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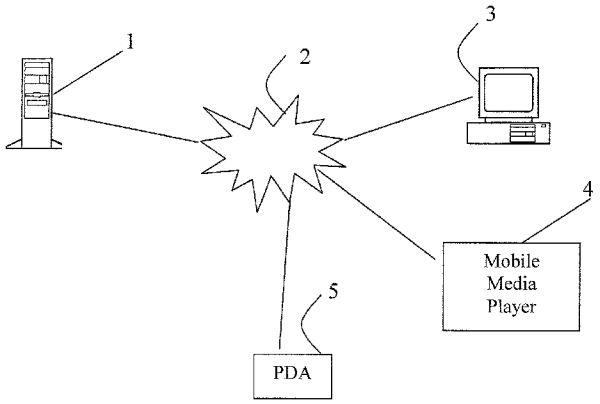

FIG. 1

(57) Abstract: A method of creating a dynamic audio file may comprise associating a tag with an audio file having audio content and the tag may comprise a location file path of a source of the audio content. A method of updating a dynamic audio file may comprise sending a dynamic audio file, receiving a request for updated audio content, and sending the updated audio content in response to the request. In various embodiments, the dynamic audio file may comprise a tag and initial audio content and the tag may comprise a location file path of the audio content.

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CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application No. 61/013,825 filed December 14, 2007, the disclosure of which is incorporated herein by reference.

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BACKGROUND

[0003] From a media user's point of view, media files are "static." In other words, the content of a media file does not change. In the context of a media playlist of country and western music, for example, a media file of George Strait's "Ace in the Hole" contains only that song when played on a media player. A user cannot update the content of that file with new content and still keep that file's place in the playlist. To add new content, a user must create a new file or playlist entry for that content. Thus, there exists a need for a system and method for updating media content within a playlist.

SUMMARY

[0004] Accordingly, a method of creating a dynamic audio file may comprise associating a tag with an audio file having audio content and the tag may comprise a location file path of a source of the audio content. A method of updating a dynamic audio file may comprise sending a dynamic audio file, receiving a request for updated audio content, and sending the updated audio content in response to the request. In various embodiments, the dynamic audio file may comprise a tag and initial audio content and the tag may comprise a location file path of the audio content.

BRIEF DESCRIPTION OF THE FIGURES

[0005] Fig. 1 illustrates an embodiment of a system that may be used for transferring and using dynamic audio files.

[0006] Fig. 2 illustrates an embodiment of a playlist incorporating dynamic audio files.

[0007] Fig. 3 is a flowchart of a method for using a dynamic audio file in accordance with an embodiment of the present invention.

[0008] Fig. 4 is a flowchart of a method for updating the audio content of a dynamic audio file in accordance with an embodiment of the present invention.

[0009] Fig. 5 illustrates an embodiment of a user interface that may be provided in connection with updater software.

[0010] Fig. 6 illustrates an embodiment of a user interface that may be provided in connection with updater software showing the details of a dynamic audio file.

[0011] Fig. 7 illustrates an embodiment of a user interface that may be provided in connection with updater software showing the details of the updater software.

[0012] Fig. 8 illustrates an embodiment of a user interface that may be provided in connection with updater software showing options for media player integration.

[0013] Fig. 9 illustrates an embodiment of a user interface that may be provided in connection with updater software showing settings that may be selected by a user.

[0014] Fig. 10 illustrates an embodiment of a user interface that may be provided in connection with updater software showing information about dynamic audio files and updater software.

[0015] Fig. 11 illustrates an embodiment of a user interface that may be provided in connection with assembly software.

[0016] Table 1 is a listing of metadata attributes associated with an embodiment of a dynamic audio file.

[0017] Table 2 demonstrates how metadata attributes map to ID3v2 frames in an embodiment of a dynamic audio file.

[0018] Table 3 provides a listing of attributes of an embodiment of an

assembly XML file that may be used to create a dynamic audio file.

[0019] **Table 4** is an implementation matrix for a graphical user interface in connection with an embodiment of assembly software.

DETAILED DESCRIPTION

[0020] **Fig. 1** illustrates one embodiment of a system and method for updating media content. In this embodiment, a radio broadcaster may manage a plurality of radio stations, and may accordingly host web sites for one or more radio stations at a server **1**. Those skilled in the art will recognize that each radio station may be assigned its own server. A user may communicate with server **1** from, for example, a computer **3** through a network **2**, such as the Internet. Alternatively, a user may communicate with a server **1** from, for example, a mobile media device **4** or PDA **5**. Those having skill in the art will recognize that a user may communicate with the server **1** using any suitable device, such as a cellular phone, a hand-held computer, an iPod, Sony Walkman, Creative Zen media player or other portable media player, or any other general purpose computer, PC, microprocessor, computer server, digital signal processor, mobile phone, or a combination thereof. In one disclosed embodiment, the user may communicate with a computer **3**.

[0021] The user may have stored a library of media files on her computer **3** in a format suitable for playback on a media player. In this embodiment, the media player may be an application installed on the computer **3**. For example, the user may have stored a library of songs in MP3 format for playback on a Windows Media Player application installed on the computer **3**. Those skilled in the art will recognize that various other media players may be supported, such as iTunes, RealPlayer, WinAmp and the like, and that the media players may be web-based or otherwise provided to the user for playback of locally-stored content, or a mix of locally-stored and remotely-provided content, or remotely provided content. The user may have further arranged some of those media files into a playlist. In one embodiment, the media files may comprise songs arranged so as to provide a particular listening experience. Those skilled in the art will also recognize that a user may maintain a library of media files on a computer, and manage that library using a suitable media player application which also allows media file management, such as Apple's iTunes software. Those skilled in the art will further recognize that a user may use that

media management/media player application to create a playlist that may be played using the media management/media player application, or transferred to mobile media player, such as Apple's iPod media player, for playback. Those skilled in the art will recognize that the updater software disclosed herein may be provided as part of a media management or media player application, or may incorporate features of media management and media player applications.

[0022] The user may desire listen to more than an unbroken series of songs or similar audio elements. Thus, a dynamic audio file may be included in the user's playlist to allow the user to listen to perishable, or relatively time-sensitive, content or other types of content. Examples of perishable content include daily news, sports scores, DJ chatter, traffic reports, emergency information, public service announcements (PSAs), talk show programs, personal messages and weather reports. A dynamic audio file may also be included in the user's playlist to provide new songs, *e.g.*, updatable incorporation of Top-10 songs into the playlist, or other content, such as advertisements and station jingles. By including one or more dynamic audio files, a playlist may provide, for example, a more radio-like listening experience. Accordingly, the user may download from server **1** a dynamic audio file, and include the dynamic audio file in the playlist. The user may also download updater software provided to allow the user to set dynamic audio file preferences. Those having skill in the art will recognize that the user may obtain a dynamic audio file and updater software in other ways, such as on CD or by RSS feed.

[0023] **Fig. 2** illustrates an embodiment of a playlist **6** that includes two dynamic audio files **23 and 28**. In the embodiment of **Fig. 2**, the playlist **6** includes ten media files that the user has selected to create a particular listening experience. Songs occupy playlist **6** slots **21**, **22**, **24**, **25**, **26**, **27**, **29** and **30**, and dynamic audio files occupy slots **23** and **28**. Those having skill in the art will recognize that the time duration of each slot may vary depending on the media file occupying each slot. However, the overall playlist may have been arranged to provide a listening experience of a certain length of time. Accordingly, as discussed in more detail herein, content provided by the dynamic audio file, as may be updated from time to time, may be adjusted to substantially maintain that length of time.

[0024] In this embodiment, the user has elected to include in the listening experience a news report from radio station WOAI in San Antonio, Texas. The user

may thus download a dynamic audio file from the WOAI radio station server, and include it at two locations in her playlist **6**. As may be seen in the playlist **6** of **Fig. 2**, the user has chosen to listen to the WOAI news report at slot **23** between songs in slots **22** and **24**, and at slot **28** between songs in slots **27** and **29**. By including a dynamic audio file at slots **23** and **28** of the playlist **6**, the user may receive the most up-to-date news from WOAI when those dynamic audio files are played, whenever that may be, and may receive the updated news without having to re-construct the playlist **6** to include updated content. Those skilled in the art will recognize that the dynamic audio files in slots **23** and **28** may provide sports scores, weather updates, traffic reports, and other perishable content, as well as fresh songs, or some mix of those elements. Furthermore, the dynamic audio file in slot **23** may provide different content than the dynamic audio file in slot **28**. For example, the dynamic audio file in slot **23** may provide news, and the dynamic audio file in slot **28** may provide updated news, or sports, or an advertisement. Those skilled in the art will further recognize that a playlist may contain one or more dynamic audio files, and may be comprised entirely of dynamic audio files. A dynamic audio file may therefore allow a user's media library or playlist content to be automatically updated without the need for a user to download new content and add the new content to the media player's library or playlist.

[0025] The audio content associated with a dynamic audio file may be replaced with updated audio content. As such, a radio broadcaster may distribute updated audio content which will be associated with one or more dynamic audio files that already reside on a user's computer. A dynamic audio file may serve as a content placeholder so that when updated content is distributed, the location of the updated content in the playlist will be the same as the location of the replaced content. In other words, a single library or playlist element reference may be provided for each dynamic audio file and all subsequent updates to each file.

[0026] Those skilled in the art will recognize that dynamic audio files may be of any suitable format, such as .acc, .wmp, .wma, .wav, .ogg, .ra, .m4a, and .mp3, to name a few examples. Those skilled in the art will also recognize that a dynamic audio file may have "default" or initial content. For example, a user may download a dynamic audio file that already includes the latest news reports from a particular radio station and is further configured to include updated news reports when those updates

are accessed. Those skilled in the art will recognize that a user may, after downloading, change her preferences with respect to that dynamic audio file.

[0027] A dynamic audio file may be moved, played, or otherwise manipulated in a manner similar to known audio files, in addition to other capabilities described herein. From a user's perspective, a dynamic audio file may not appear to be any different from a traditional audio file. For example, a dynamic audio file may be named "WOAI News" file while the artist name may be provided as "WOAI." A user may browse through their media library using their media player's available searching tools to find the "WOAI News" file and play the audio content in the "WOAI News" file on demand or put the "WOAI News" file in a playlist with other audio files. As described above, a user may, for example, play the same "WOAI News" dynamic audio file incorporated into her playlist again and again, yet hear more current content within that playlist **6** as made available for updating. A user may also play dynamic audio files in a static mode, *i.e.*, when the user's computer is not connected to a network or otherwise able to communicate with the content source. In such a circumstance, the dynamic audio file may contain the most-recently updated content. Thus, the exemplary "WOAI News" dynamic audio file retains its place in the user's media player library and playlist while providing updated content.

[0028] A media provider may thus make dynamic audio files and updater software available to users for downloading or other transfer. The updater software may be used by a user to automatically retrieve updated audio content from the broadcaster's website and replace the previous content with the updated content. Updated audio content may thus be automatically associated with the dynamic audio file. Updater software may comprise executable instructions installed on a user's computer (or other media device) to allow the user's computer to download new audio files from the broadcaster's computer. Updater software may give the broadcaster the ability to automatically update dynamic audio files and distribute audio content without the user having to affirmatively request such an update. Also, a dynamic audio file may contain update instructions that may be extracted by the updater software and stored at the user's computer. Updater software may periodically connect to the broadcaster's server to check for and receive updated audio content with which to replace audio content already associated with the user's dynamic audio files.

[0029] **Fig. 3** illustrates an exemplary method for using a dynamic audio file. In this example, a dynamic audio file may be provided to a user's computer over a network, such as the Internet, by, for example, direct download or by an RSS feed, as indicated at **10**. A dynamic audio file may be added to the user's media library as a static library asset, as indicated at **12**. The location path of the dynamic audio file in the user's computer may further be registered with the updater software and/or at the broadcaster's server, as indicated at **13**. In various embodiments, a manual pathing process may also be provided to allow a user to move a dynamic audio file to another location. Thereafter, the dynamic audio file may be played. The dynamic audio may be programmed to determine whether the user's computer has updater software installed and running the first time that the dynamic audio file is played as indicated at 14. Alternatively, the server may determine whether the user's computer has updater software installed and running. If updater software is not running or is not installed, a preamble at the beginning of the audio content in the dynamic audio file may be played to educate a user about dynamic audio files and prompt a user to download updater software, as indicated at **20**. For example, a preamble may provide an audible statement: "You have downloaded a dynamic audio file having news content. Please download the updater software to receive updates." If updater software is installed and running, the preamble may be stripped from the audio content in the dynamic audio file, as indicated at **16**. Alternatively, a version of the audio content without the preamble may be downloaded and may replace the audio content that had the preamble, as also indicated at **16**. In yet another embodiment, a preamble may be played regardless of whether updater software is running and the preamble may provide other useful information that the broadcaster wishes to distribute. Once the dynamic audio file has been downloaded, the audio content of a dynamic audio file may then be played on a variety of media players, as indicated at **18**. As noted above, if a user's computer is a desktop computer, a user may transfer the dynamic audio file to another media player, such as an iPod, MP3 player, or PDA. When a media playback device is connected to a network such that the media playback device may communicate with the appropriate server, the dynamic audio file may be updated.

[0030] In some embodiments, updater software may manage and control the update process without requiring any user interaction. As previously discussed, updater software may be downloaded onto a user's computer. Alternatively, updater

software may reside on a broadcaster's computer and perform the audio content updating from the broadcaster's computer. The updater software may also interact with the user's computer to perform the update process described herein. Of course, updating audio content may also be initiated automatically when a user plays back, moves, changes settings for, or otherwise manipulates a dynamic audio file.

[0031] Referring to **Fig. 4**, an exemplary method of updating the audio content of a dynamic audio file may include extracting update information from a dynamic audio file when the dynamic audio file is first downloaded onto a user's computer, as indicated at **30**. Accordingly, incoming dynamic audio files may be automatically registered with updater software during downloading so the user does not have to specify to the updater software a location for updates. Alternatively, updater software may retrieve location and update information from a dynamic audio file after the file is downloaded. Update information distributed with dynamic audio files may include a link (or links) to a content source (or sources) providing the updates. Such content source links ensure proper replacement of previous content with updated content. A plurality of content source links may be provided, including but not limited to a primary source link specifying the default location of updated content, an alternative source link for when the primary source link is not available, and a redirection source link. A redirection source link may, for example, be utilized in emergency situations, such that a broadcaster may automatically distribute audio content having emergency instructions, for instance informing users to seek cover due to bad weather conditions. Update information extracted by updater software may also include positive time metadata for scheduling updates and fail-over linking. In various embodiments, usage keys and digital signature systems may be incorporated in the update information in order to guard against misuse of the updater software by unauthorized third parties.

[0032] Referring still to the exemplary method of **Fig. 4**, an update schedule may be built for a particular dynamic audio file from update instructions extracted from the dynamic audio file, as indicated at **32**. In some embodiments, updates may be initiated by updater software according to the update schedule, as indicated at **34**. The updater software may determine if the user's computer is connected to a network, as indicated at **36**. If a user's computer is connected to a network, updated audio content may be downloaded over the network from a content server using one of the

content source links, as indicated at **38**. If a user's computer is not connected to a network, a user may be alerted of missed updates as indicated at **48**. If a network connection is not present, the updater software may make one or more later attempts to update and check again for a connection. If a network connection is present, updated audio content may then be downloaded, as indicated at **38**.

[0033] Once updated content has been downloaded, the updater software may determine whether the dynamic audio file to be updated is in use or locked, as indicated at **40**. If not, the updater software may replace the previous content in a dynamic audio file with updated content by associating updated content with the dynamic audio file, as indicated at **42**. That may be accomplished, for example, by deleting the old audio content, renaming the updated audio content with the name of the old audio content, and placing the renamed updated audio content in the location file path of the old audio content. If the dynamic audio file to be updated is in use or if there is a file lock on the file when an update is downloaded, the updated content may be held in local memory (or, in other embodiments, discarded and downloaded again later) and previous content in a dynamic audio file may continue to play or be used, as indicated at **50**. When the previous content is no longer in use, or the file lock is relinquished, updated content may replace previous content and be associated with the dynamic audio file, as indicated at **42**. As indicated at **44**, programming hooks in the updater software may alert a media player and library management system of updated content such that identifying information of the updated content may be incorporated. For instance, if the updated content has a different duration or title than the previous content, the new duration or title may be noted accordingly by the media player and library management application as a result of such programming hooks. In other embodiments, programming hooks may not be necessary if the user's media player or library management system automatically detect updates to content. As shown at **46**, after previous content is updated, the updated content may be played upon the next playback of the respective audio file.

[0034] In various embodiments, updates to the audio content of a dynamic audio file may be determined by various settings, specified either by a user or by a radio broadcaster. For example and not by way of limitation, in some embodiments a user may provide settings as to various types of music, news, or radio talk shows that the user would prefer to be downloaded. These settings may be part of a playlist

processing module provided as part of the updater software. Alternatively, playlist processing as described herein may be provided separate from the updater software. A playlist processing module may process an offline playlist for timing analysis and content insertion, or analyze an online playlist and add audio content as needed based on user settings. A playlist may comprise a time-based or other arrangement of audio content, such as a listing of songs to be played in a specified order. For example, a user may specify that music should be updated every week, news should be updated every day, and radio talk should be updated every hour. Alternatively, a user may request that a certain percentage of various types of music be played each hour, such as 50% Jazz and 50% Rock. In this example, 50% of the dynamic audio files downloaded may be "JAZZ" dynamic audio files, and the other 50% may be "ROCK" dynamic audio files. The playlist processing module may analyze the playlist and request updates to fulfill these settings. In addition, a user may create a playlist having static audio files and specify that news be played on a certain time interval, for instance every 60 minutes during the time that the playlist having traditional audio files is being played. When the user is playing the playlist, the playlist processing module may analyze the playlist and estimate where to insert and update dynamic audio files, *e.g.*, those having news content.

[0035] The playlist processing module may analyze the playlist in real-time and obtain updated perishable content, *e.g.*, news, based on the time that passed since perishable content was last played. A user may elect to receive audio content from a plurality of different content sources, *e.g.,* radio stations. For instance, if a user prefers the music from station A, the news from station B, and the traffic report from station C, a user may download one or more dynamic audio files having music content from station A, one or more dynamic audio files having news content from station B, and one or more dynamic audio files having traffic report content from station C. A user may then set how often music, news, and traffic reports should be updated, or how often those files should be should be played during a particular playlist. If each dynamic audio file has a different content source link, content may be updated from each of the three radio stations, A, B, and C, for the type of content selected by the user. Those skilled in the art will recognize that one or more servers may provide content for radio stations A, B and C. Alternatively, updater software may provide the ability for a user to update content on demand. A user may manually

request an update, for instance if a user is following a particular breaking news story and wishes to manually control the timing of updates.

[0036] A radio broadcaster may also have control over the timing and manner of updates to dynamic audio files. For instance, a radio broadcaster may create and provide for downloading on their website a dynamic audio file for "Breaking Music" where the song may be changed every week, day, hour or minute. This embodiment may allow a radio broadcaster to generate and maintain listener interest because the listener has the ability to request that the newest music be distributed to them. Alternatively, a radio broadcaster may provide a series of dynamic audio files which, when downloaded, are automatically assembled into a playlist **6** that presents a musical sequence such as "Today's Top 10 Songs." Each day, the content of the dynamic audio files may be automatically replaced with that day's top ten songs. In addition, a radio broadcaster may distribute "Test Music" dynamic audio files in order to distribute test music to listeners to gauge their reactions and preferences. In another embodiment, a radio broadcaster may distribute advertisements based on user registration information that may be gathered by updater software. For instance, a user may be asked to enter a residence address, and other user information, before downloading the updater software or before receiving dynamic audio files. "Advertisement" dynamic audio files may be distributed and the redirection content source links may be utilized by the radio broadcaster to direct updates to the "advertisement" dynamic audio file based on user information, such as redirecting audio content to provide advertisements particular to the geographic area where the user resides. Of course, other information about the user may be used to determine where to retrieve updated content such as advertisements. In yet another embodiment, a radio broadcaster may distribute a plurality of dynamic audio files that may be used each day to distribute an entire radio broadcast for that day or for a day part. A radio broadcaster may update the audio content in a plurality of dynamic audio files several times throughout the day to create and distribute a traditional radio broadcast over a network. Those skilled in the art will recognize that "push" or "pull" technology could be used to effect those embodiments.

[0037] In various embodiments, the dynamic audio file format may contain a number of attributes. Of course, the following description is for exemplary purposes only and a dynamic audio file may have a variety of attributes. Metadata attributes

may be associated with a dynamic audio file that may be retrieved through use of an audio watermark. Such an audio watermark may make the actual audio content format arbitrary.

[0038] In one embodiment, metadata attributes may be stored in an ID3 version 2 ("ID3v2") file tag or header made part of an MP3 audio file. In this embodiment, an ID3v2 tag may be 256MB in size, and contain a number of 16MB frames. Those skilled in the art will recognize that ID3 tags may be of variable size, and contain a variety of frames. The ID3v2 tag is described here by way of example. An ID3v2 tag may also include without limitation text and encryption, as well as linked information and weblinks. Thus, the dynamic audio file may be, in this embodiment, an ID3v2-tagged mp3 file that is instantiated as described herein. A device or media player that does not have the updater software installed may recognize this embodiment of a dynamic audio file as an mp3 file that has some proprietary ID3v2 tags in a vendor-specific or private frame, and the ID3v2 tag will not prevent such recognition. Of course, dynamic audio files may be provided in other formats, such as those mentioned above, with the tags or headers pertaining to those formats.

[0039] **Table 1** shows exemplary metadata attributes that may be associated with an mp3 file in an ID3v2 compliant mp3 header to create a dynamic audio file. **Table 1** describes each attribute and how the attribute may be used. In **Table 1**, an attribute with "yes" in the "Preferred" column indicates that the attribute may be preferred for implementation of an embodiment of the updater software. In this embodiment, the optional attributes, indicated with a "No" in the "Preferred" column may be optional in the ID3v2 public standard, so the updater software may not consider their absence a failure condition. In some embodiments, each preferred attribute in **Table 1** may be placed into a private frame value for robustness. In other embodiments, however, less than all of those attributes, or other suitable attributes may be used to create a dynamic audio file. For example, a dynamic audio file preamble having information about dynamic audio files may be skipped by using the "ContentStartTime" attribute so that the audio content immediately plays when the dynamic audio file is played. Various software applications may read from the attributes.

[0040] In some embodiments, various attributes that are shown in **Table 2** may also be placed in other standard, non-overloaded ID3v2 fields, to trigger complementary behavior of media players in this embodiment that support the ID3v2 header standard. In **Table 2**, an "n/a" in the "ID3v2 Frame" column indicates that the attribute may not be relevant to the embodiment of **Table 2**. Such behavior may include, for example, graphically depicting the source of the audio content of the dynamic audio file, which may be desirable in other embodiments. **Table 2** describes how various attributes listed in **Table 1** may map to ID3v2 frame values. The updater software may examine the ID3v2 frames to determine whether to treat the mp3 as a dynamic audio file. In other embodiments, all of the attributes in **Table 2** are placed in a private vendor area of the ID3v2 file header. In other embodiments, some of the file attributes may be placed in the standard public areas of the ID3v2 file header, if the meaning and use of the dynamic audio file attribute matches the meaning and intended use of that same attribute in the ID3v2 header.

[0041] In some embodiments, updater software may provide a user interface that may be launched when, for example, a user clicks on an updater software "tray" or on a start menu item. **Fig. 5** depicts an embodiment of a user interface for the updater software. The user interface **70** may, in this example, include four interface areas accessible under tabs as shown in **Fig. 5**: an Audio Token Files tab **60**, a Player Integration tab **62**, a Settings tab **64**, and an About tab **66**. (Some figures herein may refer to dynamic audio files as "Audio Tokens" or "Audio Token Files.")

[0042] If a user clicks on the Audio Token Files tab **60**, an Existing Audio Token Files section **68** of that tab may be provided that lists various dynamic audio files saved on the user's computer and registered with the updater software. A linked title may identify a dynamic audio file by name, for example "KZOK Weather" **72**. A user may click on the linked title "KZOK Weather" **72** to launch a dynamic audio file detail window **80** as shown in **Fig. 6**.

[0043] Turning to **Fig. 6**, the detail window **80** may provide the title **82** of the dynamic audio file ("KZOK Weather" in this example), the location path **84** of the dynamic audio file on a user's computer, a drop down menu **86** displaying directories or other remote or local locations to which a user may move the dynamic audio file by clicking on the move button **88**, the publisher **90**, *e.g.,* radio station KZOK, of the dynamic audio file, the date and time **92** when the dynamic audio file was published,

the content server source **94** of the dynamic audio file, and a Uniform Resource Locator ("URL") (or Uniform Resource Identifier "URI") **96** that, when selected, may link the user to the publisher's website. In addition, a Send to a Friend button **98** may be selected to transmit the dynamic audio file to a friend via email or some other form of electronic communication. For example, a "mailto:" command with configuration file values "SendtoFriendSubject" or "SendtoFriendText" may be used. If a Close button **100** is selected, the detail window **80** may close, while the user interface **70** in **Fig. 5** may remain open.

[0044] Referring back to **Fig. 5**, section **68** may also display the amount of time until the dynamic audio file expires, until the content becomes stale, or until the next update, as the case may be, in Expires In column **102**. A checkbox **104** next to a title of a dynamic audio file may be selected, at which point a check mark may appear. A user may use the checkboxes **104** to select a one or more dynamic audio files for updating, and then click on the Update button **106** to prompt the updater software to retrieve updated content for the selected dynamic audio files from their respective content sources. In some embodiments, clicking on the Update button **106** may also update the user's media player with new identifying information regarding the updated content, such as duration and song title, if applicable. Also, by selecting one or more dynamic audio files using a checkbox **104** corresponding to a selected dynamic audio file, a user may delete dynamic audio files by clicking on a Delete button **108**.

[0045] Additionally, dynamic audio files on a user's computer that are not registered with the updater software may be found using drop down menu **112** to select a directory or location to search for new dynamic audio files. A user may also click on a Search button **114** to search a directory or location selected via drop down menu **112**. Clicking on the Search button **114** may open up a new user interface for searching computer memory or remote databases. If unregistered dynamic audio files are found, the updater software may register those dynamic audio files and add those files to the list of registered dynamic audio files displayed in section **68**.

[0046] **Fig. 5** also provides an About Audio Tokens link **116** that may be selected to open a window **118** (an example of which is illustrated in **Fig. 7**) having a text box **151** with a vertical scroll bar **120** and text provided by a content publisher that may provide information regarding dynamic audio files. Also in **Fig. 7**, a link

150, when selected, may launch a .txt log file for viewing in the text box **151**. Such a log file may reveal the activities of the updater software. In one embodiment, a window **118** (**Fig. 7**) may also be accessed by selecting the About tab **66** of the user interface **70** of **Fig. 5**.

[0047] If a user selects the Player Integration tab **62** of the user interface **70** illustrated in **Fig. 5**, the user interface **70** may display options for the user to govern how the updater software should interact with their media player(s), as shown in **Fig. 8**. In some embodiments, a user may have the option of having the updater software synchronize with specific media player(s), *e.g.*, every time the updater software, or a media player, is launched, by checking a box next to either "Keep Audio Token files synchronized with iTunes" **124** or "Keep Audio Token files synchronized with Windows Media Player" **126**. The updater software may provide only those options that correspond to media library management applications and media players detected on a user's computer. Those having skill in the art will appreciate that media players other than iTunes and Windows Media Player may be detected and referenced by the updater software. Also, in other embodiments a user may select media player applications for synchronization (not shown), rather than automatic detection by the updater software. Such integration may allow the updater software to update the media players with file attributes that have changed. For instance, the length of the dynamic audio file may change when the dynamic audio file is updated, *e.g.*, as longer or shorter updated audio content is provided, and that updated length may be displayed in the media player's user interface. Those having skill in the art will appreciate that how a given media player reflects changes in the file attributes may depend on the richness of that media player's Application Programmer Interface (API).

[0048] **Fig. 9** illustrates one embodiment wherein the user interface **70** may provide a Settings tab **64** that allows the user to further govern the behavior of the updater software. In some embodiments, the updater software may be set to start up automatically when the user's computer starts up. In this embodiment, the updater software defaults to an autostart mode, and a user may deselect checkbox **130** to disable that setting. In some embodiments, a dialog box may pop up asking the user to confirm that the user wants to disable the setting. In some embodiments, the updater software may immediately notify the user of emergency alerts by updating

dynamic audio file with emergency alert content. A user may also elect to have the updater software immediately notify the user of emergency alerts, such as storm warnings, by selecting checkbox **132**. The updater software may also periodically perform an automatic scan of the computer or a directory for new dynamic audio files. A user may enable the updater software to a scan for new dynamic audio files by selecting box **134**. As noted above in connection with **Fig. 5**, of course, a user may also cause the updater software to scan for new dynamic audio files.

[0049] In some embodiments, the updater software may automatically, at various intervals, search for new dynamic audio files on a user's computer. If a new dynamic audio file is discovered that is not registered in the updater software, the new dynamic audio file may be added to an index of dynamic audio files in the updater software, including adding information regarding when the new dynamic audio file expires ("expire time") and thus when the dynamic audio file may be updated. The expire time may be adjusted to local time using the GMToffset attribute in an embodiment with attributes as described in **Table 1**. In order to prevent every single dynamic audio file from being updated at the same time, the expire time placed into the updater software's index may not be the literal expire time attribute (*e.g.*, DateTimeExpires). Rather, {DateTimeExpires + Random(0-ExpiresResolution)seconds} may be used such that all dynamic audio files needing updates may be randomly distributed across a specified time window or time resolution (*e.g.* ExpiresResolution), *e.g.*, a fifteen (15) minute time span, for updating rather than at the same time. Also, if the updater software has a setting that media players be updated with information regarding the new dynamic audio file, such information may be updated at that time.

[0050] Referring still to **Fig. 9**, the updater software may also send anonymous usage data comprising notification packets to a web service each time a dynamic audio file is updated. Or, a notification packet may be sent to the distributor of a dynamic audio file for tracking or marketing purposes. Such data may also be used to customize perishable content or advertising content. A user may stop the updater software from sending such anonymous usage data by unselecting checkbox **136**. A user may add more information to notifications regarding usage data by entering a user name and profile in box **140** and selecting checkbox **138**. For example, a radio broadcaster (*e.g.*, Clear Channel) may maintain a web service for

logging dynamic audio file updating at a central location. In various embodiments, such a web reporting service, or a server based interface, may accept notifications about the attributes of an updated file, for example but not limited to the following attributes: Old Unique Identifier, New Unique Identifier (may be the same value as Old Unique Identifier), Publisher, Title, ReplacementDateTime, Email address (for example if "update my profile" **138** is selected in settings).

[0051] The installation for the updater software may be simple and user-friendly, with defaults being automatically set for optimal operation. The user may be given a notice stating that they can change these settings after the updater software is installed. A link to the updater installer may be placed into an ID3v2 predefined URL frame, *e.g.*, official audio file webpage frame, since this is the URL most likely to be automatically or easily linked in a variety of browsers. A preamble comprising audio content in each dynamic audio file may also audibly refer to the location of the updater installer, so that if a user has downloaded the dynamic audio file and does not have the updater installer already, the user may be informed that additional functionality is available. **Fig. 10** illustrates an embodiment of an updater installer user interface, showing information that may be provided to a user about the updater software, including basic information about updating the files and actions taken during installation of the software.

[0052] A dynamic audio file having the format described above may be updated according to the following exemplary process, *e.g.*, when the computer system time matches the expire time (*e.g.*, DateTimeExpires). If the ContentType is "EmergencyAlert" and there is no file present in the primary source link (*e.g.*, SourceURL), the alternative source link (*e.g.*, BackupSourceURL), or the redirection source link (*e.g.*, AlertURL), the dynamic audio file may be deleted from the updater software's registry, the file system, and if the user has specified media player integration, the playlists of the user's media players.

[0053] If the ContentType is anything other than "EmergencyAlert", the redirection source link may still be checked for the presence of updated "EmergencyAlert" content. If updated "EmergencyAlert" content is present at the redirection source link, the updated "EmergencyAlert" content may be downloaded and given its own separate entry in the updater software's registry. If the user has specified that a notice be provided when updated "EmergencyAlert" content is

downloaded from the redirection source link, a dialogue box may pop up notifying the user that "the following emergency alert was issued on <DateTimePublished>: <Title>". The <Title> area may be hot linked, and may launch the updated "EmergencyAlert" content in a default media player.

[0054] Regardless of whether or not updated "EmergencyAlert" content was present at the redirection source link, the updater software may next check the primary source link and the alternative source link for updated media content. If updated media content is found, then the updated media content may be downloaded and the preamble, if any, removed. The updated media content may then overwrite the previous media content in the dynamic audio file in the file system, provided there is not a file lock preventing overwriting. If there is a file lock on the file, for instance if the user is playing the dynamic audio file, the updater software may wait for the file lock to be released and then the dynamic audio file may be updated in the updater software's registry with the updated media content and a new expire time value. If the user has specified player integration, media players may be updated with the new duration of the audio content and any other attributes that are relevant and available through the media player APIs. If the user has specified that anonymous usage data be sent out (as described below), a notification may be sent having usage data to a web service location specified in a configuration file. If updated media content is not found, the updater software may keep trying based on a "New file not found retry interval" that may be provided in the configuration file as noted below.

[0055] Furthermore, in some embodiments, upon installing a dynamic audio file on the user's computer, an XML configuration file may be placed in the installation directory with the following values: About Dynamic Audio Files text, About Updater Software text, Privacy Policy URL, Anonymous Reporting Web Service URL, User Profile Page URL, New file not found retry interval (in minutes), SendtoFriendSubject, and SendtoFriendText.

[0056] A dynamic audio file may be created either manually or automatically by use of assembly software. For example, a radio broadcaster may utilize XML assembly software on its computer systems before distributing audio content, such that distributed audio content is incorporated into dynamic audio files. **Table 3** discloses exemplary attributes that may be contained in an assembly XML file that may be used to create a dynamic audio file. In some embodiments, an assembly XML

file may contain all of the attributes listed in **Table 3** for the header portion of the dynamic audio file. An assembly XML file may also contain information about where to find the audio content and where to save and how to name the output file. In **Table 3**, an "n/a" in the "Destination" column indicates that the attribute may not be relevant to **Table 3** in some embodiments.

[0057] In other embodiments, a command line executable may be used to create a properly formatted dynamic audio file. A command line executable may take a single input file path, for example, either the full path to a specific assembly XML file or a directory path containing multiple assembly XML files. If the input file path is a directory path to a directory containing multiple assembly XML files, the assembly software may look at every XML file in that directory and attempt to parse each XML file as if it were an assembly XML file. If the assembly software does not recognize the XML file as an assembly XML file, the assembly software may output the failure and the reason therefor to an error log. The assembly software may then move on to the next XML file and proceed to either create a dynamic audio file or output a failure and reason therefor to an error log. The assembly software may work through each XML file in the foregoing manner until all XML files have been reviewed in the directory path.

[0058] In still other embodiments, the assembly software may provide a user interface to assist a broadcaster in creation of a dynamic audio file. An exemplary user interface of the assembly software may have a "Create a New Dynamic Audio File" function with a form providing a windows control appropriate to one or more of the exemplary attributes specified in **Table 4**. A user interface provided by the assembly software may also have a directory file browse function so that a user may visually select the input for the command line executable file. A "Create File" button may be selected which would launch an executable file having the selected input. In some embodiments, the assembly software may comprise a configuration file which may provide default values for certain attributes that appear in the user interface. This configuration file may also provide attribute values for attributes that may not be changed or selected through the user interface of the assembly software. **Table 4** provides data used for an embodiment of the assembly software to create a dynamic audio file. **Table 4** provides both the user interface elements of the assembly software and the items that may appear in some embodiments of an assembly XML

file. **Table 4** also contains information about how some of the data elements may behave in the operation of some embodiments of the assembly software.

[0059] Fig. 11 illustrates one embodiment of a user interface **166** provided in connection with assembly software to assist a content publisher or other user in creating a dynamic audio file. A number of options may appear within the "ATFF Assembly File Creator" user interface **166**. In this embodiment, ATFF refers to Audio Token File Format, *i.e.*, a dynamic audio file.

[0060] The interface **166** may include a Create Assembly File tab **160** that provides a number of sections that a user may access to set dynamic audio file variables and preferences. A General File Information section **168** may provide a content file path menu **170** for a user to input a source file for the audio content that may be used in the dynamic audio file being created, and a Browse button (not shown) that allows a user to browse their computer's local drives (or remote sources) for the audio content. A file identification number may be entered in a field **172** or a checkbox **174** may be selected to use the source file name as the identification number. A user may enter a title for the file in field **176** and may select the type of content by use of drop down menu **178**. The expiration time, or length of time after which the content will be deemed stale, may be set by using drop down menus **182** and **184**. An Output Directory may be selected via menu **180** or selected using a Browse button (not shown). The output file name may be the Title entered into field **176** by selecting the Use Title option button **186**. Alternatively, the source file name may be selected as the output file name by selecting button **188**. In yet another alternative embodiment, a user may enter a custom output file name in field **190** by selecting button **192**.

[0061] An Advanced Settings section **194** may allow a user to select a preamble file location by using drop down menu **196** and selecting the location on the user's computer from which the assembly software may retrieve the preamble. A user may specify how many minutes the expiration time may be delayed by selecting a precision value from drop down menu **198**. The precision value may allow the updater software or content server to advance or delay updating slightly to avoid content server overload.

[0062] A Set Information section may allow a user to identify a file as being a member of a set of files by selecting checkbox **200**. The number of dynamic audio

files in the set may be selected through menu **202** and the location in the set may be altered by a Position menu **204**. In some embodiments, the dynamic audio file's position in the set may be selected by using menu **204**. A dynamic audio file may also be added to the set by entering the dynamic audio files fields **206**, **208** and **210**. Alternatively, the primary source link may be entered into field **206** and the alternative source links may be entered into fields **208** and **210**. In other embodiments, those fields may be used, or other fields may be provided for fail-over and redirection source links. A source, such as a radio station, that distributes the dynamic audio file may be entered into a field **212** with the source's homepage being entered into another field **214**. In various embodiments, the source may be an Internet radio station. A user may indicate that the dynamic audio file should be immediately processed by selecting checkbox **216**. A user may save the settings as defaults for creation of other dynamic audio files by selecting checkbox **218**. To create the dynamic audio file having the specified attributes, a user may select the Create Assembly File button **220**.

[0063] In other embodiments, a user may click a Reset button (not shown) to clear the settings entered into interface **166**. Under the Process Assembly File(s) tab **162**, a user may select one or more dynamic audio files to process.

[0064] Dynamic audio files and the methods of use described herein may provide a radio broadcaster an efficient and flexible method of distributing audio content. Such dynamic audio files may serve as a "placeholder" audio file in a media library or playlist, where the content of the dynamic audio file may be updated or refreshed. Thus, "News" or "Sports" dynamic audio files, for example, allow a listener access to fresh news or sports content without having to reconstruct a playlist. Various embodiments described herein allow a user to specify how content should be distributed to them. Some embodiments are user friendly, as a user need not affirmatively request updates. Thus, such embodiments may promote and increase user interest in the content source.

[0065] Of course other embodiments may include a system and method that may be practiced by a non-broadcaster or other content provider. For example, a school district may distribute news to parents, students and teachers through the use of dynamic audio files. Or, multi-level distribution companies may use dynamic audio files to distribute content to various audiences. For example, depending on a user's

profile, an audio token may be updated with different content for different users. Content may be updated to different groups of people.

[0066] Although various exemplary embodiments have been shown and described, the invention is not limited to the embodiments shown and described. Therefore, the scope of the invention is intended to be limited solely by the scope of the claims that follow.

WHAT IS CLAIMED IS

1. A method of creating a dynamic audio file, the method comprising associating a tag with an audio file having audio content, said tag comprising a location file path of a source of the audio content.
2. The method of claim 1, wherein the audio content comprises an audible preamble.
3. The method of claim 1, wherein the format of the audio file is MP3.
4. The method of claim 1, wherein the tag is an ID3 tag.
5. The method of claim 1, wherein the tag further comprises a URI file path of a backup source of the audio content.
6. The method of claim 1, wherein the tag further comprising an attribute identifying a type of the audio content.
7. The method of claim 1, wherein the tag further comprises an attribute defining a content expiration time of the audio content.
8. The method of claim 1, wherein the tag further comprises an attribute defining the playback start time of the audio content as the time duration of the audible preamble measured from the beginning of the audio content.
9. The method of claim 1, wherein the tag further comprises an update time.
10. The method of claim 1, wherein the tag further comprises an update frequency.
11. A method of updating a dynamic audio file, the method comprising:
    sending a dynamic audio file, the dynamic audio file comprising a tag and initial audio content, wherein the tag comprises a location file path of the audio content;
    receiving a request for updated audio content;
    sending the updated audio content in response to the request for storage in the location path in place of the initial audio content.
12. A method of providing a dynamic audio file, the method comprising:
    sending a dynamic audio file to a client computer over a network, the dynamic audio file comprising a tag and default audio content, wherein the tag comprises a URI file path of the source of the default audio content; and

sending to the client computer a computer-readable program for execution on the client computer, the computer-readable program capable of causing the client computer to:

after receiving the dynamic audio file, register the location of the dynamic audio file with the computer-readable program;

retrieve the URI file path of the source of the default audio content from the tag;

connect with the source of the default audio content over the network using the URI file path;

request updated audio content from the source;

receive updated audio content from the source;

store the updated content after receipt thereof; and

play the updated content upon playback of the dynamic audio file.

13. The method of claim 12, wherein the client computer is one of a laptop computer, a mobile telephone, a PDA, a PC and an MP3 player.

14. A method of enabling a client computer to update a dynamic audio file comprising a tag and default audio content, wherein the tag comprises a URI file path of the source of the default audio content, the method comprising sending to a client computer a computer-readable program for execution on the client computer, the computer-readable program capable of causing the client computer to:

after receiving a dynamic audio file, register the location of the dynamic audio file with the computer-readable program;

retrieve the URI file path of the source of the default audio content from the tag;

connect with the source of the default audio content over the network using the URI file path;

request updated audio content from the source;

receive updated audio content from the source;

store the updated content after receipt thereof; and

play the updated content upon playback of the dynamic audio file.

15. A method of enabling definition of processes with respect to a dynamic audio file comprising a tag and default audio content, wherein the tag comprises a

URI file path of the source of the default audio content, the method comprising sending to a user computer a computer-readable program for execution on the user computer, the computer-readable program capable of causing the user computer to instantiate a graphical user interface, wherein the graphical user interface is capable of allowing a user to define processes comprising:

updating a dynamic audio file;

sending a dynamic audio file to another user;

synchronizing a dynamic audio file with a media player;

scanning for dynamic audio files; and

sending data pertaining to the user's usage of a dynamic audio file.

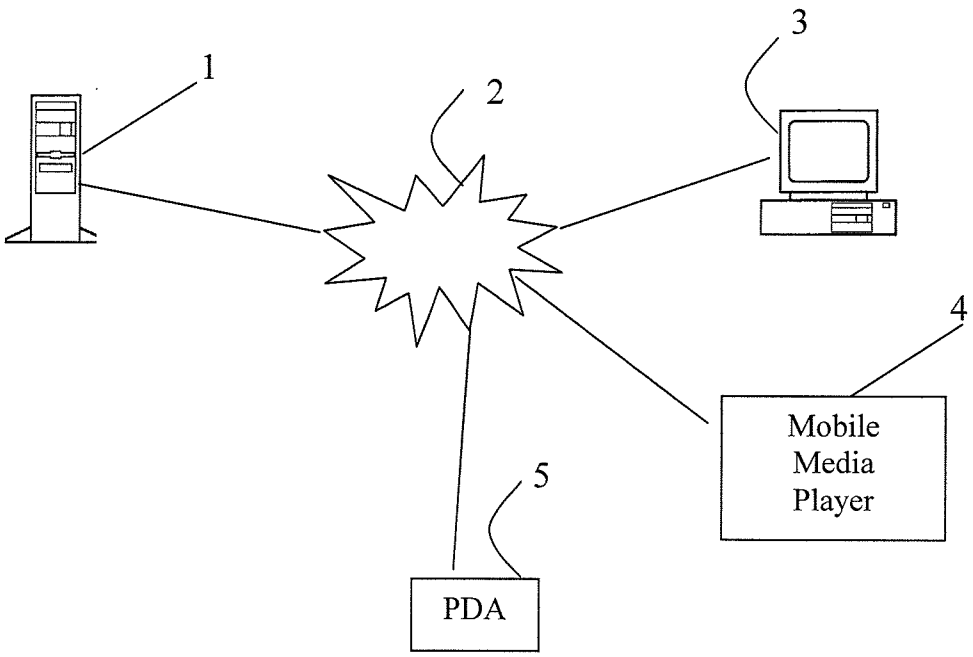

FIG. 1

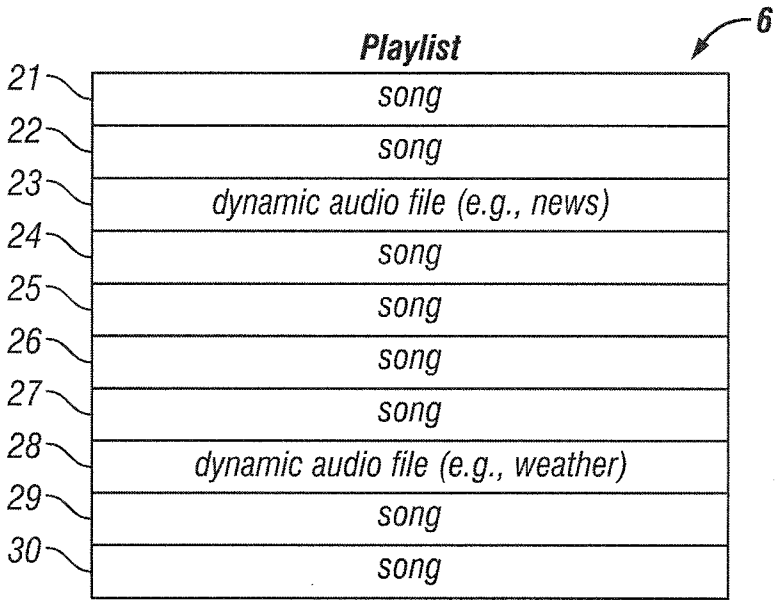
Playlist
6
21
song
22
song
23
dynamic audio file (e.g., news)
24
song
25
song
26
song
27
song
28
dynamic audio file (e.g., weather)
29
song
30
song

FIG. 2

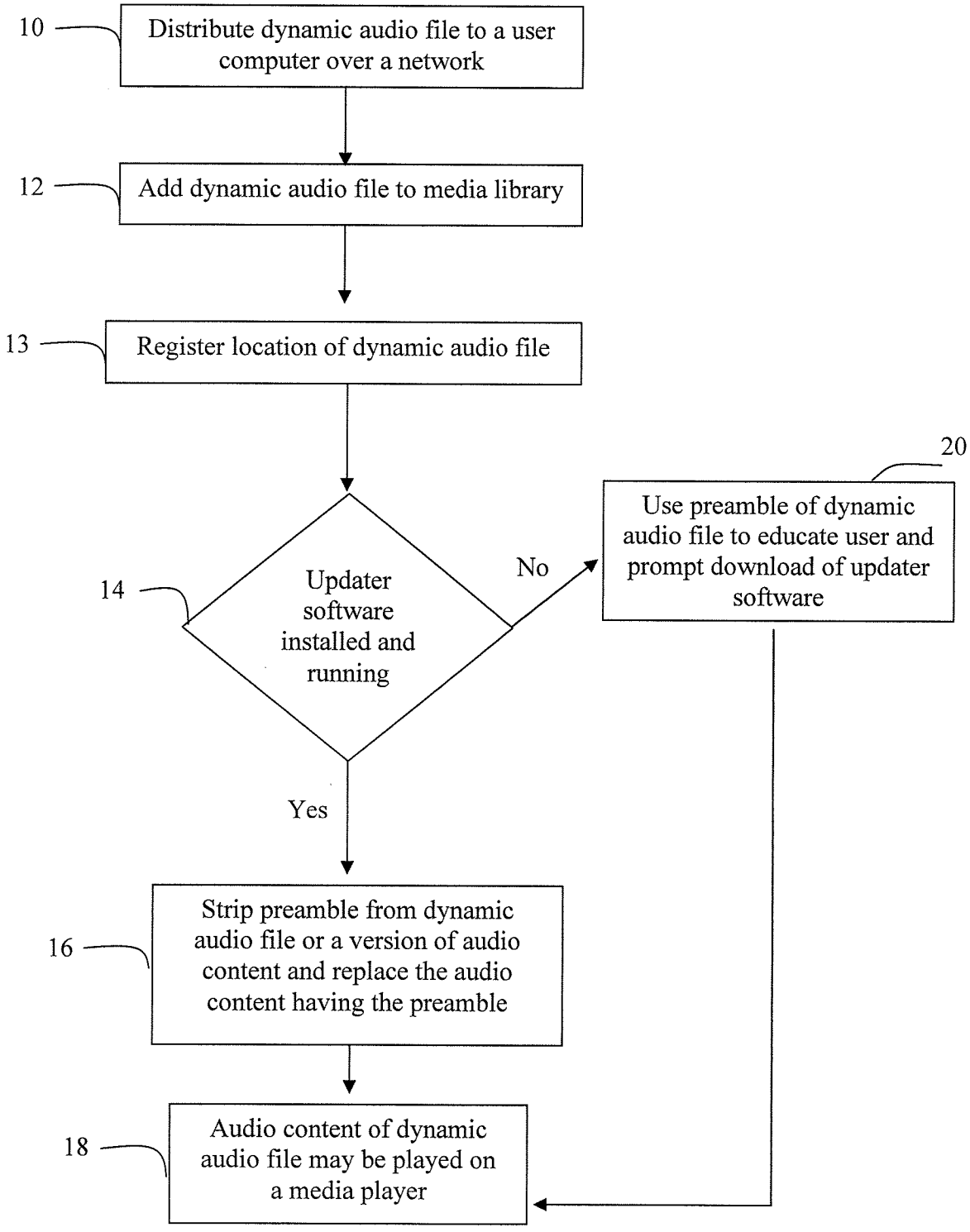
10
Distribute dynamic audio file to a user computer over a network
12
Add dynamic audio file to media library
13
Register location of dynamic audio file
14
Updater software installed and running
No
20
Use preamble of dynamic audio file to educate user and prompt download of updater software
Yes
16
Strip preamble from dynamic audio file or a version of audio content and replace the audio content having the preamble
18
Audio content of dynamic audio file may be played on a media player

FIG. 3

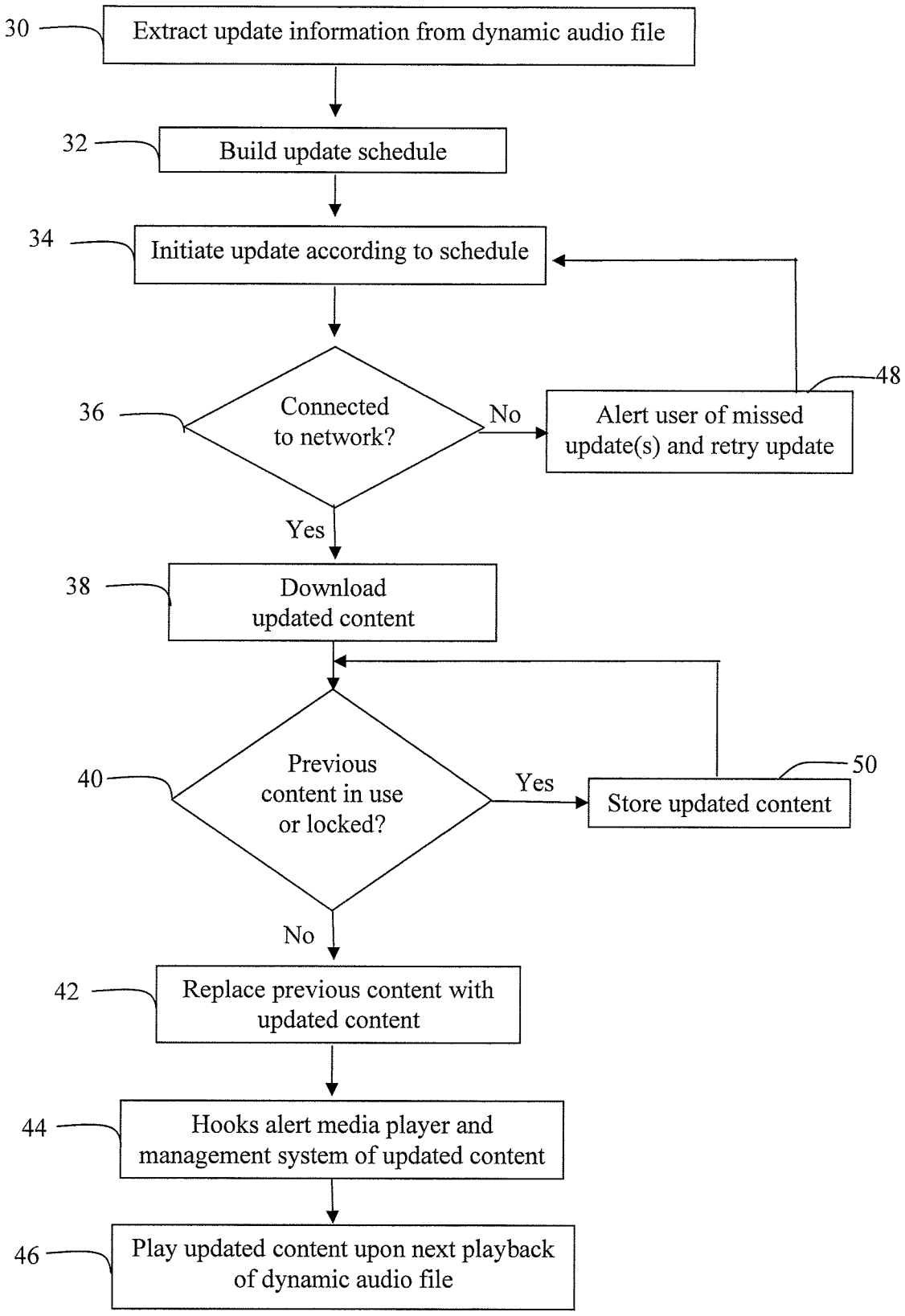
30
Extract update information from dynamic audio file
32
Build update schedule
34
Initiate update according to schedule
36
Connected to network?
No
48
Alert user of missed update(s) and retry update
Yes
38
Download updated content
40
Previous content in use or locked?
Yes
50
Store updated content
No
42
Replace previous content with updated content
44
Hooks alert media player and management system of updated content
46
Play updated content upon next playback of dynamic audio file

FIG. 4

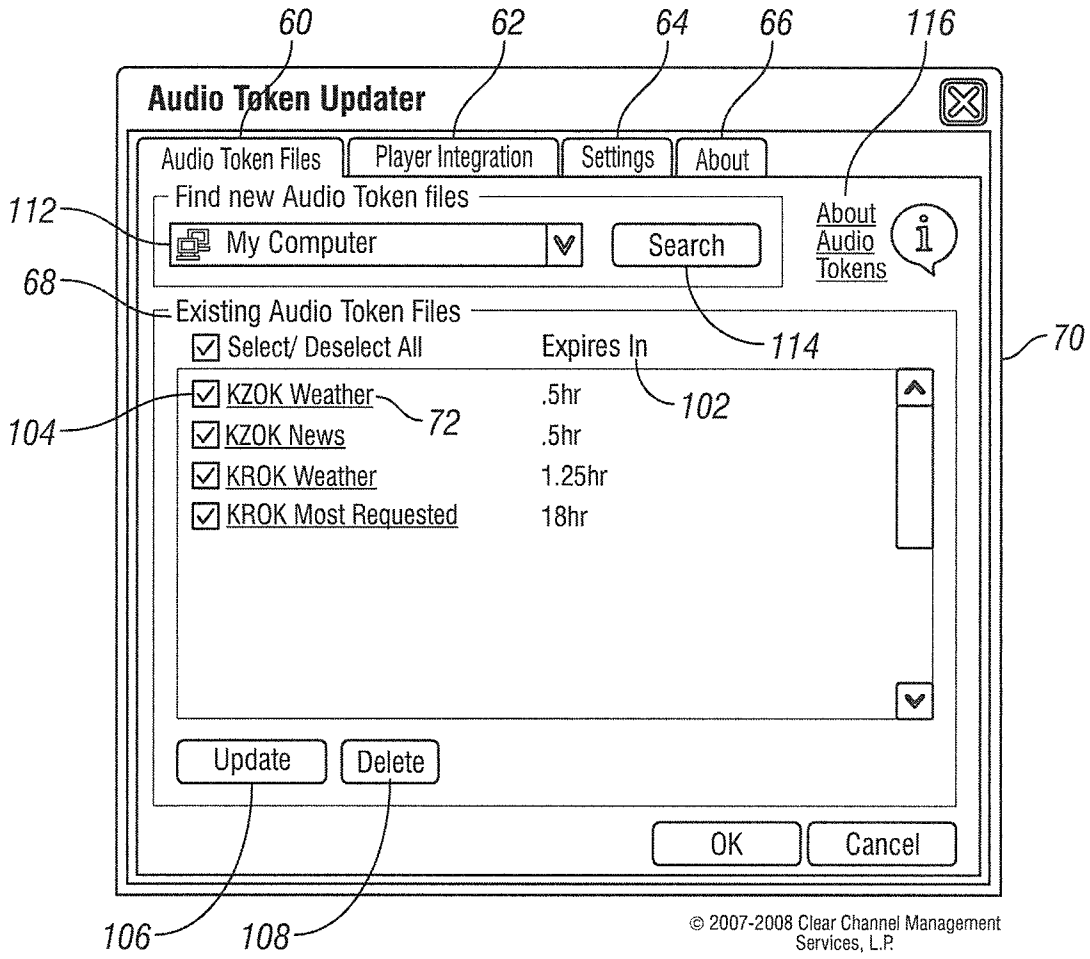
60
62
64
66
116
Audio Token Updater
Audio Token Files
Player Integration
Settings
About
112
Find new Audio Token files
My Computer
Search
About Audio Tokens
68
Existing Audio Token Files
Select/ Deselect All
Expires In
114
70
104
KZOK Weather
72
.5hr
102
KZOK News
.5hr
KROK Weather
1.25hr
KROK Most Requested
18hr
Update
Delete
OK
Cancel
106
108
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FIG. 5

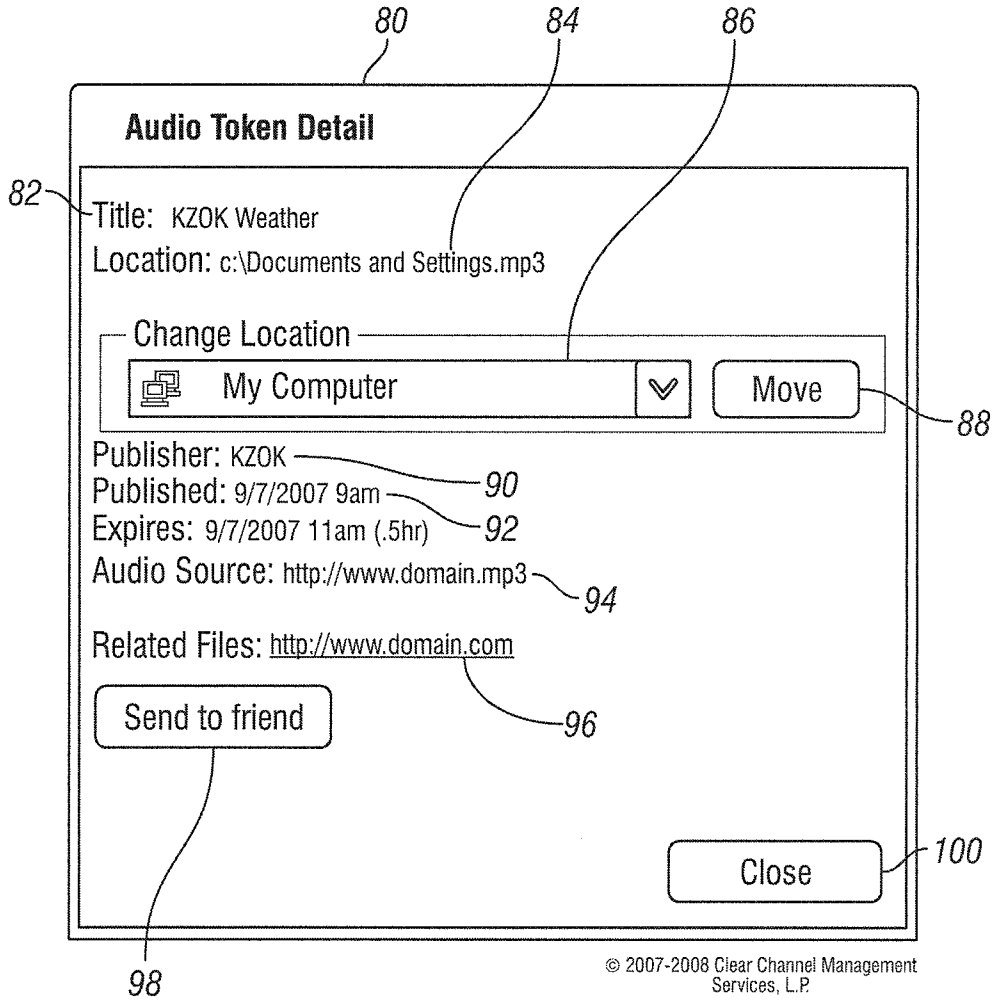
80
84
86
Audio Token Detail
82
Title: KZOK Weather
Location: c:\Documents and Settings.mp3
Change Location
My Computer
Move
88
Publisher: KZOK
90
Published: 9/7/2007 9am
92
Expires: 9/7/2007 11am (.5hr)
Audio Source: http://www.domain.mp3
94
Related Files: http://www.domain.com
96
Send to friend
98
Close
100
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FIG. 6

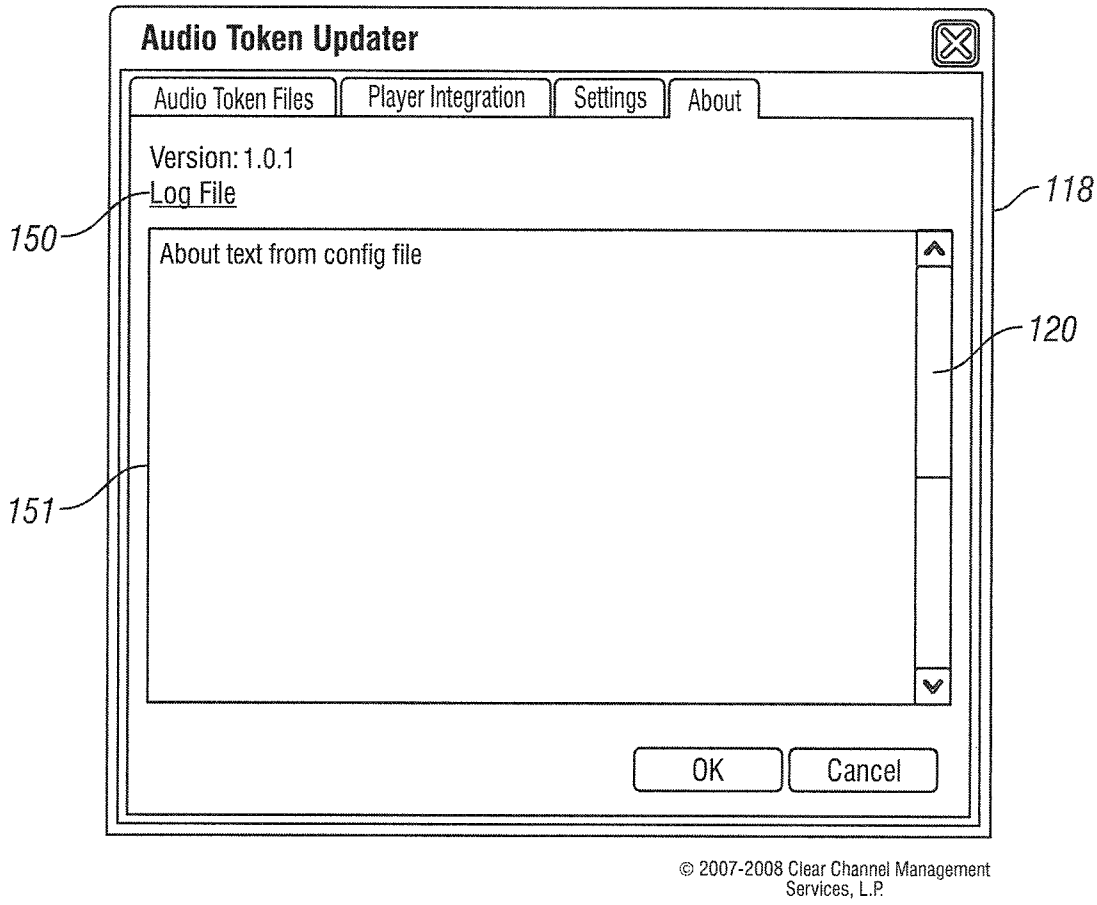
Audio Token Updater
Audio Token Files
Player Integration
Settings
About
Version: 1.0.1
Log File
About text from config file
OK
Cancel
150
151
118
120
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FIG. 7

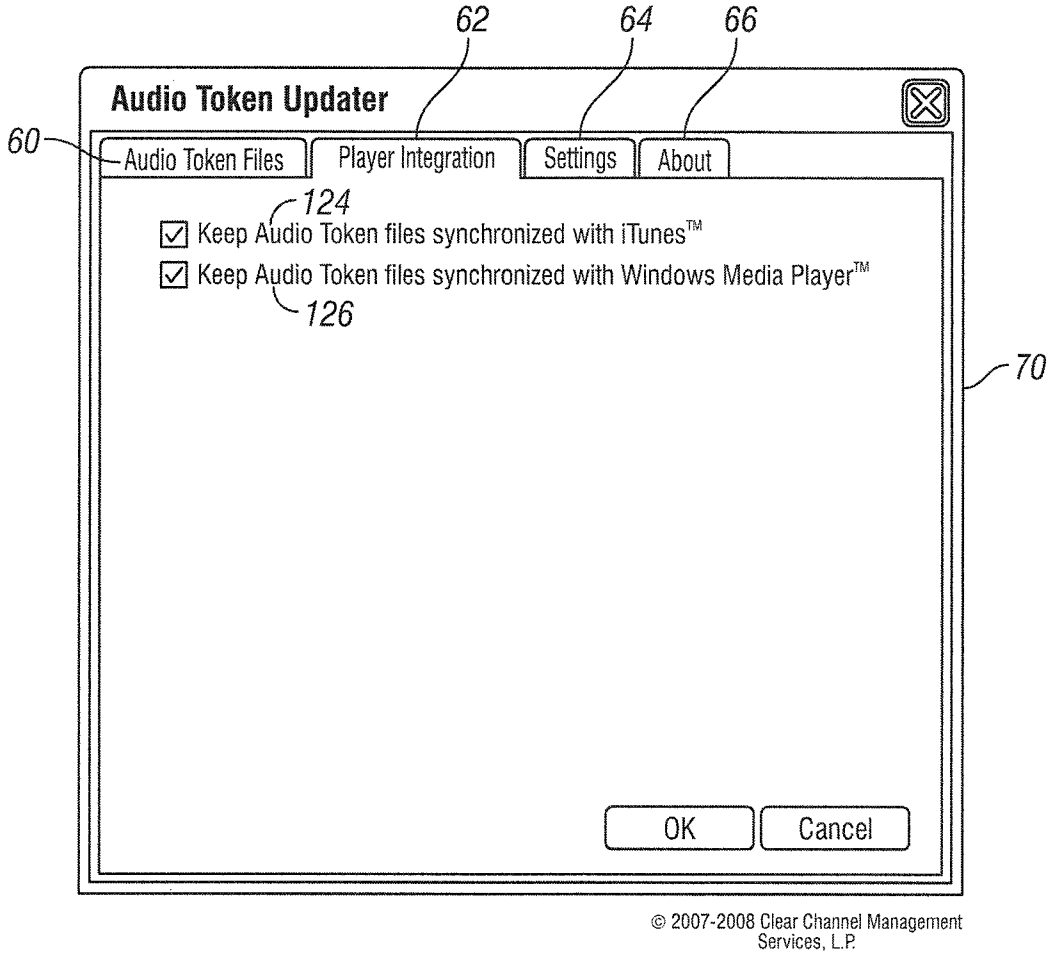
62
64
66
Audio Token Updater
60
Audio Token Files
Player Integration
Settings
About
124
Keep Audio Token files synchronized with iTunes™
Keep Audio Token files synchronized with Windows Media Player™
126
70
OK
Cancel
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FIG. 8

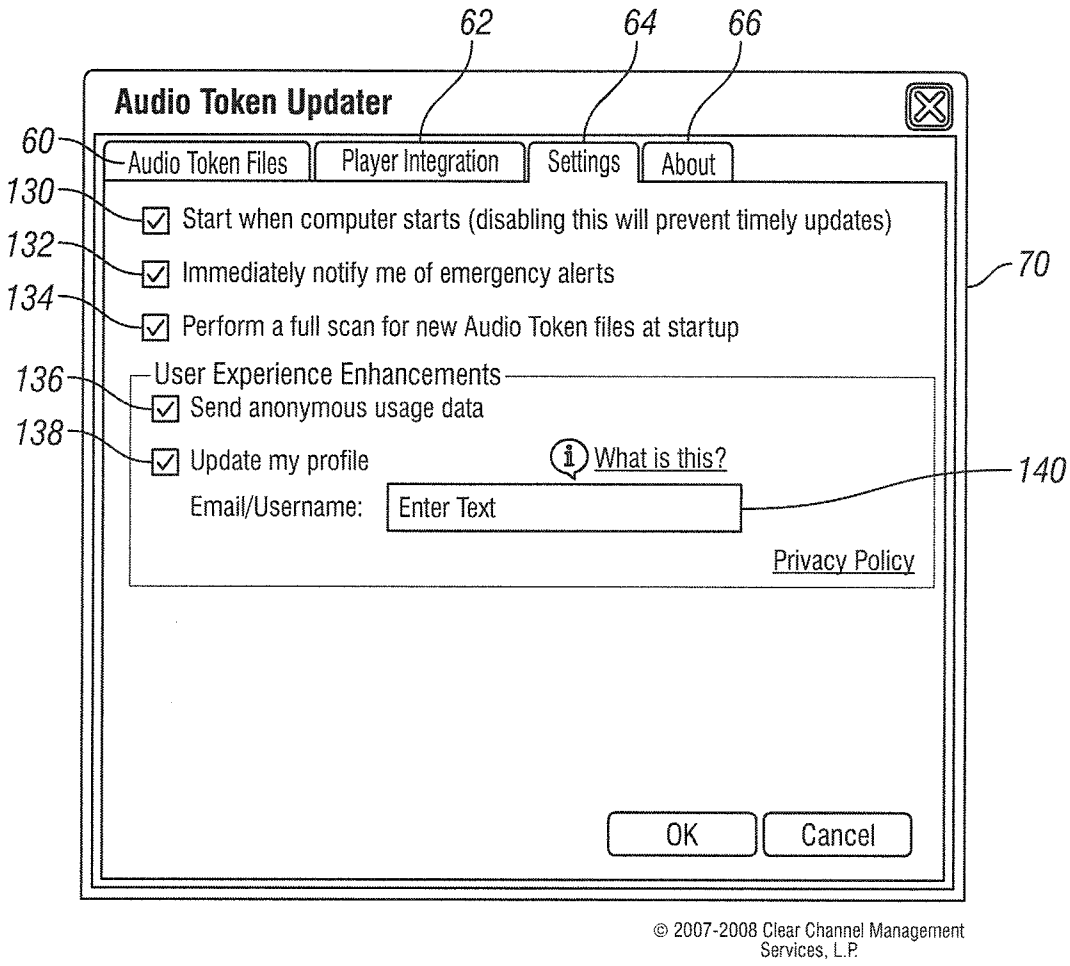
62
64
66
Audio Token Updater
60
Audio Token Files
Player Integration
Settings
About
130
Start when computer starts (disabling this will prevent timely updates)
132
Immediately notify me of emergency alerts
134
Perform a full scan for new Audio Token files at startup
70
User Experience Enhancements
136
Send anonymous usage data
138
Update my profile
What is this?
140
Email/Username:
Enter Text
Privacy Policy
OK
Cancel
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FIG. 9

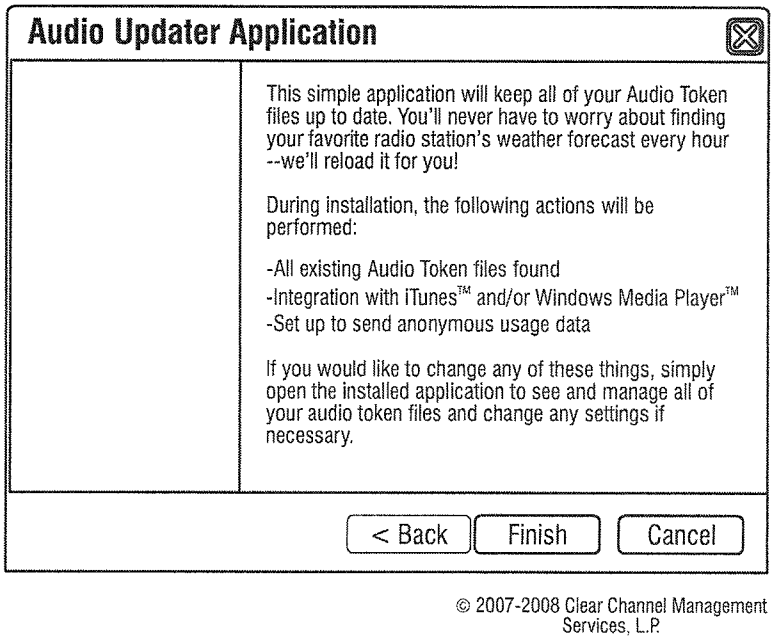
Audio Updater Application
This simple application will keep all of your Audio Token files up to date. You'll never have to worry about finding your favorite radio station's weather forecast every hour --we'll reload it for you!
During installation, the following actions will be performed:
-All existing Audio Token files found
-Integration with iTunes™ and/or Windows Media Player™
-Set up to send anonymous usage data
If you would like to change any of these things, simply open the installed application to see and manage all of your audio token files and change any settings if necessary.
< Back
Finish
Cancel
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FIG. 10

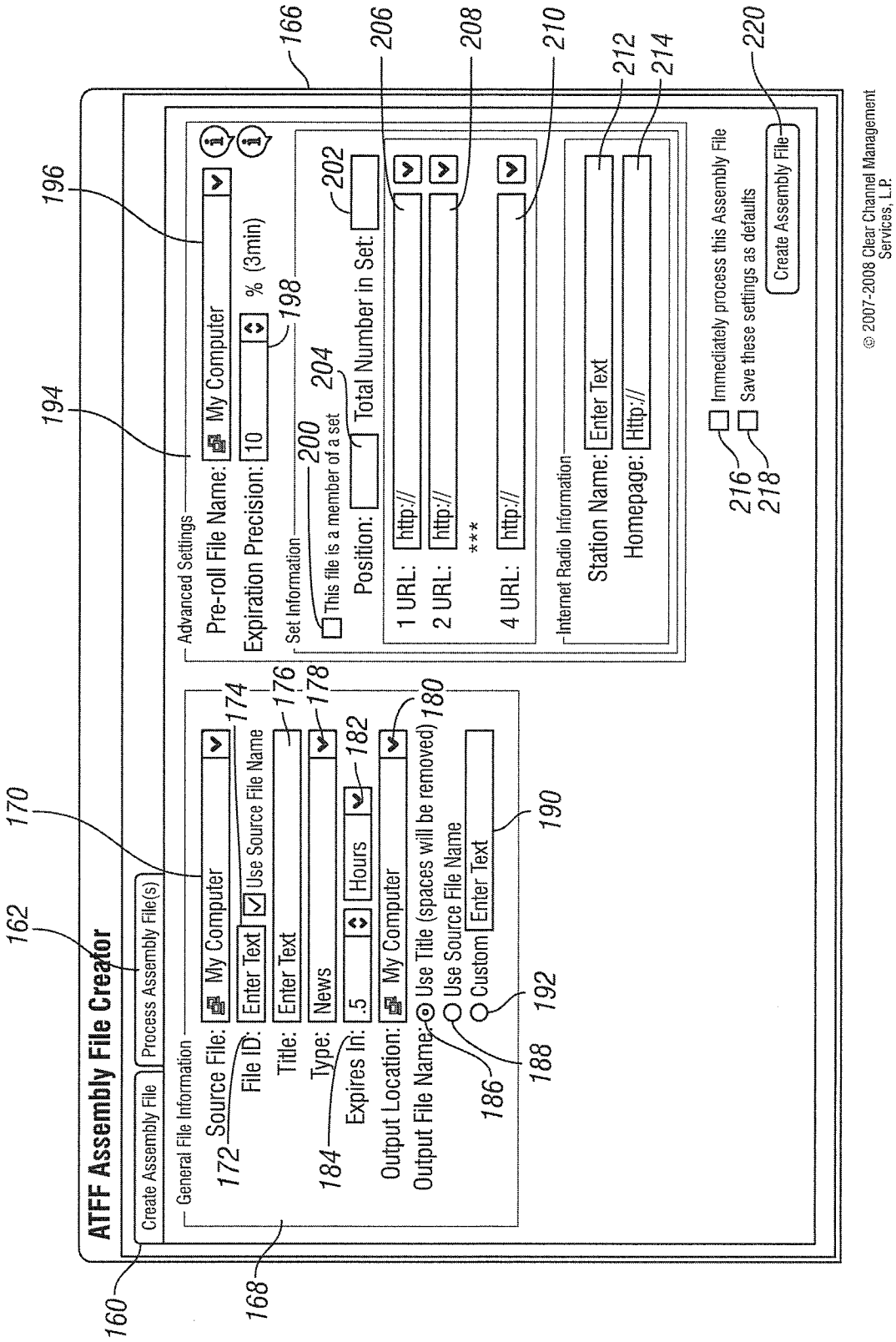
ATFF Assembly File Creator
Create Assembly File
Process Assembly File(s)
General File Information
Source File:
My Computer
File ID:
Enter Text
Use Source File Name
Title:
Enter Text
Type:
News
Expires In:
5
Hours
Output Location:
My Computer
Output File Name:
Use Title (spaces will be removed)
Use Source File Name
Custom
Enter Text
Advanced Settings
Pre-roll File Name:
My Computer
Expiration Precision:
10
% (3min)
Set Information
This file is a member of a set
Total Number in Set:
Position:
1 URL:
http://
2 URL:
http://
***
4 URL:
http://
Internet Radio Information
Station Name:
Enter Text
Homepage:
Http://
Immediately process this Assembly File
Save these settings as defaults
Create Assembly File
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FIG. 11

Name	Preferred	Datatype	Detail
FileVersionNumber	Yes	Variable Character	A file version number may be internal to the system. This attribute may be used by the updater software to differentiate between different dynamic audio file versions.
UniqueIdentifier	No	Variable Character	The unique identifier of the file. This identifier may be globally unique. It may be an index into a database. In some embodiments, it may also be the watermark identification.
GMToffset	Yes	Whole	Positive or negative offset in hours from GMT for date values. This attribute may be used to calibrate the DateTimePublished and DateTimeExpires values to the time zone of the updater installer. This attribute may be useful for files retrieved from different time zones.
DateTimePublished	Yes	DateTime	A date when the current version of the file was created.
DateTimeExpires	Yes	DateTime	A date when the current version of the file expires and the audio content should be replaced with updated content from the primary source link specified in the SourceURL.
ExpiresResolution	No	Integer	The maximum number of seconds by which it is permissible for the updater software to shift an update request. This may be used by the updater software which will generate a random number within this range so that all of the requests for updates may be spread out over a period of time to avoid instantaneous server load.
SourceURL	Yes	Variable Character	This may be a fully formed URL file path comprising a primary source link. In some embodiments, it may be publicly available on the internet.
BackupSourceURL	No	Variable Character	This may be a fully formed URL file path comprising an alternative source link.
AlertURL	No	Variable Character	This may be a fully formed URL file path comprising a redirection source link.
ContentType	No	Variable Character	May describe the type of audio content, such as News, Weather, Traffic, Sports, Music, Talk, EmergencyAlert.
Publisher	Yes	Variable Character	This may refer to a radio station or other source that is distributing, creating and updating the file.
Title	Yes	Variable Character	This may specify the title of the audio content or the type of dynamic audio file.
ContentStartTime	No	Int	Number of seconds into the audio portion of the file that the content starts. Audio content prior to the start time may be considered a preamble that may be ignored, skipped over or stripped out by the updater software.
SetMember	No	Bit	This indicates whether or not a part of a set.
SetPosition	No	Int	If a set member, the location of this dynamic audio file in the set.
SetURLList	No	Variable Character	A delimited list of URLs in order for the entire set, including the current file. The delimiting character may be URL safe and may be a character or combination of characters never found in a URL.

Table 1

Dynamic Audio File Attribute	ID3v2 Frame	Detail
	File Type	File Type = MP3 / dynamic audio file. This is the ID3v2 frame that the updater software may refer to in order to determine whether to treat the MP3 as a dynamic audio file.
FileVersionNumber	n/a	This attribute may not have a semantic match within the ID3v2 standard and may not be placed in any of the standard ID3v2 fields.
UniqueIdentifier	Unique MP3 Identifier	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
GMToffset	n/a	This attribute may not have a semantic match within the ID3v2 standard and may not be placed in any of the standard ID3v2 fields.
DateTimePublished	Date of Recording, Time of Recording	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
DateTimeExpires	n/a	This attribute may not have a semantic match within the ID3v2 standard and may not be placed in any of the standard ID3v2 fields.
SourceURL	Primary Source Link	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
BackupSourceURL	User Defined URL Link Frame	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
AlertURL	n/a	This attribute may not have a semantic match within the ID3v2 standard and may not be placed in any of the standard ID3v2 fields.
ContentType	Content Type	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
Publisher	Publisher	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
Title	Title	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
ContentStartTime	ID3v2 Chapter Frame Addendum	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
SetMember	Part of a Set	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
SetPosition	Track Number / Position in Set	Semantic meaning as described in Table 1. Behavior may vary widely across different platforms that implement ID3v2 support.
SetURLList	n/a	This attribute may not have a semantic match within the ID3v2 standard and may not be placed in any of the standard ID3v2 fields.

Table 2

Attribute	Category	Destination	Detail
FileVersionNumber	Dynamic Audio File Attribute	ID3v2 Header	This may be used as the value to place into the dynamic audio file header when it is created.
UniqueIdentifier	Dynamic Audio File Attribute	ID3v2 Header	This may be used as the value to place into the dynamic audio file header when it is created.
GMToffset	Dynamic Audio File Attribute	ID3v2 Header	May be exposed in the user interface and may read from system.
DateTimePublished	Dynamic Audio File Attribute	ID3v2 Header	This may be used as the value to place into the dynamic audio file header when it is created.
DateTimeExpires	Dynamic Audio File Attribute	ID3v2 Header	Exposed in user interface as "add X hours" or "add X days."
ExpiresResolution	Dynamic Audio File Attribute	ID3v2 Header	
SourceURL	Dynamic Audio File Attribute	ID3v2 Header	This may be a directory value. The filename may be appended to this based on the logic discussed in "Output File."
BackupSourceURL	Dynamic Audio File Attribute	ID3v2 Header	This may be a directory value. The filename may be appended to this based on the logic discussed in "Output File."
AlertURL	Dynamic Audio File Attribute	ID3v2 Header	
ContentType	Dynamic Audio File Attribute	ID3v2 Header	May be bound in the user interface as the type of audio content such as News, Weather, Traffic, Sports, Music, Talk, or EmergencyAlert.
Publisher	Dynamic Audio File Attribute	ID3v2 Header	
Title	Dynamic Audio File Attribute	ID3v2 Header	
ContentStartTime	Dynamic Audio File Attribute	ID3v2 Header	Not in assembly XML file or user interface. This may be programmatically determined based on the length of the preamble.
SetMember	Dynamic Audio File Attribute	ID3v2 Header	
SetPosition	Dynamic Audio File Attribute	ID3v2 Header	Greyed out in the user interface unless SetMember is checked.
SetURLList	Dynamic Audio File Attribute	ID3v2 Header	Greyed out in the user interface unless SetMember is checked.
Internet Radio Station Name	ID3v2 attribute	ID3v2 Header	
Internet Radio Station Owner	ID3v2 attribute	ID3v2 Header	
Copyright Message	ID3v2 attribute	ID3v2 Header	
Official Internet Radio Station Home Page	ID3v2 attribute	ID3v2 Header	
Official Audio File Webpage	ID3v2 attribute	ID3v2 Header	This field may include a link to the updater installer.
Content Location	File Path	Audio content	This may be the audio content in ".wav" or ".mp3" format.
PreRoll Location	File Path	Audio content	This audio file comprising the preamble may be prepended to the audio content (.wav or .mp3).
Output Directory	File Path	n/a	This may be the local file path where the resultant file may be output.
Output File	File Path	n/a	If this is left null, the output file may have the same name as the Content Location file name (.mp3 only).

Table 3

Attribute	Exposed in User Interface	Exposed in Configuration File	Detail
FileVersionNumber		Yes	Defaults to 1.
UniqueIdentifier	Yes		
GMToffset			Reads from system.
DateTimePublished			Reads from system.
DateTimeExpires.Datepart	Yes	Yes	Hours or days.
DateTimeExpires.Count	Yes	Yes	Up to 99.
ExpiresResolution	Yes	Yes	
SourceURL		Yes	This may be a directory value. The filename may be appended to this based on the logic discussed in "Output File."
BackupSourceURL		Yes	This may be a directory value. The filename may be appended to this based on the logic discussed in "Output File."
AlertURL		Yes	
ContentType	Yes	Yes	Bound in the user interface as the type of audio content such as News, Weather, Traffic, Sports, Music, Talk, or EmergencyAlert.
Publisher		Yes	
Title	Yes		
SetMember	Yes	Yes	
SetPosition	Yes		May be greyed out in the user interface unless SetMember is checked.
SetURLList	Yes	Yes	May be greyed out in the user interface unless SetMember is checked.
Internet Radio Station Name	Yes	Yes	
Internet Radio Station Owner		Yes	
Copyright Message		Yes	
Official Internet Radio Station Home Page	Yes	Yes	
Official Audio File Webpage		Yes	This field may include a link to the updater installer.
Content Location	Yes		This may be the audio content in ".wav" or ".mp3" file format.
PreRoll Location	Yes	Yes	This may be the audio content in ".wav" or ".mp3" file format.
Output Directory	Yes	Yes	This may be the local file path where the resultant file may be output.
Output File	Yes		

Table 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/77953

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 17/00 (2008.04)
USPC - 700/94
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(8) - G06F 17/00 (2008.04)
USPC - 700/94

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 707/104.1

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST (PGPB, USPT, EPAB, JPAB); Google Scholar
Search Terms Used: dynamic, audio, mp3, id3, url, uri, source, location, file, metatag, metadata

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/0079326 A1 (DATTA et al.), 05 April 2007 (05.04.2007), entire document, especially paras [0011], [0030]-[0033], [0043]-[0045], [0056], [0060], [0064], [0070]-[0076], [0079]	1-15
A	US 2007/0276928 A1 (RHOADS et al.), 29 November 2007 (29.11.2007), entire document	1-15
A	US 2007/0255965 A1 (MCGUCKEN), 01 November 2007 (01.11.2007), entire document	1-15

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 November 2008 (29.11.2008)	16 DEC 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)