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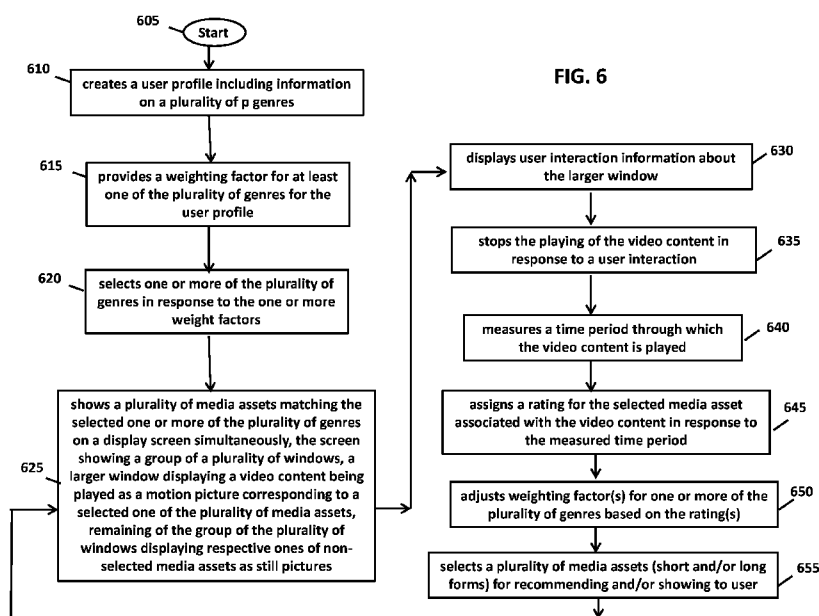
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(57) Abstract: The present principles of the embodiments generally relate to an apparatus and a method for processing media assets and in particular to assigning ratings based on short form media assets. Short form media assets may comprise, for example, a short clip of a program such as a movie trailer. One exemplary embodiment of the present invention provides an apparatus and a method for presenting short form media assets to a user of an electronic device. Ratings for the media assets are determined based on user interaction with the short form media assets. Ratings are used to make changes to the user profile and recommendations of other media assets to the user.

METHOD AND APPARATUS FOR PROCESSING MEDIA ASSETS

CROSS REFERENCE TO RELATED APPLICATIONS

5 This application claims priority to and all benefits accruing from the provisional application filed in the United States Patent and Trademark Office on May 29, 2014 and assigned serial numbers 62/004,416.

BACKGROUND OF THE INVENTION

10 Field of the Invention

 The present principles of the embodiments generally relate to an apparatus and a method for processing media assets and in particular to assigning ratings based on short form media assets for making changes to user profiles and recommendations to users. Short form media assets may
15 comprise, for example, a short clip of a program such as, e.g., a movie trailer or a portion of the normal movie content.

Background Information

 Electronic devices such as televisions, personal computers (PC),
20 tablets, cellphones, and etc., require a control system that includes a user interface system. Typically, a user interface provides information to and receives information from a user and simplifies usage of a device. One example of a user interface is an electronic program guide and its associated user interaction menu in an electronic device as shown in FIG. 1 and FIG. 2.

25 An electronic program guide may comprise a program or media asset information database and an interactive user interface. An electronic program guide obtains program information about program contents from an information provider and may display the program information to a user. The
30 program content may be a video and/or an audio media asset from various sources, such as, for example, broadcast, satellite, internet, local storage media, and etc. Program guide information typically comprises programming information for a program such as, for example, channel number, program title, start time, end time, elapsed time, time remaining, review rating, parental

guide rating, genre, a description of the program's content, and, etc. A genre of a program or media asset corresponds to a category or a classification of programs or media assets. It is sometime also referred to as theme or type of programs. Examples of possible genres comprise, e.g., sports, romance, drama, action, news, documentary, comedy, horror, adventure, biography, Jazz, rock, movie, TV series, and etc. As illustrated in FIG. 2, when a user highlights the movie ZULU, additional program guide information for the movie ZULU is shown in 320, including the genre for the program which is ACTION in this example.

U.S. Patent No. 5,515,106, issued to Chaney et al., describes in detail an exemplary embodiment of a system for providing program guide information to an electronic device including data packet structure for carrying the program guide information from a provider to the electronic device. The exemplary data packet structure is designed so that both the channel information (e.g., channel name, call letters, channel number, type, etc.) and the program description information (e.g., title, rating, star, genre, etc.) relating to a program may be transmitted from a program guide database provider to a receiving apparatus. The teachings of this patent are incorporated herein by reference in their entirety.

Therefore, various existing electronic devices which provide program contents for viewing and/or listening from a variety of sources may categorize the variety of programs into different genres for searching by users or for recommending additional programs to users. In addition, various content providers such as, e.g., video streaming service provider Netflix allows a user to create an individual user profile. Once a user profile is created, Netflix will recommend programs to a user based on programs which the user had previously watched.

The present inventors recognize the needs to improve the existing electronic devices, and in particular to provide advantageous improvements to user profile creation and recommendation features of the existing electronic devices.

SUMMARY OF THE INVENTION

An object of the present invention is to provide solutions and improvements to existing electronic devices in accordance with the principles
5 of the present invention as recognized by the present inventors,

In accordance with an aspect of the present invention, an apparatus is presented, comprising:

a processor for processing a user profile including information on a
10 plurality of genres; wherein the user profile comprising a weighting factor for at least one of the plurality of genres for the user profile;

a video processor for providing on a display, a plurality of media assets matching selected one or more of the plurality of genres, the display showing a group of a plurality of windows, a larger window for playing a motion video
15 content corresponding to a selected one of the plurality of the media assets, remaining of the group of the plurality of windows showing respective ones of non-selected media assets as still pictures;

a user control unit for entering a user command for interrupting the playing of the motion video content; and

20 the processor measures a time period through which the motion video content is played; and the processor assigns a rating on the selected media asset associated with motion video content in response to the measured time period.

25 In another embodiment, a method is presented comprising:

creating a user profile including information on a plurality of genres;
providing a weighting factor for at least one of the plurality of genres for the user profile;

selecting one or more of the plurality of genres in response to the one
30 or more weight factors;

showing a plurality of media assets matching the selected one or more of the plurality of genres on a display screen simultaneously, the screen showing a group of a plurality of windows, a larger window displaying a video content being played as a motion picture corresponding to a selected one of

the plurality of media assets, remaining of the group of the plurality of windows displaying respective ones of non-selected media assets as still pictures;

displaying user interaction information about the larger window;

5 stopping the playing of the video content in response to a user interaction;

measuring a time period through which the video content is played; and

assigning a rating for the selected media asset associated with the video content in response to the measured time period.

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In accordance with another aspect of the present invention, an apparatus is presented, comprising:

means for processing a user profile including information on a plurality of genres, wherein the user profile comprising a weighting factor for at least one of the plurality of genres for the user profile;

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means for providing on a display, a plurality of programs matching a selected one or more of the plurality of genres, the display showing a group of a plurality of windows, a larger window playing a motion video content corresponding to a selected one of the plurality of programs, remaining of the group of the plurality of windows showing respective ones of non-selected programs as still pictures;

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means for entering a user command for interrupting the playing of the motion video content; and

the means for processing measures a time period through which the motion video content is played; and the processor assigns a rating on a media asset associated with motion video content in response to the measured time period.

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DETAILED DESCRIPTION OF THE DRAWINGS

30 The above-mentioned and other features and advantages of this invention, and the manner of attaining them, will become more apparent and the invention will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 shows an existing program guide in an electronic device.

FIG. 2 shows another existing program guide in an electronic device.

FIG. 3 shows an exemplary apparatus according to the principles of the present invention;

5 FIG. 4 shows an example of user profile creation and genre selection and weighting process according to the principles of the present invention;

FIG. 5 shows an exemplary user interface of an electronic device according to the principles of the present invention; and

10 FIG. 6 shows an exemplary process according to the principles of the present invention.

FIG. 7 shows another exemplary process according to the principles of the present invention.

15 The examples set out herein illustrate exemplary embodiments of the invention. Such examples are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION

Referring now to the drawings, and more particularly to FIG. 3, FIG. 3 shows an exemplary embodiment of an electronic device 3 capable of processing audio, video signals and various associated processes in accordance with the principles of the present invention. As described herein, the system shown in FIG. 3 is an MPEG compatible system for receiving MPEG encoded transport streams representing broadcast programs. MPEG compatible systems may include systems capable of processing, e.g., MPEG-1, MPEG-2, MPEG-4, MPEG-4 Part 10 (H.264), or a future improved version thereof, compression encoded video signals. However, the system shown in FIG. 3 is exemplary only. Other non-MPEG compatible systems, involving systems capable of processing other types of non-MPEG related encoded data streams may also be used according to the principles of the present invention.

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Other exemplary devices may include mobile devices such as cellular telephones, tablets, PCs, or devices combining computer and television

functions such as the so-called "PCTVs". The term "program" and "media asset" as used herein are interchangeable and represent any form of content data such as digital video and/or audio information, including streaming and stored data content received via cable, satellite, broadcast and other telecommunications networks, or via local networks or connections, such as WiFi, USB, HDMI, or Firewire connections. The media content can be from a remote source (e.g., a server) or from a local source, such as from a local storage media (e.g., hard drives, memory cards or USB memory sticks, etc.).

As an overview, in the video receiver system 3 of FIG. 3, a carrier modulated with video data and/or audio data is received by antenna 10 and processed by input processor unit 15. The resultant digital output signal is demodulated by demodulator 20 and decoded by decoder 30. The output from decoder 30 is processed by transport system 25 which is responsive to commands from a user control/remote control unit 125. System 25 provides compressed data outputs for storage, further decoding, or communication to other devices.

Video decoder/processor 85 and audio decoder/processor 80 respectively, decodes the compressed data from system 25 to provide outputs for display 89 and speakers 88. Data port 75 provides an interface for communication of the compressed data from system 25 to/from other devices such as a computer or a High Definition Television (HDTV) receiver, for example. Storage device 90 stores compressed data from system 25 on storage medium 105. Device 90, in a playback mode also supports retrieval of the compressed or uncompressed video and audio data from storage medium 105 for processing by system 25 for decoding, communication to other devices or storage on a different storage medium (not shown to simplify drawing).

Considering FIG. 3 in detail, a carrier modulated with video and/or audio data, including e.g., digital radio data, received by antenna 10, is converted to digital form and processed by input processor 15. Input processor 15 includes one or more radio frequency (RF) tuners 16-1 to 16-N

for tuning to one or more broadcast channels concurrently. The input processor 15 which comprises turners 16-1 to 16-N, intermediate frequency (IF) mixer and amplifier 17 then tunes and down-converts the respective input video signal to a lower frequency band suitable for further processing. The resultant digital output signal is demodulated by demodulator 20 and decoded by decoder 30. The output from decoder 30 is further processed by transport system 25.

Multiplexer (mux) 37 of service detector 33 is provided, via selector 35, with either the output from decoder 30, or the decoder 30 output is further processed by a descrambling unit 40. Descrambling unit 40 may be, for example, a removable unit such as a smart card in accordance with ISO 7816 and NRSS (National Renewable Security Standards) Committee standards (the NRSS removable conditional access system is defined in EIA Draft Document IS-679, Project PN-3639), or a CableCARD used in U.S. cable systems. Selector 35 detects the presence of an insertable, compatible, descrambling card and provides the output of unit 40 to mux 37 only if the card is currently inserted in the video receiver unit. Otherwise selector 35 provides the output from decoder 30 to mux 37. The presence of the insertable card permits unit 40 to descramble additional premium program channels, for example, and provide additional program services to a viewer. It should be noted that in the preferred embodiment NRSS unit 40 and smart card unit 130 (smart card unit 130 is discussed later) share the same system interface such that only either an NRSS card or a smart card may be inserted at any one time. However, the interfaces may also be separate to allow parallel operation.

The data provided to mux 37 from selector 35 is in the form of an MPEG compliant packetized transport data stream as defined e.g., in MPEG2 Systems Standards ISO_IEC 13818-1 and may include program guide information and the data content of one or more program channels. The individual packets that comprise particular program channels are identified by Packet Identifiers (PIDs). The transport stream contains Program Specific Information (PSI) for use in identifying the PIDs and assembling individual

data packets to recover the content of all the program channels that comprise the packetized data stream. Transport system 25, under the control of the system controller or processor 115, acquires and collates program guide information from the input transport stream, storage device 90 or an Internet service provider via the communication interface unit 116. The individual packets that comprise either particular program channel content or program guide information, are identified by their Packet Identifiers (PIDs) contained within header information. Program guide information may contain descriptions for a program which may comprise different program descriptive fields such as title, star, ratings, genre, detailed event description, and etc., relating to a program.

The user interface incorporated in the video receiver 3 shown in FIG. 3 enables a user to activate various features by selecting a desired feature from an on-screen display (OSD) menu. The OSD menu includes an electronic program guide as described above and other selectable user features according to the principles of the present invention, and to be described in more detail below in connection with FIGs. 4 to 7. Data representing information displayed in the OSD menu is generated by, e.g., system controller 115 in response to stored program guide information, stored graphics information, system and user interface control information as described herein and in accordance with exemplary control programs to be shown in e.g., FIG. 6 and FIG. 7, and to be described in detail. The software control programs may be stored, for example, in embedded memory of system controller 115, or other suitable memory (both not shown) as well known by one skilled in the art.

Exemplary embodiment of a user control unit 125 may include one or more of, e.g., a wired or wireless remote control, a mouse, a keyboard, voice or other gesture activated devices, and etc. A user may use a user control unit 125 to move a cursor (e.g., 430 in FIG. 4), select from the OSD menu items such as, for example, an icon, one or more of a plurality of viewing windows (e.g., 505, 520-2 to 520-N in FIG. 5), a program to be selected or viewed, a program to be stored or viewed from storage, the type of storage

media and manner of storage, and scrolling of the electronic program guide, other different menu items, and etc.

A user is able to make various user selections via user control unit 125
5 as described above. System controller/processor 115 uses the selection information, provided via remote unit interface 120, to configure the various associated elements of system 3 shown in FIG. 3, in response to the selections. For example, system controller 115 provides associated control information to audio processor 80 and video processor 85 via control signal
10 paths 72 and 73 respectively to control their respective functions.

In addition, when a user selects programs for viewing or storage, system controller 115 generates PSI (Program Specific Information) suitable for the selected storage device and media. Controller 115 also configures
15 system 25 elements 45, 47, 50, 55, 65 and 95 by setting control register values within these elements via a data bus and by selecting signal paths via muxes 37 and 110 with control signal C.

In response to control signal C, mux 37 selects either, the transport
20 stream from unit 35, or in a playback mode, a data stream retrieved from storage device 90 via store interface 95. In normal, non-playback operation, the data packets comprising the program that the user selected to view are identified by their PIDs by selection unit 45. If an encryption indicator in the header data of the selected program packets indicates the packets are
25 encrypted, unit 45 provides the packets to decryption unit 50. Otherwise unit 45 provides non-encrypted packets to transport decoder 55. Similarly, the data packets comprising the programs that the user selected for storage are identified by their PIDs by selection unit 47. Unit 47 provides encrypted packets to decryption unit 50 or non-encrypted packets to mux 110 based on
30 the packet header encryption indicator information.

The functions of decryptors 40 and 50 may be implemented in a single removable smart card which is compatible with the NRSS standard. This approach places all security related functions in one removable unit that easily

can be replaced if a service provider decides to change encryption technique or to permit easily changing the security system, e.g., to descramble a different service.

5 Units 45 and 47 employ PID detection filters that match the PIDs of incoming packets provided by mux 37 with PID values pre-loaded in control registers within units 45 and 47 by controller 115. The pre-loaded PIDs are used in units 47 and 45 to identify the data packets that are to be stored and the data packets that are to be decoded for use in providing a video image.

10 The pre-loaded PIDs are stored in look-up tables in units 45 and 47. The PID look-up tables are memory mapped to encryption key tables in units 45 and 47 that associate encryption keys with each pre-loaded PID. The memory mapped PID and encryption key look-up tables permit units 45 and 47 to match encrypted packets containing a pre-loaded PID with associated

15 encryption keys that permit their decryption. Non-encrypted packets do not have associated encryption keys. Units 45 and 47 provide both identified packets and their associated encryption keys to decryptor 50. The PID look-up table in unit 45 is also memory mapped to a destination table that matches packets containing pre-loaded PIDs with corresponding destination buffer

20 locations in packet buffer 60. The encryption keys and destination buffer location addresses associated with the programs selected by a user for viewing or storage are pre-loaded into units 45 and 47 along with the assigned PIDs by controller 115. The encryption keys are generated by ISO 7816-3 compliant smart card system 130 from encryption codes extracted

25 from the input data stream. The generation of the encryption keys is subject to customer entitlement determined from coded information in the input data stream and/or pre-stored on the insertable smart card itself (International Standards Organization document ISO 7816-3 of 1989 defines the interface and signal structures for a smart card system).

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The packets provided by units 45 and 47 to unit 50 are encrypted using an encryption techniques such as the Data Encryption Standard (DES) defined in Federal Information Standards (FIPS) Publications 46, 74 and 81 provided by the National Technical Information Service, Department of

Commerce. Unit 50 decrypts the encrypted packets using corresponding encryption keys provided by units 45 and 47 by applying decryption techniques appropriate for the selected encryption algorithm. The decrypted packets from unit 50 and the non-encrypted packets from unit 45 that
5 comprise the program for display are provided to decoder 55. The decrypted packets from unit 50 and the non-encrypted packets from unit 47 that comprise the program for storage are provided to mux 110.

Unit 60 contains four packet buffers accessible by controller 115. One
10 of the buffers is assigned to hold data destined for use by controller 115 and the other three buffers are assigned to hold packets that are destined for use by application devices 75, 80 and 85. Access to the packets stored in the four buffers within unit 60 by both controller 115 and by application interface 70 is controlled by buffer control unit 65. Unit 45 provides a destination flag to unit
15 65 for each packet identified by unit 45 for decoding. The flags indicate the individual unit 60 destination locations for the identified packets and are stored by control unit 65 in an internal memory table. Control unit 65 determines a series of read and write pointers associated with packets stored in buffer 60 based on the First-In-First-Out (FIFO) principle. The write pointers
20 in conjunction with the destination flags permit sequential storage of an identified packet from units 45 or 50 in the next empty location within the appropriate destination buffer in unit 60. The read pointers permit sequential reading of packets from the appropriate unit 60 destination buffers by controller 115 and application interface 70.

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The non-encrypted and decrypted packets provided by units 45 and 50 to decoder 55 contain a transport header as defined by section 2.4.3.2 of the MPEG systems standard. Decoder 55 determines from the transport header whether the non-encrypted and decrypted packets contain an adaptation field
30 (per the MPEG systems standard). The adaptation field contains timing information including, for example, Program Clock References (PCRs) that permit synchronization and decoding of content packets. Upon detection of a timing information packet, that is a packet containing an adaptation field, decoder 55 signals controller 115, via an interrupt mechanism by setting a

system interrupt, that the packet has been received. In addition, decoder 55 changes the timing packet destination flag in unit 65 and provides the packet to unit 60. By changing the unit 65 destination flag, unit 65 diverts the timing information packet provided by decoder 55 to the unit 60 buffer location assigned to hold data for use by controller 115, instead of an application buffer location.

Upon receiving the system interrupt set by decoder 55, controller 115 reads the timing information and PCR value and stores it in internal memory. PCR values of successive timing information packets are used by controller 115 to adjust the system 25 master clock (27 MHz). The difference between PCR based and master clock based estimates of the time interval between the receipt of successive timing packets, generated by controller 115, is used to adjust the system 25 master clock. Controller 115 achieves this by applying the derived time estimate difference to adjust the input control voltage of a voltage controlled oscillator used to generate the master clock. Controller 115 resets the system interrupt after storing the timing information in internal memory.

Packets received by decoder 55 from units 45 and 50 that contain program content including audio, video, caption, and other information, are directed by unit 65 from decoder 55 to the designated application device buffers in packet buffer 60. Application control unit 70 sequentially retrieves the audio, video, caption and other data from the designated buffers in buffer 60 and provides the data to corresponding application devices 75, 80 and 85. The application devices comprise audio and video decoders 80 and 85 and high speed data port 75. For example, packet data corresponding to a composite program guide generated by the controller 115 as described above, may be transported to the video decoder 85 for formatting into video signal suitable for display on a display monitor 89 connected to the video decoder 85. Also, for example, data port 75 may be used to provide high speed data such as computer programs, for example, to a computer. Alternatively, port 75 may be used to output or receive data to and from an HDTV to display or process images corresponding to a selected program or a

program guide, for example. One example of port 75 may be a HDMI data port.

5 Packets that contain PSI information are recognized by unit 45 as destined for the controller 115 buffer in unit 60. The PSI packets are directed to this buffer by unit 65 via units 45, 50 and 55 in a similar manner to that described for packets containing program content. Controller 115 reads the PSI from unit 60 and stores it in internal memory.

10 Controller 115 also generates condensed PSI (CPSI) from the stored PSI and incorporates the CPSI in a packetized data stream suitable for storage on a selectable storage medium. The packet identification and direction is governed by controller 115 in conjunction with the unit 45 and unit 47 PID, destination and encryption key look-up tables and control unit 65
15 functions in the manner previously described.

In addition, controller 115 is coupled to a communication interface unit 116. Unit 116 provides the capability to upload and download information to and from the internet. Communication interface unit 116 includes, for
20 example, communication circuitry for connecting to an Internet service provider, e.g., via a wired or wireless connection such as an Ethernet, WiFi connection, or via cable, fiber or telephone line. The communication capability allows the system shown in FIG. 3 to provide, e.g., Internet related features such as program content streaming and web browsing, in addition to receiving
25 television and radio programming. Also, it allows the exemplary system shown in FIG. 3 to obtain electronic program guide information from a provider through the internet.

FIG. 4 is an exemplary process and user interface according to the
30 principles of the present invention. As described before and as shown in FIG. 3, system controller/processor 115 in receiver 3 may cause video processor 85 to provide an output signal, via signal path 78, to a display 89 for displaying a user interface as shown in FIG. 4. In particular, using the interface, a user may create a user profile by entering his name JOE in field

401. Furthermore, for the created user profile 400, a user may also input information on a plurality of genres and their respective weighting factors to reflect a user's taste and/or viewing habits via user interface fields 420-1 to 420-N. For example, a user may select a plurality of genres SPORTS, ROMANCE, DRAMA, etc. as shown in FIG. 4. The user may also enter a weight of 50% for SPORTS in field 420-1 since the user may prefer to watch programs which are sports related about half of the user's total viewing time.

In another embodiment according to the principles of the present invention, a user profile and the related genre selection and weighting information shown in FIG. 4 may be created automatically by system 3 as a default when a user first uses the system. Another embodiment could be that the profile information 420-1 to 420-N is not changeable by a user and/or displayable to a user, but instead is kept internally in an applicable memory or database of the receiver system 3 for processing only by controller 115 of system 3 shown in FIG. 3. In this embodiment, FIG. 400 would represent an internal user profile record being kept in the memory or database of system 3 and not correspond to a user interface screen as previously described.

Another embodiment may be that a user can only change fields 420-1 to 420-N initially when a profile is being created and subsequent changes are provided by processor 115 automatically in response to watched media asset ratings as to be discussed later. In yet another embodiment, values in fields 420-1 to 420-N may be changed by a user at any time, but they will also be influenced by assigned ratings of media assets a user had selected. Furthermore, although only one user profile JOE 410 is shown in FIG. 4, one skilled in the art would readily appreciate and recognize that more than one user profiles may be created for receiver 3 and the information shown in FIG. 4 may be provided for each applicable user profile.

According to the principles of the present invention, based on an exemplary user profile shown in FIG 4, different media assets can be recommended to a user where each media asset is associated with at least one genre or classification in the user profile. For example, a media asset

which is identified as being related to SPORTS 420-1 can be suggested to a user who has a profile 400 indicating that the user JOE likes sports as reflected in the weighting factor 50% assigned to the genre SPORTS 420-1. In one exemplary embodiment, system 3 will suggest to the user JOE, media assets with genre of SPORTS, about 50% of a predetermined time period (e.g., a day, a week, a month, etc.), since that is the weighting factor indicated in his user profile for this genre SPORTS. Again, this weighting factor may be updated automatically and dynamically by the controller 115 of system 3 to reflect the user's viewing habits and/or the user's media assets selection preference to be described later.

FIG. 5 illustrates another user interface according to the principles of the present invention. As described before and as shown in FIG. 3, system controller/processor 115 in receiver 3 may cause video processor 85 to provide an output signal, via signal path 78, to a display 89 for displaying a user interface as shown in FIG. 5. FIG. 5 will be described in more detail in connection with FIG. 6 later.

FIG. 6 and FIG 7 are flow charts of exemplary control programs which, according to the present invention, may be executed by controller/processor 115 of FIG. 3, or any other suitably programmed control arrangement of an electronic device. As mentioned previously, an exemplary electronic device or apparatus according to the principles of the present invention is not limited to a television receiver, but rather comprises a hybrid thereof (e.g., PCTV), a cable television converter box, suitably equipped audiovisual program recorder (e.g., digital video recorder), satellite television and/or data signal converter, program guide receiver unit, cell phone, tablet, personal computer or the like, regardless of whether incorporated into a television receiver or a personal computer, or connected externally thereto. Therefore, one skilled in the art will appreciate that the exemplary control programs shown in FIG. 6 and FIG. 7 may be implemented in hardware, software, or a combination thereof.

The exemplary control programs, when executed, facilitate display of user interfaces shown, for example, in FIG. 4 and FIG. 5, and their interactions with a user. A person skilled in the art would readily recognize from the flow charts and the following descriptions that the control programs, for example, when executed by a system 3 shown in FIG. 3 or any other suitably programmed electronic device will provide substantially the same features and advantages in accordance with the present invention. Therefore, to avoid redundancy, the control programs will be described below only with respect to the exemplary hardware implementation shown in FIG. 3.

At step 610 of FIG. 6, a user profile, e.g., 410 in FIG. 4, including information on a plurality of genres 420-1 to 420-N is created. Again as described previously, this profile may be created automatically by system 3, or purposely by a user. At step 615, a weighting factor for at least one of the plurality of genres for the created user profile are provided, as shown, e.g., in 420-1 to 420-N of FIG. 4. Again as discussed above, the weighting factors and program genres shown in FIG. 4 may be manually created and modified by a user and/or automatically by processor 115 of receiver system 3. At step 620, one or more of the plurality of genres in response to the one or more weight factors are selected by processor 115.

At step 625 of FIG. 6, a plurality of media assets 505, 520-2 to 520-N matching the selected one or more of the plurality of genres are shown simultaneously on a display 89 as illustrated in FIG. 5. Display screen 500 of FIG. 5 shows a group of a plurality of windows 505, 520-2 to 520-N. The larger window 505 displays a video content being played as a motion picture. The video content corresponds to a selected media asset. Remaining or the rest of the group of the plurality of windows 520-2 to 520-N display respective ones of the non-selected contents as still pictures, the non-selected contents corresponding to the respective non-selected media assets.

In one embodiment according to the principles of the present invention, the media assets to be shown in the group of the plurality of the windows 505, 520-2 to 520-N are chosen by processor 115 of apparatus 3 based on the

genre and weighting factor information of the user profile. In another embodiment, once these media assets have been chosen initially, a user may select a particular media asset to be played as a motion video in the larger window 505 by dragging (e.g., using a user control unit 125) a corresponding media asset from any of the smaller windows 520-2 to 520-N, in order to switch the media asset from one of the smaller windows 520-2 to 520-N to be played in the larger window 505.

In another embodiment, a user may simply, e.g., double click on any of the smaller windows 520-2 to 520-N to switch that clicked content with the content currently being played in the larger window 505. In yet another embodiment, system processor 115 may cause the media assets to automatically rotate through all the smaller windows 505, 520-2 to 520-N at a predetermined time interval, so that all the media assets will be played as a motion picture in the larger window 505 in a round robin fashion.

At step 630 of FIG. 6, user interaction information about the larger window 505 is displayed as shown in FIG. 5. This user interaction information may be, e.g., CLICK FOR MORE INFO icon 530 displayed in the vicinity of the larger window 505. When a user clicks on icon 530, system 3 will provide further information on the corresponding media asset being shown in the larger window 505, such as, e.g., further program description, rental price, purchase price, and/or prompt for user to confirm purchase and/or rental intention, and etc.

At step 635 and step 640, if a user stops or interrupts the playing of the selected motion video content in the larger window 505, processor 115 will measure the time period through which the video content is played before the motion video content is stopped or interrupted. The video content may be stopped or interrupted in response to one of more of user interactions with the exemplary interface of FIG. 5. For example, the user may select STOP icon 525, choose to exit or navigate away from the user interface of FIG. 5, or choose to switch the content being played in the larger window 505 with any

one of the contents in the smaller windows 520-2 to 520-N, as described previously in connection with step 625.

At step 645 of FIG. 6, processor 115 assigns a rating for the selected
5 media asset being played in the larger window 505 in response to the measured time period, measured in step 640. The detailed process of measuring this time period and assigning a corresponding rating to this measured time period is shown in FIG. 7 and to be discussed later. At step
650, based on the assigned rating(s), weighting factor(s) for one or more of
10 the plurality of genres is or are adjusted. At step 655, based on the adjusted weighting factor(s) for one or more of the plurality of genres of a user profile, media assets (e.g., short and/or long forms) may be selected for recommendation to user or shown in the group of the windows 505, 520-2 to 520-N of FIG. 5.

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FIG 7 shows an exemplary process of how a rating may be assigned to a corresponding media asset based on how long a user has played the video content being shown in the larger window 505 of FIG. 5. In this exemplary embodiment, a short form program which lasts about 20 seconds is used for
20 illustration purpose. One skilled in the art can readily recognize and appreciate that media assets of any length may be utilized according to the principles of the present invention.

At step 710 of FIG. 7, a determination is first made to determine
25 whether a media asset in question has been selected for play in the larger window 505. If a media asset has never been selected for play in the larger window 505, the media asset will be assign a rating 0 at step 715, reflecting the lowest user preference for the corresponding genre of this program, since the user never contemplating the playing of this content in the larger window
30 505.

At step 710, if a user or system 3 has selected to play the media asset in the larger window 505, a corresponding rating will be assigned to the media asset. The assigned rating will be in proportion to the time period through

which the content has been played in window 505, as shown at steps 720, 725, 730 and 735. That is, the longer the time period will produce a rating which corresponds to a higher preference for the selected media asset and the corresponding genre for that media asset.

5

At step 740, when a user selects CLICK FOR MORE INFO icon 530 of window 505 at any time, the highest rating is given, since it indicates a very high user interest with a potential for actual user purchase and/or rental of the media asset. Again, the algorithm shown in FIG. 7 is an exemplary embodiment only. Different algorithm may be used by one skilled in the art without departing from the teachings of the present invention. For example, even though the example of FIG. 7 uses a higher numeric rating (e.g., 5) to represent a higher user preference, a person skilled in the art can readily appreciate that the opposite numeric rating may be used instead (e.g., 0), as long as the numbers correctly represent the appropriate user preferences for the associated media assets.

While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

CLAIMS

1. A method comprising:

creating (610) a user profile including information on a plurality of genres;

5 providing (615) a weighting factor for at least one of the plurality of genres for the user profile;

selecting (620) one or more of the plurality of genres in response to the one or more weight factors;

10 showing (625) a plurality of media assets matching the selected one or more of the plurality of genres on a display screen simultaneously, the screen showing a group of a plurality of windows, a larger window displaying a video content being played as a motion picture corresponding to a selected one of the plurality of media assets, remaining of the group of the plurality of windows displaying respective ones of non-selected media assets as still pictures;

15 displaying (630) user interaction information about the larger window;

stopping (635) the playing of the video content in response to a user interaction;

measuring (640) a time period through which the video content is played; and

20 assigning (645) a rating for the selected media asset associated with the video content in response to the measured time period.

2. The method of claim 1 further comprising the step of suggesting (655) other media assets to be shown based on the assigned rating.

25 3. The method of claim 2 wherein the selected media asset comprises a portion of another media asset.

4. The method of claim 1 further comprising the step of adjusting (650) a weighting factor for a corresponding genre based on the assigned rating.

30

5. The method of claim 1 wherein a longer measured time period will produce a rating reflecting a higher user preference for a corresponding genre of the selected media asset (715 to 765).
- 5 6. The method of claim 1 wherein the user interaction information comprising a request for additional information.
7. The method of claim 1 wherein the plurality of genres comprising more than one of: sports, romance, drama, action, news, documentary, comedy, horror,
10 adventure, biography, Jazz, rock, movie, TV series, and concert.
8. An apparatus comprising:
a processor (115) for processing a user profile including information on a plurality of genres; wherein the user profile comprising a weighting factor for at least
15 one of the plurality of genres for the user profile;
a video processor (85) for providing on a display, a plurality of media assets matching selected one or more of the plurality of genres, the display showing a group of a plurality of windows, a larger window for playing a motion video content corresponding to a selected one of the plurality of the media assets, others of the
20 group of the plurality of windows showing respective ones of non-selected media assets as still pictures;
a user control unit (125) for entering a user command for interrupting the playing of the motion video content; and
the processor (115) measures a time period through which the motion video
25 content is played; and the processor assigns a rating on the selected media asset associated with motion video content in response to the measured time period.
9. The apparatus of claim 8 wherein the selected one or more of the plurality of
30 genres are selected in response to the one or more weighting factors.

10. The apparatus of claim 8 wherein the processor (115) suggests other media assets to be shown based on the assigned rating.

5 11. The apparatus of claim 8 wherein the selected media asset comprises a portion of another media asset.

12. The apparatus of claim 8 wherein the processor (115) adjusts a weighting factor for a corresponding genre based on the assigned rating.

10

13. The apparatus of claim 8 wherein a longer measured time period corresponds to a rating reflecting a higher user preference for a corresponding genre of the selected media asset.

15 14. The apparatus of claim 8, wherein the selected media asset is a movie trailer.

15. The apparatus of claim 8 wherein the plurality of genres comprise more than one of: sports, romance, drama, action, news, documentary, comedy, horror, adventure, biography, Jazz, rock, movie, TV series, and concert.

20

16. An apparatus comprising:

means for processing (115) a user profile including information on a plurality of genres, wherein the user profile comprising a weighting factor for at least one of the plurality of genres for the user profile;

25

means for providing (85) on a display, a plurality of programs matching a selected one or more of the plurality of genres, the display showing a group of a plurality of windows, a larger window playing a motion video content corresponding to a selected one of the plurality of programs, others of the group of the plurality of windows showing respective ones of non-selected programs as still pictures;

means for entering (125) a user command for interrupting the playing of the motion video content; and

the means for processing (115) measures a time period through which the motion video content is played; and the processor assigns a rating on a media asset
5 associated with motion video content in response to the measured time period.

17. The apparatus of claim 16 where the selected one or more of the plurality of genres are selected in response to the one or more weighting factors.

10 18. The apparatus of claim 16 wherein the means for processing (115) suggests other media assets to be shown based on the assigned rating.

19. The apparatus of claim 16 wherein the media asset comprises a movie.

15 20. The apparatus of claim 16 wherein the means for processing (115) adjusts the weighting factor for a corresponding genre based on the assigned rating.

21. The apparatus of claim 16 wherein a longer measured time period corresponds to a rating reflecting a higher user preference for a corresponding genre of the
20 selected one of the plurality of programs.

22. The apparatus of claim 16, wherein the media asset is a movie trailer.

23. The apparatus of claim 16 wherein the plurality of genres comprise more than
25 one of: sports, romance, drama, action, news, documentary, comedy, horror, adventure, biography, Jazz, rock, movie, TV series, and concert.

CH 150		PROGRAM GUIDE			7:05pm
		7:00pm	7:30pm	8:00pm	8:30pm
HBO 102	OTHER PEOPLE'S MONEY			FREE PREVIEW	DREAM ON
CBS 106	EVENING NEWS	HOME IMPROVEMENT		BROOKLYN BRIDGE	RAVEN
UPN 113	STAR TREK: VOYAGER			ENTERTAINMENT TONIGHT	WORLD NEWS
CINE 210	EYEWITNESS	FUN CITY			DOUBLE TROUBLE
CNN 305	PRIME NEWS	BOTH SIDES		RELIABLE SOURCES	HOME AND GARDEN
USA 422	COUNTER STRIKE		QUANTUM LEAP		
MORE	MOVIES	SPORTS	OTHER	ALL	EXIT
ENTER ALL OR PART OF PROGRAM NAME TO SEARCH: HOME					

PRIOR ART

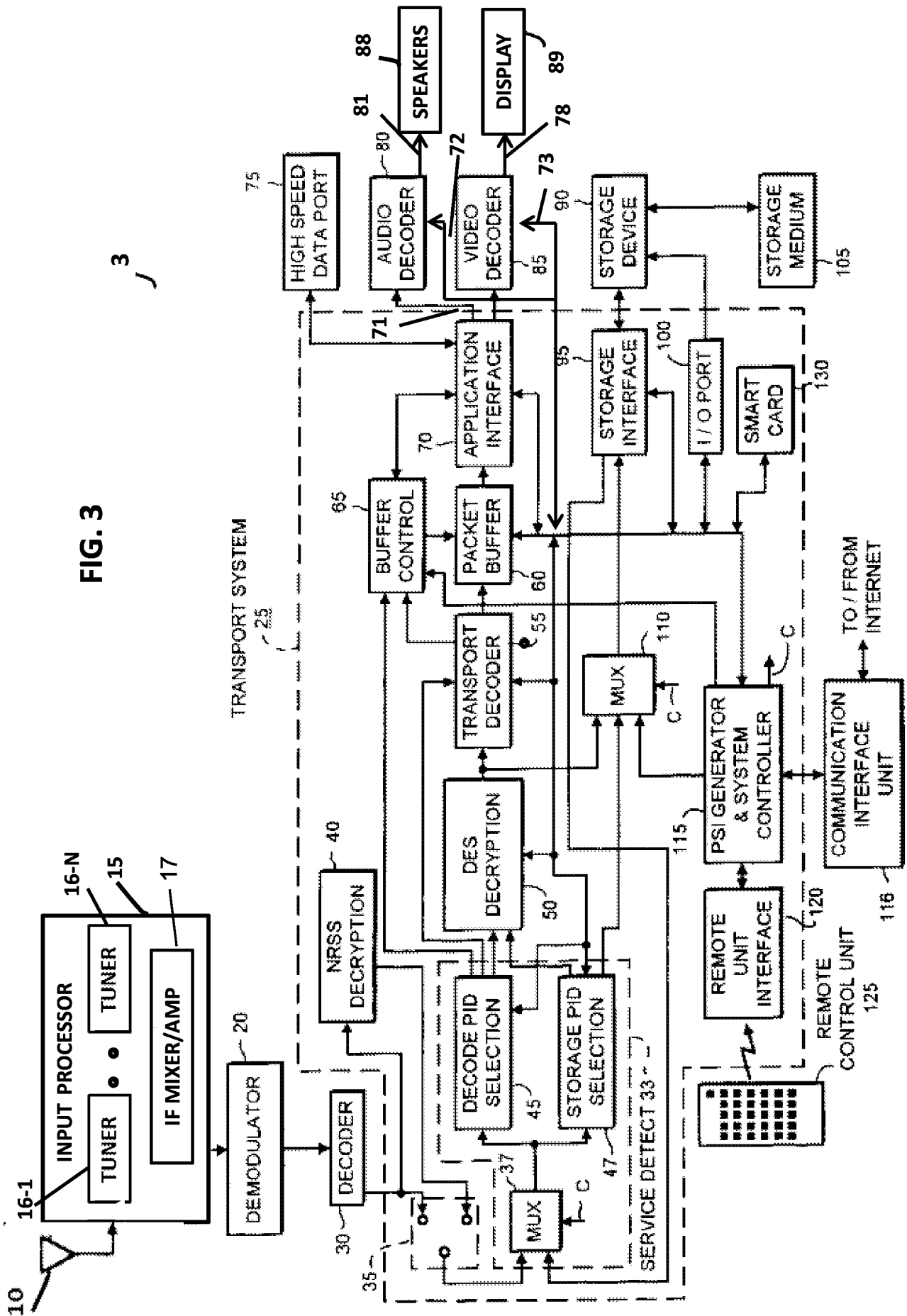
FIG. 1

CH 150		PROGRAM GUIDE			7:05pm	
		7:00pm			310 320 MOVIE TITLE: ZULU STARRING: STANLEY BAKER & MICHAEL CAINE PRODUCER: STANLEY BAKER RATING: PG-13 (VIOLENCE) REVIEW: ☆☆☆ 1/2 GENRE: ACTION PLOT: A VASTLY OUTNUMBERED COMPANY OF BRITISH SOLDIERS IN LATE 19TH CENTURY SOUTH AFRICA DEFENDS AN ISOLATED OUTPOST AGAINST AN ATTACK BY 40,000 ZULU WARRIORS.	
HBO 102	OTHER PEOPLE'S MON					
CBS 106	EVENING NEWS	FRA TUR				
UPN 113	STAR TREK: VOY					
CINE 210	CINE SATURDAY NIGHT MOVIE: ZULU					
CNN 305	PRIME NEWS	BOTH SIDES	RELIABLE SOURCES	WORLD NEWS	QUANTUM LEAP	
USA 422	COUNTER STRIKE					
MORE	MOVIES	SPORTS	OTHER	ALL	EXIT	

PRIOR ART

FIG. 2

FIG. 3



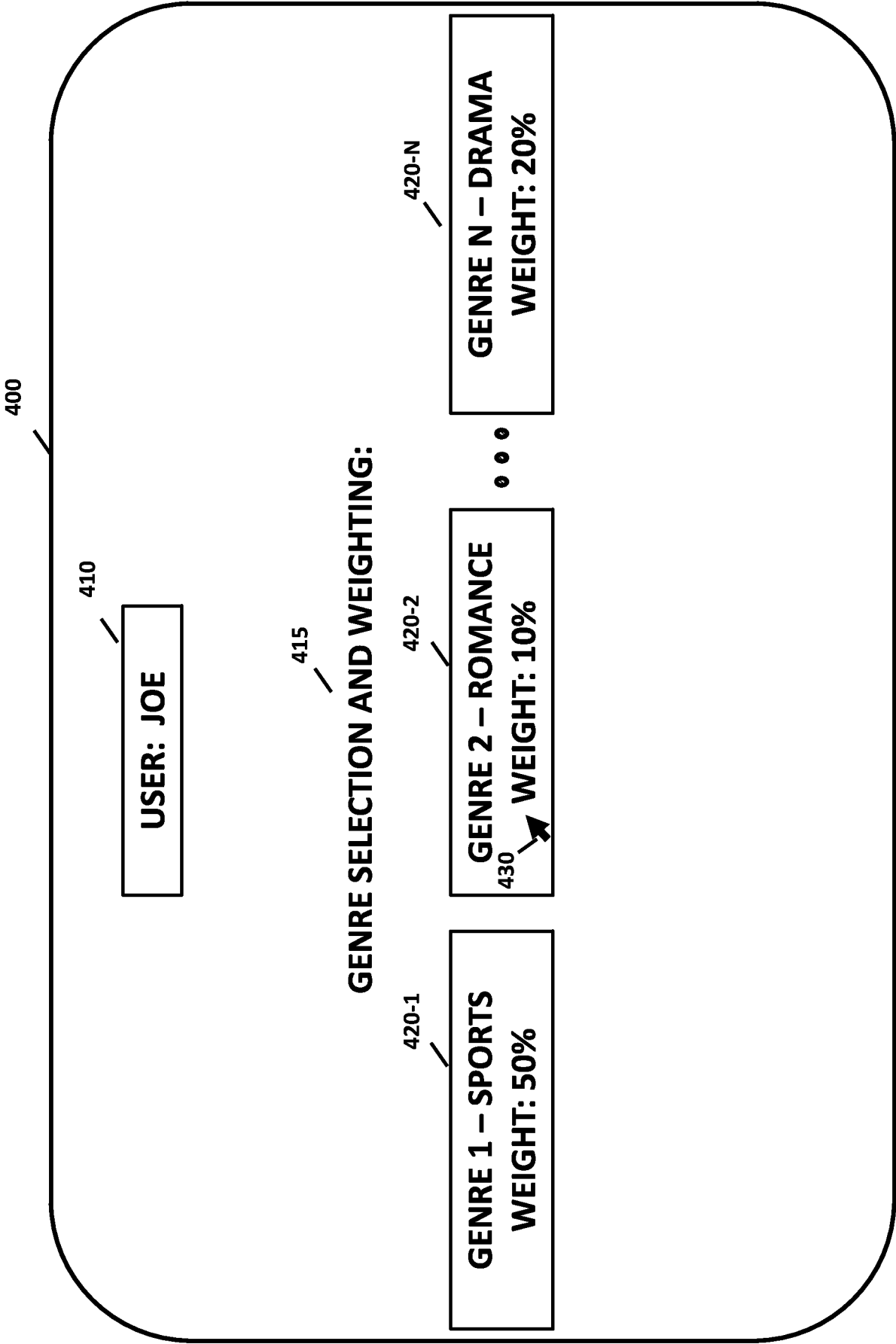


FIG. 4

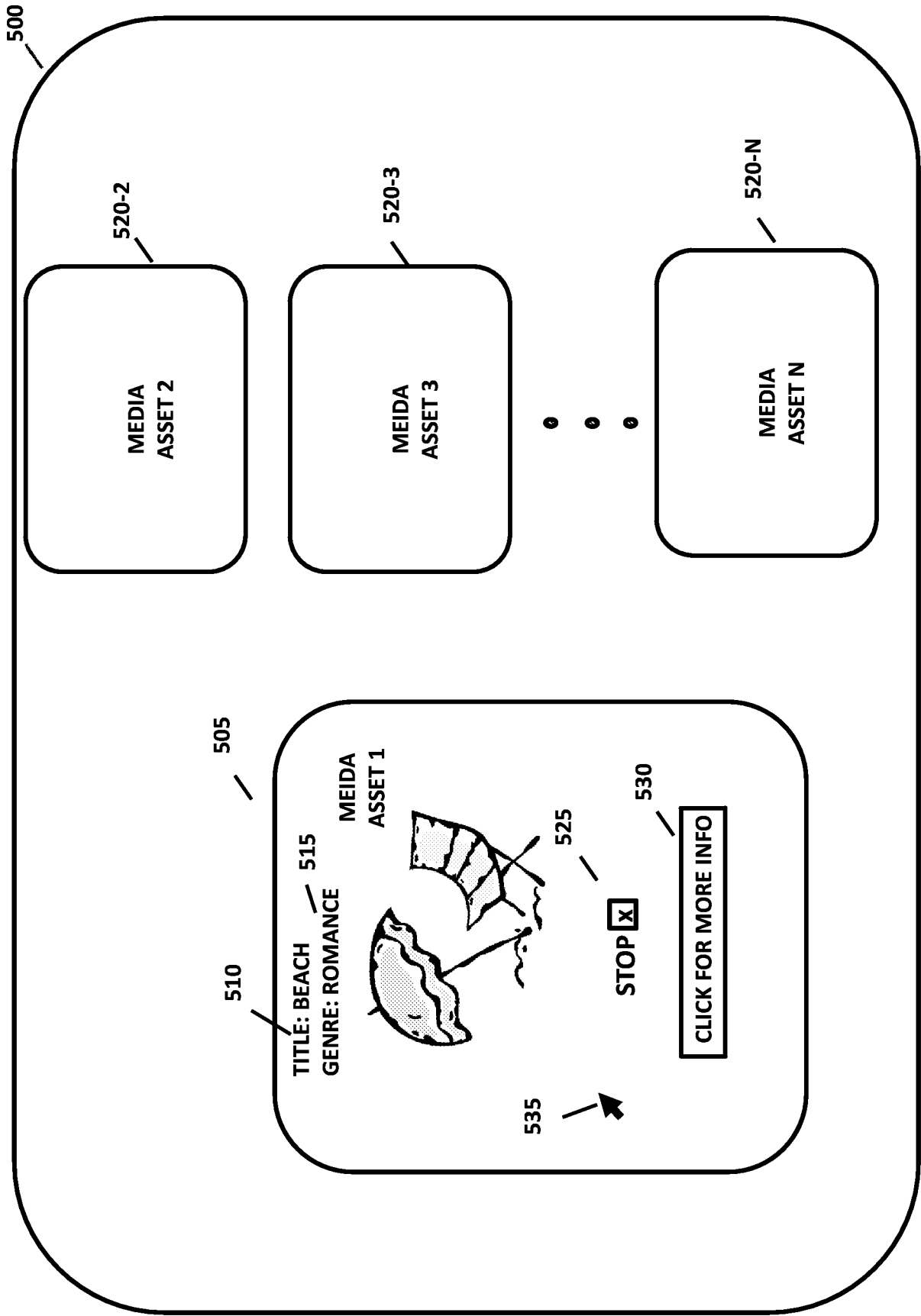
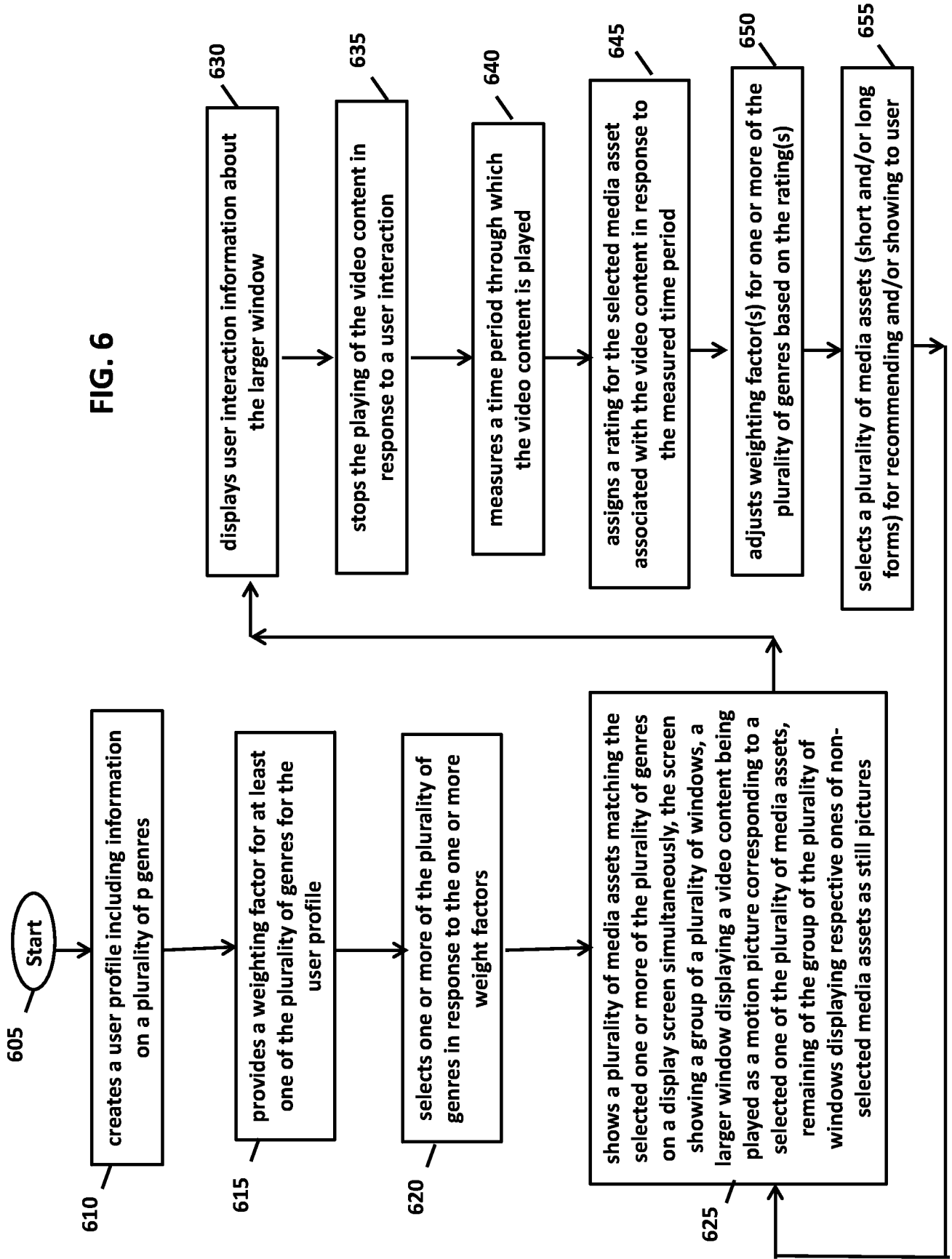
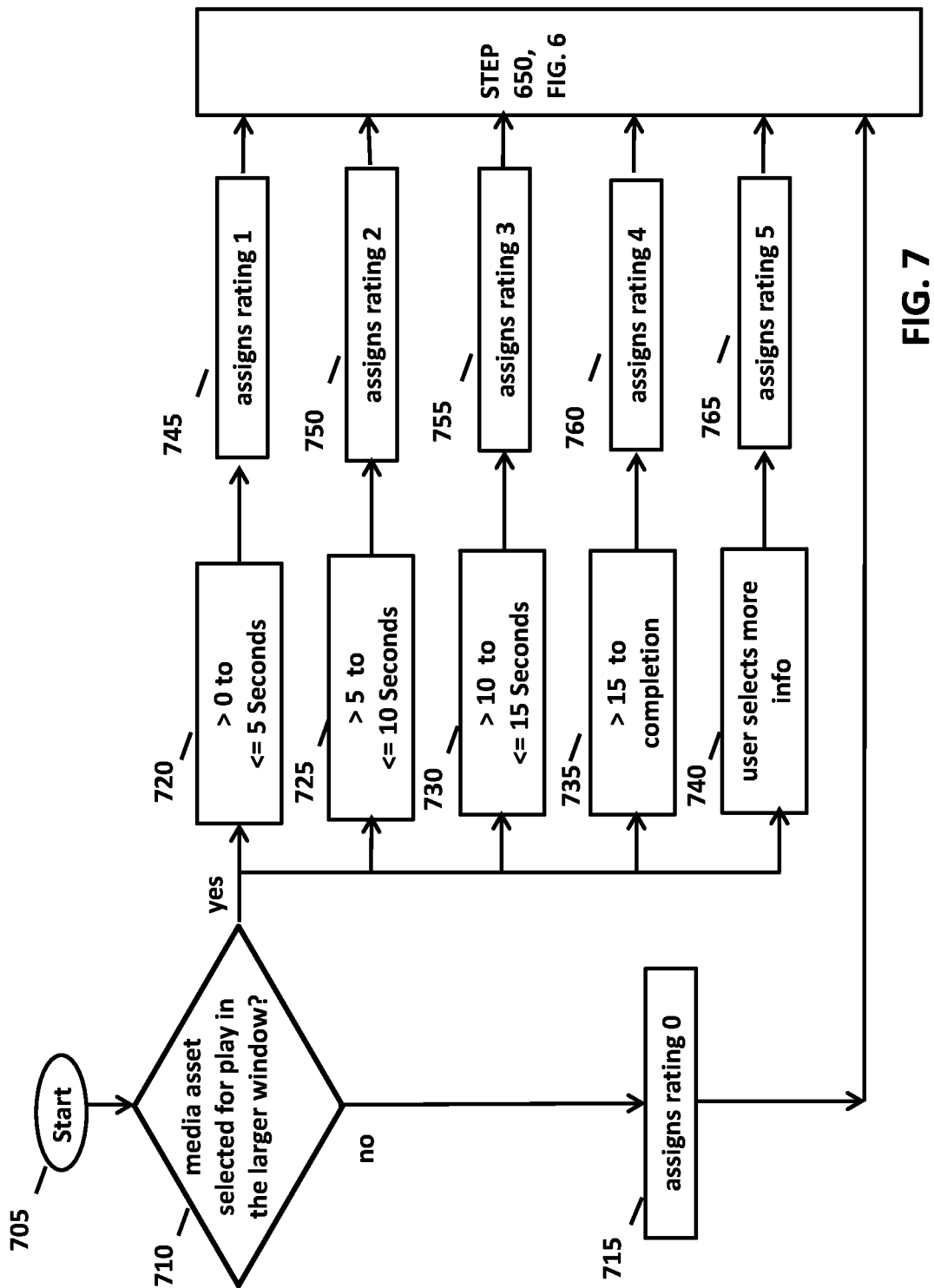


FIG. 5

6/7

FIG. 6





INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/031689

A. CLASSIFICATION OF SUBJECT MATTER INV. H04N21/466 H04N21/475 H04N21/482 H04N21/485 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) H04N		
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) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/025180 A1 (BEGEJA LEE [US] ET AL) 5 February 2004 (2004-02-05) abstract paragraphs [0009], [0031], [0035], [0068], [0090], [0092], [0098], [0111], [0113], [0114] figures 5, 10 -----	1-23
X	US 2012/254917 A1 (BURKITT KEVIN J [US] ET AL) 4 October 2012 (2012-10-04) abstract paragraphs [0216], [0217], [0234] - [0247], [0299] - [0206], [0330] - [0342] figure 10 -----	1-23
A	US 2007/089140 A1 (LI XIAO-GUANG [CN] ET AL) 19 April 2007 (2007-04-19) abstract ----- -/-	1-23
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "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) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "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 "&" document member of the same patent family		
Date of the actual completion of the international search 31 July 2015		Date of mailing of the international search report 06/08/2015
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Troya Chinchilla, A

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2015/031689

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008/216127 A1 (SHANKS DAVID ERIC [US]) 4 September 2008 (2008-09-04) abstract paragraphs [0033], [0037] figure 2A -----	1-23

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2015/031689

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004025180	A1	05-02-2004	NONE
US 2012254917	A1	04-10-2012	EP 2695379 A2 12-02-2014 US 2012254917 A1 04-10-2012 US 2014366068 A1 11-12-2014 WO 2012135804 A2 04-10-2012
US 2007089140	A1	19-04-2007	CN 1949851 A 18-04-2007 US 2007089140 A1 19-04-2007
US 2008216127	A1	04-09-2008	NONE