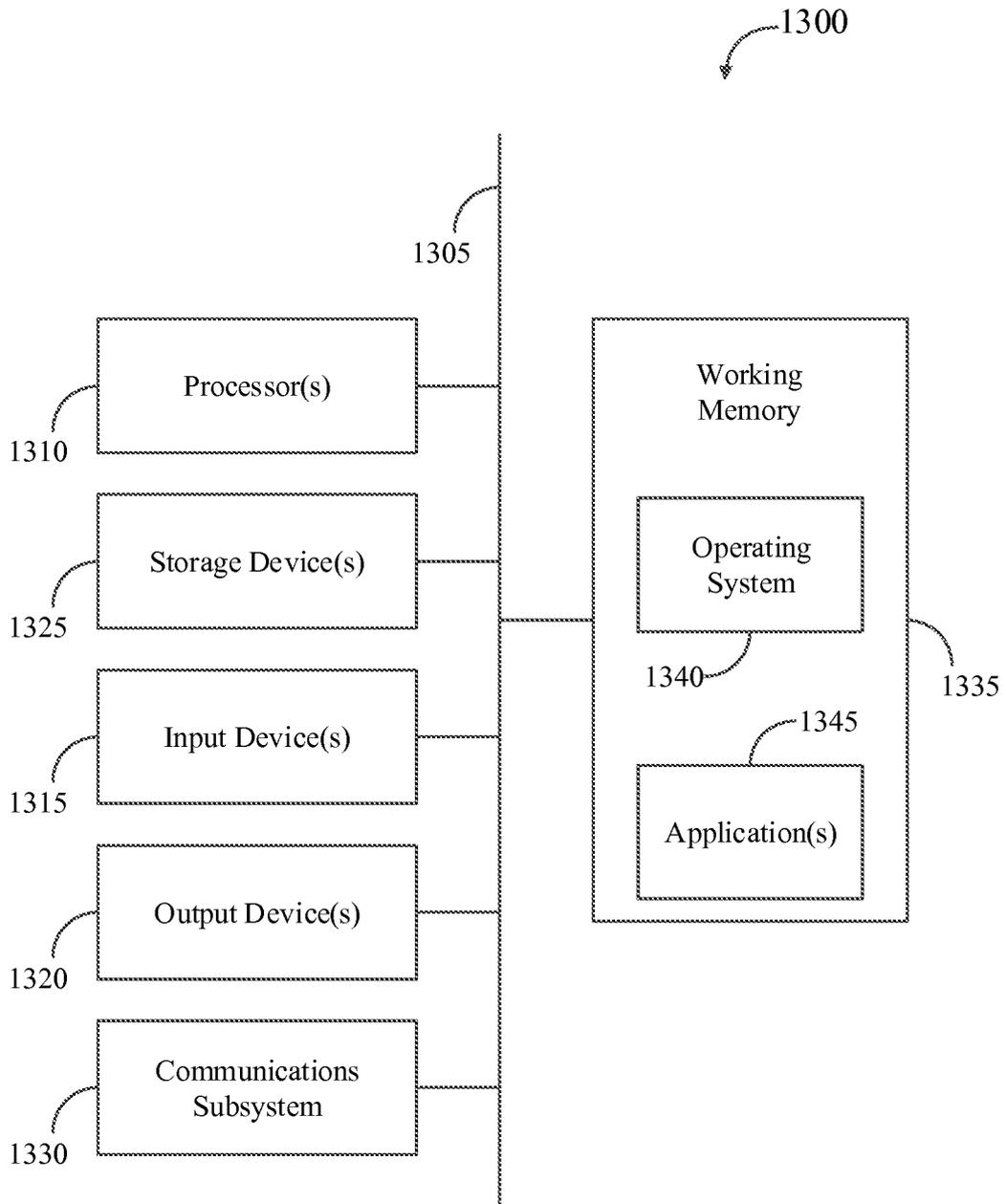


Figure 13

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US15/30212

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>				
IPC(8) - G06F 17/30 (2015.01) CPC - G06F 17/3028, 17/30274, 17/30244 According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b>				
Minimum documentation searched (classification system followed by classification symbols) IPC(8): G06F 17/30 (2015.01) CPC: G06F 17/3028, 17/30244, 17/30265, 17/30268, 17/30274, 17/30277				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); ProQuest; IEEE; Google/Google Scholar; mobile*, device*, display*, memory*, storing*, images*, processor*, current*, day*, year*, search*, metadata*, first*, time*, period*, subset*				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
<b>Category*</b>	<b>Citation of document, with indication, where appropriate, of the relevant passages</b>	<b>Relevant to claim No.</b>		
<b>X</b>	US 2005/0050043 A1 (PYHALAMMI, S et al.) 03 March 2005, Abstract, Figure 1, 4, 5, 10A, 10D, 10F-10H, Paragraph [0006], [0030], [0031], [0035], [0044], [0046], [0049], [0050], 0058].	1-20		
<b>A</b>	US 2013/0170738 A1 (CAPUOZZO, G et al.) 04 July 2013, entire document.	1-20		
<b>A</b>	WO 2014/062520 A1 (REALNETWORKS, INC.) 24 April 2014, entire document.	1-20		
<b>A</b>	US 7970240 B1 (CHAO, E et al.) 28 June 2011, entire document.	1-20		
<b>A</b>	US 2011/0211737 A1 (KRUPKA, E et al.) 01 September 2011, entire document.	1-20		
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.				
<table border="0" style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width:50%; vertical-align: top;"> <p>"V" 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</p> <p>"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</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> </td> </tr> </table>			<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"V" 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</p> <p>"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</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"V" 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</p> <p>"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</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>			
Date of the actual completion of the international search		Date of mailing of the international search report		
28 July 2015 (28.07.2015)		<b>14 AUG 2015</b>		
Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300		Authorized officer  Shane Thomas  PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774		