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(54) **SYSTEM AND METHOD FOR PROVIDING INFORMATION OF SELECTABLE OBJECTS IN A TELEVISION PROGRAM**

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(73) Assignee: **Broadcom Corporation**, Irvine, CA (US)

(58) **Field of Classification Search**
CPC H04N 21/431; H04N 21/4316; H04N 21/434
USPC 725/37, 40, 51, 61
See application file for complete search history.

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G06F 3/03 (2006.01)
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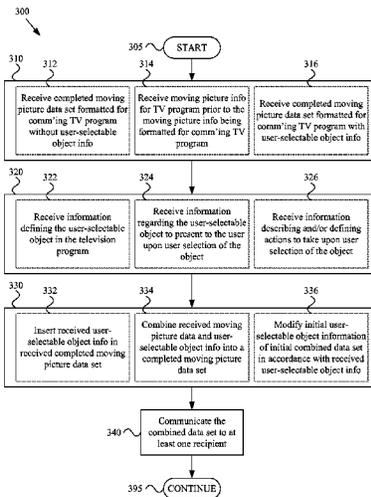
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(57) **ABSTRACT**

A system and method for providing information of selectable objects in a television program as shown in and/or described in connection with at least one of the figures, as set forth more completely in the claims.

26 Claims, 5 Drawing Sheets



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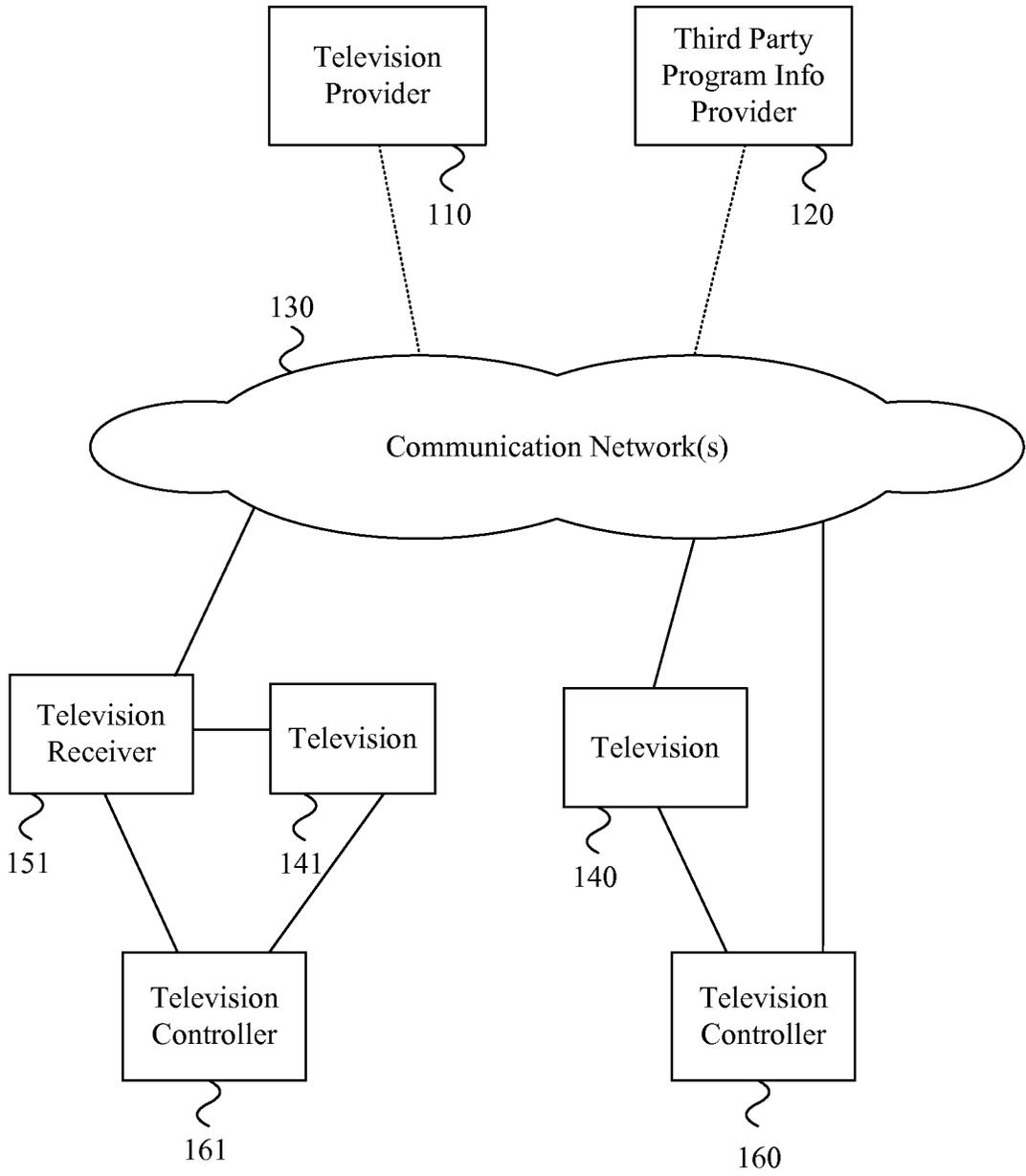


Figure 1

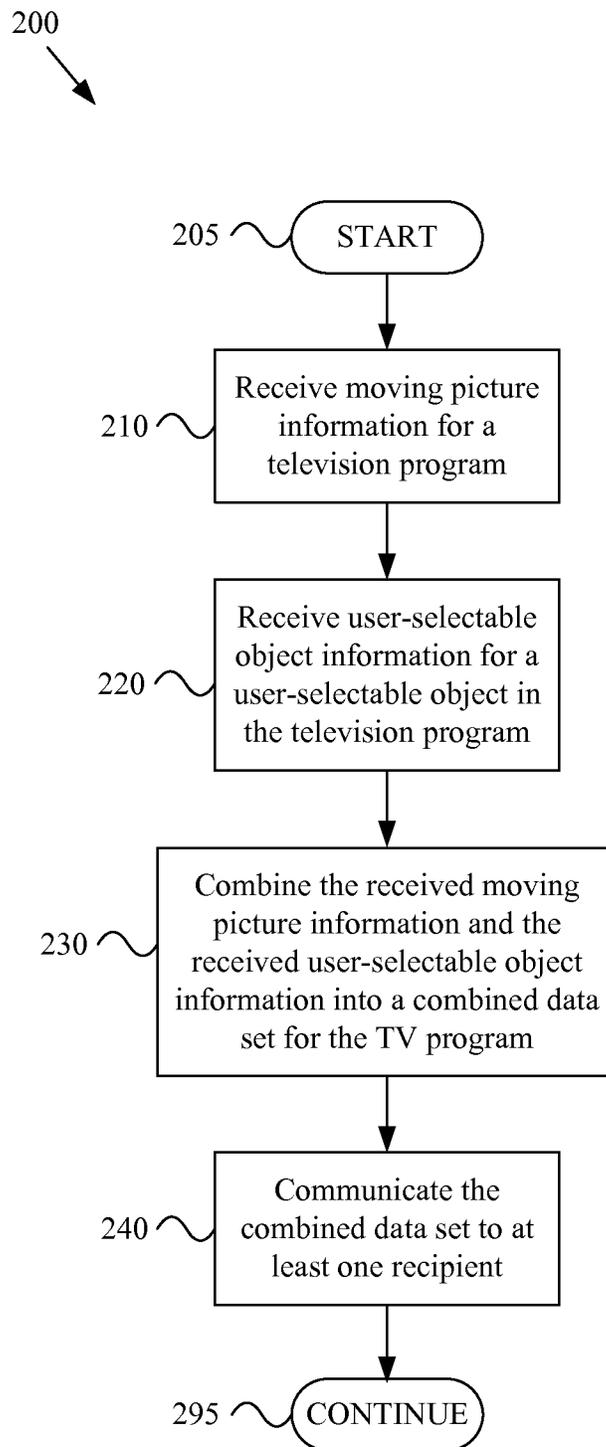


Figure 2

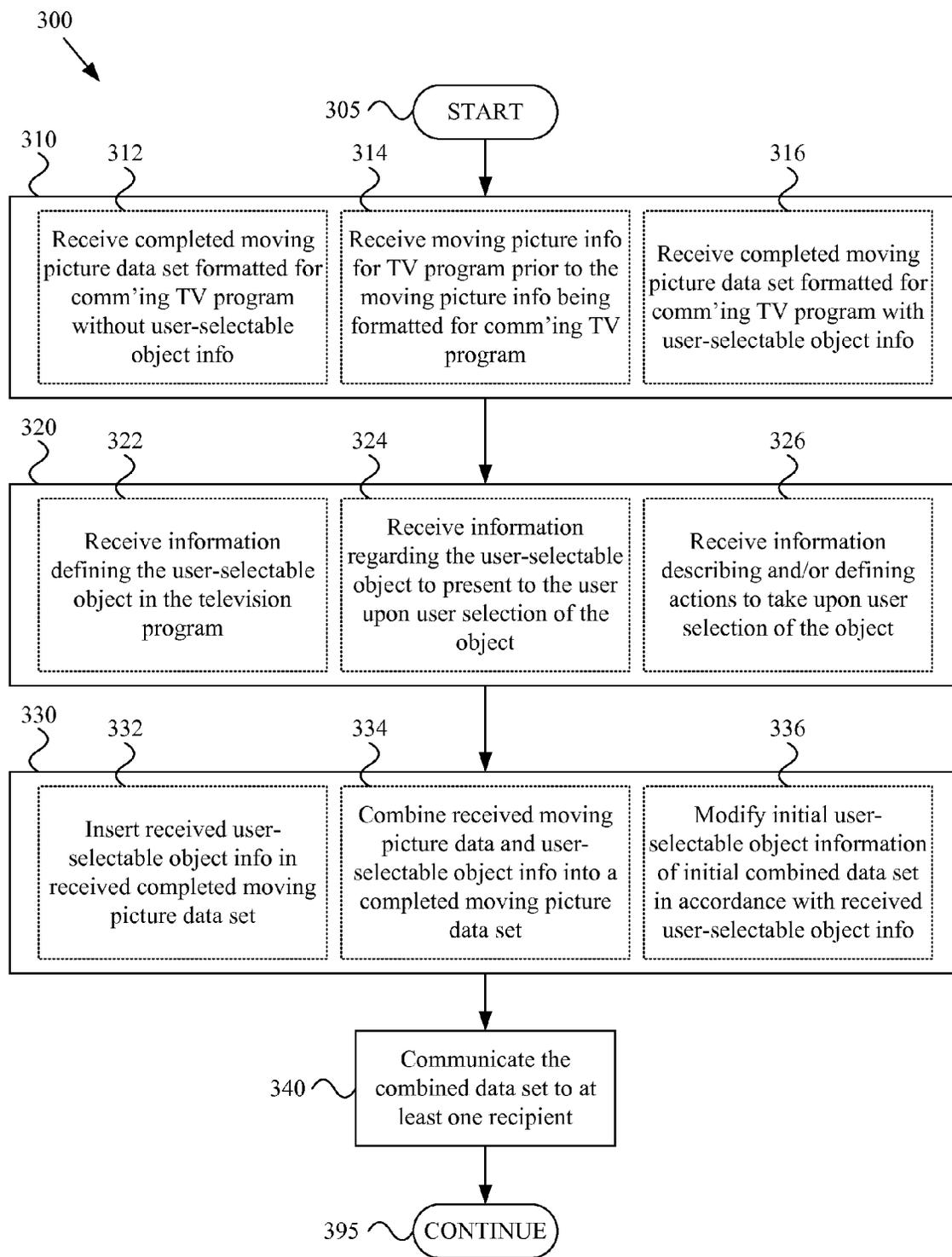


Figure 3

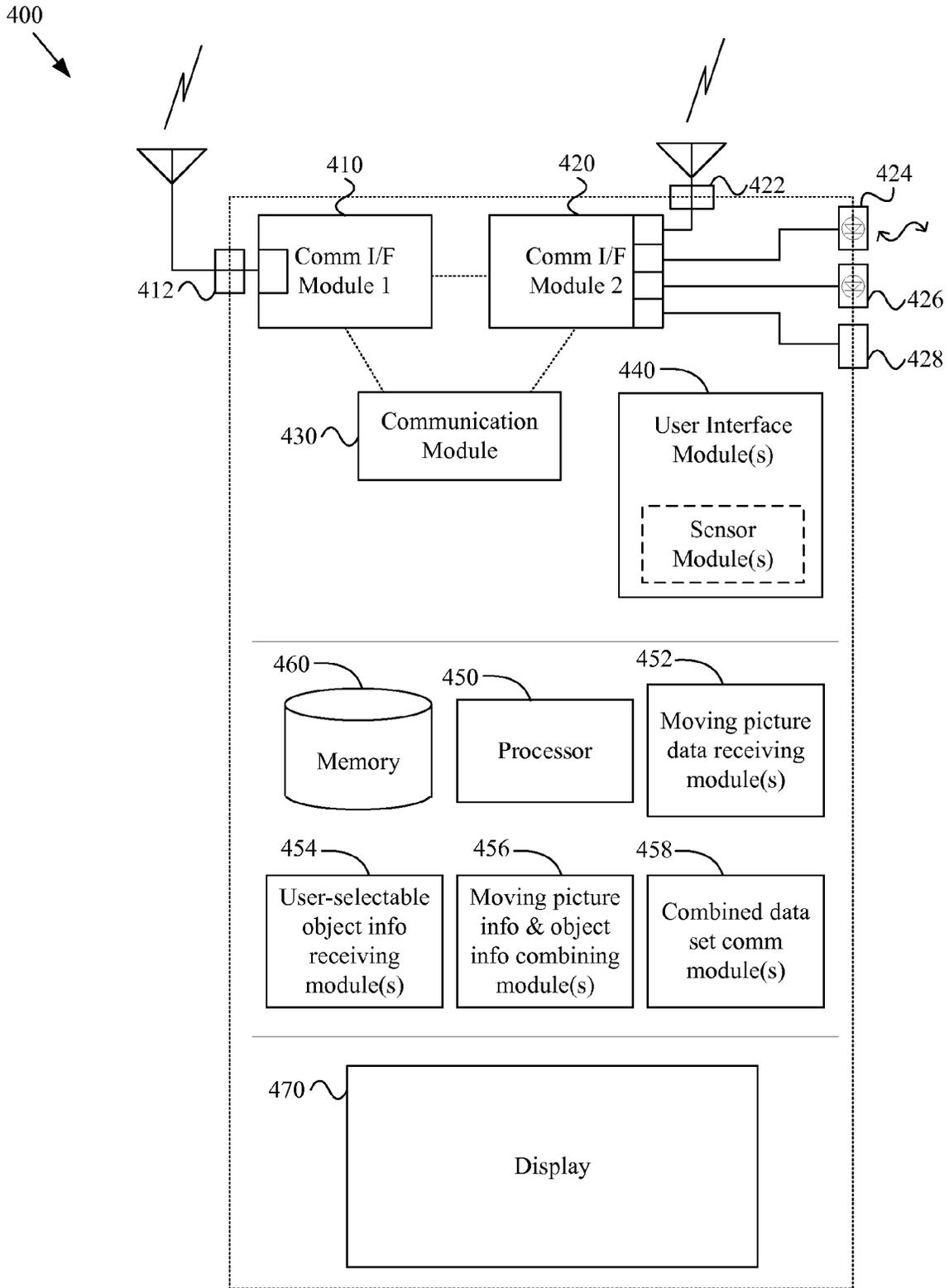


Figure 4

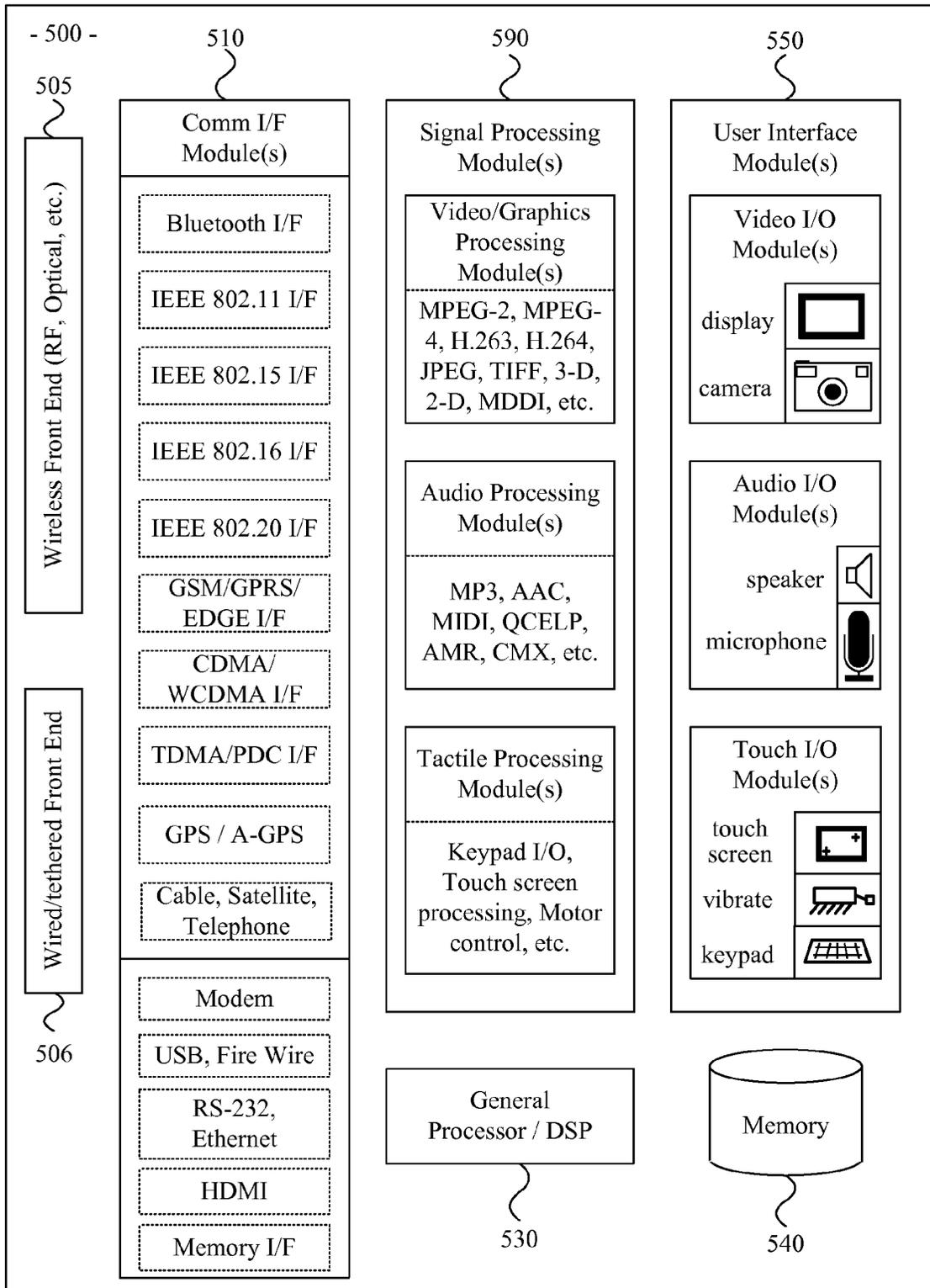


Figure 5

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**SYSTEM AND METHOD FOR PROVIDING
INFORMATION OF SELECTABLE OBJECTS
IN A TELEVISION PROGRAM**

CROSS-REFERENCE TO RELATED
APPLICATIONS/INCORPORATION BY
REFERENCE

This patent application is related to and claims priority from provisional patent application Ser. No. 61/242,234 filed Sep. 14, 2009, and titled "TELEVISION SYSTEM," the contents of which are hereby incorporated herein by reference in their entirety. This patent application is also related to U.S. patent application Ser. No. 12/881,004, filed concurrently herewith, titled "SYSTEM AND METHOD FOR PROVIDING INFORMATION OF SELECTABLE OBJECTS IN A TELEVISION PROGRAM IN AN INFORMATION STREAM INDEPENDENT OF THE TELEVISION PROGRAM"; and U.S. patent application Ser. No. 12/881,031, filed concurrently herewith, titled "SYSTEM AND METHOD FOR PROVIDING INFORMATION OF SELECTABLE OBJECTS IN A STILL IMAGE FILE AND/OR DATA STREAM". This patent application is further related to U.S. patent application Ser. No. 12/774,380, filed May 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,832, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A DISTRIBUTED SYSTEM FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,866, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION RECEIVER FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,911, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION CONTROLLER FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,945, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION CONTROLLER FOR PROVIDING USERSELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/851,036, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION SYSTEM FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/851,075, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A PARALLEL TELEVISION SYSTEM FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM". The contents of each of the above-mentioned applications are hereby incorporated herein by reference in their entirety.

FEDERALLY SPONSORED RESEARCH OR
DEVELOPMENT

[Not Applicable]

SEQUENCE LISTING

[Not Applicable]

MICROFICHE/COPYRIGHT REFERENCE

[Not Applicable]

BACKGROUND OF THE INVENTION

Present television systems are incapable of providing for and/or conveniently providing for user-selection of objects in

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a television program. Further limitations and disadvantages of conventional and traditional approaches will become apparent to one of skill in the art, through comparison of such systems with the present invention as set forth in the remainder of the present application with reference to the drawings.

BRIEF SUMMARY OF THE INVENTION

Various aspects of the present invention provide a system and method for providing information of selectable objects in a television program, substantially as shown in and/or described in connection with at least one of the figures, as set forth more completely in the claims. These and other advantages, aspects and novel features of the present invention, as well as details of illustrative aspects thereof, will be more fully understood from the following description and drawings.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF
THE DRAWINGS

FIG. 1 is a diagram illustrating an exemplary television system, in accordance with various aspects of the present invention.

FIG. 2 is a flow diagram illustrating an exemplary method for providing embedded information of selectable objects in a television program, in accordance with various aspects of the present invention.

FIG. 3 is a flow diagram illustrating an exemplary method for providing embedded information of selectable objects in a television program, in accordance with various aspects of the present invention.

FIG. 4 is a diagram illustrating an exemplary television system, in accordance with various aspects of the present invention.

FIG. 5 is a diagram illustrating exemplary modules and/or sub-modules for a television system, in accordance with various aspects of the present invention.

DETAILED DESCRIPTION OF VARIOUS
ASPECTS OF THE INVENTION

The following discussion will refer to various communication modules, components or circuits. Such modules, components or circuits may generally comprise hardware and/or a combination of hardware and software (e.g., including firmware). Such modules may also, for example, comprise a computer readable medium (e.g., a non-transitory medium) comprising instructions (e.g., software instructions) that, when executed by a processor, cause the processor to perform various functional aspects of the present invention. Accordingly, the scope of various aspects of the present invention should not be limited by characteristics of particular hardware and/or software implementations of a module, component or circuit unless explicitly claimed as such. For example and without limitation, various aspects of the present invention may be implemented by one or more processors (e.g., a microprocessor, digital signal processor, baseband processor, microcontroller, etc.) executing software instructions (e.g., stored in volatile and/or non-volatile memory). Also for example, various aspects of the present invention may be implemented by an application-specific integrated circuit ("ASIC") and/or other hardware components.

Additionally, the following discussion will refer to various television system modules (e.g., television modules, television receiver modules, television controller modules, modules of a user's local television system, modules of a geo-

graphically distributed television system, etc.). It should be noted that the following discussion of such various modules is segmented into such modules for the sake of illustrative clarity. However, in actual implementation, the boundaries between various modules may be blurred. For example, any or all of the functional modules discussed herein may share various hardware and/or software components. For example, any or all of the functional modules discussed herein may be implemented wholly or in-part by a shared processor executing software instructions. Additionally, various software sub-modules that may be executed by one or more processors may be shared between various software modules. Accordingly, the scope of various aspects of the present invention should not be limited by arbitrary boundaries between various hardware and/or software components, unless explicitly claimed.

The following discussion may also refer to communication networks and various aspects thereof. For the following discussion, a communication network is generally the communication infrastructure through which a communication device (e.g., a portable communication device, television, television control device, television provider, television programming provider, television receiver, video recording device, etc.) may communicate with other systems. For example and without limitation, a communication network may comprise a cable and/or satellite television communication network, a cellular communication network, a wireless metropolitan area network (WMAN), a wireless local area network (WLAN), a wireless personal area network (WPAN), a general data communication network (e.g., the Internet), any home or premises communication network, etc. A particular communication network may, for example, generally have a corresponding communication protocol according to which a communication device may communicate with the communication network. Unless so claimed, the scope of various aspects of the present invention should not be limited by characteristics of a particular type of communication network.

The following discussion may at times refer to an on-screen pointing location. Such a pointing location refers to a location on the television screen (e.g., a primary television screen, a secondary television screen, etc.) to which a user (either directly or with a pointing device) is pointing. Such a pointing location is to be distinguished from other types of on-screen location identification, such as, for example, using arrow keys and/or a mouse to move a cursor or to traverse blocks (e.g., on an on-screen program guide) without pointing. Various aspects of the present invention, while referring to on-screen pointing location, are also readily extensible to such other forms of on-screen location identification.

Additionally, the following discussion will at times refer to television programming. Such television programming generally includes various types of television programming (e.g., television programs, news programs, sports programs, music television, movies, television series programs and/or associated advertisements, educational programs, live or recorded television programming, broadcast/multicast/unicast television programming, etc.). Such television programming may, for example, comprise real-time television broadcast programming (or multicast or unicast television programming) and/or user-stored television programming that is stored in a user device (e.g., a VCR, PVR, etc.). Such television programming video content is to be distinguished from other non-programming video content that may be displayed on a television screen (e.g., an electronic program guide, user interface menu, a television set-up menu, a typical web page, a document, a graphical video game, etc.). Various aspects of the present invention may, for example in a television pro-

gram source system and/or television program distribution system, comprise embedding information in a television program, where such information describes various aspects of user-selectable objects in the television program. Various aspects of the present invention may also, for example in a television, comprise receiving television programming, presenting such received television programming to a user, determining an on-screen pointing location pointed to by the user and processing information of user-selectable objects embedded in the received television programming to identify a user-selected object in the television programming and/or associated actions.

Also, the following discussion will at times refer to user-selectable objects in television programming. Such user-selectable objects includes both animate (i.e., living) and inanimate (i.e., non-living) objects, both still and moving. Such objects may, for example, comprise characteristics of any of a variety of objects present in television programming. Such objects may, for example and without limitation, comprise inanimate objects, such as consumer good objects (e.g., clothing, automobiles, shoes, jewelry, furniture, food, beverages, appliances, electronics, toys, artwork, cosmetics, recreational vehicles, sports equipment, safety equipment, computer equipment, communication devices, books, etc.), premises objects (e.g., business locations, stores, hotels, signs, doors, buildings, landmarks, historical sites, entertainment venues, hospitals, government buildings, etc.), objects related to services (e.g., objects related to transportation, objects related to emergency services, objects related to general government services, objects related to entertainment services, objects related to food and/or drink services, etc.), objects related to location (e.g., parks, landmarks, streets, signs, road signs, etc.), etc. Such objects may, for example, comprise animate objects, such as people (e.g., actors/actresses, athletes, musicians, salespeople, commentators, reports, analysts, hosts/hostesses, entertainers, etc.), animals (e.g., pets, zoo animals, wild animals, etc.) and plants (e.g., flowers, trees, shrubs, fruits, vegetables, cacti, etc.).

Turning first to FIG. 1, such figure is a diagram illustrating a non-limiting exemplary television system **100** in accordance with various aspects of the present invention. The exemplary system **100** includes a television provider **110**. The television provider **110** may, for example, comprise a television network company, a cable company, a movie-providing company, a news company, an educational institution, etc. The television provider **110** may, for example, be an original source of television programming (or related information). Also for example, the television provider **110** may be a communication company that provides television programming distribution services (e.g., a cable television company, a satellite television company, a telecommunication company, a data network provider, etc.). The television provider **110** may, for example, provide television programming and non-programming information and/or video content. The television provider **110** may, for example, provide information related to a television program (e.g., information describing or otherwise related to selectable objects in programming, etc.). As will be discussed below in more detail, the television provider **110** may operate to create a television program (or television program data set, television program data stream, etc.) that includes embedded information of user-selectable objects in the television program. For example and without limitation, such a television provider **110** may operate to receive a completed television program (e.g., a data file, a data stream, etc.), for example via a communication network and/or on a physical media, and embed information of user-selectable objects in the completed television program. Also for example, such

a television provider **110** may operate to form the original television program and embed information of user-selectable objects in the original television program during such formation (e.g., in the studio).

The exemplary television system **100** may also include a third party program information provider **120**. Such a provider may, for example, provide information related to a television program. Such information may, for example, comprise information describing user-selectable objects in programming, program guide information, etc. As will be discussed below in more detail, such a third party program information provider (e.g., a party independent of a television program source, television program network operator, etc.) may operate to create a television program (or television program data set, television program data stream, etc.) that includes embedded information of user-selectable objects in the television program. For example and without limitation, such a third party program information provider **120** may operate to receive a completed television program (e.g., a data file, a data stream, etc.), for example via a communication network and/or on a physical media, and embed information of user-selectable objects in the completed television program.

The exemplary television system **100** may include one or more communication networks (e.g., the communication network(s) **130**). The exemplary communication network **130** may comprise characteristics of any of a variety of types of communication networks over which television programming and/or information related to television programming may be communicated. For example and without limitation, the communication network **130** may comprise characteristics of any one or more of: a cable television network, a satellite television network, a telecommunication network, the Internet, a local area network (LAN), a personal area network (PAN), a metropolitan area network (MAN), any of a variety of different types of home networks, etc.

The exemplary television system **100** may include a first television **140**. Such a first television **140** may, for example, comprise networking capability enabling such television **140** to communicate directly with the communication network **130**. For example, the first television **140** may comprise one or more embedded television receivers or transceivers (e.g., a cable television receiver, satellite television transceiver, Internet modem, etc.). Also for example, the first television **140** may comprise one or more recording devices (e.g., for recording and/or playing back video content, television programming, etc.). The first television **140** may, for example, operate to (which includes “operate when enabled to”) perform any or all of the functionality discussed herein. The first television **140** may, for example, operate to receive and process television program information (e.g., via a communication network, stored on a physical medium or computer readable medium, etc.), where such television program information comprises embedded information of user-selectable objects.

The exemplary television system **100** may include a first television controller **160**. Such a first television controller **160** may, for example, operate to (e.g., which may include “operate when enabled to”) control operation of the first television **140**. The first television controller **160** may comprise characteristics of any of a variety of television controlling devices. For example and without limitation, the first television controller **160** may comprise characteristics of a dedicated television control device, a universal remote control, a cellular telephone or personal computing device with television control capability, etc.

The first television controller **160** (or television control device) may, for example, transmit signals directly to the first

television **140** to control operation of the first television **140**. The first television controller **160** may also, for example, operate to transmit signals (e.g., via the communication network **130**) to the television provider **110** to control television programming (or related information) being provided to the first television **140**, or to conduct other transactions (e.g., business transactions, etc.).

As will be discussed in more detail later, the first television controller **160** may operate to communicate screen pointing information with the first television **140** and/or other devices. Also, as will be discussed in more detail later, various aspects of the present invention include a user pointing to a location on a television screen (e.g., pointing to an animate or inanimate object presented in television programming). In such a scenario, the user may perform such pointing in any of a variety of manners. One of such exemplary manners includes pointing with a television control device. The first television controller **160** provides a non-limiting example of a device that a user may utilize to point to an on-screen location.

Additionally, for example in a scenario in which the first television controller **160** comprises an on-board display, the first television controller **160** may operate to receive and process television program information (e.g., via a communication network, stored on a physical medium or computer readable medium, etc.), where such television program information comprises embedded information of user-selectable objects.

As will be mentioned throughout the following discussion, various aspects of the invention will be performed by one or more devices, components and/or modules of a user’s local television system. The first television **140** and first television controller **160** provide a non-limiting example of a user’s local television system. Such a user’s local television system, for example, generally refers to the television-related devices that are local to the television system currently being utilized by the user. For example, when a user is utilizing a television system located at the user’s home, the user’s local television system generally refers to the television-related devices that make up the user’s home television system. Also for example, when a user is utilizing a television system at a premises away from the user’s home (e.g., at another home, at a hotel, at an office, etc.), the user’s local television system generally refers to the television-related devices that make up the premises television system. Such a user’s local television system does not, for example, comprise television network infrastructure devices that are generally outside of the user’s current premises (e.g., cable and/or satellite head-end apparatus, cable and/or satellite communication intermediate communication network nodes) and/or programming source devices that are generally managed by television enterprises and generally exist outside of the user’s home. Such entities, which may be communicatively coupled to the user’s local television system, may be considered to be entities remote from the user’s local television system (or “remote entities”).

The exemplary television system **100** may also include a television receiver **151**. The television receiver **151** may, for example, operate to (e.g., which may include “operate when enabled to”) provide a communication link between a television and/or television controller and a communication network and/or information provider. For example, the television receiver **151** may operate to provide a communication link between the second television **141** and the communication network **130**, or between the second television **141** and the television provider **110** (and/or third party program information provider **120**) via the communication network **130**.

The television receiver **151** may comprise characteristics of any of a variety of types of television receivers. For

example and without limitation, the television receiver **151** may comprise characteristics of a cable television receiver, a satellite television receiver, etc. Also for example, the television receiver **151** may comprise a data communication network modem for data network communications (e.g., with the Internet, a LAN, PAN, MAN, telecommunication network, etc.). The television receiver **151** may also, for example, comprise recording capability (e.g., programming recording and playback, etc.).

Additionally, for example in a scenario in which the television receiver **151** comprises an on-board display and/or provides audio/video information to a television communicatively coupled thereto, the television receiver **151** may operate to receive and process television program information (e.g., via a communication network, stored on a physical medium or computer readable medium, etc.), where such television program information comprises embedded information of user-selectable objects.

The exemplary television system **100** may include a second television controller **161**. Such a second television controller **161** may, for example, operate to (e.g., which may include "operate when enabled to") control operation of the second television **141** and the television receiver **151**. The second television controller **161** may comprise characteristics of any of a variety of television controlling devices. For example and without limitation, the second television controller **161** may comprise characteristics of a dedicated television control device, a dedicated television receiver control device, a universal remote control, a cellular telephone or personal computing device with television control capability, etc.

The second television controller **161** may, for example, operate to transmit signals directly to the second television **141** to control operation of the second television **141**. The second television controller **161** may, for example, operate to transmit signals directly to the television receiver **151** to control operation of the television receiver **151**. The second television controller **161** may additionally, for example, operate to transmit signals (e.g., via the television receiver **151** and the communication network **130**) to the television provider **110** to control television programming (or related information) being provided to the television receiver **151**, or to conduct other transactions (e.g., business transactions, etc.).

As will be discussed in more detail later, various aspects of the present invention include a user selecting a user-selectable object in programming. Such selection may, for example, comprise the user pointing to a location on a television screen (e.g., pointing to an animate or inanimate object presented in television programming). In such a scenario, the user may perform such pointing in any of a variety of manners. One of such exemplary manners includes pointing with a television control device. The second television controller **161** provides one non-limiting example of a device that a user may utilize to point to an on-screen location. Also, in a scenario in which the second television controller **161** comprises a touch screen, a user may touch a location of such touch screen to point to an on-screen location (e.g., to select a user-selectable object).

As will be mentioned throughout the following discussion, and as mentioned previously in the discussion of the first television **140** and television controller **160**, various aspects of the invention will be performed by one or more devices, components and/or modules of a user's local television system. The second television **141**, television receiver **151** and second television controller **161** provide another non-limiting example of a user's local television system.

Additionally, for example in a scenario in which the second television controller **161** comprises an on-board display, the second television controller **161** may operate to receive and

process television program information (e.g., via a communication network, stored on a physical medium or computer readable medium, etc.), where such television program information comprises embedded information of user-selectable objects.

The exemplary television system **100** was provided to provide a non-limiting illustrative foundation for discussion of various aspects of the present invention. Thus, the scope of various aspects of the present invention should not be limited by any characteristics of the exemplary television system **100** unless explicitly claimed.

FIG. **2** is a flow diagram illustrating an exemplary method **200** for providing embedded information of selectable objects in a television program, in accordance with various aspects of the present invention. Any or all aspects of the exemplary method **200** may, for example, be implemented in a television system component (e.g., the television provider **110**, third party program information provider **120**, a component of a communication network **130**, first television **140**, first television controller **160**, second television **141**, television receiver **151**, second television controller **161**, shown in FIG. **1** and discussed previously) and/or a plurality of such television system components operating in conjunction. For example, any or all aspects of the exemplary method **200** may be implemented in one or more television system components remote from the user's local television system. Also for example, any or all aspects of the exemplary method **200** may be implemented in one or more components of the user's local television system.

The exemplary method **200** may, for example, begin executing at step **205**. The exemplary method **200** may begin executing in response to any of a variety of causes and/or conditions, non-limiting examples of which will now be provided. For example, the exemplary method **200** may begin executing in response to a user command to begin (e.g., a user at a television program source, a user at a television production studio, a user at a television distribution enterprise, etc.), in response to television program information and/or information of user-selectable objects in a television program arriving at a system entity implementing the method **200**, in response to an electronic request communicated from the external entity to a system entity implementing the method **200**, in response to a timer, in response to a request from an end user and/or a component of a user's local television system for a television program including information of user-selectable objects, in response to a request from a user for a television program where such user is associated in a database with television programming comprising user-selectable objects, upon reset and/or power-up of a system component implementing the exemplary method **200**, in response to identification of a user and/or user equipment for which object selection capability is to be provided, in response to user payment of a fee, etc.

The exemplary method **200** may, for example at step **210**, comprise receiving moving picture information for a television program. Many non-limiting examples of such television programs were provided above. Note that, depending on the particular implementation, such moving picture information may also, for example, be received with corresponding audio information.

Step **210** may comprise receiving the moving picture information from any of a variety of sources, non-limiting examples of which will now be provided. For example and without limitation, step **210** may comprise receiving the moving picture information from a television broadcasting company, from a movie streaming company, from a television studio, from a television program database or server, from a

video camera or other video recording device, an Internet television programming provider, etc.

Step 210 may comprise receiving the moving picture information via any of a variety of types of communication networks. Such networks may, for example, comprise a wireless television network (e.g., terrestrial and/or satellite) and/or cable television network. Such networks may, for example, comprise any of variety of general data communication networks (e.g., the Internet, a local area network, a personal area network, a metropolitan area network, etc.).

Step 210 may comprise receiving the moving picture information from any of a variety of types of hard media (e.g., optical storage media, magnetic storage media, etc.). Such hard media may, for example, comprise characteristics of optical storage media (e.g., compact disc, digital versatile disc, Blu-ray®, laser disc, etc.), magnetic storage media (e.g., hard disc, diskette, magnetic tape, etc.), computer memory device (e.g., flash memory, one-time-programmable memory, read-only memory, random access memory, thumb drive, etc.). Such memory may, for example, be a temporary and/or permanent component of the system entity implementing the method 200. For example, in a scenario including the utilization of such hard media, step 210 may comprise receiving the moving picture information from such a device and/or from a reader of such a device (e.g., directly via an end-to-end conductor or via a communication network).

In an exemplary scenario, step 210 may comprise receiving a completed moving picture data set for the television program, the completed moving picture data set formatted for communicating the television program without information describing user-selectable objects in the television program. For example, the received completed moving picture data set may be in conformance with a moving picture standard (e.g., MPEG, MPEG-2, MPEG-4, MPEG-4 AVC, DVD, way, etc.). For example, such a data set may be a data file (or set of logically linked data files) formatted in an MPEG or DVD format for normal presentation on a user's local television system. Such a data set of a television program, when received at step 210, might not have information of user-selectable objects in the television program. Such information of user-selectable objects may then, for example, be added, as will be explained below.

In another exemplary scenario, step 210 may comprise receiving moving picture information for the television program prior to the moving picture information being formatted into a completed moving picture data set for communicating the television program. In an exemplary implementation, step 210 may comprise receiving moving picture information (e.g., frame-by-frame bitmaps, partially encoded moving picture information, etc.) that will be formatted in accordance with a moving picture standard, but which has not yet been so formatted. Such a data set of a television program, when received at step 210, might not have information of user-selectable objects in the television program. Such information of user-selectable objects may then, for example, be added, as will be explained below.

In yet another exemplary scenario, step 210 may comprise receiving a completed moving picture data set for the television program, the completed moving picture data set formatted for communicating the television program with information describing user-selectable objects in the television program. For example, the received completed moving picture data set may be in conformance with a moving picture standard (e.g., MPEG, MPEG-2, MPEG-4, MPEG-4 AVC, DVD, way, etc.), or a variant thereof, that specifically accommodates information of user-selectable objects in the television program. Also for example, the received completed mov-

ing picture data set may be in conformance with a moving picture standard (e.g., MPEG, MPEG-2, MPEG-4, MPEG-4 AVC, DVD, way, etc.), or a variant thereof, that while not specifically accommodating information of user-selectable objects in the television program, allows for the incorporation of such information in unassigned data fields. For example, such a data set may be a data file (or set of logically linked data files) formatted in an MPEG or DVD format for normal presentation on a user's local television system. Such a data set of a television program, when received at step 210, might comprise information of user-selectable objects in the television program. Such information of user-selectable objects may then, for example, be deleted, modified and/or appended, as will be explained below.

Step 210 may, for example, comprise receiving the moving picture information in digital and/or analog signals. Though the examples provided above generally concerned the receipt of digital data, such examples are readily extendible to the receipt of analog moving picture information (e.g., the receipt of composite and/or component video signals, etc.).

In general, step 210 may comprise receiving moving picture information for a television program. Accordingly, the scope of various aspects of the present invention should not be limited by characteristics of any particular type of moving picture information or by any particular manner of receiving moving picture information unless explicitly claimed.

The exemplary method 200 may, at step 220, comprise receiving object information corresponding to a user-selectable object in the television program. Many non-limiting examples of receiving such object information will now be provided.

Step 220 may comprise receiving the user-selectable object information from any of a variety of sources, non-limiting examples of which will now be provided. For example and without limitation, step 220 may comprise receiving the user-selectable object information from a television broadcasting company, from a movie streaming company, from a television studio, from a television program database or server, from an advertising company, from a commercial enterprise associated with a user-selectable object in a television program, from a person or organization associated with a user-selectable object in a television program, from an Internet television programming provider, from a third party television program information source, etc.

Step 210 may comprise receiving the user-selectable object information from a plurality of independent sources. For example, in an exemplary scenario in which a television program includes user-selectable objects corresponding to a plurality of respective interested parties (e.g., respective product sponsors, respective leagues or other associations, respective people, etc.), step 210 may comprise receiving the user-selectable object information from each of such respective interested parties. For example, step 210 may comprise receiving user-selectable object information corresponding to a user-selectable consumer good in a television program from a provider of such consumer good, receiving user-selectable object information corresponding to an entertainer in the television program from the entertainer's management company, receiving user-selectable object information corresponding to a user-selectable historical landmark in the television program from a society associated with the historical landmark, receiving user-selectable object information corresponding to a user-selectable object in the television program associated with a service from a provider of such service, etc. In such a multiple-source scenario, step 210 may comprise aggregating the user-selectable object information received from the plurality of sources (e.g., into a single

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user-selectable object data set) for ultimate combination of such user-selectable object information with received moving picture information.

Step 220 may, for example, comprise receiving the user-selectable object information from a same source as that from which the moving picture information was received at step 210 or may comprise receiving the user-selectable object information from a different source. For example and without limitation, step 220 may comprise receiving the user-selectable object information from an advertising company, while step 210 comprises receiving the moving picture information from a television studio. In another example, step 220 may comprise receiving the user-selectable object information from a commercial enterprise associated with a consumer good object presented in the television program, while step 210 comprises receiving the moving picture information from a head-end server of a sports network.

In yet another example, step 220 may comprise receiving the user-selectable object information directly from a computer process that generates such information. For example, an operator may play a moving picture (e.g., at a normal rate, a slower-than-normal rate, frame-by-frame, etc.) and utilize graphical tools (e.g., boxes or other polygons, edge detection routines, etc.) to define and track movement of a user-selectable object in the moving picture. Such a computer process may then output information describing the object and/or movement thereof in the moving picture. Step 220 may comprise receiving the information output from such process.

Step 220 may comprise receiving the user-selectable object information via any of a variety of types of communication networks. Such networks may, for example, comprise a wireless television network (e.g., terrestrial and/or satellite) and/or cable television network. Such networks may, for example, comprise any of variety of general data communication networks (e.g., the Internet, a local area network, a personal area network, a metropolitan area network, etc.).

Step 220 may, for example, comprise receiving the user-selectable object information via a same communication network as that via which the moving picture information was received at step 210 or may comprise receiving the user-selectable object information from a different communication network. For example and without limitation, step 220 may comprise receiving the user-selectable object information via a general data communication network (e.g., the Internet), while step 210 comprises receiving the moving picture information via a television network. In another example, step 220 may comprise receiving the user-selectable object information via a general data network, while step 210 comprises receiving the moving picture information from a computer readable medium.

Step 220 may comprise receiving the user-selectable object information from any of a variety of types of hard media (e.g., optical storage media, magnetic storage media, etc.). Such hard media may, for example, comprise characteristics of optical storage media (e.g., compact disc, digital versatile disc, Blu-ray®, laser disc, etc.), magnetic storage media (e.g., hard disc, diskette, magnetic tape, etc.), computer memory device (e.g., flash memory, one-time-programmable memory, read-only memory, random access memory, thumb drive, etc.). Such memory may, for example, be a temporary and/or permanent component of the system entity implementing the method 200. For example, in a scenario including the utilization of such hard media, step 220 may comprise receiving the user-selectable object information from such a device and/or from a reader of such a device (e.g., directly via an end-to-end conductor or via a communication network).

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The object information corresponding to one or more user-selectable objects that is received at step 220 may comprise any of a variety of characteristics, non-limiting examples of which will now be provided.

For example, such user-selectable object information may comprise information describing and/or defining the user-selectable object that is shown in the television program. Such information may, for example, be processed by a recipient of such information to identify an object that is being selected by a user. Such information may, for example, comprise information describing boundaries associated with a user-selectable object in the television program (e.g., actual object boundaries (e.g., an object outline), areas generally coinciding with a user-selectable object (e.g., a description of one or more geometric shapes that generally correspond to a user-selectable object), selection areas that when selected indicate user-selection of a user-selectable object (e.g., a superset and/or subset of a user-selectable object in the television program), etc. Such information may, for example, describe and/or define the user-selectable in a television program frame coordinate system.

Such information describing and/or defining the user-selectable object that is shown in the television program may comprise information describing movement of a user-selectable object in the television program. For example, such information may comprise information describing the location of the object on a frame-by-frame basis, information describing movement of a user-selectable object in television screen coordinates as a function of time and/or frame, information describing location of a user-selectable object in a video frame relative to a previous object location in a previous video frame, etc.

Many examples of such object description information are provided in a variety of related U.S. patent applications. For example, as mentioned previously, U.S. patent application Ser. No. 12/774,380, filed May 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,832, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A DISTRIBUTED SYSTEM FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,866, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION RECEIVER FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,911, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION CONTROLLER FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/850,945, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION CONTROLLER FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/851,036, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A TELEVISION SYSTEM FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; and U.S. patent application Ser. No. 12/851,075, filed Aug. 5, 2010, titled "SYSTEM AND METHOD IN A PARALLEL TELEVISION SYSTEM FOR PROVIDING USER-SELECTION OF OBJECTS IN A TELEVISION PROGRAM"; which are hereby incorporated herein by reference in their entirety, provide many examples of information describing (or otherwise related to) user-selectable objects in television programming.

Also for example, such user-selectable object information may comprise information describing the object, where such

information may be presented to the user upon user-selection of a user selectable object. For example, such object information may comprise information describing physical characteristics of a user-selectable object, background information, historical information, general information of interest, location information, financial information, travel information, commerce information, personal information, etc.

Additionally for example, such user-selectable object information may comprise information describing and/or defining actions that may be taken upon user-selection of a user-selectable object, non-limiting examples of such actions and/or related information corresponding to a respective user-selectable object will now be presented.

For example, such user-selectable object information may comprise information describing a one or more manners of determining information to present to the user (e.g., retrieving such information from a known location, conducting a search for such information, etc.), establishing a communication session by which a user may interact with networked entities associated with a user-selected object, interacting with a user regarding display of a user-selected object and/or associated information, etc.

For example, such user-selectable object information may comprise information describing one or more manners of obtaining one or more sets of information, where such information may then, for example, be presented to the user. For example, such information may comprise a memory address (or data storage address) and/or a communication network address (e.g., an address of a networked data server, a URL, etc.), where such address may correspond to a location at which information corresponding to the identified object may be obtained. Such information may, for example, comprise a network address of a component with which a communication session may be initiated and/or conducted (e.g., to obtain information regarding the user-selected object, to interact with the user regarding the selected object, etc.).

In an exemplary scenario in which the user-selectable object information comprises information to present to a user upon user-selection of a selectable object in a television program, such information may comprise any of a variety of different types of information related to the user-selected object. For example and without limitation, such information may comprise information describing the user-selectable object (e.g., information describing aspects of the object, history of the object, design of the object, source of the object, price of the object, critiques of the object, information provided by commercial enterprises producing and/or providing such object, etc.), information indicating to the user how the user may obtain the selected object, information indicating how the user may utilize the selected object, etc. The information may, for example, comprise information of one or more non-commercial organizations associated with, and/or having information pertaining to, the identified user-selected object (e.g., non-profit and/or government organization contact information, web site address information, etc.).

In another exemplary scenario, the information corresponding to a user-selectable object in the television program may comprise information related to conducting a search for information corresponding to the user-selectable object. Such information may, for example, comprise network search terms that may be utilized in a search engine to search for information corresponding to the user-selected object. Such information may also comprise information describing the network boundaries of such a search, for example, identifying particular search networks, particular servers, particular addresses, particular databases, etc.

In an exemplary scenario the information corresponding to a user-selectable object may describe a manner in which a system is to interact with a user to more clearly identify information desired by the user. For example, such information may comprise information specifying user interaction that should take place when an amount of information available and corresponding to a user-selectable object exceeds a particular threshold. Such user interaction may, for example, help to reduce the amount of information that may ultimately be presented to the user. For example, such information may comprise information describing a user interface comprising providing a list (or menu) of types of information available to the user and soliciting information from the user regarding the selection of one or more of the listed types of information.

In yet another exemplary scenario, in which an action associated with a user-selectable object comprises the establishment and/or management of a communication session between the user and one or more networked entities, the user-selectable object information may comprise information describing the manner in which a communication session may be established and/or management.

In still another exemplary scenario, in which an action associated with a user-selectable object comprises providing a user interface by which a user may initiate and perform a commercial transaction regarding a user-selectable object, the user-selectable object information may comprise information describing the manner in which the commercial transaction is to be performed (e.g., order forms, financial information exchange, order tracking, etc.).

As shown above, various user-selectable objects (or types of objects) may, for example, be associated with any of a variety of respective actions that may be taken upon selection of a respective user-selectable object by a user. Such actions (e.g., information retrieval, information searching, communication session management, commercial transaction management, etc.) may, for example, be included in a table or other data structure indexed by the identity of a respective user-selectable object.

Other non-limiting examples of object information corresponding to user-selectable objects in a television program may comprise: athlete information (e.g., statistics, personal information, professional information, history, etc.), entertainer information (e.g., personal information, discography and/or filmography information, information of related organizations, fan club information, photograph and/or video information, etc.), landmark information (e.g., historical information, visitation information, location information, mapping information, photo album information, visitation diary, charitable donation information, etc.), political figure information (e.g., party affiliation, stances on particular issues, history, financial information, voting record, attendance record, etc.), information regarding general types of objects (e.g., information describing actions to take upon user-selection of a person object, of a consumer good object, of a landmark object, etc.) and/or specific objects (e.g., information describing actions to take when a particular person object is selected, when a particular consumer good object is selected, when a particular landmark object is selected, etc.).

For additional non-limiting examples of actions that may be performed related to user selectable objects in television programming, and related user-selectable object information that may be combined with television program moving picture information, the reader is directed to U.S. patent application Ser. No. 12/880,530, filed concurrently herewith, titled "SYSTEM AND METHOD IN A DISTRIBUTED SYSTEM FOR RESPONDING TO USER-SELECTION OF AN OBJECT IN A TELEVISION PROGRAM"; U.S. patent

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application Ser. No. 12/880,594, filed concurrently herewith, titled "SYSTEM AND METHOD IN A LOCAL TELEVISION SYSTEM FOR RESPONDING TO USER-SELECTION OF AN OBJECT IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/880,668, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION SYSTEM FOR RESPONDING TO USER-SELECTION OF AN OBJECT IN A TELEVISION PROGRAM BASED ON USER LOCATION", U.S. patent application Ser. No. 12/881,067, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION SYSTEM FOR PRESENTING INFORMATION ASSOCIATED WITH A USER-SELECTED OBJECT IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/881,096, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION SYSTEM FOR PRESENTING INFORMATION ASSOCIATED WITH A USER-SELECTED OBJECT IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/880,749, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION SYSTEM FOR RESPONDING TO USER-SELECTION OF AN OBJECT IN A TELEVISION PROGRAM UTILIZING AN ALTERNATIVE COMMUNICATION NETWORK"; U.S. patent application Ser. No. 12/880,851, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION FOR PROVIDING ADVERTISING INFORMATION ASSOCIATED WITH A USER-SELECTED OBJECT IN A TELEVISION PROGRAM"; U.S. patent application Ser. No. 12/880,888, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION FOR PROVIDING INFORMATION ASSOCIATED WITH A USER-SELECTED PERSON IN A TELEVISION PROGRAM"; and U.S. patent application Ser. No. 12/881,110, filed concurrently herewith, titled "SYSTEM AND METHOD IN A TELEVISION FOR PROVIDING INFORMATION ASSOCIATED WITH A USER-SELECTED INFORMATION ELEMENT IN A TELEVISION PROGRAM". The entire contents of each of such applications are hereby incorporated herein by reference in their entirety.

In general, the above-mentioned types of information corresponding to user-selectable objects in television programming may be general to all eventual viewers of the television program, but may also be customized to a particular target user and/or end user. For example, such information may be customized to a particular user (e.g., based on income level, demographics, age, employment status and/or type, education level and/or type, family characteristics, religion, purchasing history, neighborhood characteristics, home characteristics, health characteristics, etc. For example, such information may also be customized to a particular geographical location or region.

In general, step **220** may comprise receiving object information corresponding to a user-selectable object in the television program. Accordingly, the scope of various aspects of the present invention should not be limited by characteristics of any particular type of such user-selectable object information or by any particular manner of receiving such user-selectable object information unless explicitly claimed.

The exemplary method **200** may, at step **230**, comprise combining the received moving picture information (e.g., as received at step **210**) and the received user-selectable object information (e.g., as received at step **220**) in a combined data set. Many non-limiting examples of such combining will now be provided.

As mentioned previously, step **210** may comprise receiving moving picture information for a television program by, at

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least in part, receiving a completed moving picture data set for the television program, where the completed moving picture data set is formatted for communicating the television program without information describing user-selectable objects in the television program. In such an exemplary scenario, step **230** may comprise combining the received moving picture information and the received user-selectable object information by, at least in part, inserting the received user-selectable object information in the completed moving picture data set to create a combined data set comprising the received moving picture data set and the received user-selectable object information.

For example, in an exemplary scenario in which the received completed moving picture data set, as received, is formatted in accordance with a moving picture standard (e.g., an MPEG standard), step **230** may comprise inserting the received user-selectable object information in data fields of the completed moving picture data set that are not assigned by the moving picture standard for any specific type of information (e.g., inserting such information into unassigned data fields provided by the moving picture standard, adding new data fields to the moving picture standard, etc.).

Such inserting may, for example, comprise inserting the received user-selectable object information in data fields of the completed moving picture data set that are interleaved with data fields carrying moving picture data. For example, such inserting may be performed in accordance with a format alternating moving picture data and user-selectable object information on a frame-by-frame basis (e.g., sequencing frame **1** moving picture data, frame **1** user-selectable object information, sequencing frame **2** moving picture data, frame **2** user-selectable object information, etc.), by groups of frames (e.g., frame **1-A** moving picture data, frame **1-A** user-selectable object information, frame **A-N** moving picture data, frame **A-N** user-selectable object information, etc.), by sub-frames, etc. Also for example, utilizing time information user-selectable object information need not be strictly placed with the moving picture data for the frame(s) in which the user-selectable object appears. For example, information of user-selectable objects in frame **N+1** may be communicated with frame **N** moving picture information.

Also for example, in another exemplary scenario in which the received completed moving picture data set, as received, is formatted in accordance with a moving picture data standard that specifically assigns data fields to information of user-selectable objects, step **230** may comprise inserting the received user-selectable object information in the data fields of the completed moving picture data set that are specifically assigned by the moving picture standard to contain information of user-selectable objects.

Also as mentioned previously, step **210** may comprise receiving moving picture information for a television program by, at least in part, receiving moving picture information for the television program prior to the moving picture information being formatted into a completed moving picture data set for communicating the television program. For example, such a scenario may comprise receiving information describing the television program moving picture that has yet to be formatted into a data set that conforms to a particular moving picture standard (e.g., bitmap information, still frame information, movement vector information, etc., which has yet to be placed into a self-contained MPEG data set for communicating the television program). In such an exemplary scenario, step **230** may comprise combining the received moving picture information and the received user-selectable object information into a completed moving picture data set that is formatted for communicating the television program with

information describing user-selectable objects in the television program (e.g., into a single cohesive data set, for example, a single data file or other data structure, into a plurality of logically linked data files or other data structures, etc.).

In an exemplary scenario, such a completed moving picture data set may be formatted in accordance with a moving picture standard that specifically assigns respective data fields (or elements) to moving picture information and user-selectable object information. In another exemplary scenario, such a completed moving picture data set may be formatted in accordance with a moving picture standard that specifically assigns data fields to moving picture information, but does not specifically assign data fields to user-selectable object information (e.g., utilizing general-purpose unassigned data fields, adding new data fields to the standard, etc.).

Also as mentioned previously, step 210 may comprise receiving moving picture information for a television program by, at least in part, receiving an initial combined television program data set that comprises initial moving picture information and initial user-selectable object information corresponding to user-selectable objects in the television program. For example, prior to being received, the received initial combined television program data set may have already been formed into a single cohesive data set that comprises the moving picture information for the television program and information of user-selectable objects in the television program.

In such an exemplary scenario, step 230 may comprise modifying the initial user-selectable object information of the initial combined television program data set in accordance with the received user-selectable object information (e.g., as received at step 220). Such modifying may, for example and without limitation, comprise adding the received object information to the initial object information in the initial combined television program data set (e.g., in unused unassigned data fields and/or in unused data fields that have been specifically assigned to contain user-selectable object information, etc.).

Also such modifying may comprise changing at least a portion of the initial object information of the initial combined television program data set in accordance with the received user-selectable object information (e.g., changing information defining a user-selectable object in a presented television program, changing information about a user-selectable object to be presented to a user, changing information regarding any action that may be performed upon user-selection of a user-selectable object, etc.). Additionally, such modifying may comprise deleting at least a portion of the initial object information in accordance with the received user-selectable object information (e.g., in a scenario in which the received user-selectable object information includes a command or directive to remove a portion or all information corresponding to a particular user-selectable object).

In the previously provided examples of combining the received moving picture information and the received user-selectable object information, step 230 may comprise performing such operations automatically (i.e., without real-time interaction with a user while such operations are being performed) and may also be performed with user interaction. For example, the received moving picture information and the received user-selectable object information may each be time-stamped to assist in merging such information. For example, step 230 may comprise analyzing such respective time-stamps to determine the location in a serial stream of moving picture information at which the user-selectable object information is to be inserted. For example, the user-

selectable object information for a particular user-selectable object may comprise information of the time and/or frame numbers at which the user-selectable object appears in the television program. Such information may be utilized at step 230 to determine the appropriate location in the moving picture data set at which to place the user-selectable object information.

In another example, step 230 may comprise presenting an operator with a view of the moving picture of a television program and a view of a user-selectable object in such moving picture for which information is being added to a combined dataset. Step 230 may then comprise interacting with the operator to obtain permission and/or directions for combining the moving picture and user-selectable object information.

Note that step 230 may comprise encrypting the user-selectable object information or otherwise restricting access to such information. For example, in a scenario in which access to such information is provided on a subscription basis, in a scenario in which providers of such information desire to protect such information from undesirable access and/or manipulation, etc., such information protection may be beneficial.

In general, step 230 may comprise combining the received moving picture information (e.g., as received at step 210) and the received user-selectable object information (e.g., as received at step 220) in a combined data set. Accordingly, the scope of various aspects of the present invention should not be limited by any particular manner of performing such combining and/or any particular format in which such a combined data set may be placed unless specifically claimed.

The exemplary method 200 may, at step 240, comprise communicating the combined data set(s) (e.g., as formed at step 230) to one or more recipient systems or devices. Such communication may comprise characteristics of any of a variety of types of communication, non-limiting examples of which will now be presented.

Step 240 may, for example, comprise communicating the combined data set(s) via a communication network (e.g., a television communication network, a telecommunication network, a general data communication network (e.g., the Internet, a LAN, etc.), etc.). Many non-limiting examples of such communication network were provided previously. Step 240 may, for example, comprise broadcasting, multi-casting and/or uni-casting the combined data set over one or more communication networks. Step 240 may also, for example, comprise communicating the combined data set(s) to another system and/or device via a direct conductive path (e.g., via a wire, circuit board trace, conductive trace on a die, etc.).

Additionally for example, step 240 may comprise storing the combined data set(s) on a computer readable medium (e.g., a DVD, a CD, a Blu-ray® disc, a laser disc, a magnetic tape, a hard drive, a diskette, etc.). Such a computer readable medium may then, for example, be shipped to a distributor and/or ultimate recipient of the computer readable medium. Further for example, step 240 may comprise storing the combined data set(s) in a volatile and/or non-volatile memory device (e.g., a flash memory device, a one-time-programmable memory device, an EEPROM, a RAM, etc.).

Further for example, step 240 may comprise storing (or causing or otherwise participating in the storage of) the combined data set(s) in a television system component (e.g., a component or device of the user's local television system and/or a component or device of a television program provider and/or a component or device of any television program source. For example and without limitation, step 240 may comprise storing the combined dataset(s), or otherwise participating in the storage of the combined dataset(s), in a

component of the user's local television system (e.g., in a digital video recorder, a television receiver, a television, a television controller, personal communication device, a local networked database, a local networked personal computer, etc.).

Step 240 may, for example, comprise communicating the combined data set in serial fashion. For example, step 240 may comprise communicating the combined data set (comprising interleaved moving picture information and user-selectable object information) in a single data stream (e.g., via a television network, via a general data network, stored on a hard medium in such serial fashion, etc.). Also for example, step 240 may comprise communicating the combined data set in parallel data streams, each of which comprises interleaved moving picture information and user-selectable object information (e.g., as opposed to separate distinct respective data streams for each of moving picture information and user-selectable object information).

In general, step 240 may comprise communicating the combined data set(s) (e.g., as formed at step 230) to one or more recipient systems or devices (e.g., an end user or associated system, television programming provider or associated system, an advertiser or associated system, a television program producer or associated system, a television program database, a television program server, etc.). Accordingly, the scope of various aspects of the present invention should not be limited by characteristics of any particular manner of performing such communicating or by any particular recipient of such communication unless explicitly claimed.

The exemplary method 200 may, for example at step 295, comprise performing continued operations. Step 295 may comprise performing any of a variety of continued operations, non-limiting examples of such continued operation(s) will be presented below. For example, step 295 may comprise returning execution flow to any of the previously discussed method steps. For example, step 295 may comprise returning execution flow of the exemplary method 200 to step 220 for receiving additional user-selectable object information to combine with television program information. Also for example, step 295 may comprise returning execution flow of the exemplary method 200 to step 210 for receiving additional television program moving picture information and user-selectable object information to combine with such received television program information. Additionally for example, step 295 may comprise returning execution flow of the exemplary method 200 to step 240 for additional communication of the combined information to additional recipients.

In general, step 295 may comprise performing continued operations (e.g., performing additional operations corresponding to combining television program information and information of user-selectable objects in such programming, etc.). Accordingly, the scope of various aspects of the present invention should not be limited by characteristics of any particular type of continued processing unless explicitly claimed.

Turning next to FIG. 3, such figure is a flow diagram illustrating an exemplary method 300 for providing embedded information of selectable objects in a television program, in accordance with various aspects of the present invention. The exemplary method 300 may, for example, share any or all characteristics with the exemplary method 200 illustrated in FIG. 2 and discussed previously. Any or all aspects of the exemplary method 300 may, for example, be implemented in a television system component (e.g., the television provider 110, third party program information provider 120, a component of a communication network 130, first television 140, first television controller 160, second television 141, televi-

sion receiver 151, second television controller 161, shown in FIG. 1 and discussed previously) and/or a plurality of such television system components operating in conjunction. For example, any or all aspects of the exemplary method 300 may be implemented in one or more television system components remote from the user's local television system. Also for example, any or all aspects of the exemplary method 200 may be implemented in one or more components of the user's local television system.

The exemplary method 300 may, for example, begin executing at step 305. The exemplary method 300 may begin executing in response to any of a variety of causes or conditions. Step 305 may, for example, share any or all characteristics with step 205 of the exemplary method 200 illustrated in FIG. 2 and discussed previously.

The exemplary method 300 may, for example at step 310, comprise receiving moving picture information for a television program. Step 310 may, for example, share any or all characteristics with step 210 of the exemplary method 200 illustrated in FIG. 2 and discussed previously. For example, step 310 may comprise receiving any of the various types of moving picture information from any of the various sources of moving picture information via any of the various communication media discussed previously with regard to the method 200 of FIG. 2 and the system 100 of FIG. 1 and elsewhere herein.

For example, step 310 may comprise, for example at sub-step 312, receiving a completed moving picture data set for the television program, the completed moving picture data set formatted for communicating the television program without information describing user-selectable objects in the television program. Alternatively for example, step 310 may comprise, for example at sub-step 314, receiving moving picture information for the television program prior to the moving picture information being formatted into a completed moving picture data set for communicating the television program. Alternatively for example, step 310 may comprise, for example at sub-step 316, receiving a completed moving picture data set for the television program, the completed moving picture data set formatted for communicating the television program with information describing user-selectable objects in the television program.

The exemplary method 300 may, for example at step 320, comprise receiving object information corresponding to a user-selectable object in the television program. Step 320 may, for example, share any or all characteristics with step 220 of the exemplary method 200 illustrated in FIG. 2 and discussed previously. For example, step 320 may comprise receiving any of the various types of user-selectable object information from any of the various sources of user-selectable object information via any of the various types of media discussed previously with regard to the method 200 of FIG. 2 and the system 100 of FIG. 1 and elsewhere herein.

For example, step 320 may comprise, for example at sub-step 322, receiving user-selectable object information comprising information describing and/or defining the user-selectable object that is shown in the television program (e.g., object dimension information, object movement information, etc.). Also for example, step 320 may comprise, for example at sub-step 324, receiving user-selectable object information comprising information regarding the user-selectable object that may be presented to the user upon user-selection of such object in a television program.

Additionally for example, step 320 may comprise, for example at sub-step 326, receiving user-selectable object information comprising information describing and/or defining actions that may be taken upon user-selection of a user-

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selectable object (e.g., retrieving and/or obtaining and/or searching for information about a user-selectable object, information specifying a manner in which a system is to interact with a user regarding a user-selected object, searching for information, establishing and/or maintaining communication sessions, information describing the manner in which the commercial transaction is to be performed, etc.).

The exemplary method **300** may, for example at step **330**, comprise combining the received moving picture information (e.g., as received at step **310**) and the received user-selectable object information (e.g., as received at step **320**) in a combined data set. Step **330** may, for example, share any or all characteristics with step **230** of the exemplary method **200** illustrated in FIG. **2** and discussed previously.

For example, step **330** may comprise, for example at sub-step **332**, inserting the received user-selectable object information in a completed moving picture data set that was received at step **320** (e.g., inserting such user-selectable object information in fields of the moving picture data set that are specified by a standard for carrying such user-selectable object information, inserting such user-selectable object information in fields of the moving picture data set that are not specifically allocated for a particular type of data, etc.).

Also for example, step **330** may comprise, for example at sub-step **334**, combining received moving picture data and received user-selectable object information into a completed moving picture data set that is formatted for communicating the television program with information describing user-selectable objects in the television program. Additionally for example, step **330** may comprise, for example at sub-step **336**, modifying initial user-selectable object information of an initial combined television program data set in accordance with received user-selectable object information.

The exemplary method **300** may, for example at step **340**, comprise communicating the combined data set(s) (e.g., as formed at step **230**) to one or more recipient systems or devices. Step **340** may, for example, share any or all characteristics with step **240** of the exemplary method **200** illustrated in FIG. **2** and discussed previously.

For example, step **340** may comprise, for example at sub-step **342**, communicating the combined data set(s) via a communication network (e.g., any of a variety of communication networks discussed herein, etc.). Also for example, step **340** may comprise, for example, at sub-step **344**, communicating the combined data set(s) by storing the combined data set(s) on a computer readable medium and/or by transmitting the combined data set(s) to another device or system to perform such storage. Additionally for example, step **340** may comprise, for example, at sub-step **346**, communicating the combined data set in a single serial stream (e.g., comprising interleaved moving picture data and user-selectable object information). Further for example, step **340** may comprise, for example, at sub-step **348**, communicating the combined data set in a plurality of parallel serial streams (e.g., each of such streams comprising interleaved moving picture data and user-selectable object information).

The exemplary method **300** may, for example at step **395**, comprise performing continued operations. Step **395** may, for example, share any or all characteristics with step **295** of the exemplary method **200** illustrated in FIG. **2** and discussed previously.

Turning next to FIG. **4**, such figure is a diagram illustrating an exemplary television system (e.g., single television system component and/or plurality of television system components) **400**, in accordance with various aspects of the present invention. The exemplary television system **400** may, for example, share any or all characteristics with one or more of the tele-

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vision system components illustrated in FIG. **1** and discussed previously. For example, the exemplary television system **400** may correspond to any of the television system components illustrated in FIG. **1** (or the like) or any group of the television system components illustrated in FIG. **1** (or the like). Also, the exemplary television system **400** may comprise characteristics of a computing system (e.g., a personal computer, a mainframe computer, a digital signal processor, etc.). The exemplary television system **400** (e.g., various modules thereof) may operate to perform any or all of the functionality discussed previously with regard to the exemplary methods **200** and **300** illustrated in FIGS. **2-3** and discussed previously.

The exemplary television system **400** includes a first communication interface module **410**. The first communication interface module **410** may, for example, operate to communicate over any of a variety of communication media and utilizing any of a variety of communication protocols. For example, though the first communication interface module **410** is illustrated coupled to a wireless RF antenna via a wireless port **412**, the wireless medium is merely illustrative and non-limiting. The first communication interface module **410** may, for example, operate to communicate with one or more communication networks (e.g., cable television networks, satellite television networks, telecommunication networks, general data communication networks, the Internet, local area networks, personal area networks, metropolitan area networks, etc.) via which television-related information (e.g., moving picture information, information of user-selectable objects, television programming with and without embedded information of user-selectable objects) and/or other data is communicated. Also for example, the first communication interface module **410** may operate to communicate with local sources of television-related content or other data (e.g., disc drives, computer-readable medium readers, video recorders, video cameras, computers, receivers, etc.). Additionally, for example, the first communication interface module **410** may operate to communicate with a remote controller (e.g., directly or via one or more intermediate communication networks).

The exemplary television system **400** includes a second communication interface module **420**. The second communication interface module **420** may, for example, operate to communicate over any of a variety of communication media and utilizing any of a variety of communication protocols. For example, the second communication interface module **420** may communicate via a wireless RF communication port **422** and antenna, or may communicate via a non-tethered optical communication port **424** (e.g., utilizing laser diodes, photodiodes, etc.). Also for example, the second communication interface module **420** may communicate via a tethered optical communication port **426** (e.g., utilizing a fiber optic cable), or may communicate via a wired communication port **428** (e.g., utilizing coaxial cable, twisted pair, HDMI cable, Ethernet cable, any of a variety of wired component and/or composite video connections, etc.). The second communication interface module **420** may, for example, operate to communicate with one or more communication networks (e.g., cable television networks, satellite television networks, telecommunication networks, general data communication networks, the Internet, local area networks, personal area networks, metropolitan area networks, etc.) via which television-related information (e.g., moving picture information, information of user-selectable objects, television programming with and without embedded information of user-selectable objects) and/or other data is communicated. Also for example, the second communication module **420** may operate to communicate with local sources of television-related information

(e.g., disc drives, computer-readable medium readers, video recorders, video cameras, computers, receivers, etc.). Additionally, for example, the second communication module **420** may operate to communicate with a remote controller (e.g., directly or via one or more intervening communication networks).

The exemplary television system **400** may also comprise additional communication interface modules, which are not illustrated (some of which may also be shown in FIG. 5). Such additional communication interface modules may, for example, share any or all aspects with the first **410** and second **420** communication interface modules discussed above.

The exemplary television system **400** may also comprise a communication module **430**. The communication module **430** may, for example, operate to control and/or coordinate operation of the first communication interface module **410** and the second communication interface module **420** (and/or additional communication interface modules as needed). The communication module **430** may, for example, provide a convenient communication interface by which other components of the television system **400** may utilize the first **410** and second **420** communication interface modules. Additionally, for example, in an exemplary scenario where a plurality of communication interface modules are sharing a medium and/or network, the communication module **430** may coordinate communications to reduce collisions and/or other interference between the communication interface modules.

The exemplary television system **400** may additionally comprise one or more user interface modules **440**. The user interface module **440** may generally operate to provide user interface functionality to a user of the television system **400**. For example, and without limitation, the user interface module **440** may operate to provide for user control of any or all standard television system commands (e.g., channel control, volume control, on/off, screen settings, input selection, etc.). The user interface module **440** may, for example, operate and/or respond to user commands utilizing user interface features disposed on the television system (e.g., buttons, etc.) and may also utilize the communication module **430** (and/or first **410** and second **420** communication interface modules) to communicate with other systems and/or components thereof, regarding television-related information, regarding user interaction that occurs during the formation of combined dataset(s), etc. (e.g., a television system controller (e.g., a dedicated television system remote control, a universal remote control, a cellular telephone, personal computing device, gaming controller, etc.)). In various exemplary scenario, the user interface module(s) **440** may operate to utilize the optional display **470** to communicate with a user regarding user-selectable object information and/or to present television programming to a user.

The user interface module **440** may also comprise one or more sensor modules that operate to interface with and/or control operation of any of a variety of sensors that may be utilized during the performance of the combined data set(s). For example, the one or more sensor modules may be utilized to ascertain an on-screen pointing location, which may for example be utilized to input and/or received user-selectable object information (e.g., to indicate and/or define user-selectable objects in a moving picture). For example and without limitation, the user interface module **440** (or sensor module(s) thereof) may operate to receive signals associated with respective sensors (e.g., raw or processed signals directly from the sensors, through intermediate devices, via the communication interface modules **410**, **420**, etc.). Also for example, in scenarios in which such sensors are active sensors (as opposed to purely passive sensors), the user interface

module **440** (or sensor module(s) thereof) may operate to control the transmission of signals (e.g., RF signals, optical signals, acoustic signals, etc.) from such sensors. Additionally, the user interface module **440** may perform any of a variety of video output functions (e.g., presenting moving picture information to a user, presenting user-selectable object information to a user, presenting television programming to a user, providing visual feedback to a user regarding an identified user-selected object in a presented moving picture, etc.).

The exemplary television system **400** may comprise one or more processors **450**. The processor **450** may, for example, comprise a general purpose processor, digital signal processor, application-specific processor, microcontroller, microprocessor, etc. For example, the processor **450** may operate in accordance with software (or firmware) instructions. As mentioned previously, any or all functionality discussed herein may be performed by a processor executing instructions. For example, though various modules are illustrated as separate blocks or modules in FIG. 4, such illustrative modules, or a portion thereof, may be implemented by the processor **450**.

The exemplary television system **400** may comprise one or more memories **460**. As discussed above, various aspects may be performed by one or more processors executing instructions. Such instructions may, for example, be stored in the one or more memories **460**. Such memory **460** may, for example, comprise characteristics of any of a variety of types of memory. For example and without limitation, such memory **460** may comprise one or more memory chips (e.g., ROM, RAM, EPROM, EEPROM, flash memory, one-time-programmable OTP memory, etc.), hard drive memory, CD memory, DVD memory, etc.

The exemplary television system **400** may comprise one or more modules **452** (e.g., moving picture information receiving module(s)) that operate to receive moving picture information for a television program. Such one or more modules **452** may, for example, operate to utilize the communication module **430** (e.g., and at least one of the communication interface modules **410**, **420**) to receive such television program moving picture information. For example, such one or more modules **452** may operate to perform step **210** of the exemplary method **200** discussed previously and/or step **310** of the exemplary method **300** discussed previously.

The exemplary television system **400** may comprise one or more module(s) **454** (e.g., user-selectable object information receiving module(s)) that operate to receive object information corresponding to one or more user-selectable objects in a television program. Such one or more modules **454** may, for example, operate to utilize the communication module **430** (e.g., and at least one of the communication interface modules **410**, **420**) to receive such television program user-selectable object information. For example, such one or more modules **454** may operate to perform step **220** of the exemplary method **200** discussed previously and/or step **320** of the exemplary method **300** discussed previously.

The exemplary television system **400** may comprise one or more modules **456** (e.g., moving picture and user-selectable object combining module(s)) that operate to combine received moving picture information (e.g., as received by the module(s) **452**) and received user-selectable object information (e.g., as received by the module(s) **454**) into a combined data set. Such one or more modules **456** may, for example, operate to receive moving picture information from the module(s) **452**, receive user-selectable object information from the module(s) **454**, combine such received moving picture information and user-selectable object information into a combined data set, and output such combined data set. Such

one or more modules **456** may operate to perform step **230** of the exemplary method **200** discussed previously and/or step **330** of the exemplary method **300** discussed previously.

The exemplary television system **400** may comprise one or more modules **458** (e.g., combined data set communication module(s)) that operate to communicate the combined data set to at least one recipient system and/or device. For example, such module(s) **458** may operate to utilize the communication module(s) **430** (and, for example, one or both of the first communication interface module(s) **410** and second communication interface module(s) **420**)) to communicate the combined data set. Also for example, such module(s) **458** may operate to communicate the combined data set to one or more system devices that store the combined data set on a physical medium (e.g., a computer-readable medium). Such one or more modules **458** may operate to perform step **240** of the exemplary method **200** discussed previously and/or step **340** of the exemplary method **300** discussed previously.

Though not illustrated, the exemplary television system **400** may, for example, comprise one or more modules that operate to perform any or all of the continued processing discussed previously with regard to step **295** of the exemplary method **200** and step **395** of the exemplary method **300**, discussed previously. Such modules (e.g., as with the one or more modules **452**, **454**, **456** and **458**) may be performed by the processor(s) **450** executing instructions stored in the memory **460**.

Turning next to FIG. **5**, such figure is a diagram illustrating exemplary modules and/or sub-modules for a television system **500**, in accordance with various aspects of the present invention. The exemplary television system **500** may share any or all aspects with the television system **400** illustrated in FIG. **4** and discussed previously. For example, the exemplary television system **500** may, for example, share any or all characteristics with one or more of the television system components illustrated in FIG. **1** and discussed previously. For example, the exemplary television system **500** may correspond to any of the television system components illustrated in FIG. **1** (or the like) or any group of the television system components illustrated in FIG. **1** (or the like). For example, the exemplary television system **500** (or various modules thereof) may operate to perform any or all functionality discussed herein with regard to the exemplary method **200** illustrated in FIG. **2** and the exemplary method **300** illustrated in FIG. **3**.

For example, the television system **500** comprises a processor **530**. Such a processor **530** may, for example, share any or all characteristics with the processor **450** discussed with regard to FIG. **4**. Also for example, the television system **500** comprises a memory **540**. Such memory **540** may, for example, share any or all characteristics with the memory **460** discussed with regard to FIG. **4**.

Also for example, the television system **500** may comprise any of a variety of user interface module(s) **550**. Such user interface module(s) **550** may, for example, share any or all characteristics with the user interface module(s) **440** discussed previously with regard to FIG. **4**. For example and without limitation, the user interface module(s) **550** may comprise: a display device, a camera (for still or moving picture acquisition), a speaker, an earphone (e.g., wired or wireless), a microphone, a video screen (e.g., a touch screen), a vibrating mechanism, a keypad, and/or any of a variety of other user interface devices (e.g., a mouse, a trackball, a touch pad, touch screen, light pen, game controlling device, etc.).

The exemplary television system **500** may also, for example, comprise any of a variety of communication modules (**505**, **506**, and **510**). Such communication module(s)

may, for example, share any or all characteristics with the communication interface module(s) **410**, **420** discussed previously with regard to FIG. **4**. For example and without limitation, the communication interface module(s) **510** may comprise: a Bluetooth interface module; an IEEE 802.11, 802.15, 802.16 and/or 802.20 module; any of a variety of cellular telecommunication interface modules (e.g., GSM/GPRS/EDGE, CDMA/CDMA2000/1x-EV-DO, WCDMA/HS-DPA/HSUPA, TDMA/PDC, WiMAX, etc.); any of a variety of position-related communication interface modules (e.g., GPS, A-GPS, etc.); any of a variety of wired/tethered communication interface modules (e.g., USB, Fire Wire, RS-232, HDMI, Ethernet, wireline and/or cable modem, etc.); any of a variety of communication interface modules related to communicating with external memory devices; etc. The exemplary television system **500** is also illustrated as comprising various wired **506** and/or wireless **505** front-end modules that may, for example, be included in the communication interface modules and/or utilized thereby.

The exemplary television system **500** may also comprise any of a variety of signal processing module(s) **590**. Such signal processing module(s) **590** may share any or all characteristics with modules of the exemplary television system **400** that perform signal processing. Such signal processing module(s) **590** may, for example, be utilized to assist in processing various types of information discussed previously (e.g., with regard to sensor processing, position determination, video processing, image processing, audio processing, general user interface information data processing, etc.). For example and without limitation, the signal processing module(s) **590** may comprise: video/graphics processing modules (e.g. MPEG-2, MPEG-4, H.263, H.264, JPEG, TIFF, 3-D, 2-D, MDDI, etc.); audio processing modules (e.g., MP3, AAC, MIDI, QCELP, AMR, CMX, etc.); and/or tactile processing modules (e.g., Keypad I/O, touch screen processing, motor control, etc.).

In summary, various aspects of the present invention provide a system and method for providing information of selectable objects in a television program. While the invention has been described with reference to certain aspects and embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from its scope. Therefore, it is intended that the invention not be limited to the particular embodiment disclosed, but that the invention will include all embodiments falling within the scope of the appended claims.

What is claimed is:

1. A method for communicating television program information, the method comprising:

by a television or television receiver:

- receiving, by the television or television receiver, moving picture information for a television program;
- receiving, by the television or television receiver, user-selectable object information corresponding to a user-selectable object in the television program; and
- combining, by the television or television receiver, the received moving picture information and the received user-selectable object information into a completed moving picture data set that is formatted for communicating the television program with information describing user-selectable objects in the television program, the completed moving picture data set is formatted in accordance with a moving picture standard;

wherein:

said receiving moving picture information for the television program comprises receiving an initial combined television program data set comprising initial moving picture information and initial user-selectable object information corresponding to user-selectable objects in the television program; and

said combining comprises modifying the initial user-selectable object information of the initial combined television program data set in accordance with the received user-selectable object information by inserting the received user-selectable object information in data fields of the completed moving picture data set that are not assigned by the moving picture standard.

2. The method of claim 1, comprising communicating the combined data set in at least one serial data stream over a communication network to at least one recipient, the at least one serial data stream comprising a serial data stream that comprises moving picture information and user-selectable object information.

3. The method of claim 1, comprising storing the combined data set on a computer readable medium, the combined data set comprising user-selectable object information interleaved with moving picture information.

4. The method of claim 1, wherein the moving picture information for the television program is formatted for communicating the television program without information describing user-selectable objects in the television program.

5. The method of claim 1, wherein said modifying comprises changing at least a portion of the initial object information in accordance with the received user-selectable object information.

6. The method of claim 1, wherein the received user-selectable object information corresponding to the user-selectable object in the television program comprises customized user-selectable object information that is customized to a particular set of one or more users.

7. The method of claim 1, wherein the received user-selectable object information corresponding to the user-selectable object in the television program comprises information describing location of the user-selectable object in a frame of the television program.

8. A television receiver comprising:

at least one processor in the television receiver operable to, at least:

receive moving picture information for a television program;

receive user-selectable object information corresponding to a user-selectable object in the television program;

combine the received moving picture information and the received user-selectable object information into a combined data set, the combined data set is formatted in accordance with a moving picture standard; and communicate the combined data set comprising interleaved moving picture information and user-selectable object information;

wherein:

the at least one processor is operable to receive the moving picture information for the television program by, at least in part, operating to receive an initial combined television program data set comprising initial moving picture information and initial user-selectable object information corresponding to user-selectable objects in the television program; and

the at least one processor is operable to combine the received moving picture information and the received

user-selectable object information into the combined data set by, at least in part, operating to modify the initial user-selectable object information of the initial combined television program data set in accordance with the received user-selectable object information by inserting the received user-selectable object information in data fields of the combined data set that are not assigned by the moving picture standard.

9. The television receiver of claim 8, wherein the at least one processor is operable to communicate the combined data set in at least one serial data stream over a communication network to at least one recipient, the at least one serial data stream comprising a serial data stream that comprises moving picture information and user-selectable object information.

10. The television receiver of claim 8, wherein the at least one processor is operable to store the combined data set on a computer readable medium, the combined data set comprising user-selectable object information interleaved with moving picture information.

11. The television receiver of claim 8, wherein the moving picture information for the television program is formatted for communicating the television program without information describing user-selectable objects in the television program.

12. The television receiver of claim 11, wherein the at least one processor is operable to combine the received moving picture information and the received user-selectable object information in the combined data set by, at least in part, operating to insert the received user-selectable object information in the completed moving picture data set to create the combined data set comprising a moving picture data set and the received user-selectable object information.

13. The television receiver of claim 8, wherein said at least one processor is operable to receive moving picture information for the television program by, at least in part, operating to receive moving picture information for the television program prior to the moving picture information being formatted into a completed moving picture data set for communicating the television program.

14. The television receiver of claim 13, wherein said at least one processor is operable to combine the received moving picture information and the received user-selectable object information into the combined data set by, at least in part, operating to combine the received moving picture information and the received user-selectable object information into the completed moving picture data set that is formatted for communicating the television program with information describing user-selectable objects in the television program.

15. The television receiver of claim 8, wherein the at least one processor is operable to modify the initial user-selectable object information of the initial combined television program data set in accordance with the received user-selectable object information by, at least in part, operating to change at least a portion of the initial object information in accordance with the received user-selectable object information.

16. The television receiver of claim 8, where the received user-selectable object information corresponding to the user-selectable object in the television program comprises customized user-selectable object information that is customized to a particular set of one or more users.

17. The television receiver of claim 8, where the received user-selectable object information corresponding to the user-selectable object in the television program comprises information describing location of the user-selectable object in a frame of the television program.

18. The television receiver of claim 8, where the received user-selectable object information corresponding to the user-

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selectable object in the television program comprises information identifying at least one action to be performed upon user-selection of the user-selectable object.

19. The method of claim 1, further comprising communicating the combined data set in parallel data streams, each of the parallel data streams comprising interleaved moving picture information and user-selectable object information.

20. The method of claim 1, further comprising aggregating the user-selectable object information received from a plurality of data sources into a single user-selectable object data set prior to the combining.

21. A method for communicating television program information, the method comprising:

by a television or television receiver system:

receiving, by the television or television receiver, moving picture information for a television program;

receiving, by the television or television receiver, user-selectable object information corresponding to a user-selectable object in the television program;

combining, by the television or television receiver, the received moving picture information and the received user-selectable object information into a combined data set, the combined set is formatted in accordance with a moving picture standard; and

communicating, by the television or television receiver, the combined data set in parallel data streams, each of the parallel data streams comprising interleaved moving picture information and user-selectable object information;

wherein:

the at least one processor is operable to receive the moving picture information for the television program by, at least in part, operating to receive an initial combined television program data set comprising ini-

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tial moving picture information and initial user-selectable object information corresponding to user-selectable objects in the television program; and

the at least one processor is operable to combine the received moving picture information and the received user-selectable object information into the combined data set by, at least in part, operating to modify the initial user-selectable object information of the initial combined television program data set in accordance with the received user-selectable object information by inserting the received user-selectable object information in data fields of the combined data set that are not assigned by the moving picture standard.

22. The method according to claim 1, wherein modifying the initial user-selectable object information comprises changing information defining the user-selectable object presented in the television program.

23. The method according to claim 1, wherein modifying the initial user-selectable object information comprises changing information regarding an action performed upon selection of the user-selectable object.

24. The method according to claim 1, wherein modifying the initial user-selectable object information comprises deleting information regarding the user-selectable object.

25. The method according to claim 1, wherein modifying the initial user-selectable object information comprises encrypting information regarding the user-selectable object.

26. The method according to claim 1, wherein the initial combined television program data set comprising initial moving picture information and initial user-selectable object information corresponding to user-selectable objects in the television program is received in a single serial data stream.

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