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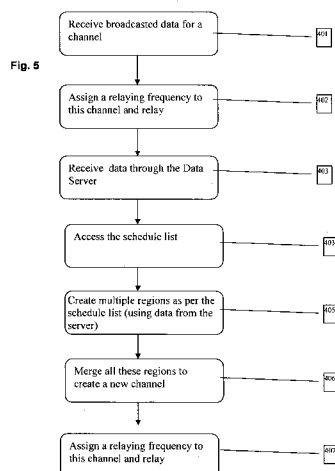
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(54) Title: SYSTEM AND METHOD FOR GENERATING PLURALITY OF DISPLAY OPTIONS



(57) Abstract: A system and method of generating plurality of display option segmenting the area of display screen into plurality of segments, the method comprising the steps of receiving channel broadcast data for atleast one channel relay having multimedia audio-video (A/V) program data/information; assigning a relay frequency to said channel; receiving relay frequency data through the data server; accessing the schedule list; creating multiple regions as per said schedule list; merging said multiple display regions to create a new channel; assigning a relay frequency to said new channel having multiple display regions; relaying the channel having multiple display regions.

SYSTEM AND METHOD FOR GENERATING PLURALITY OF DISPLAY OPTIONS

This application claims priority from Indian Provisional Patent Application No...678/~~DEL~~2008 filed on 19th March 2008.

Field of the Invention

The present invention relates to a method and system for generating plurality of display options available to an end-user over a cable TV network. More particularly the instant invention relates to generating plurality of display options using a same set of content and displaying the said content to the end-user as different channels. More particularly the instant invention discloses a method and system of segmenting the area of the display screens into plurality of display segments. More particularly the instant invention discloses a method of utilizing the segmented areas to display local, national, regional and user generated content

Background of the Invention

Ever since its introduction television has become an integral part of our daily life. It has become an important medium for entertainment, information, advertising and infotainment.

Moreover, in the present day scenario cable television (TV) has become a widely subscribed commodity. Cable TV typically comprises a plurality of audio/video (A/V) transmissions accumulated for example in a central office of a cable TV service provider. The A/V transmissions may be accumulated in a content server, for example – A content server is an information storage unit adapted to collect, accumulate, package, disseminate, and broadcast multimedia- (A/V) program data/information to clients at various locations remote from the central office. A common central content server may be located in a central office of a service provider.

Typically, cable TV transmissions (channels) are distributed to end-users over cables or wirelessly. The channels may be distributed from a content server located at a local cable TV service provider's location. The service provider's content server is adapted to transmit all of the channels simultaneously on a single shared cable to an end-user location.

Now there's a huge network that enables a user to view a channel of his choice. Clients, end-users and/or customers subscribe to the channels and/or service provided by the content server of the cable TV service provider. Ordinarily, there may be a signal distribution unit situated at the cable TV service provider's location. The signal distribution unit may be adapted to receive all channels via at

least one satellite signal-receiving unit, subsequently via at least one satellite. Digital encrypted content is uplinked which is received by the cable TV service provider/MSO that decrypts this content. The MSO decrypts plurality of such contents and then either encrypts it again to be decrypted by a set-top-box (STB) or beams it through his (service providers') network on free to air mode. A television (TV) set and a set-top-box (STB) may be located at the end-user's location to decode and display the channels. The STB provides end-users access to (i.e. decode) only those channels that the end-user subscribes.

In general, the end-user may watch generally one channel provided by the cable TV service provider at a given time. The end-user may select a subscribed channel for viewing by controlling the STB causing the STB to decode and send a particular channel to the TV set for display and viewing,

Thus, in the conventional TV system, for the most part, only one channel at a time can be viewed. This way the end-user is constrained to watch only one channel only at one point of time. It is also well known that people prefer watching localized and customized content on the channel, but television is a "push" technology so one has little control over the content so displayed on a particular channel. To watch such localized and customized content the end-user is required to surf through the network and limit himself to such channel (as a single display) displaying specifically a localized and customized content in generally a single display option.

Therefore a need exists for a system and method to enable to generate customized/localized content to be displayed on a television or like screen generating plurality of display options using a same set of content and displaying the said content to the user as different channels.

Further limitations and disadvantages of conventional and traditional approaches will become apparent to one skilled in the art, through comparison of such systems with some aspects of the present invention. The novel and inventive features believed characteristics of the invention are set forth in the appended claims. The invention itself, however, as well as preferred modes of use, further objects and advantages thereof, will be best understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings.

Summary of the Invention

A primary object of the present invention is to provide a system and method to generate plurality of display options over a cable TV network.

Yet another objective of the instant invention is to generating plurality of display options using a same set of content and displaying the said content to the end-user as different channels.

Yet another objective of the instant invention is segment the display area of the display screens into plurality of display segments.

Yet another objective of the instant invention is to utilize the segmented areas to display local, national, regional and user generated localized and customized content.

Yet another objective of the instant invention is to create plurality of channels with same national content.

Thus the present invention makes it possible for a cable TV system to provide a customized view to the end-user creating plurality of channels having localized and customized multimedia audio-video (A/V) program data/information.

Brief description of accompanying drawings

Non-limiting and non-exhaustive features of the present invention together with its objects and advantages are described with reference to the accompanying drawings, like reference numerals refer to like elements throughout the various figures unless otherwise specified and wherein:

FIG. 1 illustrates a general display of a channel view available to the end-user in the prior art.

FIG. 2 illustrates the channel(s) views i.e. plurality of display options available to the end-user according to a preferred embodiment of the present invention having plurality of multimedia audio/video content.

FIG. 3 illustrates a satellite and/or World Wide Web (Internet) transmission/reception system in accordance with a preferred embodiment of the present invention.

FIG. 4. is a block diagram illustrating a video processing system for generating plurality of display options.

FIG. 5 is a flow diagram illustrating a method of displaying plurality of display options segmenting the area of display screen into plurality of segments according to a preferred embodiment of the present invention.

Detailed Description of the Invention

A method and system for generating plurality of display options available to an end-user over a cable TV network segmenting the area of the display screens into plurality of display segments are provided. In the following description for purposes of explanation, specific details are set forth in order to provide a

thorough understanding of the present invention. It will be evident, however, to one skilled in the art that the present invention may be practiced without these specific details.

Throughout the specification and claims, the following term take the meaning explicitly associated herein, unless the context clearly indicates otherwise.

The expression "service provider" may comprise a cable television (TV) service provider, an Internet service provider, a radio service provider, and/or other multimedia-program service providers.

For a detailed explanation reference will now be made to the accompanying drawings.

As displayed in FIG. 1 the normal channels as broadcasted and displayed on a television over a cable TV network have one base region 101 displaying the running audio/video visuals relating to entertainment, information, advertising and infotainment.. The ticker 102 region displays a running text/visual relating to entertainment, information, advertising and infotainment. Only the multimedia-program information that an end user requests is available to an end-user location, for example if an end-user selects a channel having generally a single base region 101 and optionally comprising a ticker region 102 to view, the set-top-box transmits a request for the multimedia-program information associated with that channel to the content server located at a proximate (local) service provider location. In response to the channel request, the content server may initiate transmission of the multimedia-program information associated with the selected channel to the end-user location.

As illustrated in FIG. 2 the instant invention in one of its preferred embodiments receives a channel broadcast data (hereinafter also referred as national data), adds some localized/customized data, rearranges the localized/customized data and beams it to the end user. The final display according to a preferred embodiment of the present invention to the end-user looks like as illustrated in FIG. 2 wherein display screen comprises at least one base region 201 which displays the national data and at least region A 203, region B 204, and region C 205 which display localized and customized content and at least one ticker region 202 containing running audio/video (A/V) transmissions accumulated for example in a central office of a cable TV service provider. The number of display regions in FIG. 2 is for illustration only. Clearly, the invention is not limited to this illustrated example, a variety of other display modes having plurality of display regions may be aggregated, without departing from the scope or spirit of the invention.

In a preferred embodiment of the present invention the content in the local region is transmitted to the server of the MSO/Cable TV service provider where the process of selecting the local/customized content, positioning them into different

display regions and merging them with the national content data display takes place.

For example a channel "x", a news channel being broadcasted on a cable TV network. Channel "x" is received by the cable TV service provider /MSO and further beamed in "S-band "with "abc" frequency for display to the end-user. In a preferred embodiment of the instant invention said channel "x" may continue to be beamed in a similar manner and a new frequency is set for the customized/localized channel "y" having plurality of audio/video content.

Using this technique the instant invention proposes to utilize the "push" technology of television channel This would help create display of plurality of channels with same national content.

FIG. 3 illustrates a satellite and/or World Wide Web (Internet) transmission/reception system in accordance with a preferred embodiment of the present invention A broadcasting uplinking station 301 transmits multimedia-program information to a satellite 302. The satellite transmission/reception system may comprise a plurality of satellites receivers, wherein each satellite 302 may transmit a plurality of multimedia-program channels to a plurality of satellite receivers. The multimedia-program information for all channels that a cable TV service provider offers may be accumulated and encoded together at a satellite 302 receiver array location for further satellite transmission to a plurality of remotely located respective cable TV service provider (MSO) 303 for further dissemination and distribution to the end-users 305.

An end-user can view a list of audio/video content while sitting in his room and make a request for such elements; a customized and localized element can be created for delivery to the end-user from various sources. MSO 303 in a preferred embodiment of the present invention may receive the multimedia-program transmissions from the data server 304 on World Wide Web (Internet) and transmits multimedia-program transmissions to the end users 305 from the various sources. For example, the end-user can view a list of available TV programs on a website associated with a cable TV station whereby customized audio/video elements can be created for delivery to the end-user that incorporates portions of audio/video elements from one or more TV channels. In addition, it enables a data server 304 on the World Wide Web (internet) to provide customized audio/video elements based on one or more multimedia elements in a plurality of display options.

In accordance with a preferred embodiment of the present invention, each of the plurality of multimedia-program transmissions may comprise a plurality of television channels, a plurality of internet transmissions, etc. The plurality of multimedia-program transmissions may be conveyed to content servers 303 residing at a plurality of cable TV service provider locations.

The multimedia-program transmission transmitted through content servers (MSO) 303 may be received at set-top-box (STB). From STB, another media (cable) may connect the STB to the Television (TV) set of the end users 305. The multimedia-program transmission received at an end-user 305 may comprise every channel available for displaying or viewing that a service provider offers.

FIG 4. is a block diagram illustrating a audio/video processing system for generating plurality of display options where the system comprises receiving means to receive broadcast data for at least one channel relay having multimedia audio-video (A/V) program data/information 401, assigning means to assign a relay frequency to said channel 402, receiving means to receive relay frequency data through the data server 401, accessing means to access the schedule list 403, creating means to create multiple display regions as per said schedule list 404, merging means to merge said multiple display regions to create a new channel 405, assigning means to assign a relay frequency to said channel having multiple display regions 402, relaying means to the channel having multiple display regions 406.

FIG. 5 depicts a flow diagram illustrating a method of displaying plurality of display options segmenting the area of display screen into plurality of segments according to a preferred embodiment of the present invention

In a preferred embodiment of the present invention, a channel may be selected for viewing at an end-user location. The end-user's electronic device (STB) may transmit a channel request to the service provider's location (MSO). The channel request may be received at the content server. The content server may process the channel request. Processing the channel request may comprise receiving broadcast data for at least one channel relay having multimedia audio-video (A/V) program data/information 401, assigning a relay frequency to said channel 402, receiving relay frequency data through the data server 403, accessing the schedule list 404, creating multiple display regions as per said schedule list 405, merging said multiple regions to create a new channel 406, assigning a relay frequency to said new channel having multiple display regions 407, relaying the channel having multiple display regions with the localized and customized display content.

Thus a method of creating and relaying a custom display option having multiple display regions from a plurality of multimedia elements is illustrated in FIG. 5. The method starts at block 401, the MSO receives broadcast data for at least one channel relay preferably having national broadcast data being transmitted from the satellite/internet. The MSO assigns a relay frequency to said national broadcast data at block 402 receiving the relay frequency data at block 403. At the next block 404, the schedule list is accessed for customized and localized display in multiple regions. The Schedule list may also include definitions and display parameters of selected portion of display elements, such as dimensions of display, positions, resolutions, shapes for displaying multimedia elements,

brightness level, sound strings and other display characteristics associated with a display unit.

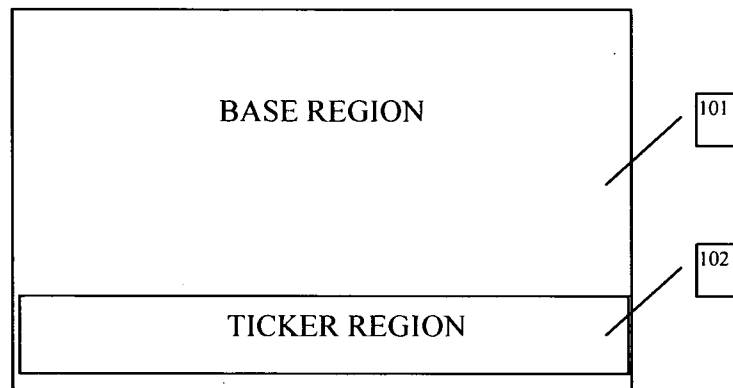
At the next block 405, the custom display as a new channel with the customized and localized display content is generated by selection, positioning and merging using the display data from the server, which is assigned a relay frequency at block 407 and relayed to the end user for viewing the content in multiple display region.

Although, the invention has been described with reference to specific examples, it would be appreciated by those skilled in the art that the invention may be embodied in many forms without departing from the broader spirit and scope of the invention as set forth in the invention. Preferred embodiments of this invention have been described herein, including the best mode known to the inventor for carrying out the invention. Variations of those preferred embodiments may become apparent to those of ordinary skill in the art upon reading the foregoing description. For example there may be means and system wherein the display screen being created by the set top box of the user instead at the MSO/Cable TV service provider level. Thus, other modifications are apparent. Accordingly, this invention includes all modifications and equivalents of the subject matter recited in the claims appended hereto as permitted by applicable law. Moreover, any combination of the above-described elements in all possible variations thereof is encompassed by the invention unless otherwise indicated herein or otherwise clearly contradicted by context. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

CLAIMS:

1. A method of generating plurality of display option segmenting the area of display screen into plurality of segments, the method comprising the steps of:
 - receiving channel broadcast data for atleast one channel relay having multimedia audio-video (A/V) program data/information;
 - assigning a relay frequency to said channel;
 - receiving relay frequency data through the data server;
 - accessing the schedule list;
 - creating multiple regions as per said schedule list;
 - merging said multiple display regions to create a new channel;
 - assigning a relay frequency to said new channel having multiple display regions;
 - relaying the channel having multiple display regions.
2. The method as claimed in claim 1, wherein channel broadcast data comprises the national broadcast data having multimedia audio-video (A/V) program data/information.
3. The method as claimed in claim 1, wherein channel broadcast data comprises the localized/customized multimedia audio-video (A/V) program data/information.
4. The method as claimed in claim 1, wherein the channel broadcast data transferred/transmitted to the server of the MSO/Cable TV service provider for generation of multiple display regions having localized/customized data.
5. The method as claimed in claim 4, wherein multiple regions generated by selection, positioning and merging using the data from the server.
6. A system of displaying plurality of display option segmenting the area of display screen into plurality of segments, the system comprising :
 - receiving means to receive broadcast data for atleast one channel relay having multimedia audio-video (A/V) program data/information;
 - assigning means to assign a relay frequency to said channel;
 - receiving means to receive relay frequency data through the data server;
 - accessing means to access the schedule list;
 - creating means to create multiple display regions as per said schedule list;
 - merging means to merge said multiple display regions to create a new channel;
 - assigning means to assign a relay frequency to said channel having multiple display regions;
 - relaying means to the channel having multiple display regions.
7. System for displaying customized data/content on a display screen as substantially herein described with reference to the drawing and figures.
8. Method for displaying customized data/content on a display screen as

substantially herein described with reference to the drawing and figures.



Prior art

Fig. 1

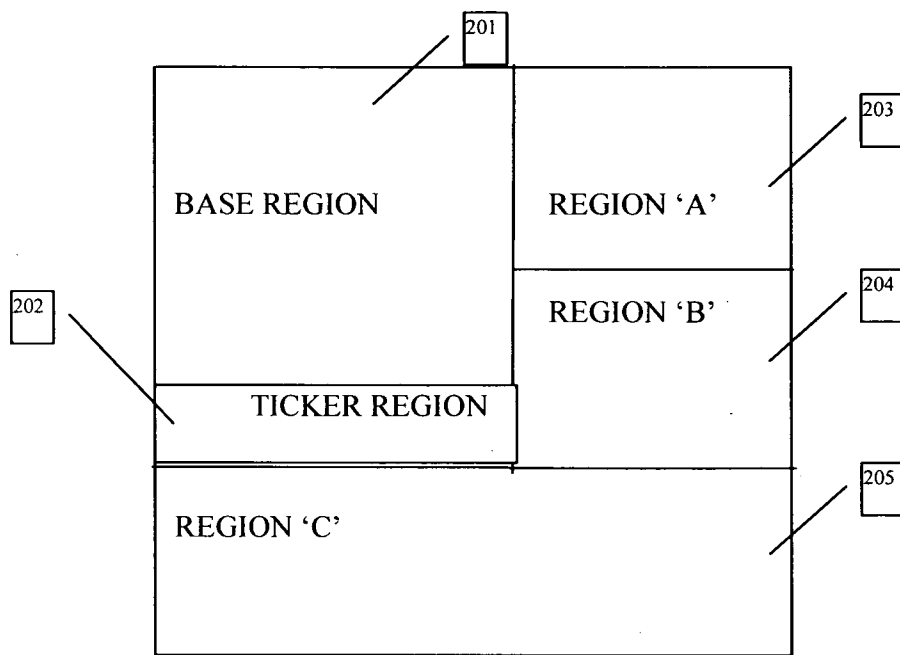
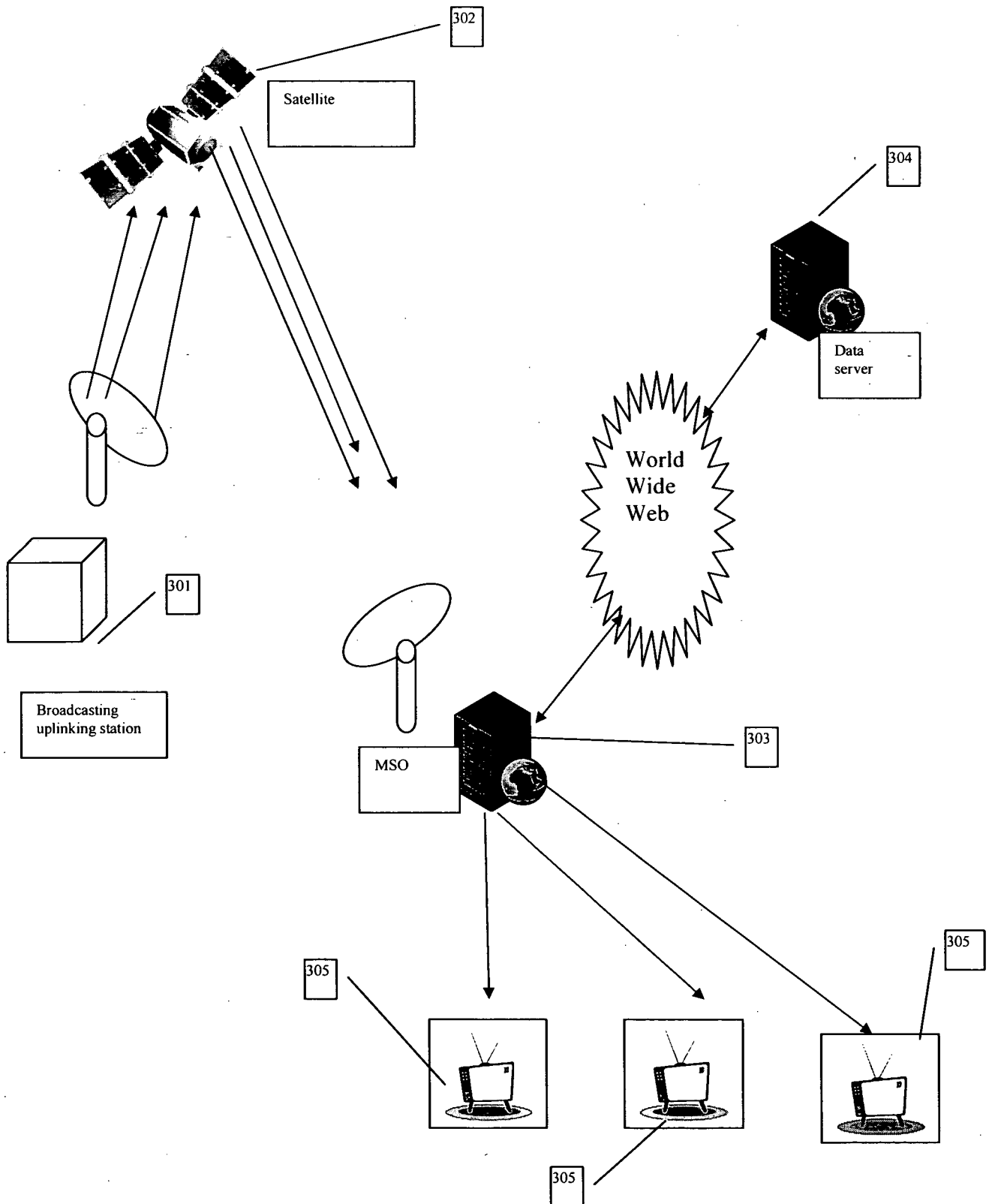
**Fig. 2**

Fig. 3



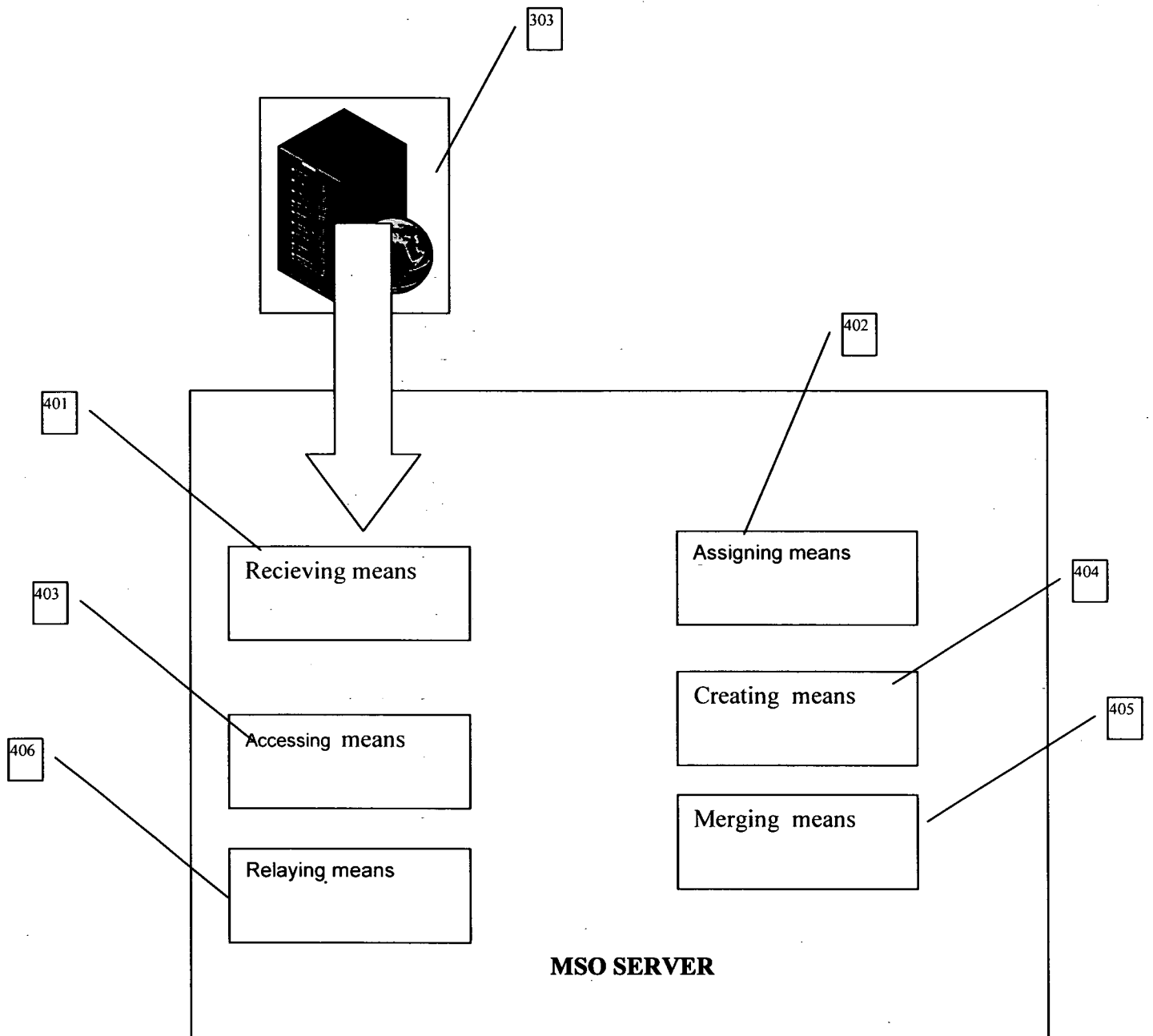
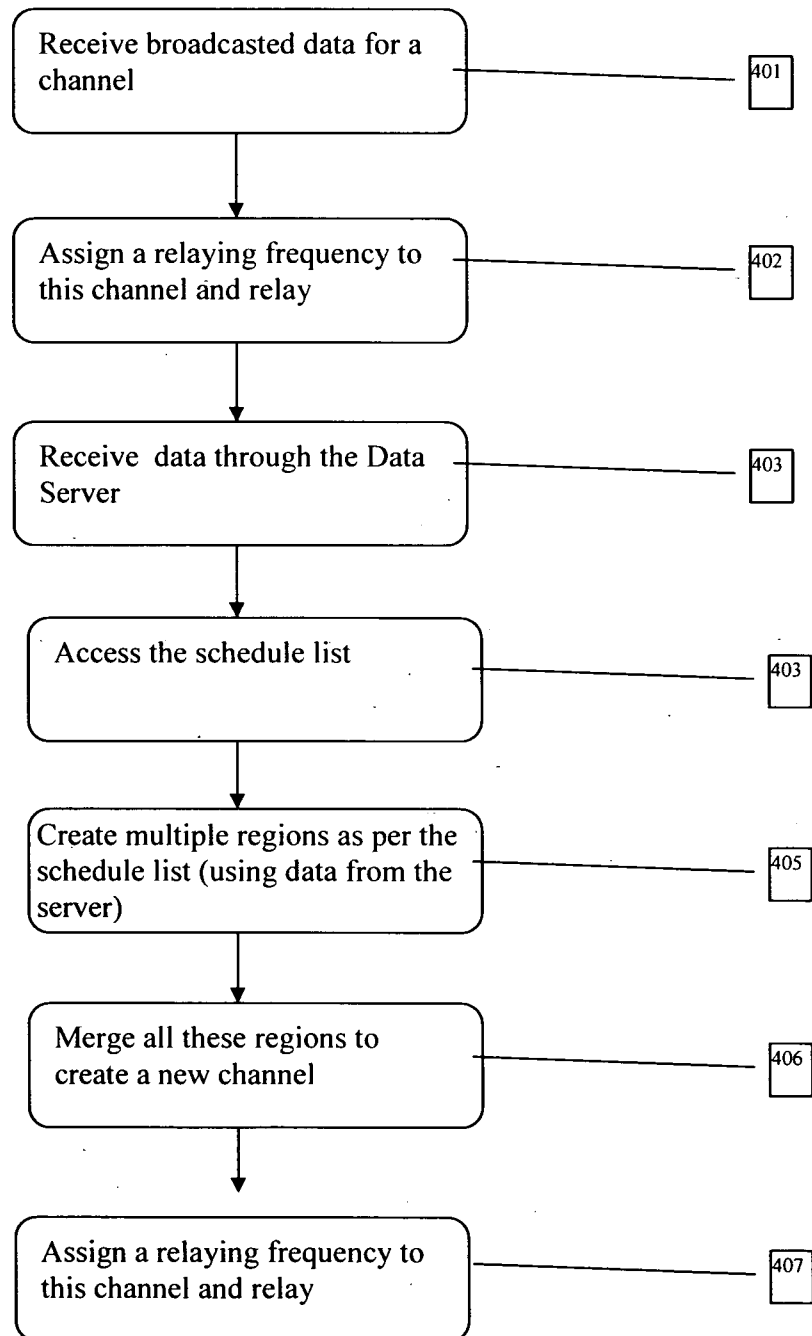


Fig. 4

**Fig. 5**