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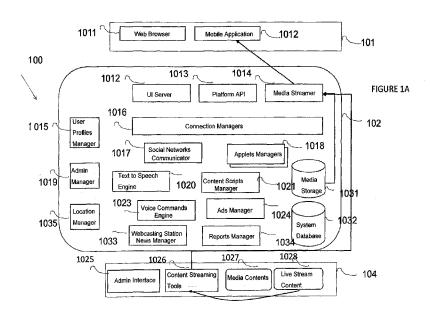
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(54) Title: WEBCASTING STATION PLATFORM



(57) Abstract: The subject matter discloses web casting system that may be used, for example, by various radio or TV stations. The web easting application provides access to the content that is broadcasted via the internet. According to some embodiments the webcasting system provides fo! directiona! communication between the users and the webcasting platform integrating media content with streaming content.



# WEBCASTING STATION PLATFORM

#### FIELD OF THE INVENTION

The present disclosure relates to internet webcasting.

#### **BACKGROUND OF THE INVENTION**

A webcast is a media presentation distributed over the Internet using streaming media technology to distribute a single content source to many simultaneous listeners/viewers. A webcast may either be distributed live or on demand. Webcasting may be interpreted as broadcasting over the Internet.

The largest webcasters include existing radio and TV stations as well as a multitude of Internet only stations.

Internet radio (also known as web radio, net radio, streaming radio, e-radio, and online radio) is an audio service that is transmitted via the Internet.

Known in the art Internet radio involves streaming media, presenting listeners with a continuous stream of audio that typically cannot be paused or replayed, much like traditional broadcast media. Many Internet radio services are associated with a corresponding traditional radio station or radio network, although there are also independent-Internet-only radio stations. Internet radio stations like *Pandora* and *Jango* offer various types of live stream music.

US2012215935 filed on February 8 2012 discloses a method for injecting local content into an internet radio data stream supplied via an internet web site to a listener accessing the internet web site, the method comprising: (a) storing local content in a data base; (b) identifying a location of the listener; and (c) streaming the local content to the listener.

## SUMMARY OF THE INVENTION

Embodiments of the invention disclose a web casting system. The web casting system includes a web casting platform that may be used, for example, by various internet radio or TV stations. The web casting system includes web casting application that may be installed or downloaded in a plurality of computerized devices of a plurality of end users. The term end user refers herein to the person that activates the webcasting station application. The computerized devices may be, for example, smart phones, Tablets, PC, laptops, TV boxes or any other computerized machine that is connected to the internet. The web casting application provides access to the content that is broadcasted by the web casting platform via the internet.

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The webcasting platform may serve a plurality of radio or TV stations. Each station may operate its own context separately from other stations and may customize the webcasting platform according to the specification of the station. For example the logo of the satiation may be integrated with the broadcasted content.

According to some other embodiments, the platform serves multiple stations 5 simultaneously wherein the clients can view the content from multiple stations by one web casting application

The web casting station is configured for integrating media contents either during a live show or during an on demand show such that media contents are embedded into the show and become part of the show and may be played to user of the webcasting application during the show. Such media content may include images, videos and texts. During a radio broadcast, images of a singer or a clip of the song may be displayed to the end user while playing a song; thus, for example, an image of a person, who is the topic of a discussion, may be integrated with the radio broadcast; a text or a video may be integrated with a radio broadcast.

According to some embodiments the web casting station enables bi-directional communication between the station and its audience. The station can send information to clients and the web casting application allows the user to view this information and provide feedback that returns to the station.

The webcasting station may integrate Radio/TV Applets in the web casting application. A Radio/TV Applet includes a module that runs inside the webcasting application. A Radio/TV Applet can be integrated into streamed media content or can be presented in the web casting application menu separately from the playing media stream. The term Radio/TV Applet refers herein to software extension that has a client side, a server side and administrator side. The client side displays to the user information sent from the webcasting Station (from the server side) and may retrieve information from the user and send the information to the webcasting

platform (to the server side). The server side may receive the information from the client, collect and act upon the information. An administrator of the webcasting platform may utilize an administration client for configuring of Radio/TV Applets and decide when the Radio/TV Applets should appear in the web casting application. The administration client also allows the administrator to observer the information provided by the clients from the Radio/TV Applets and to disallow the execution of the Radio/TV Applets by end users. There may be many Radio/TV Applets for a webcasting station.

According to one embodiment the Radio/TV Applets are implemented as web pages (e.g. using HTML5/CSS3/Java script. According to such embodiment, each Radio/TV Applet utilizes a web view of the client to present a web URL that is the Radio/TV Applet client representation. It should be noted that HTML5 is supported by many client platforms and thus, provides a generic solution.

According to one other embodiment a native implementation for the Radio/TV Applets is provided, that is to say that for each client platform the Radio TV Applet is implemented according to the platform. The webcasting platform may utilize API to operate the Radio/TV Applets.

Such Radio/TV Applet provides two-way communication between the radio or the TV station and the end users; that is to say the user may send data via the computerized device that runs the webcasting application to the webcasting station. Such Radio/TV Applets may be utilized, for example, for running surveys during the show, for integrating video with the show, for enabling the user to select the next content to be streamed, for customizing the look and feel of the application and for integrating games.

According to some embodiment, a Radio/TV Applet may be configured for showing information to the users on the webcasting application substantially at the same time

According to some embodiment, the webcasting platform utilizes SDK (software development kit) for allowing 3<sup>rd</sup> parties to develop Radio/TV Applets to be integrated into the webcasting platform and into the webcasting application.

According to some embodiment, the webcasting application may present to the client the secondary media streams and the Radio/TV Applets without presenting the main stream.

In one embodiment, the end users may be invited to participate in the live show via the application. The participation may be done by registering through the webcasting application as candidates (via a Radio/TV Applet). In such a case the web casting platform displays to the operator the webcasting station the list of candidates that would like to participate. In some embodiments, the web casting platform attaches a profile to the name of the candidate. The profile may be retrieved from Facebook account, for example.

According to some embodiments webcasting station may also enrich user experience and connection to the station by running a Radio/TV Applet of games and quizzes with prizes that are conducted through the Webcasting platform.

According to some embodiments the webcasting system provide the option to activate Radio/TV Applets for surveys among the audience of a webcasting show in order to determine about the multimedia content that will be played in the future for providing a better selection and higher ratings.

According to some embodiments the webcasting platform allows the station to 5 run a News Feed section for announcing messages such as upcoming shows, promote content, and any other information that may interest its audience.

According to some embodiments the webcasting system provides voice commands for controlling the application, for example, while driving.

In some cases when the listener plays on demand show from the webcasting application while driving a car, the user may stop the playback in order to exist from the car and may run the Radio Application again when returning to the car. In such case the application may suggest the user to continue listening to the playback from the place it was stopped. However if there is a new broadcast for the show that the user has listened to, the application may also suggest to listen to playback the new broadcast; if a long period of time passed from the last time the user listened to the playback, the application may not suggest the resuming of the playback.

According to some embodiments users may login to the webcasting application with their Facebook identification, enabling access to information from their social profile. This information can be used for presenting targeted advertisements and also for statistic purposes.

Integration with social networks may allow users to "like" shows utilizing the Facebook like operation, post on their wall regarding the stations content.

According to some embodiments the station may integrate its own social network page with the platform to allow discussion around specific topics, shows and posts related to the station.

According to some embodiments the webcasting platform can learn what type of shows the user likes and offer personalized multimedia content. Such personalized multimedia content may include multimedia content that is similar to the preference of the user or similar to shows that he viewed in the past and multimedia content that is favored by users with similar characteristics. Such characteristic may include gender, age, location, social network 30 information, friends list, work place and the like.

According to some embodiments the webcasting platform may present to the user personalized multimedia content. Personalized multimedia content may include textual data related to the user that may be taken from social network accounts. Such textual information may be translated into audio and may be played to the user.

According to some embodiments the shows may be ranked by the end users while ors after listening to the show.

According to some embodiments the webcasting platform generates reports. Such reports may be related to advertisements and rating.

According to some embodiments the show may be activated or deactivated by the webcasting administrator while playing the multimedia content or while activating the radio TV applets.

One exemplary embodiment of the disclosed subject matter is a method for integrating media content with streaming content, the method comprising: at a server system having one or more processors and memory: streaming a first media content to a remote computerized device; wherein said first media content being audio or video content; and streaming a second media content to said remote computerized device or instructing said remote computerized device to activate a Radio/TV Applet; said streaming said second media content or said launching said Radio/TV Applet being while streaming said first media content. According to some embodiments the first media content comprises a live show and wherein the second media content or the Radio/TV Applets being integrated within the live show. According to some embodiments the first media content is content on demand. According to some embodiments the second media content comprises one member of a group consisting of textual data, audio, video and images. According to some embodiments the method further comprises retrieving the second media content from a social network account. According to some embodiments the social network account is associated with a user of said remote computerized device. According to some embodiments the method further comprising identifying a key word in the first media content; and retrieving the second media content from the data repository; wherein the second media content is associated with the key word in the data repository; thereby enabling the presenting of the second media content in the remote computerized device as a result of identifying the key word in said first media content. According to some embodiments the method further comprising logging a first event in a log file upon streaming the first media content and logging a second event in said log file upon

streaming the second media content or the instructing; thereby generating a script for play-backing said events. According to some embodiments the server comprises an internet radio station, an internet TV station and a traditional radio and TV station thereby enriching broadcasts of the server and allowing communication with the audience during said broadcasts. According to some embodiments the second media content or the radio TV applet being further synchronized for presenting content by the plurality of remote computerized device substantially simultaneously.

One exemplary embodiment of the disclosed subject matter is a method for integrating media content with streaming content, the method comprising: at a server system having one or more processors and memory: streaming a first media content to a remote computerized device; wherein the first media content being audio or video content; and instructing the remote computerized device to play a second media content while playing said first media content; wherein said second media content being downloaded from said server to said remote computerized device.

One exemplary embodiment of the disclosed subject matter is a method for bidirectional communication between a webcasting station and a remote computerized device,
the method comprising: at a server system having one or more processors and memory;
streaming a first media content to a remote computerized device; wherein the first
media content being audio or video content; instructing the remote computerized device to
activate a Radio/TV Applet; the instructing being while streaming the first media content;
and receiving data from the remote computerized device as a result of said activating said
Radio/TV Applet on said remote computerized device; thereby providing bi-directional
communication between said server and said remote computerized device. According to some
embodiments the data comprises one member of a group consisting of: an image or a video
depicting a user of said computerized device, textual data edited by said user of said
computerized device and media data retrieved from a data repository of said computerized
device.

One exemplary embodiment of the disclosed subject matter is a method for generating on demand content from a stream of media content the method comprising: at a server system having one or more processors and memory streaming a first media content to a remote computerized device; recording an event of starting said steaming of said first media content; streaming an at least one second media content or instructing to activate

an at least one radio TV Applet; said streaming or said instructing being during said streaming said first media content to said remote computerized device; recording an event of said streaming said at least one second media content or said instructing; thereby enabling the play-backing of said recorded events.

One exemplary embodiment of the disclosed subject matter is a method for integrating media content with streaming content, the method comprising: at a server system having one or more processors and memory; instructing an application running on a computerized device to download a first media content; wherein said first media content being audio or video content; instructing said application to download a second media content; instructing said application to play said first media content; and Instructing said application to play said second media content at a predefined time; wherein said predefined time being within a time slice during which the first media content is being played on said device. One exemplary embodiment of the disclosed subject matter is a method for integrating media content with streaming content, the method comprising: at a computerized device having one or more processors and memory; receiving a first media content from a remotes server; the first media content being audio or video content; receiving from said remote server a second media content; receiving from said remote server instructions for playing said second media content or for activating a Radio TV Applet in a predefined time; wherein the predefined time being in a time slice during which the first media content is being played on the device; and playing the second media content or activating a Radio TV Applet in said predefined time in accordance with the instructions. According to some embodiments the method further comprising receiving a script from said remote computerized device wherein said predefined time being identified by said script.

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# THE BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

The present disclosed subject matter will be understood and appreciated more fully from the following detailed description taken in conjunction with the drawings in which corresponding or like numerals or characters indicate corresponding or like components. Unless indicated otherwise, the drawings provide exemplary embodiments or aspects of the disclosure and do not limit the scope of the disclosure. In the drawings:

Fig. 1a shows a block diagram of a webcasting station platform showing live stream media flow, in accordance with some exemplary embodiments of the subject matter;

Fig. 1b shows a block diagram of a webcasting station platform showing on demand media flow, in accordance with some exemplary embodiments of the subject matter

Figs. 2A and 2B show a flowchart diagram of a method for integrating media content with streaming content and for generating a script for playing the integrated content, in accordance with some exemplary embodiments of the disclosed subject matter;

Fig. 2C shows a flowchart diagram of a method for integrating radio TV applets with streaming content and for generating a script for enabling the integrated content, in accordance with some exemplary embodiments of the disclosed subject matter; and

Fig. 3 shows a block diagram of a script, in accordance with some exemplary embodiments of the disclosed subject matter.

#### **DETAILED DESCRIPTION**

[0001]One technical problem dealt with by the present disclosure is the lack of bidirectional communications between a radio station or a TV station and their audience using a computerized device. A typical known in the art traditional radio and TV station can only broadcast content to the audience without receiving feedback.

One technical solution is to embed Radio/TV Applets during show by running a Radio/TV Applets on the computerized device while playing the streamed show (or without playing the

streamed show) in order to enable the user to send data from the computerized device to the webcasting station during the show. In some embodiments the data that is sent is related to the show. In some other embodiments the data that is sent is not related to the show. According to some embodiments a first type of Radio/TV Applets (in show) is related to

a specific show while a second type of Radio/TV Applets (off line) is not related to a specific show and may be activated at any time

One technical side effect is enabling the end users to provide feedback on a show while the show is being streamed. For example the end users may participate in a survey among the listeners to select the next song to be played by a broadcasting radio or TV station. Once the user makes his selection from the Radio/TV Applet, the information is sent back to the Webcasting Station Platform.

According to some embodiments the administrator of Webcasting Station may view the information that was sent from their listener's Radio TV Applets by using the admin interface. The admin interface is also used to configure the Radio TV Applets and for scheduling the appearance of the Radio TV Applets in the webcasting application.

Non limiting examples for such Radio TV Applets are:

In-Show-Radio TV Applets (first type) -

- Surveys Applets for selecting the next song, selecting topic for discussion in next broadcast of a radio show, receiving feedback from listeners (e.g. who should be the next Prime Minister)
- Games
  - Trivia
  - Puzzles show a distorted image of someone or something and ask
     the listeners to guess the subject in the image
- Games that require concurrency present some information to the listeners through a Radio Applet in a way that all users are exposed to the information at the same time. The first listener who answers right wins some price.
- Location based games e.g. who will arrive first to a specific location such as a specific store

## Offline-Radio-TV-Applets

Submit user information to be selected for discussion in next radio broadcast of a radio show; for example during a radio show that discusses medical issues users may use a Radio TV Applet to submit their problem and question by providing title, detailed description of the problem, by attaching files, capturing an image and the like. The Radio Station administrator uses

the admin interface for viewing the information that is sent by the users and for selecting the cases for the next broadcast.

Offline surveys – for example the weekly/monthly/annual music hits charts. Selecting among list of songs one or more to be on the charts. The listeners make their selection of songs from a Radio Applet, the results are retrieved by the Radio Station Platform for being used by the administrator at any time.

One other technical side effect is interactivity between pluralities of listeners.

One other side effect is customizing the look and feel of the webcasting station/

Referring now to Figure 1 showing a block diagram of a webcasting station system depicting live stream media flow, in accordance with some exemplary embodiments of the subject matter. Webcasting station system 100 includes client application 101 a webcasting station platform 102 and webcasting station layer 104.

The client application 101 may include a web browser 1011 and a webcasting mobile application 1012. The client application 101 may be installed on any computerized device that includes internet access.

The webcasting station layer 104 is configured for customizing the webcasting station platform 102 and the content that is played by the webcasting station platform 102 in accordance with the requirement of the specific webcasting station that utilizes the platform.

The webcasting station layer 104 includes admin interface 1025, content steaming tool 1026, on demand media contents 1027 and live steaming content 1028.

The content streaming tool 1026 is configured for uploading live stream content 1028 to the webcasting station platform 102. Examples of live stream content 1028 are live audio stream. The live stream content includes also audio files of recorded shows and various other media types such as images, videos and texts that can be presented during live/recorded shows as news feed. The uploaded content is transferred to the media streamer 1014.

The content streaming tool 1026 is also configured for allowing the webcasting station to record live broadcasts for being used as on demand media contents 1027. After recording ends, the content streaming tool 1026 may provide editing tools on the recorded content for example to break the content into chapters, cut some parts, add media content to the recording, create short version and long version of the show, etc.

The admin interface 1025 is a user interface for admin user, configured for managing the webcasting station platform 102 and for uploading on demand media content 1027 to the webcasting station platform 102. Examples of on demand media content 1027 are audio, video and texts. The on demand media content 1027 may include advertisements.

The admin interface 1025 is also configured for customizing the look and feel of the webcasting application 101, such that each webcasting station provides its own look and feel to the end user. The admin interface 1025 is configured for managing all aspects of the platform and its user interface applications. The admin interface 1025 is also configured for generating various reports from the webcasting station platform 102. Such reports may provide information about users operations, profiles, campaigns, and the like.

The admin interface 1025 is also configured or managing the live stream content 1028. The admin interface 1025 is also configured for managing on demand media content 1027 and live stream content 1028. The method for integrating the on demand media content 1027 is explained in greater details in Fig.2.

The webcasting station platform 102 includes UI server 1012, platform API 1013, media streamer 1014, connection manager 1016, user profiles manager 1015, social network communicator 1017, admin manager 1019, custom API Radio/TV Applets managers 1018, text to speech engine 1020, content script manager 1021, voice command engine 1023, webcasting station news manager 1033, ads manager 1024, reports manager 1034, location manager 1035, media storage 1031 and system database 1032. The webcasting station platform 102 may be one or more servers, each operating a subset of the platform.

In one embodiment the webcasting station layer 104 and the webcasting station platform 102 serve a plurality of radio and TV stations. In one other embodiment the webcasting station layer 104 and the webcasting station platform 102 serve a specific radio station or a specific TV station. The platform API (Application Program Interface) 1013 is configured for interfacing with the webcasting station platform 102 and its modules. According to one embodiment, the platform API 1013 is a secure web service. In such a case the user of the platform API has to first authenticate with the platform API 1013 prior to performing the API calls. The access to the various API calls may be restricted according to the authorization level of the user. Examples of such authorization levels are Platform Admin role, UI user role and Platform internal role.

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The Platform Admin role may be used by the administrator of the webcasting station for performing operations related to system administration. Such operations may be performed via the admin interface 1025

The UI user role may be used by end user for browsing and consuming the media content that is offered by the webcasting station system 100. Such operations may be performed via the client application 101.

The Platform internal role may be used for internal operations performed by sub modules of the webcasting station platform 102. The Platform internal role is internal and is not exposed to the outside of the webcasting station platform 102. The internal operations may be implemented separately on a different server for security purpose. In some embodiments a DMZ server may be used for bridging between the outside world (e.g the end user or the administrators of the webcasting station) and the platform API 1013 for protecting the internals of the webcasting station platform 102. The DMZ may be protected by more than one firewall for security reasons. In some embodiments the access of the administrators of the webcasting station may be separated from the access of the end users. The separation can be done by utilizing different servers, different network paths and different firewalls; therefore the platform API 1013 can be divided into a few sub-APIs, each being implemented separately. The platform API 1013 or sub-API could be implemented on multiple servers in order to allow the service of many concurrent client applications 101 that call the API 1013. The network architecture for deploying these servers can vary according to security deployment demands.

The UI server 1012 is configured for supporting the user interface to the webcasting platform 102. According to some embodiment the UI server 1012 includes one or more web server that is configured for allowing access to the platform for consuming its content for example web browsers, Televisions and any other target client that may require adaptation of the content for presentation. UI server 1012 communicates with the webcasting station platform 102 via the Platform API 1013. Another type of UI server may be to a web browser that serves the admin users who use the admin interface 1025. The admin web server may be implemented on servers that are separated from clients' user interface servers which serve application clients from web browsers 1011. These admin web servers may interface with the Platform API through the Admin API.

In some embodiments the UI server 1012 provides dashboard pages which may be utilized by the administrator of the platform for presenting platform status and statistics

information and for managing the Radio/TV Applets such as install, uninstall, view status and configure. A dashboard is real-time user interface, showing a graphical presentation of the current status and historical trends of key performance indicators.

The media streamer 1014 is configured for sending media content to the end users and for receiving updates on new or existing media types. Such updates may be related to 5 adding or updating or removing media type. The media streamer 1014 is also configured for managing media content that can be presented to the platform's clients. Such media content may be audio, video, images, texts and the like. In some embodiments the media streamer 1014 includes a plurality of servers, each responsible for handling one or more media types. For example, one server may be responsible for live and recorded audio and video streams. Such a server is configured for supporting audio and video streaming protocols such as RTSP and codecs such as H.264 and mp3. In another example another server may be configured for handling images and text files. Such a server may be a file server such as FTP or on web server.

The sources for Media Streamer's 1014 may include either live content or offline content. Offline content may be media files that are uploaded by the Webcasting Station administrator via the admin interface 1025. The uploaded content may be stored on media storage 1031. This content may be enabled or disabled for end users. Live streams typically, but not limited to, include a single live stream source of the webcasting station's live webcasting channel. The webcasting station may provide live stream of the webcasting station for their clients. Live and recorded audio streams may include additional media contents to be played in addition to the audio stream itself. For example, the station may add some images to be played with an audio stream, or may offer some videos that may be integrated with the audio source user may play.

The connection manager 1016 may be allocated for each client application 101 which is connected to the system. The connection manager 1016 is configured for managing the operations of the end user and the information that is sent to the client of the user to be presented. The connection manager 1016 is configured for determining the media content that is transferred to the client application 101. The media content may include advertisements. The connection manager 1016 is configured for managing the media streams that are transferred to the client application 101. The connection manager 1016 is configured for auditing the operations of the end user. Such auditing may be presented to admin user through the admin interface 1025. The connection manager 1016 is also configured for interfacing with social networks and for transferring feedback of the user to the social networks. The connection

manager 1016 is also configured for managing voice commands of the end user and for translating and for performing text to speech operations.

The connection manager 1016 may be configured for managing the operations of the administrator of the platform. In such a case the connection manager 1016 is configured for managing platform settings, dashboard information, reports, media streams management, 5 social network platform related management and webcasting station news.

The Connection Manager 1016 is operated by calling platform API 1013 and by interacting with the other platform sub components. Such platform sub components may be Webcasting Station News Manager 1033, Reports Manager 1034, Location Manager 1035, Voice Commands Engine 1023, Ads Manager 1024, Text To Speech Engine 1020, Content Scripts Manager 1021, Social Networks Communicator 1017 and Radio/TV Applets Managers 1018.

In some embodiments the Connection Manager 1016 is configured for identifying an event of terminating the application and an event of restarting the application. For example, the webcasting application may use API calls (application program interface) to notify events such as going up and going down. According to some embodiments when the client application is closed the application calls a platform API 1013 function to notify such event. According to some other embodiments the connection manager 1016 detects a period of inactivity from the client side and decides that it was terminated. In such cases the connection manager can resume the playing of the content that was played when the application was terminated. For example, a user may be driving his car, and may stop the application in the middle of playing on demand show as a result exiting from the car. After an hour, the driver may return to the car and may start the application again. The Connection Manager 1016 can identify the event of restarting the application, and may offer to the user to resume listening to the show that was stopped in the middle of play back. In some embodiments the Connection Manager 1016 may also decide to automatically start the playback. In some embodiment, if the Connection Manager 1016 determines that a long time (e.g few days) has elapsed from the time the playback stopped, the Connection Manager 1016 may decide to ignore the previous playback and to let the user browse the application for the content he would like to listen to this time.

The media storage 1031 is configured for storing media content that is uploaded to the platform by the webcasting station for being used by the clients. In some embodiments theo media storage 1031 includes network NAS or SAN that provides storage accessible through the network.

The system database 1032 is configured for storing platform information such as client users profiles, administrator profiles, system administration settings, credentials for accessing platform API 1013, advertisements campaigns, management information, reports, webcasting station news data, content scripts data and/or metadata, live and recorded streams information, social networks information, custom application Radio/TV Applets settings and status, current connection information, and the like.

The user profiles manager 1015 provides service to create, update and delete profiles of end users and to handle queries to retrieve information about end users.

The admin manager 1019 is configured for managing the profiles of the administrators. The admin manager 1019 provides services for creating, updating and deleting administrators. The admin manager 1019 also provides services for querying information regarding the administrators and for orchestrating all administrating operations related to the platform.

The content script manager 1021 is configured for handling a script that identifies when to show media content on a stream. Such a script includes media content that has to be played by the platform and timestamps. The structure of the script is explained in greater details in Fig. 3.

The ads manager 1024 is configured for uploading commercial campaigns to the system. The uploaded commercial content includes media files related to the commercial campaign such as video, audio and images files. The ad manager 1024 is configured for defining information regarding when to play the commercial content, how many times to show the commercial content, the dates of the campaign, to which user profiles the campaign is targeted, etc. In some embodiments the ad manager 1024 decides when to present an ad for a user and which ad to show. The ad manager 1024 may decide based on the platform policy to show advertisements before, during and after content is played for the user. For example, if the user asked to view a recorded show, then before start playing the show, a video commercial can be played. During the playback, image banners related to commercial campaigns can bas presented to users. Between chapters of the playback (in case the content was divided into chapters), video, image or audio commercial content can be played. All campaign media file presentation to users may be registered in the platform's system database 1032. This information can later on be used to generate reports from the webcasting station admin interface 1025. 30

When a user is logged in his information is available to the webcasting station platform 102. The user information can be used for personalizing or customizing advertisemenst that are

delivered to the specific user (e.g. whether the user is married or not, gender, where he/she lives). When the client application 101 enables location detection. The location information can also be used for ads personalization (e.g. specific branch of a retail chain). The information of the user is taken into account by the algorithm of the advertisement generation on the server, which is responsible to deliver the customized advertisements to the end user for example 5 choosing the appropriate advertisement from a pool of potential advertisements.

The webcasting station news manager 1033 is configured for uploading news content into the system through the admin interface 1025. News content may include media types such as text, images and videos. The news content is presented to the end user in various ways such as pop up messages on the client application 101, and/or in special page of the app dedicated to displaying the station's news. The news may include texts videos and images. In some embodiments clicking on the news may open a page that presents more detailed information about the news. The news may be divided into topics and the user may be able to select which topics he is interested in and to filter out the topics he does not like to get.

The location manager 1035 is configured to manage users' location. The client application 101 may or may not support user location detection. In case that it is supported, the client application sends the user location to the webcasting station platform 102. The location can be used by other system component, for example by Applets Manager 1018 in order to create a location based Radio/TV Applet game.

The social network communicator 1017 is configured for integrating with social networks such as Facebook and Twitter. According to some embodiments users can login into the system with their social network account credentials such as Facebook account credentials. Such a method enables the platform to receive details about the user and to learn about his profile. As mention above this is also used for personalized / customized advertisements. Such an option enables the user to register into the platform. In some embodiments the user will have to fill in more details about himself/herself such as age, gender and location. The social network communicator 1017 is configured for providing users the option to rank a show they listened to and to post the rank with a message on their social network account, for example by publishing on their Facebook wall.

In some embodiments the webcasting station platform 102 is associated with one or more Facebook accounts and/or Twitter accounts. In some embodiments each show may be

associated with social networks accounts. In some embodiments the accounts are provided by the admin interface by presenting the associated Facebook page on the client application 101 and by allowing discussions around the show on Facebook directly from the client application. In some embodiments the Social network content is presented to the user next to the content, showing the relevant social network pages, providing quick access to the Facebook page of the show and allowing reading content from the facebook page and adding new posts by the user-

The voice command engine 1023 is configured for enabling the end users to control the application with voice commands, for example while driving. Examples of such voice commands are pause, resume, play, next, fast forwards, fast backwards, skip, etc.

The text to speech engine 1020 is configured for converting text to audio for being played to end users. In some embodiments the text to speech engine 1020 may generate audio content related to shows that the user likes to listen to on the system (e.g. content related to a show from the Facebook account of the station), and in general information from recent news sections and from related Facebook posts. The text to speech engine 1020 is configured for communicating with the social network communicator 1017 and webcasting station news 15 manager 1033 in order to get relevant texts.

Custom API Radio/TV Applets managers 1018 is the server side of the Radio/TV Applets. Each Radio/TV Applet may include pages or sections in the client application 101 that present the user information. Such information may be retrieved from a pre-defined module included in the client application 101, or a UI module that is part of the UI server 1012. A 20 Radio/TV Applet allows the client to send information back to the webcasting station platform 102. This information eventually arrives to the Radio/TV Applet manager 1018 of this specific Radio/TV Applet (each Radio/TV Applet has its own server side Applet Manager 1018). The Applet Manager 1018 may store information that was received from the clients in the System Database 1032. The administrator of the webcasting station may be able to install/uninstall@and manage the add-on Radio/TV Applets from the admin interface 1025.

Table 1 shows an example for a voting selection Radio/TV Applets which is comprised of a page that shows a text and list of choices for the user to select from.

Place your vote on the next song to be played

- 1. Travis / Sing
- 2. Coldplay / Paradise
- 3. U2 / Beautiful Day

Select the song you wish us to play next.

Table 1

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The Radio/TV Applets may be generated and installed by the administrator via the admin interface 1025. After a Radio/TV Applet is installed, the radio station admin user can configure the Radio/TV Applet and decide when to show Radio/TV Applet to the clients. The radio station admin user can also observe the feedback provided by the users from the Radio/TV Applets. Each applet has its own admin page that presents its status and allows controlling the Radio/TV Applets. A typical Radio/TV Applets include administration pages for settings and management, user interface elements, database entries, and media type usage.

The reports manager 1034 is configured for generating reports related to the webcasting platform 102 and the activity of the end users. The reports may be used for rating shows and for learning about the behavior of the end users.

The client application 101 is configured for enabling end users to interact with the webcasting station platform 102 for consuming its content. The webcasting station application may run on web browsers 1011, smart phones 1012, car computes, TV app, or any other device that can run an application that connects to the internet and can communicate with the webcasting station platform for playing at least audio stream from and optionally other 30 multimedia content such as video, images and text.

The arrows from the live stream source 1028 to content streaming tools 1026, from the content streaming tool 1026 to the media streamer 1014 and from the media streamer 1014 to the mobile application 1012 depict the live stream media flow. The leave stream source is uploaded by the content streaming tool 1026 to the media streamer 1014ss which sends the media content to the end users.

Fig. 1b shows a block diagram of a webcasting station platform showing on demand media flow, in accordance with some exemplary embodiments of the subject matter. Fig 1b shows the webcasting station of figure 1a. The arrow from the media storage 1031 to the media streamer 1014 and from the media streamer 1014 to the mobile application 1012 depicts the on demand media flow.

Fig. 2A shows a flowchart diagram of a method for integrating media content with streaming content and for generating a script for playing the integrated content, in accordance with some exemplary embodiments of the disclosed subject matter.

In some embodiments the administrator of the webcasting system may push content to the user during a live show. Such content is integrated with the live broadcast stream. This integrated content may be pre-loaded to the system before the live broadcast starts or during the live broadcast. The integrated content may include audio, video, image and text. For example, the administrator may decide to integrate a video clip during the playing of a song for a radio broadcast. In such a case the video stream may be muted in order to enable the user to listen to the stream audio show while watching the video.

In some embodiments the media content is automatically chosen by the system for example, as a result of detecting key word in a played content after applying speech-to-text on the playing stream.

In some embodiments the system generates a script as a result of streaming the show and the integrated content. The script may be used for play backing the show and the integrated content.

Blocks 100 and 205 illustrate the uploading of the media content.

At 200, the administrator uploads media content via the admin interface. In the exemplary scenario the media content is a video file and an image. The media content may be integrated with live show or with content on demand while the live show or the content on demand is being played.

At 205 the platform extracts the metadata of the video file and stores the metadata in the system data base. Such metadata includes for example, the length of the file, the size of the file etc.

At 210, the platform stores the video file and the image in the media storage.

Blocks 215, 220, 225, 230 and 235 illustrate a method for streaming live show and for integrating media content with the streaming.

At 215 a show is streamed to all the remote computerized devices of users that are currently connected to the webcasting station (the live broadcast). The show may include video or audio stream. The remote computerized device may be Smartphone, Laptops, PCs and the like. In the exemplary scenario the show includes audio file.

At 220 the administrator decides to integrate a media content with the streamed show such that the media content will be presented to users while the live show stream is played. For example images text and video will be displayed to the user while he is listening to the audio stream.

In some other embodiments the media content (e.g. an image) may be automatically selected by the webcasting platform; that is to say the webcasting platform may associate keywords with the media content. For example the keyword "Obama" can be associated with media "obama.jpg" which is an image of Obama. During the broadcast of a show, the webcasting platform may perform speech-to-text for identifying one of the keywords that are associated with this show. When a keyword is detected the associated media content is streamed to the user.

In one embodiments application utilizes NTP (Network Time Protocol) instead of the clock of the device on which the app is running in order to synchronize the operation of the media content during a live show and to synchronize the display of integrated content such that the media content is played in all the computerized device of the users substantially simultaneously.

At 225 the webcasting station retrieves media content from a social network account. In one example when a song of a specific singer is being broadcasted the webcasting platform retrieves content from a twitter account of this user. In another example the webcasting platform may retrieve, for each user, content of his social network account and present it as a personal news feed in the client application.

At 230, the integrated media content is streamed to the end user while the show is being streamed. In some embodiments each Connection Manager that is associated with a user who listens to the broadcast show streams the integrated media content and internal commands related to Radio TV Applet to the remote computerized device of that user.

At 235 the webcasting platform logs the streaming of the show and the integrated content in a script. The script may be generated while streaming the media. The first event may include a pointer to the file that includes the show and a time stamp 0:00

that indicates the beginning of a show. The other events may include a pointer to the media content and a time stamp from the beginning of the show at which the media content has to be played. Upon steaming any other media content the event is logged in a script. Example of such a script file is described in Fig. 3.

Blocks 240 and 245 illustrate a method for play-backing a show with integrated content in accordance with some exemplary embodiments of the disclosed subject matter.

At 240 each Connection Manager that is associated with a user who listens to the broadcast sends the script to users that request to play back the show. By sending the script the webcasting platform instructs the applications running on the computerized device of the users to play the show and to play the media content while playing said first media content.

At 245, each application plays the show and the integrated media content according to the instructions that are supported by the script that was received from the webcasting platform. According to some embodiments the application downloads the files of the media content and keeps these files in cache. The application plays the media content according to the events that are logged in the script.

Fig. 2C shows a flowchart diagram of a method for integrating radio TV applets with streaming content and for generating a script for playing the integrated radio TV applets, in accordance with some exemplary embodiments of the disclosed subject matter.

In some embodiments the administrator of the webcasting system may launch Radio/TV applets during a live show and may instruct the application to activate the Radio/TV Applet during the show.

In some embodiments the system generates a script as a result of streaming the show and launching the Radio/TV Applets. The script may be used for play-backing the show and for activating the integrated Radio/TV Applets.

At 250, the administrator installs and configures Radio/TV Applets via the admininterface.

At 252, the platform API stores the Radio/TV applets configuration in a data repository.

Blocks 255, 257, 260 and 265 illustrate a method for streaming live show and for integrating Radio-TV Applet with the streaming, in accordance with some embodiments.

At 255 a show is streamed to all the remote computerized devices of users that are currently connected to the webcasting station and get the live broadcast. The show may

include video or audio stream. The remote computerized device may be Smartphone, Laptops, PCs and the like.

At 257 the administrator decides to integrate a Radio/TV Applet with the streamed show. The administrator may decide during the broadcast of the show to expose the users to one or more Radio/TV Applets.

At 260 the administrator launches the radio-TV Applets. As a result, the users are notified by the client application that a Radio/TV Applet is available during the show, for receiving information from the webcasting station and for sending their feedback to the webcasting station.

In one embodiments application utilizes NTP (Network Time Protocol) instead of the clock of the device on which the application is running in order to synchronize the operation of a Radio TV Applet during a live show and to synchronize the display of the content of the Applet such that the radio TV applets are be played in all the computerized device of the users substantially simultaneously. Thus, for example, a Radio/TV Applet that runs a survey can run on the remote computerized device substantially simultaneously, or an image for a quiz game will be presented on a Radio/TV Applet for all users at the same time.

At 265 the webcasting platform logs the streaming of the show and the integrated Radio TV Applet in a script. The script may be generated while streaming the media. The first event may include a pointer to the file that includes the show and a time stamp 0:00 that indicates the beginning of a show. The other events may include a pointer20 to the Radio TV Applet and a time stamp from the beginning of the show at which the Radio TV Applets has to be performed. Upon steaming any other Radio TV Applet the event is logged in a script. Example of such a script file is described in Fig. 3.

Blocks 270 and 275 illustrate a method for play-backing a show with integrated Radio TV Applets in accordance with some exemplary embodiments of the disclosed subject matter.

At 270 each Connection Manager that is associated with a user who listens to the broadcast sends the script to users that demand to play back the show. By sending the script the webcasting platform instructs the applications running on the computerized device of the users to play the show and to activate the Radio/TV Applet while playing the show.

At 275, each application plays the show and activates the Radio/TV Applets according to the instructions that are supported by the script that was received from the webcasting platform.

Fig. 3 shows a block diagram of a script, in accordance with some exemplary embodiments of the disclosed subject matter.

Script 300 includes an event for starting the broadcast 301, en event of ending the broadcast 302 and a plurality of events 303 for playing media content while the broadcast is being played.

The flowchart and block diagrams in the Figures illustrate the architecture, functionality, and operation of possible implementations of systems, methods and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of program code, which comprises one or more executable instructions for implementing the specified logical function(s). It should also be noted that, in some alternative implementations, the functions noted in the block may occur out of the order noted in the figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts, or combinations of special purpose hardware and computer instructions.

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

As will be appreciated by one skilled in the art, the disclosed subject matter may be embodied as a system, method or computer program product. Accordingly, the disclosed subject matter may take the form of an entirely hardware embodiment, an entirely software embodiment (including firmware, resident software, micro-code, etc.) or an embodiment combining software and hardware aspects that may all generally be referred to herein as a

"circuit," "module" or "system." Furthermore, the present invention may take the form of a computer program product embodied in any tangible medium of expression having computer-usable program code embodied in the medium.

Any combination of one or more computer usable or computer readable medium(s) may be utilized. The computer-usable or computer-readable medium may be, for example but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium. More specific examples (a non-exhaustive list) of the computer-readable medium would include the following: an electrical connection having one or more wires, a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), an optical fiber, a portable compact disc read-only memory (CDROM), an optical storage device, a transmission media such as those supporting the Internet or an intranet, or a magnetic storage device. Note that the computer-usable or computer-readable medium could even be paper or another suitable medium upon which the program is printed, as the program can be electronically captured, via, for instance, optical scanning of the paper or other medium, then compiled, interpreted, or otherwise processed in a suitable manner, if necessary, and then stored in a computer memory. In the context of this document, a computer-usable or computer-readable medium may be any medium that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The computer-usable medium may include a propagated data signal with the computer-usable program code embodied therewith, either in baseband or as part of a carrier wave. The computer usable program code may be transmitted using any appropriate medium, including but not limited to wireless, wireline, optical fiber cable, RF, and the like.

Computer program code for carrying out operations of the present invention may be written in any combination of one or more programming languages, including an object oriented programming language such as Java, Smalltalk, C++ or the like and conventional procedural programming languages, such as the "C" programming language or similar programming languages. The program code may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network,

including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider).

The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

#### **CLAIMS**

# What is claimed is:

 A method for integrating media content with streaming content, the method comprising:

at a server system having one or more processors and memory:

streaming a first media content to a remote computerized device; wherein said first media content being audio or video content; and

streaming a second media content to said remote computerized device or instructing said remote computerized device to activate a Radio/TV Applet; said streaming said second media content or said instructing being while streaming said first media content.

- 2. The method of claim 1 wherein said first media content comprises a live show and wherein said second media content or said Radio/TV Applets being integrated within said live show.
- The method of claim 1, wherein said first media content comprises content on demand.
- The method of claim 1, wherein said second media content comprises one member of a group consisting of textual data, audio, video and images.
- 5. The method of claim 1, further comprises retrieving said second media content from a social network account.
- 6. The method of claim 5, wherein said social network account being associated with a user of said remote computerized device.
- 7. The method of claim 1, further comprising:

identifying a key word in said first media content; and

retrieving said second media content from said data repository; wherein said second media content being associated with said key word in said data repository; thereby enabling the presenting of said second media content in said remote computerized device as a result of identifying said key word in said first media content.

8. The method of claim 1, further comprising logging a first event in a log file upon said streaming of said first media content and logging a second event in said log file upon said streaming said second media content or upon said instructing; thereby generating a script for play-backing said events.

9. The method of claim 1, wherein said server comprises one member of a group consisting of an internet radio station, an internet TV station and a traditional radio and TV station thereby enriching broadcasts of said server and allowing communication with the audience during said broadcasts.

- 10. The method of claim 1, further comprising a plurality of remote computerized device wherein said second media content or said radio TV applet being further synchronized for presenting content by said plurality of remote computerized device substantially simultaneously.
- 11. The method of claim 1 further comprising deactivating or reactivating said streaming of said first media content while said streaming said second media content.
- 12. A method for integrating media content with streaming content, the method comprising:

at a server system having one or more processors and memory:

streaming a first media content to a remote computerized device; wherein said first media content being audio or video content; and

instructing said remote computerized device to play a second media content while playing said first media content; wherein said second media content being downloaded from said server to said remote computerized device.

13. A method for bi-directional communication between a webcasting station and a remote computerized device, the method comprising:

at a server system having one or more processors and memory;

streaming a first media content to a remote computerized device; wherein said first media content being audio content or video content;

instructing said remote computerized device to activate a Radio/TV Applet; said instructing being while streaming said first media content; and

receiving data from said remote computerized device as a result of said activating said Radio/TV Applet on said remote computerized device; thereby providing bi-directional communication between said server and said remote computerized device.

14. The method of claim 13, wherein said data comprises one member of a group consisting of: an image or a video depicting a user of said computerized device,

textual data edited by said user of said computerized device and media data retrieved from a data repository of said computerized device.

- 15. The method of claim 14 further comprising deactivating or reactivating said streaming of said first media content while said instructing.
- 16. A method for generating on demand content from a stream of media content the method comprising:

at a server system having one or more processors and memory

streaming a first media content to a remote computerized device;

recording an event of starting said steaming of said first media content;

streaming an at least one second media content or instructing to activate an at least one radio TV Applet; said streaming or said instructing being during said streaming said first media content to said remote computerized device;

recording an event of said streaming said at least one second media content or said instructing; thereby enabling the play-backing of said recorded events.

17. A method for integrating media content with streaming content, the method comprising:

at a server system having one or more processors and memory;

instructing an application running on a computerized device to download a first media content; wherein said first media content being audio or video content;

instructing said application to download a second media content;
instructing said application to play said first media content; and
Instructing said application to play said second media content at a
predefined time; wherein said predefined time being within a time slice during which

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18. A method for integrating media content with streaming content, the method comprising:

at a computerized device having one or more processors and memory;

receiving a first media content from a remote server; wherein said first media content being audio or video content;

receiving from said remote server a second media content;

the first media content is being played on said device.

receiving from said remote server instructions for playing said second media content or for activating a Radio TV Applet in a predefined time; wherein said predefined time being in a time slice during which the first media content is being played on said device; and

playing said second media content or activating a Radio TV Applet in said predefined time in accordance with said instructions.

19. The method of claim 18, further comprising receiving a script from said remote computerized device wherein said predefined time being identified by said script.

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- 20. The method of claim 18 wherein said playing or said activating being synchronized with a plurality of computerized devices.
- 21. A method for bi-directional communication between a webcasting station and a computerized device, the method comprising:

at a computerized device having one or more processors and memory;
receiving from a webcasting station a first media content; wherein said first
media content being audio or video content;

receiving from said webcasting station instructions for activating radio/TV app; and

activating said radio/TV Applet while playing said first media content; said activating being in accordance with said instructions; and

transmitting data to said webcasting station as a result of said activating thereby providing bi-directional communication between said webcasting station and said computerized device.

22. A Non-transitory storage media including program instructions for implementing integrated media content with streaming content, the program instructions including instructions executable to:

Stream a first media content to a remote computerized device; wherein said first media content being audio or video content; and

stream a second media content to said remote computerized device or instructing said remote computerized device to activate a Radio/TV Applet; said streaming said second media content or said launching said Radio/TV Applet being while streaming said first media content.

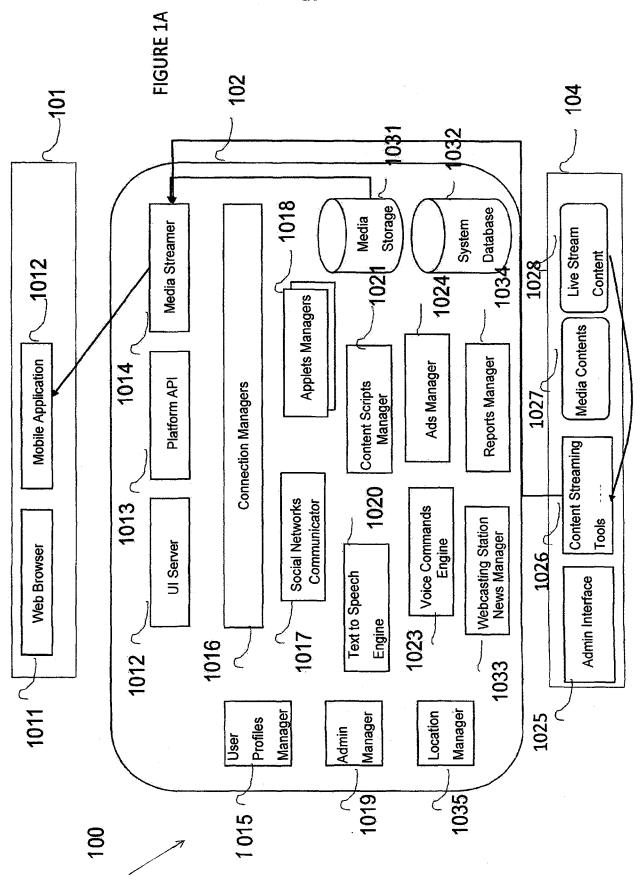
23. Non-transitory storage media including program instructions for implementing bidirectional communication between a webcasting station and a remote computerized device, the program instructions including instructions executable to:

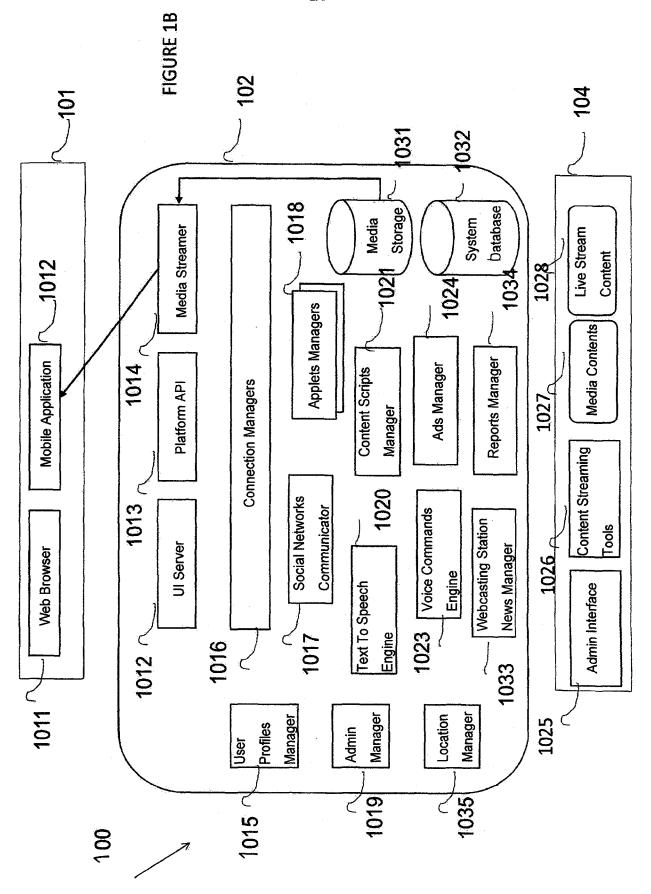
stream a first media content to a remote computerized device;

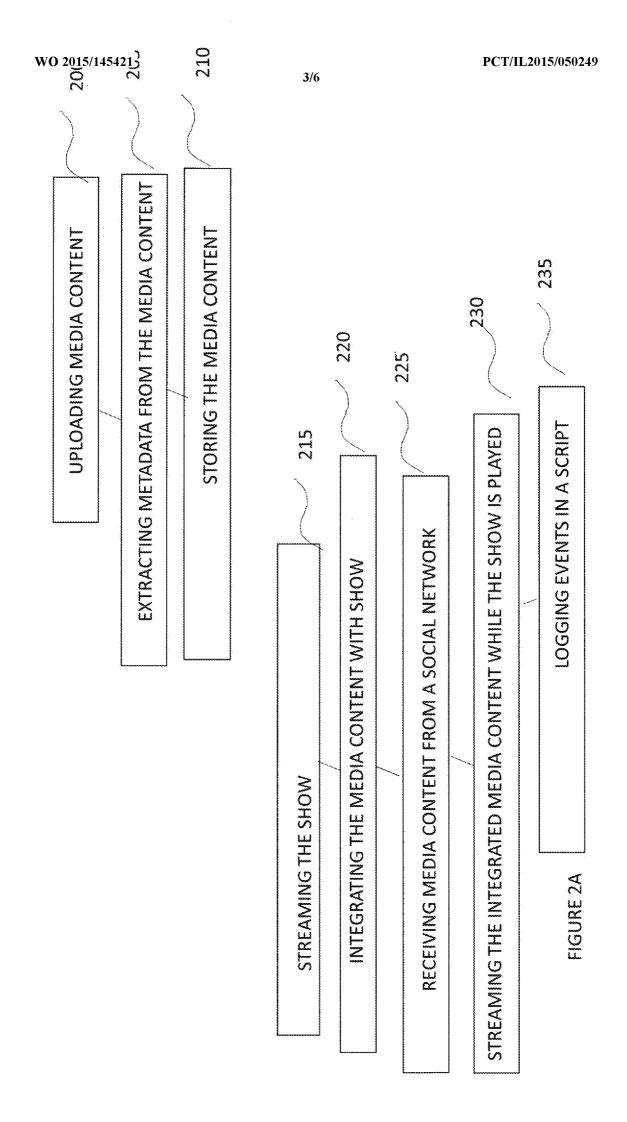
wherein said first media content being audio or video content;

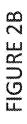
instruct said remote computerized device to activate a Radio/TV Applet; said instructing being while streaming said first media content; and

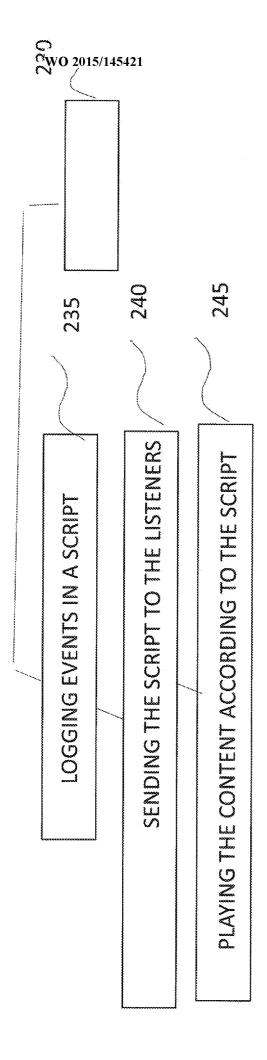
receive data from said remote computerized device as a result of said activating said Radio/TV Applet on said remote computerized device; thereby providing bi-directional communication between said server and said remote computerized device.











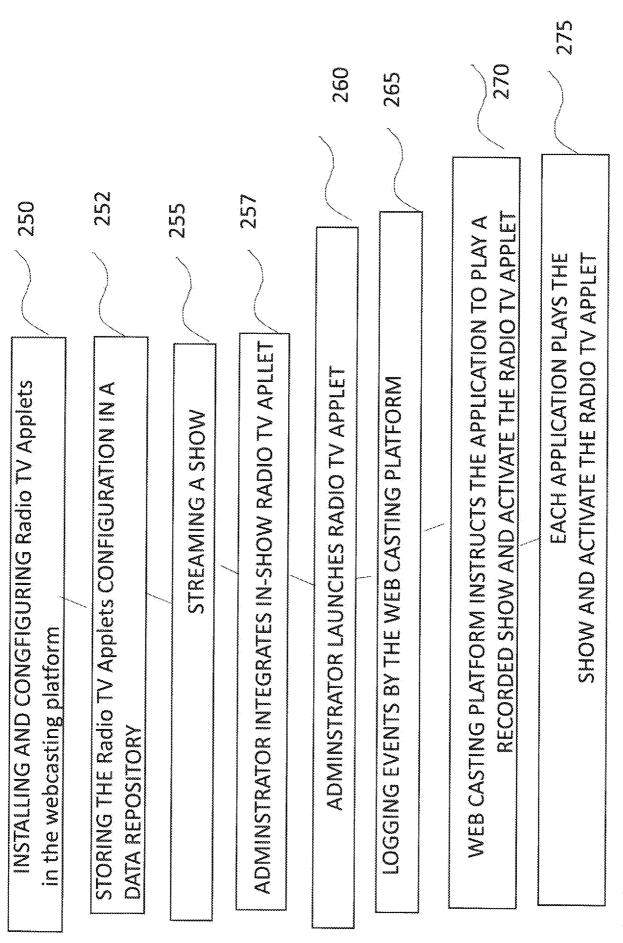


FIGURE 2C

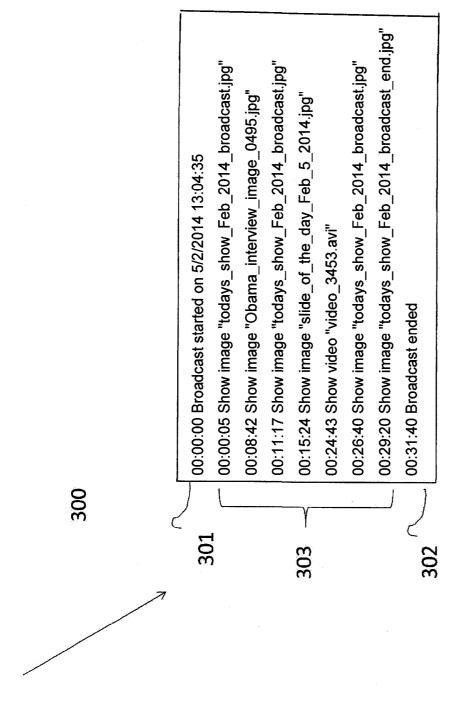


FIGURE 3

International application No.

PCT/IL2015/050249

#### A. CLASSIFICATION OF SUBJECT MATTER

PC (2015.01) H04N 21/00, H04H 60/06, G06F 3/00, H04N 5/445, H04N 7/025, H04N 7/173, G06F 15/16

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC (2015.01) H04N 21/00, H04H 60/06, G06F 3/00, H04N 5/445, H04N 7/025, H04N 7/173, G06F 15/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Databases consulted: PATENTSCOPE

Search terms used: radio stream identifier server media text analyzing speech synchronization

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	US 6513003 B1 Angell et al. 28 Jan 2003 (2003/01/28) figs. 1,3; abstract,col 8 .1.43-45,col.1 1.54-55,col. 6 1. 1-5.	1-12,14-20,22	
X	US 2011231869 A1 Scheirey et al. 22 Sep 2011 (2011/09/22) figs.3,5,9 ;abstract ,¶¶5,20,24,25,27,28,32.	1-12,14-20,22	
X	US 2010306808 A1 Neumeier et al. 02 Dec 2010 (2010/12/02) figs. 3,6,9;abstract,¶¶10-12,29-31.	5,6,8,11,13,15,17, 19-21,23	
A	US 7725557 B2 Klemets et al. 25 May 2010 (2010/05/25) entire document	1-23	
A	US 6587127 B1 Leeke et al. 01 Jul 2003 (2003/07/01) entire document	1-23	

X	Further documents are listed in the continuation of Box C.	See patent family annex.					
* "A" d	Special categories of cited documents: locument defining the general state of the art which is not considered	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand					
	to be of particular relevance	the principle or theory underlying the invention					
international filing date		"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive					
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other	step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be					
	special reason (as specified) locument referring to an oral disclosure, use, exhibition or other means	considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art					
	document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family					
Date	of the actual completion of the international search	Date of mailing of the international search report					
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Name and mailing address of the ISA:		Authorized officer					
Israe	l Patent Office	MAUDA Nissim					
	mology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel						
Facsi	imile No. 972-2-5651616	Telephone No. 972-2-5651733					

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