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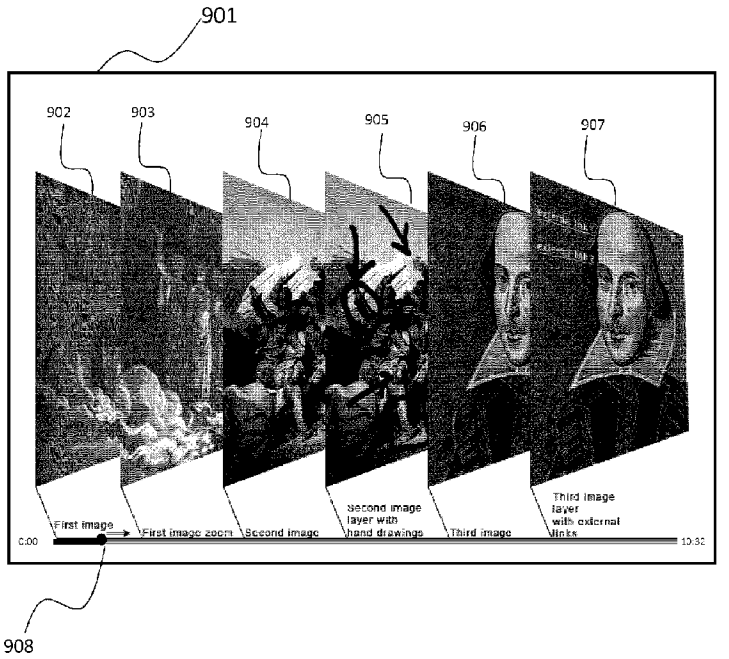
(54) Title: SYSTEMS AND METHODS FOR PROCESSING IMAGE DATA TO COINCIDE IN A POINT OF TIME WITH AUDIO DATA



(57) Abrégé/Abstract:
Systems and methods for processing image data to coincide in a point of time with audio data to create a master timeline coordinating audio timeline playback and image data display to generate a synchronized multimedia presentation using content creator and content player modules. The system comprises a network architecture, a synchronization system and a file system database. The method comprises: accessing a content creator module of a synchronization system; manipulating one or more audio data to assemble an audio timeline; manipulating one or more image data to display transformations made as a result of editing; creating one or more timestamps on the audio timeline; assigning each image data to a timestamp corresponding to a time value of a play duration of the audio timeline; generating a master timeline; generating a digital control file; and reproducing the synchronized multimedia presentation in a content player module.

ABSTRACT

Systems and methods for processing image data to coincide in a point of time with audio data to create a master timeline coordinating audio timeline playback and image data display to generate a synchronized multimedia presentation using content creator and content player modules. The system comprises a network architecture, a synchronization system and a file system database. The method comprises: accessing a content creator module of a synchronization system; manipulating one or more audio data to assemble an audio timeline; manipulating one or more image data to display transformations made as a result of editing; creating one or more timestamps on the audio timeline; assigning each image data to a timestamp corresponding to a time value of a play duration of the audio timeline; generating a master timeline; generating a digital control file; and reproducing the synchronized multimedia presentation in a content player module.

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SYSTEMS AND METHODS FOR PROCESSING IMAGE DATA TO COINCIDE IN A POINT OF TIME WITH AUDIO DATA

TECHNICAL FIELD

This application relates to the field of software engineering. More particularly, the present disclosure relates to implementing methods and systems to synchronize unconnected image data and audio data.

BACKGROUND

Since the advent of the Internet, a number of multimedia platforms and software have been developed to support the creation, consumption and distribution of digital content. Many individuals have created presentations, podcasts and digital tutorial sessions using audio and video formats. Nevertheless, individuals producing, transmitting and distributing digital audio content often encounter limitations to include multimedia elements (e.g. images, annotations and hyperlinks) to complement the content existing in digital audio data.

Existing technology supports the inclusion of presentation slides or other kinds of graphical data to coincide in a point of time with audio data and video data to generate synchronized presentations. Nevertheless, the methods and systems employed to process the inclusion of such data produce video data by merging audio and graphical data. As a result, the audio and graphical data become a single file in a video format (e.g. .mp4). If an individual need to edit parts of that single file, it will be necessary to upload the data that generated such a file again. Furthermore, the existing technology does not support the synchronization of audio data and image data during live transmissions occurring in the Internet. For example, an individual hosting a podcast wants to include an image to illustrate what it is being presented during the podcast. Such an image cannot be added to coincide in a point of time with the audio playback using the existing technology unless the individual uses a video camera to record a video.

The present disclosure concerns implementing systems and methods for processing image data to coincide in a point of time with audio data, maintaining the integrity of both image and audio data. For example, a tutor teaching online lessons wants to use an image to support the learning of their pupils while narrating the characteristics of such an image. The

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tutor uploads the supporting image and manipulates the image to be displayed during the online lessons. The tutor chooses to zoom in the image and display the details, thus supporting the narration describing the characteristics of the image. The tutor generates a timestamp and assigns this timestamp to the image. Consequently, the image will be displayed in a point of time coinciding with the audio timeline playback in a synchronized format. Rather than merging the image with the audio, the present disclosure results in a synchronized format establishing a timed connection between the image and audio data.

In a different scenario, a social media influencer expert on reviews and tutorials concerning makeup. The social media influencer takes pictures of her face wearing makeup and adds links and descriptions overlaying those pictures by using a number of manipulations existing in the present disclosure. The social media influencer's audience will be able to save in the form of bookmarks the content existing on the images.

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SUMMARY

The present disclosure concerns implementing systems and methods for processing image data to coincide in a point of time with audio data to create a master timeline coordinating audio timeline playback and image data display to generate a synchronized multimedia presentation using content creator and content player modules. The system comprises a network architecture, a synchronization system and a file system database. The network architecture comprises one or more computing devices and computer networks connected to the synchronization system. The synchronization system comprises the content creator module, the content player module and the file system database. The file system database is configured to store data pertaining to a master timeline, a digital control file and one or more content player user events.

In accordance with an embodiment of the invention, the method comprising: accessing a content creator module of a synchronization system; manipulating one or more audio data to assemble an audio timeline containing a sequential order of one or more audio data; manipulating one or more image data to display transformations made as a result of editing; creating one or more timestamps on the audio timeline; assigning each image data to a timestamp corresponding to a time value of a play duration of the audio timeline; generating a master timeline containing manipulated image data and the audio timeline; generating a digital control file containing records and information pertaining to manipulations of image data and the audio timeline in the master timeline; including meta-elements describing characteristics of a synchronized multimedia presentation; storing the master timeline in the form of a digital control file in a file system database; making a request to the file system database; processing the digital control file containing records and information of a synchronization of image data with an audio timeline; loading a master timeline containing a synchronized multimedia presentation; activating the master timeline playback; and reproducing the synchronized multimedia presentation in the content player module.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an illustration of a computer network, one or more computing devices and a synchronization system in accordance with an embodiment of the invention.

FIG. 2 is an illustration of a synchronization system in accordance with an embodiment of the invention.

FIG. 3 is an illustration of a content creator module system in accordance with an embodiment of the invention.

FIG. 4 is an illustration of a content player module system in accordance with an embodiment of the invention.

FIG. 5 is an illustration of a user interface for a content creator module system in accordance with an embodiment of the invention.

FIG. 6 is an illustration of a user interface for a content player module system in accordance with an embodiment of the invention.

FIGS. 7A-7B (collectively referred to as "FIG.7") provide a flow diagram of an illustrative method for processing image data to coincide in a point of time with audio data in accordance with an embodiment of the invention.

FIG.8 provides a flow diagram of an illustrating method for reproducing a master timeline synchronizing image data with audio data in accordance with an embodiment of the invention.

FIG. 9 is an illustration of a master timeline playback illustrating image data processed to coincide in a point of time with an audio timeline in accordance with an embodiment of the invention.

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Detailed Description

It will be readily understood that the components of the embodiments as generally described herein and illustrated in the appended figures could be arranged and designed in a wide variety of different configurations. Thus, the following detailed description of various embodiments, as represented in the figures, is not intended to limit the scope of the present disclosure, but is merely representative of various embodiments. While the various aspects of the embodiments are presented in drawings, the drawings are not necessarily drawn to scale unless specifically indicated.

The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by this detailed description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

Reference throughout this specification to features, advantages, or similar language does not imply that all of the features and advantages that may be realized with the present invention should be or are in any single embodiment. Rather, language referring to the features and advantages is understood to mean that a specific feature, advantage, or characteristic described in connection with an embodiment is included in at least one embodiment. Thus, discussions of the features and advantages, and similar language, throughout this disclosure may, but do not necessarily, refer to the same embodiment.

Furthermore, the described features, advantages, and characteristics of the present disclosure may be combined in any suitable manner in one or more embodiments. One skilled in the relevant art will recognize, in light of the description herein, that the invention can be practiced without one or more of the specific features or advantages of a particular embodiment. In other instances, additional features and advantages may be recognized in certain embodiments that may not be present in all embodiments of the invention.

Reference throughout this specification to "one embodiment," "an embodiment," or similar language means that a particular feature, structure, or characteristic described in connection with the indicated embodiment is included in at least one embodiment. Thus, the phrases "in one embodiment," "in an embodiment," and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment.

Systems for processing image data to coincide in a point of time with audio data to create a master timeline coordinating audio timeline playback and image data display to

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generate a synchronized multimedia presentation using content creator and content player modules comprises a network architecture, a synchronization system and a file system database.

A network architecture **100** for producing, transmitting, receiving and reproducing synchronized multimedia presentations is illustrated in FIG.1. As used herein, synchronized multimedia presentations refer to one or more image data arranged to coincide in a point of time with parts of audio data containing play duration times. The one or more image data may be photographic image files and computer graphic images in accordance with an embodiment of the invention. The one or more audio data may be relating to files reproducing recorded sounds in accordance with an embodiment of the invention.

In an embodiment of the invention, the network architecture **100** comprises one or more computing devices **101** and computer networks **102** connected to a synchronization system **103** as illustrated in FIG. 1. The computing devices **101** may be any electronic device for storing and processing data comprising at least a screen and enabled to connect to computer networks **102**. In an embodiment of the invention, the computer network **102** may be the Internet and other networks that connect to the Internet.

As illustrated in FIG. 2, the synchronization system **103** comprises a content creator module **201**, a content player module **202** and a file system database **203** in accordance with an embodiment of the invention. The synchronization system **103** is configured to permit the creation, transmission, reception, storage, preview and playback of synchronized multimedia presentations. Each of the content modules **202-203** comprise a processor **204** to execute commands and operations generated in each module **202-203** in accordance with an embodiment of the invention.

Users accessing the synchronization system **103** may be content creator users and content player users in accordance with an embodiment of the invention.

The content creator module **201** operates to permit content creator users using a computing device **101** to create, transmit, receive, save, preview and reproduce synchronized multimedia presentations as illustrated in FIG. 3 in accordance with an embodiment of the invention. A content creator user may create, list and manipulate synchronized multimedia presentations using one or more image data and audio data in accordance with an embodiment of the invention.

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As shown in FIG.3, the content creator module **201** comprises an audio data section **301**, an image data section **306**, a master timeline section **310**, a synchronization section **313** and a file system database **203** in accordance with an embodiment of the invention. In another embodiment of the invention, the content creator module may comprise a live transmission section **317** and an audio to text transcription section **323**.

The audio data section **301** comprises an audio data creation **302**, an audio data list **303**, an audio data manipulation **304** and an audio data timeline creation **305**. The audio data section **301** is configured to provide an interface to create, list and manipulate one or more audio data.

The image data section **306** comprises an image data creation **307**, an image data list **308** and an image data manipulation **309**. The image data section **306** is configured to provide an interface to create, list and manipulate one or more image data.

The master timeline section **310** comprises a timestamp creator **311** and an audio timeline and image data time relationship generator **312**. The master timeline section **310** is configured to provide an interface to create timestamps in an audio timeline and process a synchronization of one or more image data with the audio timeline. As used herein, timestamps refer to digital records of time to indicate a play duration time of audio data wherein image data is displayed to coincide in time with a time assigned in an audio timeline

The synchronization section **313** comprises a master timeline information compilation **314**, an audio timeline and image data time relationship execution **315**, and a digital control file generator **316**. The synchronization section **313** is configured to process and execute a digital control file containing commands to execute a synchronization of one or more image data with the audio timeline.

In one embodiment of the invention, a content creator user may activate a live transmission **317** of one or more synchronized multimedia presentations as shown in FIG.3. If the content creator user chooses to activate a live transmission **317**, a live transmission section **318** starts to operate. The live transmission section **318** comprises a live transmission activation **319**, a transmission delay time **320**, a live transmission operation **312**. The live transmission activation **319** is configured to start live transmissions at the same time that the content creator user creates the one or more synchronized multimedia presentations. The transmission delay time **320** is configured to delay the time wherein one or more synchronized multimedia presentations are transmitted to one or more content player users.

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The live transmission operation **312** is configured to permit live transmissions and reception of one or more synchronized multimedia presentations using a computing device **101** over a computer network **102**, allowing playback to start while the rest of the data is still being received.

In one embodiment of the invention, a content creator user may activate an audio to text transcription **322** based on the content of an audio timeline as shown in FIG. 3. If the content creator user chooses to activate an audio to text transcription **322**, an audio to text transcription section **323** starts to operate. The audio to text transcription section **323** comprises a manual audio to text transcription upload **324**, an automated audio to text transcription activation **325**, and an audio to text transcription display **325**. The manual audio to text transcription upload **324** is configured to permit transferring audio to text transcription files from a computing device **101** to the content creator module **201**. The automated audio to text transcription activation **325** is configured to generate automatic audio to text transcriptions of an audio timeline using machine learning techniques generated by an application programming interface. The audio to text transcription display **326** is configured to enable the display of audio to text transcriptions at the same time that a synchronized multimedia presentation is reproduced.

As shown in FIG. 4, the content player module **202** comprises a synchronization section **323**, a synchronization section processing section **401**, a playback section **404** and a user interface section **406** in accordance with one embodiment of the invention.

The synchronization processing section **401** comprises a digital control file processor **402** and a master timeline loader **403**. The synchronization processing section **401** is configured to retrieve the digital control file from the synchronization section **323** and provide an interface to process the digital control file **402** and load the master timeline **403**.

The playback section **404** is configured to reproduce a master timeline playback **405** guiding a synchronized multimedia presentation wherein one or more image data are configured to coincide in a point of time with parts of an audio timeline.

The user interface section **406** comprises a synchronized master timeline playback viewer **407**, a content player user events **408** and a log content player user events **409**. The synchronized master timeline playback viewer **407** is configured to play, forward, backward, pause, stop, adjust sound volume, vary playback speed of the master timeline and enable content player user events in accordance with an embodiment of the invention.

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The content player user events **408** is configured to create, store and distribute one or more content player user events. Content player user events may be to store and distribute preferred parts of a master timeline, create marks on the master timeline, add one or more image data to the master timeline and enable audio to text transcriptions in accordance with an embodiment of the invention. The log content player user events **408** is configured to load and store one or more content player user events in the file system database **203**.

An exemplary content creator interface **501** for creating a synchronized multimedia presentation according to an embodiment of the invention is illustrated in FIG 5. In one embodiment, the content creator interface **501** is provided as a computer program to computing devices. Nevertheless, in other embodiments, the content creator interface **501** may be provided as a webpage by a webpage provider to computing devices accessing a webpage processing the synchronization system **103**.

The content creator interface **501** comprises a live transmission module **502**, a list of images section **503**, an add image data section **505**, a manipulation tools section **506**, a current image section **507**, an add audio data section **508**, an audio manipulation tools section **509**, an audio timeline assembling section **510**, a timestamp section **514**, an image timestamp assignment section **517**, and a master timeline section **518** and an audio to text transcription module **521** in accordance with an embodiment of the invention.

The list of images section **503**, wherein one or more images **504** created, listed and manipulated are displayed once the content creator user captures, transfers from a computing device or manipulates the one or more image data using the add image data section **505**. The current image section **507** displays an image data being manipulated by the content creator user. The manipulation tools section **506** comprises one or more manipulations a content creator user generates for an image data. The one or more manipulations may be resize, crop, color manipulation, rotate, include layers with graphical elements, tridimensional manipulations, animations, zoom, sharpen, enhance, remove blemish, add tone effect, reverse image, reverse exposure, add, delete, and modify one or more graphical image elements in accordance with an embodiment of the invention. The assign timestamp to image data section **508** enables the assignment of timestamps containing the play duration time of audio data wherein image data is displayed to coincide in time with a time assigned in an audio timeline.

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In the embodiment shown in FIG.5, the add audio data section **508** comprises creating and/or listing one or more audio data, wherein a content creator user captures, transfers from a computing device and/or manipulates the one or more audio data in accordance with an embodiment of the invention.

The audio manipulation tools section **509** comprise tools to equalize sounds of audio data, add and/or remove parts of audio data, add and/or remove sound effects of audio data in accordance with an embodiment of the invention. The audio timeline assembling section **510** is configured to list one or more audio data **511** in a sequential order and assemble **512** the one or more data **511** into an audio timeline **513**.

The timestamp section is configured to add timestamps **515** corresponding to time durations in a playback of the audio timeline **513**. The image timestamp assignment section **517** is configured to assign one or more timestamps **515** to each of the image data **507** corresponding to a time duration in a playback of the audio timeline **513**. The master timeline section **518** is configured to generate **519** and reproduce a master timeline **520** comprising the time synchronization of image data with audio data in accordance with an embodiment of the invention.

As shown in FIG. 5, the live transmission area **502** comprises a transmission and reception of the synchronized multimedia presentation using a computing device over a computer network, allowing playback to start while the rest of the data is still being received while in a live transmission in accordance with one embodiment of the invention. The audio to text transcription area **521** comprises an area to transfer an audio to text transcription generated manually and an area to enable an audio to text transcription generated automatically. The automatic audio to text transcription is generated by an application programming interface.

The content creator interface **501** illustrated in FIG. 5 represents one of many possibilities to arrange the content creator interface. Nevertheless, in other embodiments, the sections represented in the content creator interface **501** may be arranged in different configurations.

In one embodiment of the invention, a synchronized multimedia presentation may be used by a content creator user generating audio data to be available over computer networks to one or more individuals (e.g. podcasts). In another embodiment of the invention, the synchronized multimedia presentations may be used by a content creator teaching electronic

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lessons to one or more individuals in person and/or over computer networks. In another embodiment of the invention, the synchronized multimedia presentation may be used by a content creator generating content to be distributed over one or more web applications.

A content player module **202** may operate to permit content player users operating a computing device **101** to search synchronized multimedia presentations, navigate synchronized multimedia presentations, add content player user events and reproduce synchronized multimedia presentations in accordance with an embodiment of the invention. In another embodiment of the invention, the content player module **202** is configured to permit content player users to receive live transmissions of synchronized multimedia presentations created by content creator users.

An exemplary content player interface **601** for reproducing a synchronized multimedia presentation according to one embodiment of the invention is illustrated in FIG. 6. In one embodiment, the content player interface **601** is provided as a computer program to computing devices. Nevertheless, in other embodiments, the content creator interface may be provided as a webpage by a webpage provider to computing devices accessing the webpage.

As shown in FIG. 6, the content player interface comprises a content player user events area **602**, a synchronized multimedia presentation viewer **608**, and a synchronized presentation sections area **610**.

The content player user events area **602** comprises one or more digital records **603** generated by content player users to mark a master timeline, web applications to distribute content over computer networks **604** to one or more content player users, an audio to text transcription module **605**, an add content player user events section **606** and a log content player user events section **607** in accordance with one embodiment of the invention.

The one or more digital records **603** comprise sections in the master timeline wherein the content player user creates marks on one or more preferred sections of a master timeline (e.g. bookmarks). The web applications distributing content over computer networks **604** comprise one or more applications to distribute preferred master timelines and sections in master timelines to other users over a computer network. The audio to text transcription module **605** comprises a section to enable the audio to text transcript to be displayed in a master timeline. The add content player user events section **606** is configured to include and record information created by a content player user for a synchronized multimedia

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presentation. The information may be annotations, links, meta-elements, image data and audio data in accordance with one embodiment of the invention. The log content player user events section **607** is configured to store records and information pertaining to content player user events and generated by a content player user for a synchronized multimedia presentation in accordance with one embodiment of the invention.

The synchronized presentation viewer **608** comprises an image data viewer area **609** and a master timeline playback area **610** in accordance with an embodiment of the invention. The image data viewer area **609** displays one or more synchronized multimedia presentations. In one embodiment of the invention, the one or more synchronized multimedia presentations are reproduced in a live transmission generated by a content creator user.

The master timeline playback area **610** reproduces the synchronized multimedia presentation containing image data and the audio timeline in accordance with an embodiment of the invention. The master timeline playback area **610** comprises play, forward, backward, pause, stop, adjust sound volume, and vary playback speed of the synchronized multimedia presentation.

The synchronized multimedia presentation sections area **611** comprises one or more sections **612** wherein a content player user selects a preferred point in the master timeline to view the synchronized multimedia presentation. The one or more sections **612** may be generated automatically or manually by a content creator user in accordance with one embodiment of the invention. The one or more sections **612** generated automatically are retrieved from the timestamps **515** generated by the content creator user.

The content player interface **601** illustrated in FIG. 6 represents one of many possibilities to arrange the content creator interface. Nevertheless, in other embodiments, the sections represented in the content creator interface **601** may be arranged in different configurations.

Methods for processing image data to coincide in a point of time with audio data to create a master timeline coordinating audio timeline playback and image data display to generate a synchronized multimedia presentation using content creator and content player modules are now described.

As illustrated in FIGS. 7A-7B, the method **700** begins with a content creator user accessing a synchronization system using a computing device **101** as described in the process

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702. In one embodiment of the invention, accessing the synchronization system **103** may occur over a computer network **102**.

As illustrated in FIG. 7A, if a content creator user prefers to transmit a synchronized multimedia presentation over a computer network **102** using a live transmission **703:YES**, then the method **700** continues with enabling the live transmission **704** in accordance with an embodiment of the invention. The live transmission **703** is configured to transmit and receive one or more synchronized multimedia presentations in a computing device **101** over a computer network **102** allowing playback to start while the rest of the data is still being received while in a live transmission. In the process **704**, the live transmission may be configured to delay the transmission and reception of synchronized multimedia presentations to one or more content player users in accordance with an embodiment of the invention.

In the process **705**, the one or more audio data is manipulated to assemble an audio timeline containing a sequential order of one or more audio data. The one or more audio data are created by using an apparatus to capture sounds and transfer to the content creator module **201**. In one embodiment of the invention, the one or more audio data are listed by transferring the one or more audio data from a computing device **101** to the content creator module **201**. In another embodiment of the invention, the one or more audio data is manipulated by equalizing sounds of audio files, adding and/or removing parts of audio files, adding and/or removing sound effects. In another embodiment of the invention, the one or more audio data is reproduced by playing, forwarding, backwarding, pausing, stopping, adjusting sound volume, varying playback speed of audio data.

In the process **705**, the one or more audio data are assembled to generate an audio timeline **513** comprising the sum of time durations of the one or more audio data in accordance with an embodiment of the invention. The audio timeline **513** comprises a sequential order of one or more audio data wherein the sequential order may be determined by a content creator user in accordance with an embodiment of the invention.

In the process **706**, one or more image data are manipulated to display transformations made as a result of editings. The one or more image data are created using an apparatus to capture images and transfer to the content creator module **201** in accordance with one embodiment of the invention. The one or more image data are listed by transferring the one or more image data from a computing device **101** to the content creator

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module **201**. The one or more image data are manipulated using one or more manipulation tools **506**. The one or more manipulation tools comprise resizing, cropping, color manipulating, rotating, including layers with graphical elements, tridimensional manipulations, animations, zooming, sharpening, enhancing, removing blemish, adding tone effect, reversing image, reversing exposure, adding, deleting, and modifying one or more graphical image elements in accordance with one embodiment of the invention. In one embodiment of the invention, the one or more image data transferred to the content creator module **201** may be previewed by a content creator user.

In the process **707**, one or more timestamps are generated for an audio timeline to be assigned to each of the image data listed in the content creator module. The audio timestamps **515** represent the current play time for each of the image data listed in a list of image data section **503**. Following the process **708**, each of the image data listed in the content creator module is assigned a timestamp **513** recording a play time wherein each image is displayed to coincide in time with the audio timeline **513**. Then, in the process **709**, each image timestamp is connected to the master timeline, thus generating an audio data and image data time relationship.

In the process **710**, the master timeline containing image data and the audio timeline generates a digital control file. The digital control file contains records or information concerning one or more manipulations processed in audio data and image data wherein the characteristic integrity of audio data and image data are maintained. The digital control file may use any text file standard, wherein some embodiments may use HTML, XML and Json. The digital control file comprises a text file standard recording a time relationship between the audio timeline and image data.

In the **711** process, one or more meta-elements describing the characteristics of a synchronized multimedia presentation may be added permitting that synchronized multimedia presentations are discoverable by search engines in accordance with one embodiment of the invention. The one or more meta-elements comprising records and information stored in the digital control file and audio to text transcription may be text files, meta-tags, titles, author and date to generate meta-elements.

As illustrated in FIG. 7B, if a content creator user prefers to generate audio to text transcriptions **712:YES**, then the method **700** continues with enabling the audio to text transcriptions **713** in accordance with an embodiment of the invention. Automatic and

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manual audio to text transcripts describing the content in an audio timeline may be enabled in accordance with one embodiment of the invention. The manual audio to text transcription comprise a transcription generated by a human operator (e.g. content creator user) transferred from a computing device **101** to the content creator module **201**. The automated audio to text transcription comprise a transcription generated using machine learning techniques generated by an application programming interface in accordance with an embodiment of the invention. The manual and automated audio to text transcriptions comprising a text-type file may be recorded in a different file than the digital control file storing the master timeline synchronizing one or more image data with an audio timeline **513**. The text-type file generated for audio to text transcriptions is stored in the file system database **203**.

In the process **714**, the digital control file containing the commands to execute the time relationship between image data and the audio timeline, thus comprising a master timeline is stored in a file system database **203**.

As shown in FIG.8, a method **800** for reproducing a master timeline **520** to reproduce a synchronized multimedia presentation containing image data coinciding in time with an audio timeline is described in accordance with an embodiment of the invention. In the process **801**, the content player module is accessed by a content player user. Then, a request to the file system database to retrieve the digital control file is generated in **802**.

The content player module **202** processing the digital control file in **803** to execute the time relationship between image data and the audio timeline. Then, the master timeline is loaded to proceed with reproducing a synchronized multimedia presentation in **804**. In the process **805**, the master timeline playback is activated.

As illustrated in FIG. 8, if a content player user prefers to display audio to text transcriptions to be displayed during the time the master timeline playback is being reproduced **806:YES**, then the method **800** continues with displaying the audio to text transcriptions.

The content player module **202** may enable the exhibition of meta-elements, records content player user events and distributes content player user events to one or more content player users in accordance with an embodiment of the invention.

In the process **808**, the master timeline is reproduced and the synchronized multimedia presentation is viewed by the content player user.

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As illustrated in FIG. 9, an embodiment of a master timeline with one or more image data processed to coincide in a point of time with the audio timeline disclosed herein **901**. The audio timeline reproducing a sequential order of audio data during the time that listed, created and/or manipulated image data are displayed in **908**. In some embodiments, an image not having the use of manipulations **902** may be displayed as the first image in the point of time synchronized with the timestamps **517** generated for the audio timeline **513**. In the time following, a manipulated version of the first image may be displayed in the point of time synchronized with the timestamps generated for the audio timeline, wherein a section of the first image displaying a close-up with one or more characteristics of the first image are viewed in detail **903**. A second image not having the use of manipulations **904** may be displayed in the point of time synchronized with timestamps **517** generated for the audio timeline **513**. One or more annotations overlaying the second image wherein some sections may be made visually prominent using hand drawings **905**. A third image not having the use of manipulations **906** may be displayed in the point of time synchronized with the timestamps generated for the audio timeline. In the time following, a manipulated version of the third image may be displayed in the point of time synchronized with the timestamps generated for the audio timeline, wherein one or more hyperlinks **907** overlaying the third image allowing a content player user pressing a button or touching a computing device screen to access the content of the one or more hyperlinks **907**.

Although the processes of the methods herein are shown and described in a particular order, the order of the processes of the methods may be altered so that certain processes may be performed in an inverse order or so that certain processes may be performed, at least in part, concurrently with other processes. In another embodiment, instructions or sub-processes of distinct processes may be implemented in an intermittent and/or alternating manner.

Although the present disclosure has been illustrated and described with respect to one or more implementations, equivalent alterations and modifications will occur to others skilled in the art upon the reading and understanding of the present disclosure and the annexed drawings. Furthermore, while a particular feature of the present disclosure may have been disclosed with respect to one of several implementations, such feature may be combined with one or more other features of the other implementations as may be desired and advantageous for any given or particular application. Thus, the breadth and scope of the

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present disclosure should not be limited by any of the above described embodiments. Rather, the scope of the present disclosure should be defined in accordance with the following claims and their equivalents.

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AMENDMENTS TO THE CLAIMS

Please amend the claims according to the status designations in the following list, which contains all claims that were ever in the Application, with the text of all active claims.

1. (CURRENTLY AMENDED) A method for processing image data to coincide in a point of time with audio data ~~to create~~ generating a master timeline coordinating audio timeline playback and image data display ~~to generate~~ generating a synchronized multimedia presentation ~~using a content creator module~~, the method comprising:

a content creator module comprising:

receiving one or more audio data;

generating one or more audio data commands;

manipulating one or more audio data to assemble an audio timeline;~~, wherein the audio timeline contains timestamps to indicate a position of time wherein each image data is displayed to coincide in time with audio playback recorded in the audio timeline;~~

assembling the audio timeline comprising one or more audio data;

receiving one or more image data;

generating one or more image data commands;

manipulating one or more image data;

assigning one or more timestamps indicating one or more position of time wherein each image data displaying to coincide in time with an assembled audio data playback recorded in the audio timeline;

generating a master timeline;

~~creating~~ processing a master timeline comprising a synchronized audio data and image data master timeline ~~manipulated image data and the audio timeline and~~ establishing a time relationship between audio data and image data ~~and the audio timeline to generate~~ generating a synchronized multimedia presentation;

~~generating a digital control file wherein records and information pertaining to manipulations of image data and the audio timeline in the master timeline are stored to maintain the synchronized time relationship between image data and the audio timeline;~~

~~storing the master timeline in a file system database;~~

~~processing the digital control file to reproduce the synchronized multimedia presentation and maintaining the integrity of each image data and audio data in the master timeline.~~

generating a digital control file in a standard text file format comprising:

a plurality of commands maintaining each audio data and image data characteristic integrity in the synchronized audio data and image data master timeline;

a plurality of commands storing the synchronized audio data and image data master timeline establishing a time relationship between audio data and image data generating the synchronized multimedia presentation;

processing the synchronized audio data and image data master timeline;

processing the plurality of commands in the digital control file;

generating the digital control file comprising a synchronized multimedia presentation master timeline;

storing the synchronized multimedia presentation master timeline in a file system database.

2-22 (CANCELLED)

23. (CURRENTLY AMENDED) A synchronization system for processing image data to coincide in a point of time with audio data ~~to create~~ generating a master timeline coordinating audio timeline playback and image display ~~to generate~~ generating a synchronized multimedia presentation, the system comprising:

a content creator module ~~to create a master timeline comprising image data and audio data wherein each image data is assigned a timestamp corresponding to a time value of a play duration of an audio timeline to generate a digital control file containing synchronizing information to execute the master timeline and reproduce a synchronized multimedia presentation;~~ comprising:

an audio data section comprising:

an audio data creation section configured to receive one or more audio data;

an audio data list section configured to generate one or more audio data commands;

an audio data manipulation section configured to ~~manipulating~~ manipulate one or more audio data to assemble an audio timeline~~, wherein the audio timeline contains comprising timestamps indicating one or more position of time~~

~~wherein each image data is displayed displaying to coincide in time with an assembled audio data playback recorded in the audio timeline;~~

an audio data timeline creation section configured to assemble an audio data timeline

an image data section comprising:

an image data creation section configured to receive one or more image data;

an image data list section configured to generate one or more image data commands;

an image data manipulation section configured to manipulate one or more image data;

a master timeline section comprising:

a timestamp creator section configured to assign one or more timestamps indicating one or more position of time wherein each image data displaying to coincide in time with an assembled audio data playback recorded in the audio timeline;

an audio timeline and image data relationship generator configured to generate a master timeline;

a synchronization section comprising:

a master timeline information compilation section configured to process a time relationship between the audio data timeline and one or more image data;

an audio timeline and image data time relationship execution section;

a digital control file generator configured to:

generate a plurality of commands maintaining each audio data and image data characteristic integrity in the synchronized audio data and image data master timeline;

generate a plurality of commands storing the synchronized audio data and image data master timeline establishing a time relationship between audio data and image data generating the synchronized multimedia presentation;

process the synchronized audio data and image data master timeline;

process the plurality of commands in the digital control file;

generate the digital control file comprising a synchronized multimedia presentation;

~~a content player module to process the digital control file and reproduce the synchronized multimedia presentation according to records and information pertaining to the master timeline and enable users to manipulate the synchronized multimedia presentation while viewing thereon; and~~

~~a file system database configured to store data pertaining to the digital control file and one or more content player user events.~~

a file system database to store the synchronized multimedia presentation master timeline.

24-31 (CANCELLED)

32. (CURRENTLY AMENDED) The system of claim [[29]] 62 further comprising a user interface section ~~comprises~~ comprising at least a synchronized master timeline playback viewer, a content player user events and a log content player user events ~~and configured to create~~, generating, ~~store and distribute~~ storing and distributing one or more content player user events~~, wherein the content player user events are to store and distribute preferred parts of the master timeline to one or more users and enable audio to text transcriptions~~.

33. (CURRENTLY AMENDED) The system of claim 62 further ~~comprises~~ comprising a transmission and reception of the synchronized multimedia presentation using a computing device to transmit and receive over a computer network, allowing playback to start while the rest of the data is still being received while in a live transmission.

34-39 (CANCELLED)

40. (CURRENTLY AMENDED) The system of claim [[34]] 62 further comprising an audio to text transcription module enabling~~, wherein the audio to text transcription module enables~~ the audio to text transcript to be displayed in a master timeline.

41. (CURRENTLY AMENDED) The system of claim [[34]] 62 further comprising an~~, wherein the~~ add user events section enabling a content player user ~~is configured to include and record information created by a content player user for~~ including, editing and/or recording one or more user events on the [[a]] synchronized multimedia presentation.

42. (CANCELLED)

43. (CURRENTLY AMENDED) The system of claim [[34]] 62 further comprising a~~, wherein the~~ log content player user events section ~~is~~ configured to store records and information pertaining to one or more content player user events ~~and generated by a content player user~~ for [[a]] the synchronized multimedia presentation.

44. (NEW) The method of claim 1 further comprising at least:

an audio data section comprising an audio data creation section, an audio data list section, an audio data manipulation section, an audio timeline creation section;

an image data section comprising an image data creation section, an image data list section, an image data manipulation section;

a master timeline section comprising a timestamp creator section, an audio timeline and image data relationship generator;

a synchronization section comprising a master timeline information compilation section, an audio timeline and image data time relationship execution section, a digital control file generator.

45. (NEW) The method of claim 1 further comprising generating one or more interactive graphic element layers overlaying the synchronized multimedia presentation.

46. (NEW) The method of claim 1 further comprising one or more interactive graphic element layers at least one of: annotations, text selection, clickable hyperlinks, clickable buttons, zooming, or drawings.

47. (NEW) The method of claim 1 further comprising generating one or more commands storing one or more interactive graphic element layers.

48. (NEW) The method of claim 1 further comprising generating the digital control file in a standard text file at least one of: html, xml, csv or json.

49. (NEW) The method of claim 1 further comprising processing the digital control file comprising the synchronized multimedia presentation master timeline in one or more of the following formats: a computing device application or web application.

50. (NEW) The method of claim 1 further comprising enabling one or more manipulations of audio data, the said manipulations comprising at least one of: equalize sounds of audio data, add and/or remove parts of audio data, or add and/or remove sound effects of audio data.

51. (NEW) The method of claim 1 further comprising enabling one or more manipulations of image data to display transformations made as a result of editing, the said manipulations comprising at least one of: resize, crop, colour manipulation, rotate, include layers with interactive graphic elements, tridimensional manipulations, animations, zoom, sharpen, enhance, remove blemish, add tone effect, reverse image, reverse exposure, add, delete, or modify one or more graphic image elements.

52. (NEW) A method for reproducing image data coinciding in a point of time with audio data generating a master timeline coordinating audio timeline playback and image data display generating a synchronized multimedia presentation, the method comprising:

a content player module comprising:

loading a digital control file in a standard text file format comprising a plurality of commands generating a synchronized multimedia presentation master timeline;

processing the digital control file;

executing the plurality of commands in the digital control file generating the synchronized multimedia presentation master timeline;

executing the digital control file comprising the synchronized multimedia presentation master timeline;

reproducing the synchronized multimedia presentation.

53. (NEW) The method of claim 52 further comprising at least one of: a synchronization processing section, a playback section.

54. (NEW) The method of claim 52 further comprising a synchronized master timeline playback viewer reproducing the synchronized multimedia presentation on a multimedia player.

55. (NEW) The method of claim 52 further comprising reproducing one or more interactive graphic element layers on the content player module.

56. (NEW) The method of claim 52 further comprising enabling a content player user manipulating one or more interactive graphic element layers while the said presentation is being reproduced on the synchronized master timeline playback viewer.

57. (NEW) The method of claim 52 further comprising executing manipulations of one or more interactive graphic element layers at least one of: annotations, text selection, clickable hyperlinks, clickable buttons, zooming or drawings.

58. (NEW) The method of claim 52 further comprising processing one or more content player user-generated commands comprising one or more interactive graphic element layers.

59. (NEW) The method of claim 52 further comprising enabling a content player user to reproduce the digital control file generating the synchronized multimedia presentation in one or more of the following formats: computing device application or web application.

60. (NEW) The method of claim 52 further comprising content player user-generated events stored in a content player user digital control file in a standard text file format.

61. (NEW) The system of claim 23 further comprising at least:

an audio data section comprising an audio data creation section, an audio data list section, an audio data manipulation section, an audio data timeline creation section;

an image data section comprising an image data creation section, an image data list section, an image data manipulation section;

a master timeline section comprising a timestamp creator section, an audio timeline and image data relationship;

a synchronization section comprising a master timeline information compilation section, an audio timeline and image data time relationship execution section, a digital control file generator.

62. (NEW) A system for reproducing image data coinciding in a point of time with audio data generating a master timeline coordinating audio timeline playback and image data display generating a synchronized multimedia presentation, the system comprising:

a content player module comprising:

a synchronization section comprising a synchronization processing section configured to:

load a digital control file in a standard text file format comprising a plurality of commands generating a synchronized multimedia presentation master timeline;

process the digital control file;

execute the plurality of commands in the digital control file generating the synchronized multimedia presentation master timeline;

a playback section configured to:

execute the digital control file comprising the synchronized multimedia presentation master timeline;

reproduce the synchronized multimedia presentation.

63. (NEW) The system of claim 62 further comprising at least:

a synchronization section comprising a synchronization processing section;

a playback section.

64. The system of claim 62 further comprising enabling a synchronized master timeline playback viewer to reproduce the synchronized multimedia presentation on a multimedia player.

65. (NEW) The system of claim 62 further comprising:

Reproduce one or more interactive graphic element layers on the master timeline playback viewer;

Enable a content player user to manipulate one or more interactive graphic element layers while the synchronized multimedia presentation is being reproduced on the master timeline playback viewer;

Execute one or more manipulations of one or more interactive graphic element layers at least one of: annotations, text selection, clickable hyperlinks, clickable buttons, zooming or drawings.

66. (NEW) The system of claim 62 further comprising enabling a content player user to reproduce the digital control file generating the synchronized multimedia presentation in one or more of the following formats: computing device application or web application.

67. (NEW) The method of claim 62 further comprising content player user events stored in a content player user digital control file in a standard text file format.

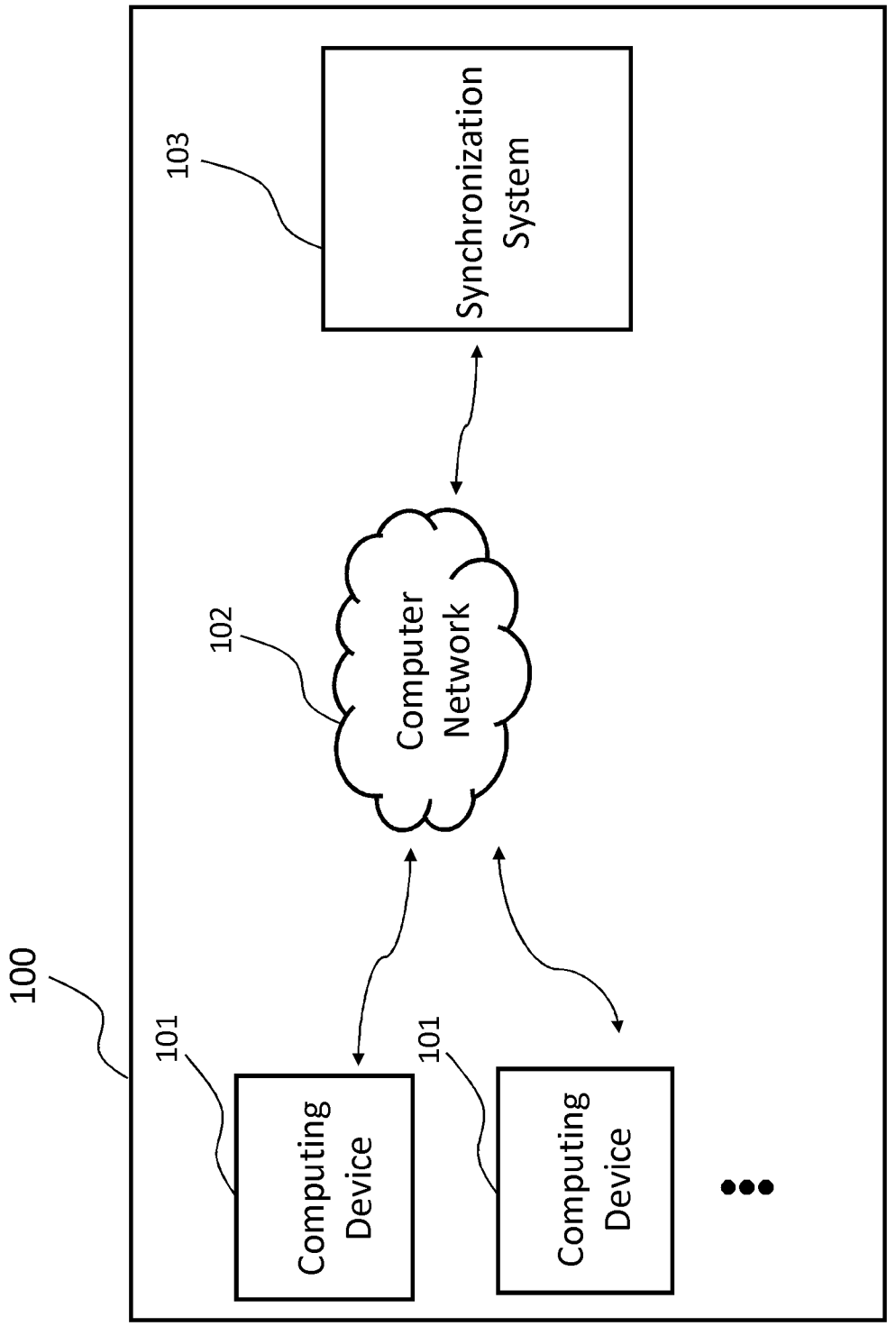

FIG. 1

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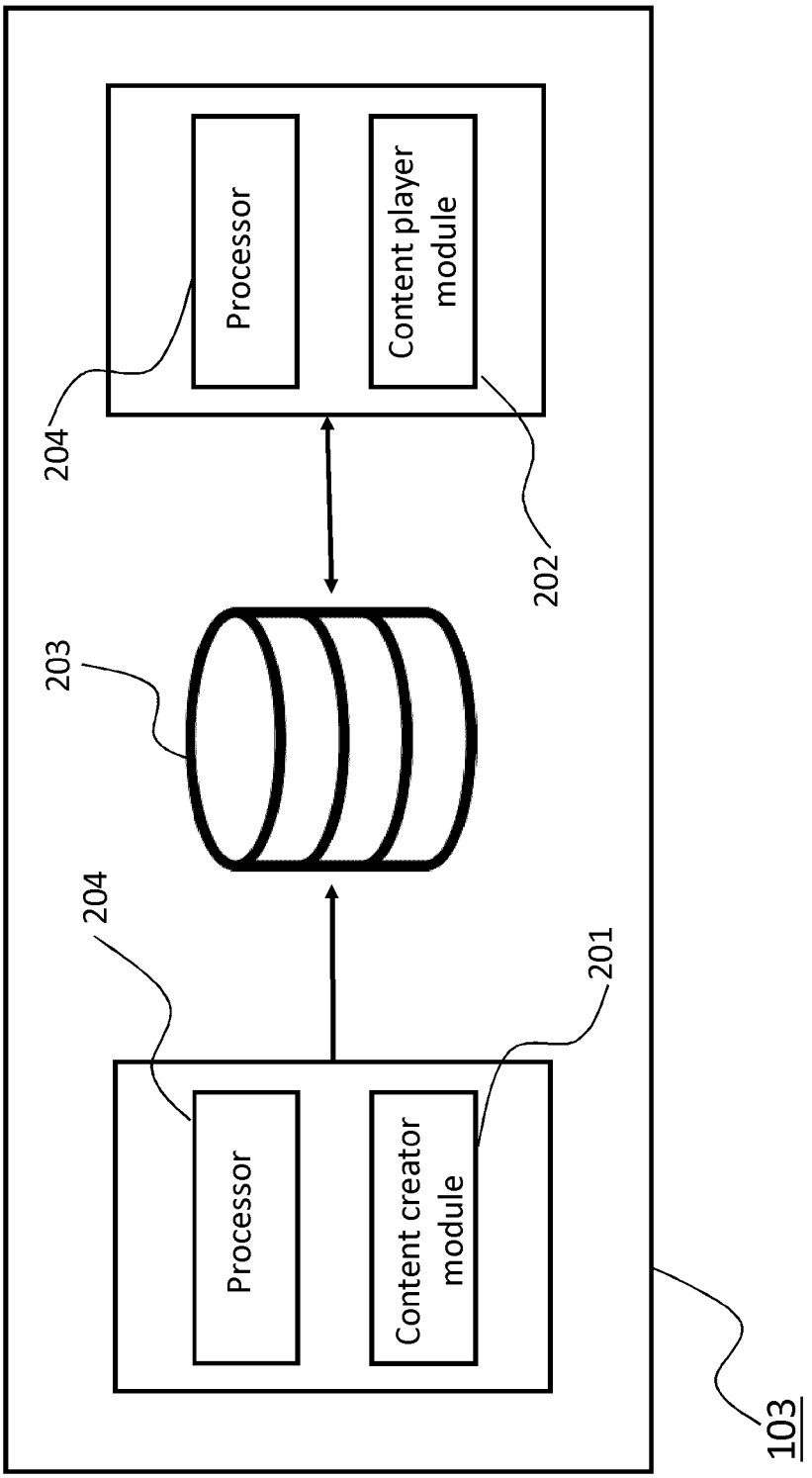

FIG. 2

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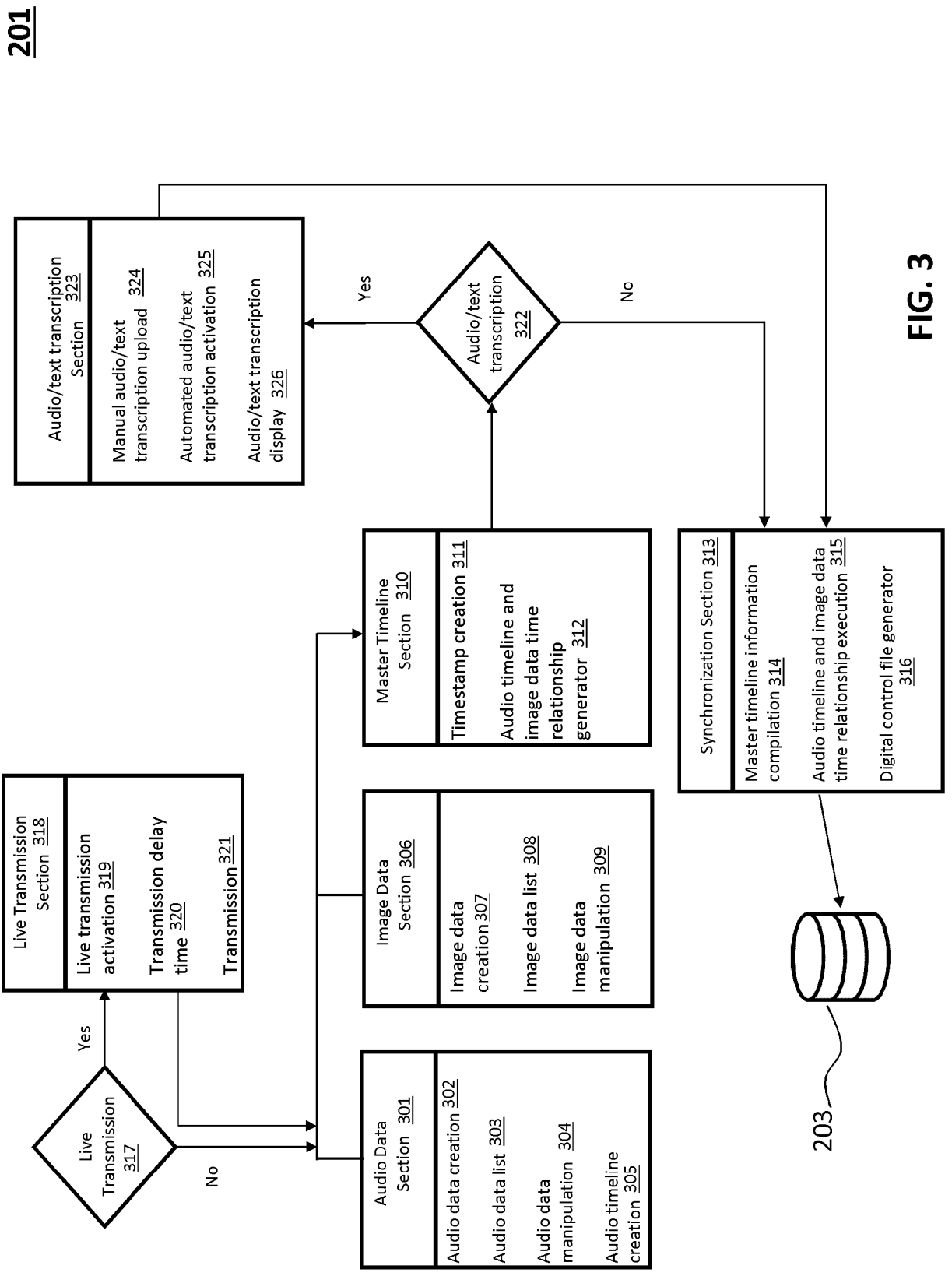
201
Audio/text transcription Section 323
Manual audio/text transcription upload 324
Automated audio/text transcription activation 325
Audio/text transcription display 326
Yes
Audio/text transcription 322
No
Live Transmission Section 318
Live transmission activation 319
Transmission delay time 320
Transmission 321
Master Timeline Section 310
Timestamp creation 311
Audio timeline and image data time relationship generator 312
Synchronization Section 313
Master timeline information compilation 314
Audio timeline and image data time relationship execution 315
Digital control file generator 316
Yes
Live Transmission 317
No
Image Data Section 306
Image data creation 307
Image data list 308
Image data manipulation 309
Audio Data Section 301
Audio data creation 302
Audio data list 303
Audio data manipulation 304
Audio timeline creation 305
203

FIG. 3

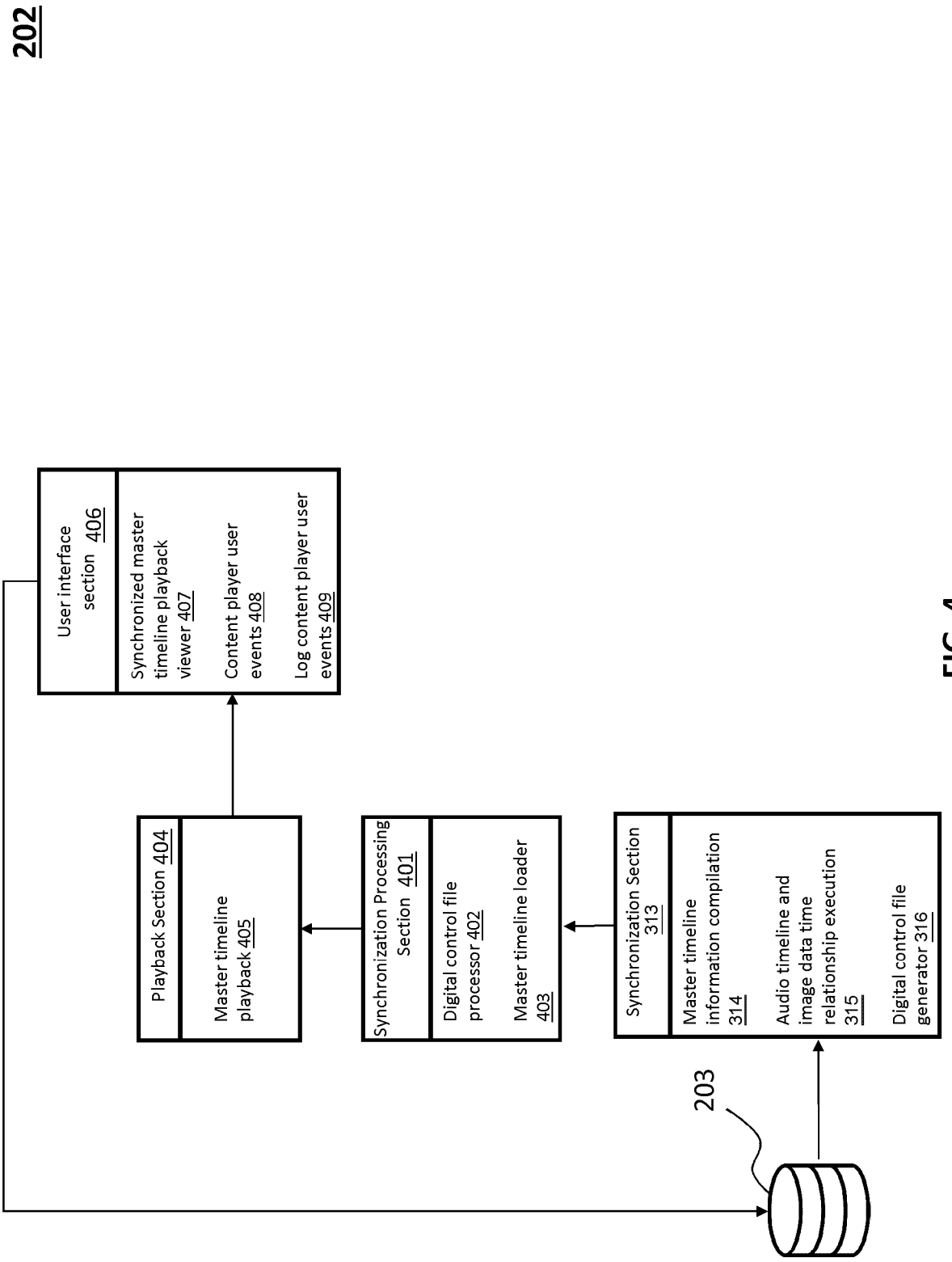
202
User interface section 406
Synchronized master timeline playback viewer 407
Content player user events 408
Log content player user events 409
Playback Section 404
Master timeline playback 405
Synchronization Processing Section 401
Digital control file processor 402
Master timeline loader 403
Synchronization Section 313
Master timeline information compilation 314
Audio timeline and image data time relationship execution 315
Digital control file generator 316
203

FIG. 4

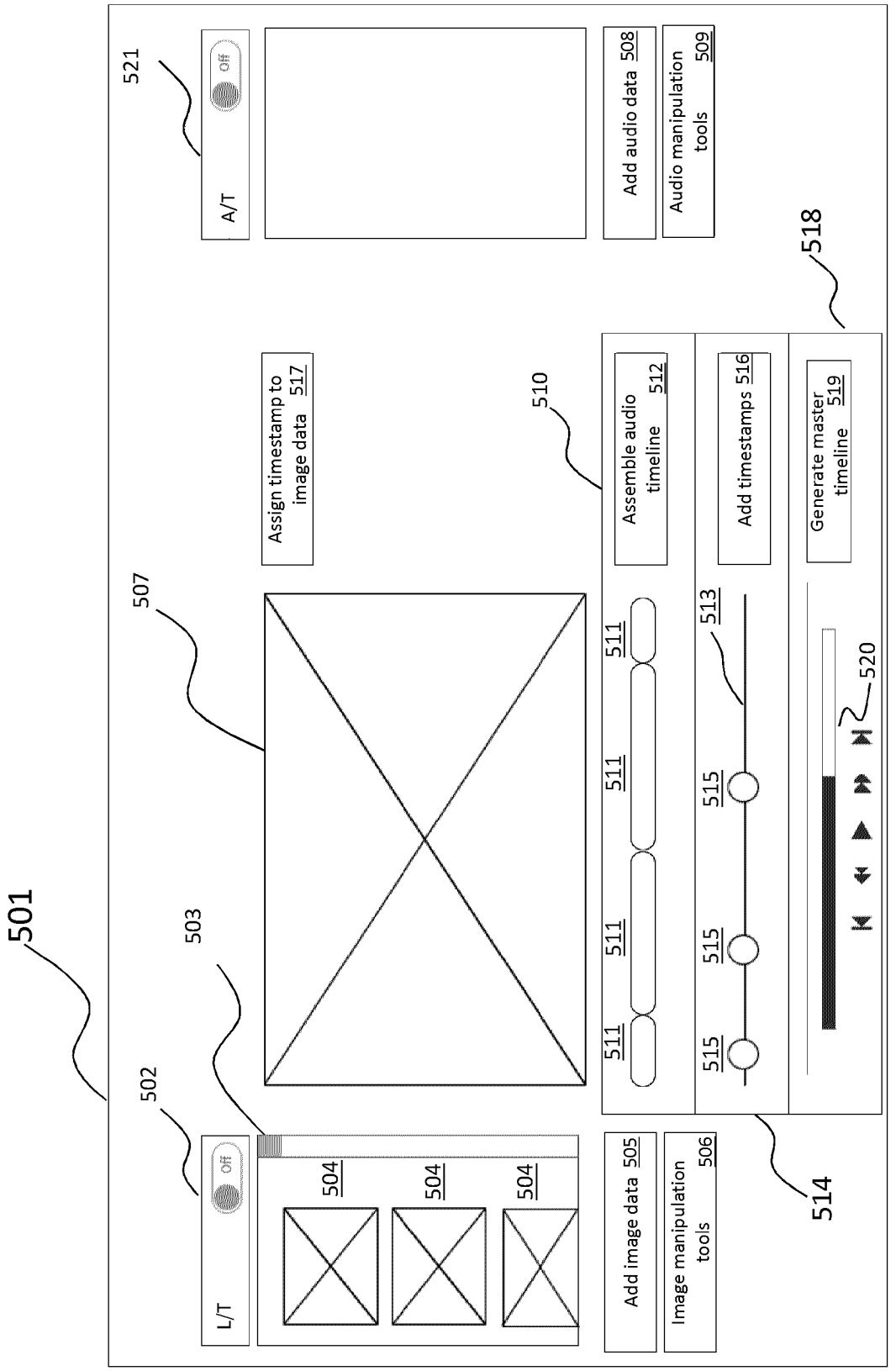

FIG. 5

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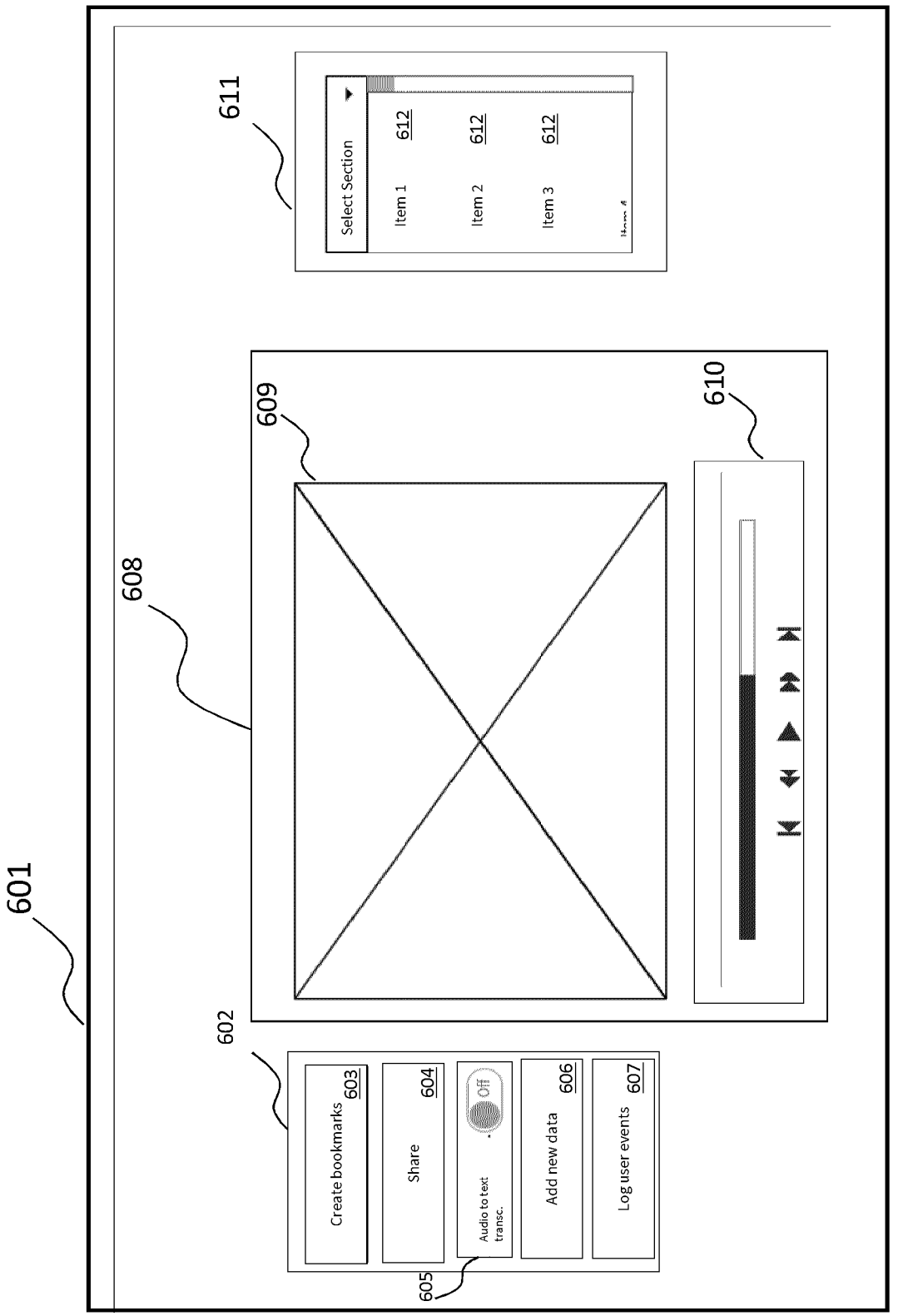
601
602
603
Create bookmarks
604
Share
605
Audio to text transc.
Off
606
Add new data
607
Log user events
608
609
610
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Select Section
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Item 1
612
Item 2
612
Item 3

FIG. 6

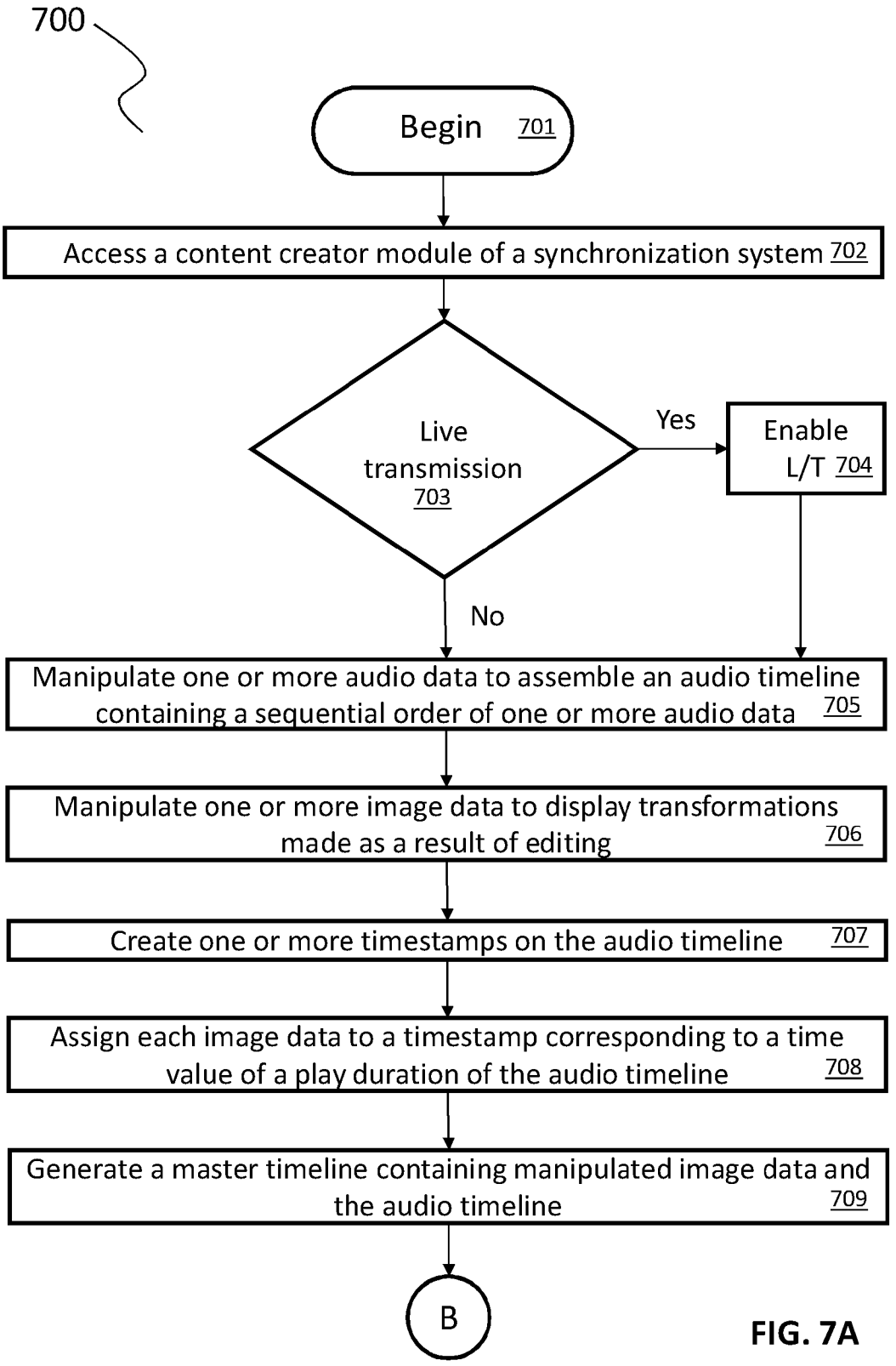

FIG. 7A

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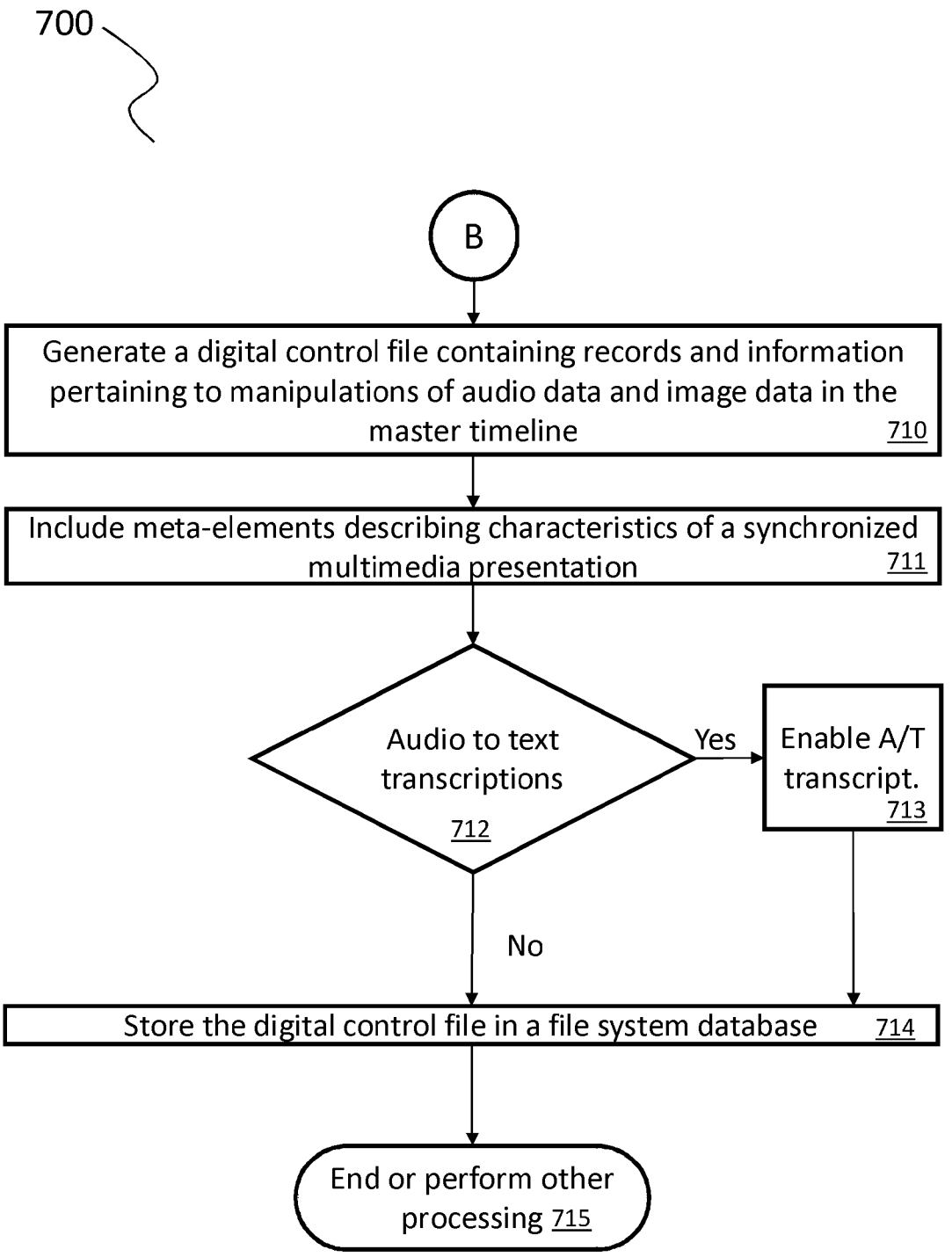

FIG. 7B

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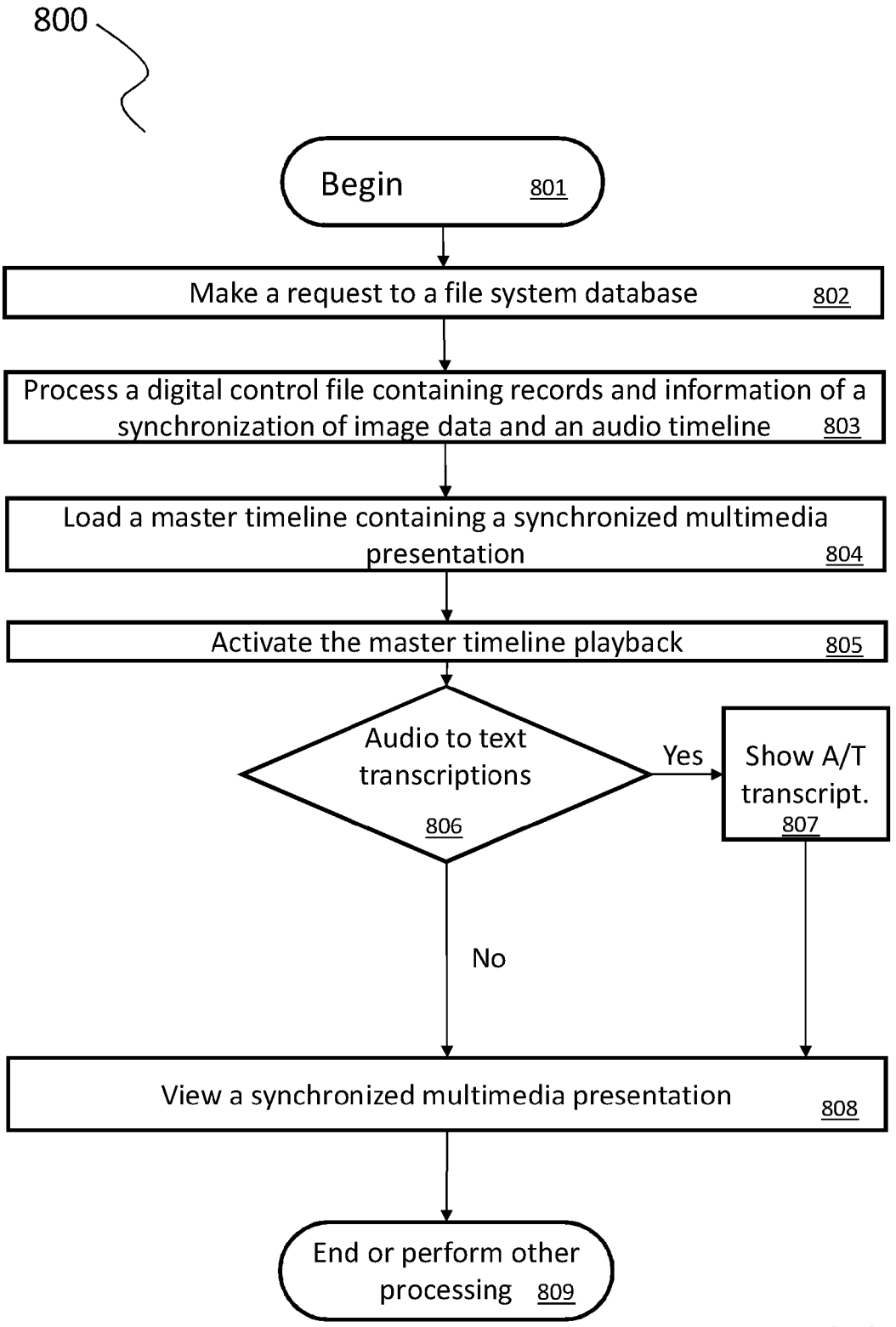

FIG. 8

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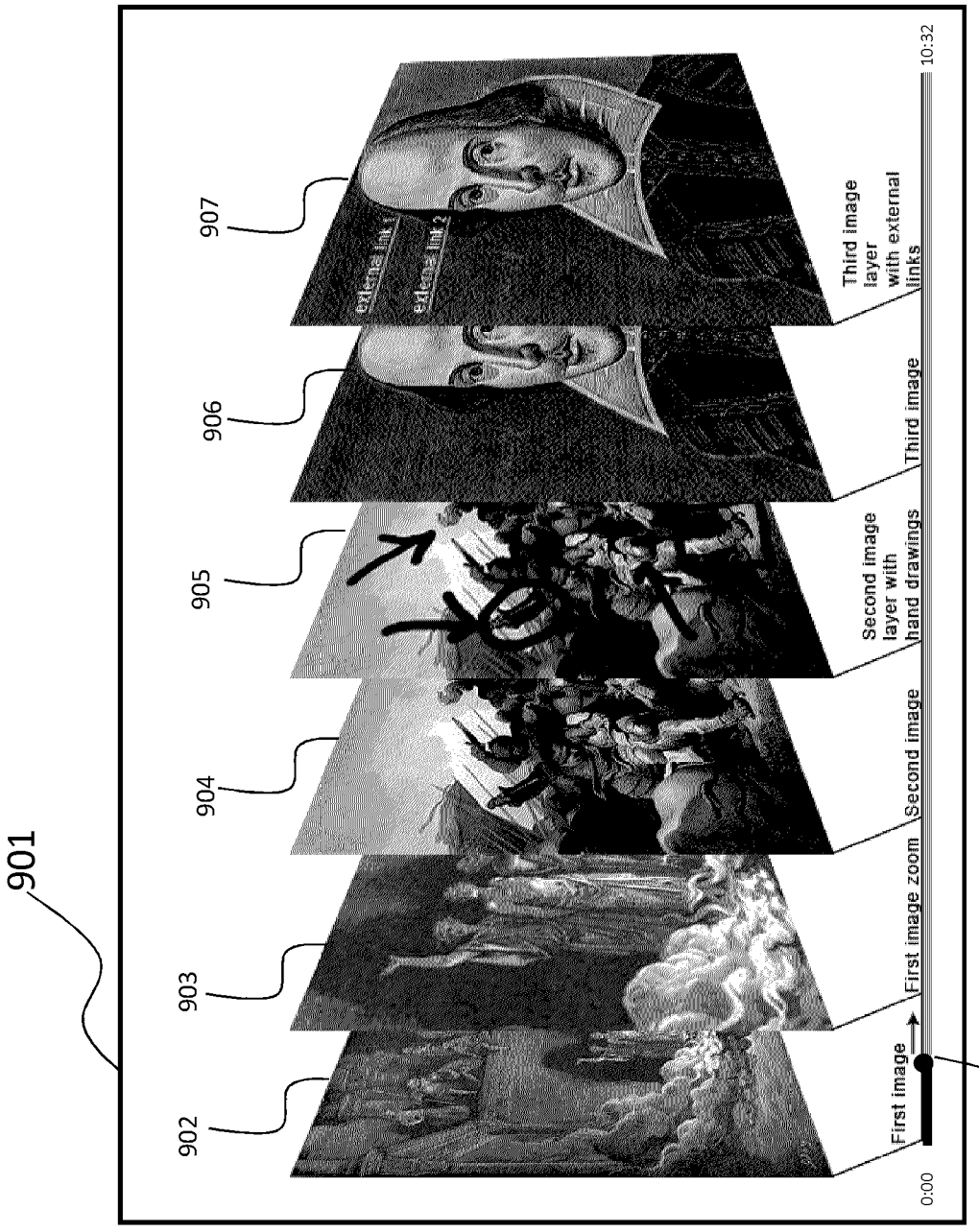

FIG. 9

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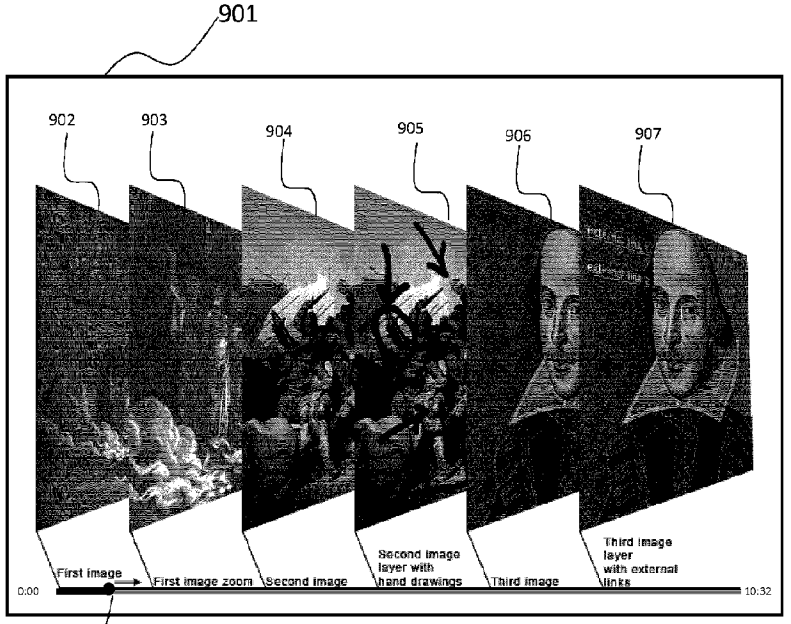
901
902
903
904
905
906
907
First image
First image zoom
Second image
Second image layer with hand drawings
Third image
Third image layer with external links
0:00
10:32
908