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(54) Title: METHOD AND SERVER FOR TRANSMITTING AUDIO MESSAGE

(57) Abstract: The invention relates to a server for transmitting an audio message and to a method of transmitting an audio message. The server (116) comprises: an audio database (120) including given sections of an audio program transmitted in an electronic media; a data transfer interface (130); browsing means (124, 126) for providing given sections of the audio program transmitted in the electronic media for browsing in a data transmission connection (138, 142) set up via the data transfer interface (130); selection means (128, 136) for receiving a selection and audio message recipient data from the data transmission connection (138, 142), the selection specifying the desired given section of the audio program transmitted in the electronic media; and means (134) for generating the audio message and transmitting the audio message to the recipient specified in the recipient data.

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For two-letter codes and other abbreviations, refer to the “Guidance Notes on Codes and Abbreviations” appearing at the beginning of each regular issue of the PCT Gazette.
METHOD AND SERVER FOR TRANSMITTING AUDIO MESSAGE

FIELD

[0001] The invention relates to a method of transmitting an audio message and to a server for transmitting an audio message.

5 BACKGROUND

[0002] The development of communication systems creates new kinds of services. MMS (Multimedia Messaging Service) is a new kind of messaging service, corresponding to an SMS message (Short Message Service). However, an MMS message may include three different elements at the same time: text, an audio message and a picture. Some telephone models include a camera, allowing photographs taken at the spot to be added to an MMS message. The prediction is that as early as at the end of the year 2002, a significant part of mobile phones sold in Finland are MMS telephones. The user of an MMS phone is able to create a very personalized message, for instance a greeting, birthday congratulation or the like message. The structure and standard of an MMS message enable the transmission of the message, instead of or in addition to using an MMS phone, also as email to an email address.

[0003] The text and speech parts of a message can be generated with the phone in the usual manner, but new methods of use are required for making pictures and other audio content. Pictures and music can be added to the message as files, which the user is able to load into his phone for instance from a personal computer. However, this is quite cumbersome, since it requires the use of a personal computer, which is difficult or even impossible when one is away from home or the office. The generation of a message also creates a technical problem, especially in finding audio elements created by others than the user of the mobile phone and adding them to the message. Technical aspects to be considered include effective use of the data transmission capacity of the communication system and, thereby, the costs of the message, easy retrieval of an audio element, and adding the audio element to the speech part of the message.

[0004] As is known, various ringing tones can be ordered to a mobile phone, but the retrieval of the desired ringing tone using for instance the WAP (Wireless Application Protocol) is slow due to the large number of ringing tones listed. A ringing tone can also be selected based on a list in an ad in a paper or using a www server (World Wide Web) on the Internet, but these
means are subject to acquiring the paper or a connection to the www server.

BRIEF DESCRIPTION

[0005] The object of the invention is to provide an improved method for transmitting an audio message and an improved server for transmitting an audio message.

[0006] As an aspect of the invention is provided a method for transmitting an audio message, the method comprising: transmitting an audio program in an electronic media; setting up a data transmission connection to a server including given parts of the audio program of the electronic media, browsing the given parts of the audio program transmitted in the electronic media, and selecting the desired given part of the audio program transmitted in the electronic media to the audio message; transmitting audio message recipient data to the server; and generating the audio message in the server and transmitting the audio message from the server to the recipient specified by the recipient data.

[0007] As an aspect of the invention is provided a server for transmitting an audio message, the server comprising: an audio database including given parts of an audio program transmitted in an electronic media; a data transfer interface; browsing means for providing given parts of the audio program transmitted in the electronic media for browsing in a data transmission connection set up via the data transfer interface; selection means for receiving a selection and audio message recipient data from the data transmission connection, the selection specifying the desired given part of the audio program transmitted in the electronic media; and means for generating the audio message and transmitting the audio message to the recipient specified in the recipient data.

[0008] The preferred embodiments of the invention are disclosed in the dependent claims.

[0009] The invention is based on logical interconnection of an audio program of an electronic media and a server including given sections of the audio program of the electronic media. When the listener hears a section of the audio program that he wants to add to an audio message, he sets up a connection to the server, wherein he is not offered a huge menu including all the audio programs of the media; instead, he is offered given sections of the audio program for browsing that were shown lately in the media, of which the user
easily finds the desired one by browsing.

[0010] The method and server of the invention provide a plurality of advantages. In a way, the user hears a selection of available audio elements as he listens to a given media, avoiding wasting expensive data transmission capacity on this. Finding the desired audio element is easy in the manner described, since listening to the audio element and its retrieval are events that occur closely in time. The invention thus provides a simple but effective concept for creating an audio message and transmitting it using a remote-controlled server. In an embodiment, speech received from the data transmission connection from the listener is mixed in the server to the audio message, allowing the audio element and speech to be joined together efficiently in the server and not in the user’s MMS phone, for example. In fact, using the invention does not require an MMS phone at all, but the message can be generated also for instance using a telephone of a regular fixed network.

15 LIST OF FIGURES

[0011] In the following, preferred embodiments of the invention will be described in detail with reference to the accompanying drawings, in which

Figure 1 is a simplified block diagram showing a server for transmitting an audio message, illustrating the internal structure of the server and its interfaces to other necessary devices;

Figure 2 is a time line showing the creation of an audio message as events succeeding each other in time; and

Figure 3 is a flow diagram illustrating a method of transmitting an audio message.

25 DESCRIPTION OF EMBODIMENTS

[0012] A server 116 for transmitting an audio message is described with reference to Figure 1. Figure 1 shows the internal structure of the server 116 and its interfaces to other necessary devices.

[0013] An audio program 108 is transmitted in an electronic media 100 to a receiver 110. In an embodiment, the electronic media 100 is a real-time electronic media, e.g. radio or television. The radio may be e.g. an FM radio (Frequency Modulation), an AM radio (Amplitude Modulation) or a DAB radio (Digital Audio Broadcasting). The audio program 108 may include other type of information besides audio, e.g. visual information when a television is concerned. The electronic media 100 may also be a seemingly real-time media
whose content is determined according to the listener's preferences. An example of such a seemingly real-time media is a net radio, wherein the programs are stored in a www server (World Wide Web), and from where the listener is able to listen to them when desired. It is important to observe that the transmissions of a net radio do not coincide for all listeners as they do in a conventional radio; but to an individual listener they are real-time, hence the term seemingly real-time. A transmission of the electronic media 100 can take place using known methods, e.g. as radio waves in the air, using a cable, using an optical cable, as a satellite transmission or as data packets transmitted over a data network.

[0014] Naturally, the receiver 110 is such that it is able to receive an audio program transmitted in said electronic media 100. Consequently, the receiver 100 may be e.g. a radio receiver, a car radio, a television, a personal computer, a portable computer, a PDA device (Personal Digital Assistant), a device of type Nokia® Communicator®, a radio system subscriber terminal comprising a broadcast receiver or another known device for receiving the audio program 108 transmitted by the electronic media 100, particularly a real-time or seemingly real-time audio program. The receiver 110 comprises a loudspeaker, an earpiece or another known device for converting the received audio program 108 into voice 112 heard by a listener 114.

[0015] The electronic media 100 comprises an audio library 102, wherein the audio programs to be transmitted are stored, and an audio program production and transmission system 106 in data transmission connection 104 to the audio library 102. In an embodiment, the electronic media 100 is a broadcasting company, whereby the necessary audio library 102 and the audio program production and transmission system 106 can be implemented by Jutel® Oy's RadioMan®, which is a system-level solution including all necessary components. Said solution includes all necessary devices for creating, scheduling, organizing, transmitting and archiving audio programs. Although Figure 1 shows the audio library 102 as one database, it may naturally be composed of different devices, e.g. various database servers and automatic CD (Compact Disc) players, so-called CD jukeboxes. Database servers may be implemented e.g. by SQL databases (Structured Query Language) including associated database servers, e.g. IBM® DB2® database software or Oracle® database software. The production and transmission system 106 is a complex system comprising radio transmitters, antennas, automatic music and
program replay devices, editors' workstations for designing and mixing programs, an actual audio production studio including various devices, etc.

[0016] The server 116 for transmitting an audio message is described next. As Figure 1 shows, the server 116 is in a data transmission connection 118 to the electronic media 100. The server 116 comprises an audio database 120 including given sections of the audio program 108 transmitted in the electronic media 100. The data transmission connection 118 is implemented in known manners, e.g. using a circuit-switched or a packet-switched fixed or temporary connection. The audio program 108 includes e.g. talk shows, pieces of music and ads. Depending on copyright contracts and the interest of the public, given sections of the audio program 108 are selected to the audio database 120 of the server 116. If the electronic media 100 is a radio, given sections of the audio program 108 may be pieces of music played in the audio program 108. The given section may be an entire piece of music or part of a piece of music. One piece of music may also be divided into several parts, e.g. the beginning, middle and end sections of the piece or alternatively into a chorus section and an instrumental section or into sections by strophes, naturally depending on the structure characteristic of said music style. For example, the division principles for popular music and classical music may be different. The given sections of the audio program 108 may also be e.g. talk shows, parts of talk shows, news, sports news, jokes, sketches, bulletins or elements present in 'talk radio' transmissions, such as cracks made by the host of the show.

[0017] The given sections of the audio program 108 may be selected in the electronic media 100, whereby such sections of the audio program 108 that are not provided to the listener for addition to the audio message do not have to be transmitted in the data transmission connection 118. The given sections of the audio program 108 may also be selected in the server 116, whereby no special apparatus/software is needed for it in the electronic media 100, but the audio program 108 may be transmitted as such from the audio library 102 of the electronic media 100 over the data transmission connection 118 to the server, where the audio program 108 is stored in the audio database 120, and given sections may be selected later of the audio program 108 stored in the audio database 120.

[0018] The structure of the server 116 is described as logical entities, whose practical implementation may vary. Depending on the extent of the
system, the server may comprise several computers and several database servers. The server comprises not only the audio database 120 but also a data transmission interface 130, via which given sections of audio programs are provided for selection to be added to an audio message, and, in addition, a computer or computers for performing the necessary processing. In our example, blocks 124, 126, 128, 132, 134, and 136 denote the processing required. It is apparent to a person skilled in the art that the structure of the blocks chiefly illustrates logical, functional entities, and the number of said blocks can be more or fewer than in our exemplary solution. The number of blocks and their cooperation depends on the necessary processing capacity and a reasonable integration degree. In smaller servers 116, the functions of said blocks can be combined to be executed for instance in one computer, but in large systems, the implementation of one block may be subject to the use of several computers. The processing capacity of the computers used also affects the integration degree. Since the blocks are mainly implemented as software operating in a processor, the different blocks may be composed of software including the routines required for implementing the functions.

[0019] Other data required by the server 116 may also be stored in the audio database 120, e.g. server billing data, an event log, and a play list to be described later.

[0020] The server 116 comprises an audio mixer 126 for implementing a user interface for electronic business. Instead of electronic business, or e-business, the term multimedia business could also be used. The audio mixer 126 provides browsing means for providing given sections of the audio program 108 transmitted in the electronic media 100 for browsing over a data transmission connection 138, 142 set up via the data transmission interface 130. The audio mixer 126 also provides selection means for receiving a selection and audio message recipient data from the data transmission connection 138, 142. Said selection determines the given section to be added to the audio message of the audio program 108 transmitted in the electronic media 100. For implementing the selection means, the server 116 comprises an audio interface 128 that is connected to the audio mixer 126 and processes data coming from and transmitted to the data transmission connection 138, 142.

[0021] The audio mixer 126 can be implemented in known manners. In an embodiment, a system described in US patent application 09/665008 and incorporated herein by reference is used. Said system enables flexible
choice of pieces of music by the use of the dual tone multi frequency (DTMF) dialling of a regular phone or a mobile phone, for example. In this embodiment, the server 116 comprises a detector 136 for receiving and interpreting dual tone multi frequency dialling.

[0022] The browsing means can be used to browse given sections of the audio program 108 forward and/or backward. In an embodiment, the browsing means are used to browse sideways at a given section of the audio program 108, i.e. the similar sections of different audio programs are browsed. In this case, in an embodiment, the server 116 comprises means for classifying the given sections of the audio program 108 included in the audio database 120 by a predetermined criterion into different classes, the given sections belonging to the same class being similar. The audio mixer 126 provides for instance the following functions: pause command, forward wind command, backward wind command, stop command, reset command, skip command, tempo command, volume adjustment command, equalization command, login command, and logout command. The audio mixer 126 may also include a function allowing a side track, indicating for instance the name and performer of a piece of music audible at that particular moment and mixed into the audio stream, to be made audible at the given section of the audio program.

[0023] The browsing and selection means can naturally be implemented also using other suitable technologies, for instance the WAP protocol (Wireless Application Protocol). The selection of the method of implementing the browsing and selection means also depends on the implementation of the data transmission interface 130. The data transmission interface 130 may be implemented as a line interface, e.g. a T1 interface or a SLIC interface (Subscriber Line Interface). The data transmission interface 130 sets up the data transmission connection 138 via a telecommunication network 140 to a terminal 144 at the listener's 114 disposal. The terminal 144 may be for instance a telephone system subscriber terminal, a telephone, a personal computer, a portable computer, a PDA device (Personal Digital Assistant), a device of type Nokia® Communicator®, a radio system subscriber terminal or another known device enabling connection set-up over the telecommunication network 140 between the server 116 and the terminal 144. Thus, the connection 142 from the terminal 144 to the telecommunication network 140 can be wired or wireless. In an embodiment, the listener's 114 terminal 144 and receiver 110 can be in the same physical device, e.g. a mobile telephone including a broadcast
receiver and able to act as an MMS telephone at the same time, although this is not necessary. The terminal 144 can thus be used to remote control the server 116, for instance by dual tone multi frequency dialling using the keyboard of the terminal 144.

[0024] The server 116 also comprises a message generator 132 for generating the audio message and transmitting an audio message 152 to a recipient 166 determined in the recipient data. The recipient data include an email address or a telephone number, i.e., if desired, the audio message 152 can be transmitted to the recipient 166 using different manners, e.g. to an email or a mobile system subscriber terminal, such as an MMS telephone. In an embodiment, the audio message is an MMS message.

[0025] In an embodiment, the given sections of the server 116 of the audio program 108 of the electronic media include a play list of pieces of music, e.g. an ‘on air’ play list. In accordance with Figure 1, the electronic media 100 may transfer the play list in real time, at regular intervals or as needed over a data transmission connection 172 to a synchronization part 124, which synchronizes the live transmission 108 with the supply of the server 116, allowing the listener 114 to easily find exactly the given section of the audio program 108 he hears in the audio database 120 of the server 116. If a service is concerned, wherein the user himself is able to select the desired audio program 108, e.g. net radio, then information can be transferred over the data transmission connection 172 from the electronic media 100 to the server 116 indicating which audio program 108 was transmitted to the listener’s 114 receiver 110.

[0026] In an embodiment, the server also comprises mixing means for mixing the listener’s 114 speech received over the data transmission connection 138, 142 to the audio message 152 in the server 116. The mixing means can be arranged as part of the message generator 132. Mixing takes place seemingly in real time. This can be implemented by the server 116 playing the selected section of the audio program 108 to the listener, and the mixing means 132 determining the timing of the mixing between the section of the audio program selected and the listener’s 114 speech on the basis of the timing between the playing of the selected section of the audio program 108 and the listener’s 114 speech. Since the mixing is carried out in the server 116, the selected section of the audio program 108 has to be transferred only in one direction from the server 116 to the terminal 144, and only the listener’s speech is transferred from the terminal 144 to the server 116, data transmis-
sion connection 138, 142 capacity is saved, allowing the service to be provided to the listener 114 more inexpensively. Furthermore, if the listener's speech and the selected section of the audio program are mixed into the same file, the listener does not want to transmit the received audio message forward, whereby the service may be still more inexpensive as the copyright fees are likely to fall.

[0027] The audio message 152 created in the server is transferred to the recipient 166 for instance in the manner shown in Figure 1. There is a connection 164 from the server 116 via a telecommunication system 150 to a recipient's 170 terminal 166. The recipient's 170 terminal 166 can thus be for instance a personal computer, a portable computer, a PDA device (Personal Digital Assistant), a device of type Nokίa® Communicator®, a radio system subscriber terminal or another known device capable of setting up a connection over the telecommunication system 150 between the server 116 and the terminal 166 and capable of downloading and listening to the created audio message 152.

[0028] In an embodiment, the telecommunication system 150 is thus a mobile telephone system. In accordance with Figure 1, the mobile telephone system 150 comprises a gateway 154, via which the server 116 is coupled to an MMS centre 158. There is a further connection from the MMS centre 158 to other infrastructure of the mobile telephone network 162, for instance to a mobile services switching centre, a base station controller, and a base station, via which the audio message 152 is finally delivered to the terminal 166. Finally, there is a wireless radio link 164 from the base station to the terminal 166. In other words, there may exist several connections from the server 116 to different operators' telecommunication systems 150, for instance to mobile telephone systems, and via the Internet to various email systems. The MMS is not restricted to a particular radio technology, i.e. the mobile telephone system may be for instance a GSM system (Global System for Mobile Communications), a WCDMA system (Wideband Code Division Multiple Access) or another radio system supporting the MMS.

[0029] In an embodiment, the audio message is billed in the telephone bill of the listener's 114 subscriber equipment 144, i.e. the sender of the message. If the billing is to include, in addition to or instead of content-based billing, the use of the resources of the telecommunication system 150, e.g. based on the number of data packets sent, then there may be a connection
from the infrastructure 162 of the telecommunication system 160 to a billing part 174 in the server 116, from which the billing data are further transferable to the billing of the listener's 114 telecommunication system 140.

[0030] The server 116 also comprises a control part 134 for controlling the operation of the server 116, and also for monitoring specific functions, e.g. the management of copyright fees. In an embodiment, the server comprises, in the control part 134, means for adding text and/or a picture to the audio message. The listener 114 may generate the text with his terminal 144, the picture may also originate from the listener's terminal 144, for instance shot with a digital camera in the terminal 144 or a digital camera connected to the terminal 144. The picture may also be the cover of a disc of a piece of music included in the selected section of the audio program 108 and stored in the audio database 120 or the picture of the performer of the selected section of the audio program 108. The MMS supports at least the following file formats: text, for audio AMR (Advanced Multirate), and for pictures JPEG (Joint Photographic Experts Group), and GIF (Graphics Interchange Format). Other suitable file formats for generating an audio message may also be used. When a moving picture is desired in an audio message, some file format suitable for video has to be used, for instance MPEG (Moving Picture Experts Group).

[0031] Figure 1 thus shows an entire system, wherein for instance the user 114 of the mobile telephone 144 listens to a radio program 108 at either a receiver 110 inbuilt in the mobile telephone 144 or another external receiver 110. The incoming program and particularly the music act as a stimulus for the listener 114, who sets up a connection 142 to the server 116 with his mobile telephone 144. The server 116 links given sections of the currently played radio program 108 to the mobile telephone 144. In practice, an MMS message is constructed by calling a service number, which at once plays the latest played piece(s) of music to the caller. The dual tone multi frequency keys can be used to scroll backward and forward on the program's play list selecting suitable music. The list of pieces of music played can be easily browsed and listened to backwards, and maybe a few pieces forward from the present moment. Moving 'sideways' from the play list is also possible; this means listening to pieces in the audio database 120 that have the same type of classification as the one in the play list. The keys of the mobile telephone 144 can be used to mark the bits listened to and desired, and request that an audio message be 'created from them, to which a 'speak', a greeting or the like, personally spoken
on the telephone, can be added either on top of the piece of music or as a separate portion. This way an MMS message is achieved, wherein the desired snatches of music and a ‘speak’ are constructed. Text and, when desired, a picture, can also be added to this message. This MMS message, constructed into a whole, can now be transmitted from the server 116 further to the desired recipients 170. If required, the picture of an MMS message can also be acquired from a broadcasting company’s service, e.g. an artist, a disc cover etc., but when more freely selectable pictures are desired, the service requires that the user browse the www pages of the service provider or the broadcasting company on the Internet, since browsing pictures with the mobile telephone 144 does not succeed in the same way as browsing pieces of music, which is ‘voice stream’ characteristic of a telephone.

[0032] In a business model, the income of a service is distributed to the mobile operator via billing of calls/messages and to the service content and service concept provider, which can be entirely or partly a broadcasting company. At a minimum, the share of the broadcasting company is to provide a real-time play list and a connection to the radio’s music database 102 against payment. The share of the broadcasting company may also include management of the server 116 providing the services, and billing of the services via the operator as chargeable service calls, but an operator or an external service provider may also play this role. However, the service is clearly profiled to the participating broadcasting company and its listeners. For this reason, the share of the broadcasting company in publishing and advertising the service is important. The music played by the broadcasting company also acts as a stimulus to the use of the service. Technically, adding advertising material to the MMS message to be transmitted to the user is also possible.

[0033] Next, the flow diagram of Figure 3 is used to illustrate a method of transmitting an audio message. At the same time, reference is made to Figure 2, which is a time line expressing the creation of an audio message as events succeeding each other in time.

[0034] The execution of the method starts at 300. Then, in 302, an audio program is broadcast in an electronic media. In Figure 2, at time t1, ‘Wild Thing’ by Jimi Hendrix is broadcast from the receiver 110 as an audio program 112, which the listener 114 hears. For some reason, said piece awakes the thought of another person 170 in the listener’s 114 mind. The reason may be for instance that the listener 114 met the other person 170 when said piece
was played.

[0035] Next, in 304, a data transmission connection 142A is set up to a server 116 containing given sections of the audio program 112 of the electronic media. At time t2, the listener 114 uses his terminal 144 to call the service number of a radio station called ‘Radio Rock’, thus establishing the connection 142A to the server 116.

[0036] Then, in 306, given sections of the audio program 112 broadcast in the electronic media are browsed. At time t3, a voice stream is transmitted to the listener’s 114 terminal 144 over a data transmission connection 142B, the voice stream including given sections of the audio program 112, i.e. pieces ‘Hotel California’, ‘Wild Thing’ and ‘Yesterday’.

[0037] Then, in 308, the desired given section of the audio program 112 broadcast in the electronic media is selected to the audio message. At time t4, the listener 114 has also used an embodiment allowing the user not only to browse given sections forward and/or backward but also to browse sideways at a given point, i.e. browse similar sections of different audio programs. The given sections of the audio program comprised by the server are classified by a predetermined criterion into different classes, the given sections belonging to the same class being similar. In our example, the predetermined criterion is the performer, i.e. samples of Jimi Hendrix' pieces ‘Wild Thing’, ‘Purple Haze’ and ‘All Along The Watchtower’ were sent to the listener 114 over the data transmission connection 142B. However, the listener 114 has selected ‘Wild Thing’, and control data indicative thereof are sent from the terminal 144 along the radio link 142A to the server 116. In an embodiment, the server 116 is controlled using dual tone multi frequency dialling.

[0038] At this point it should be pointed out that the radio link is bidirectional, i.e. reference number 142A denotes uplink traffic, using the terminology of a mobile system, and reference number 142B downlink traffic. In an embodiment, the data transmission connection 142A, 143B is set up using a subscriber terminal of the telephone system. In this case, the audio message can be billed in the telephone bill of the subscriber terminal.

[0039] Then, in 314, audio message recipient data are sent to the server 116. In an embodiment, the recipient data include an email address or a telephone number.

[0040] This is not separately shown in Figure 2, but is may be thought to occur for instance between times t4 and t5 or at some suitable time.
before the connection is released.

[0041] In accordance with an embodiment, in 310, the listener’s 114 speech, received along the data transmission connection 142A, is mixed into the audio message to be created in the server 116. The mixing is carried out seemingly in real time. This is achieved for instance in such a manner that the selected section of the audio program 112 is played from the server 116 to the listener, i.e. at time t5, ‘Wild Thing’ is played to the listener 114 via his terminal 144, and the timing between playing the selected section of the audio program 112 and the listener’s 114 speech determines the timing between the section of the audio program 112 selected in the mixing and the listener’s 114 speech. In our example, the listener utters, at a given point either before, during or after ‘Wild Thing’, the words ‘I love you’.

[0042] Finally, in 316, the audio message 164 is generated in the server 116, and in 318, the audio message 164 is sent from the server 116 to the recipient 166, 170 determined by the recipient data. At time t6, the audio message 164 leaves the server 116 for the recipient’s 170 terminal 166. The recipient 170 then hears the piece ‘Wild Thing’ and the listener’s message, ‘I love you’, mixed therein at his terminal 166. In an embodiment, the audio message is an MMS message. The recipient 170 of the audio message 164 thinks warm thoughts of the sender 114. The execution of the method ends in 320.

[0043] The electronic media used in the method may be a real-time electronic media, e.g. radio or television or then the electronic media may be a seemingly real-time media, whose content is determined according to the listener’s preferences. In an embodiment, in this case, the server 116 includes information about the audio program that was sent to the listener 114.

[0044] In an embodiment, given sections of the audio program 112 of the electronic media in the server 116 comprise a list of pieces of music to be played.

[0045] In an embodiment, in 312, text and/or a picture are added to the audio message. The picture may be the cover of a disc of a piece of music included in the selected section of the audio program 112 or the picture of the performer of the selected section of the audio program.

[0046] The method can be implemented with a server 116 of the type described in Figure 1, allowing the method to be modified in manners described in the description of Figure 1, but it is apparent that other kinds of servers including the environment are suitable for implementing the method. In
brief, the method can be characterized by three words; listen – create – send, i.e. in an embodiment, listen on the radio, create using a phone and send as an MMS message. The method enables a powerful expression using a simple and intuitive user interface.

[0047] Although the invention is described above with reference to the example according to the attached drawings, it is apparent that the invention is not limited thereto, but can be modified in a plurality of ways within the inventive idea disclosed in the appended claims. It is thus clear that although the examples describe the electronic media 100 and the server 116 as separate units, they can also be combined, whereby only one storage place for audio programs is required in the system. The solution described in the examples is a kind of ASP (Application Service Provider) application. The administrator of the server 116 may serve various electronic media, and the administrator of the server 116 may license the maintenance rights of the server 116 to foreign countries.
CLAIMS

1. A method of transmitting an audio message, characterized by
   transmitting (302) an audio program in an electronic media;
   setting up (304) a data transmission connection to a server including
   given sections of the audio program of the electronic media, browsing (306)
   the given sections of the audio program transmitted in the electronic media,
   and selecting (308) the desired given section of the audio program transmitted
   in the electronic media to the audio message;
   transmitting (314) audio message recipient data to the server; and
   generating (316) the audio message in the server and transmitting
   (318) the audio message from the server to the recipient specified by the re-
   cipient data.

2. A method as claimed in claim 1, characterized by the
   electronic media being a real-time electronic media.

3. A method as claimed in claim 1, characterized by the
   electronic media being a radio or a television.

4. A method as claimed in claim 1, characterized by the
   electronic media being a seemingly real-time media, whose content is deter-
   mined according to the listener's preferences.

5. A method as claimed in claim 4, characterized by the
   server including information about the audio program transmitted to the lis-
   tener.

6. A method as claimed in claim 1, characterized by the
   given sections of the audio program of the electronic media in the server in-
   cluding a list of pieces of music to be played.

7. A method as claimed in claim 1, characterized by the au-
   dio message being an MMS message (Multimedia Messaging Service).

8. A method as claimed in claim 1, characterized by setting
   up the data transmission connection from a subscriber terminal in a telephone
   system.

9. A method as claimed in claim 8, characterized by billing
   the audio message in the telephone bill of the subscriber terminal.

10. A method as claimed in claim 1, characterized by mix-
    ing (310) the listener's speech, received over the data transmission connec-
11. A method as claimed in claim 10, characterized by performing the mixing seemingly in real time.

12. A method as claimed in claim 10, characterized by playing a selected section of an audio program from the server to the listener, and the timing between the playing of the section of the selected audio program and the listener's speech determining the timing of the mixing between the section of the selected audio program and the listener's speech.

13. A method as claimed in claim 1, characterized by adding (312) text and/or a picture to the audio message.

14. A method as claimed in claim 13, characterized by the picture being the cover of a disc of a piece of music included in the selected section of the audio program or the picture of the performer of the selected section of the audio program.

15. A method as claimed in claim 1, characterized by controlling the server using dual tone multi frequency dialling.

16. A method as claimed in claim 1, characterized by browsing given sections forward and/or backward.

17. A method as claimed in claim 1, characterized by browsing sideways at a given section, i.e. browsing similar sections of different audio programs.

18. A method as claimed in claim 17, characterized by classifying the given sections of the audio program included in the server by a predetermined criterion into different classes, the given sections belonging to the same class being similar.

19. A method as claimed in claim 1, characterized by the recipient data including an email address or a telephone number.

20. A server for transmitting an audio message, characterized in that the server (116) comprises:

   an audio database (120) including given sections of an audio program transmitted in an electronic media;
   a data transfer interface (130);
   browsing means (124, 126) for providing given sections of the audio program transmitted in the electronic media for browsing in a data transmission connection (138, 142) set up via the data transfer interface (130);
   selection means (128, 136) for receiving a selection and audio mes-
sage recipient data from the data transmission connection (138, 142), the selec-
tion specifying the desired given section of the audio program transmitted in
the electronic media; and

means (134) for generating the audio message and transmitting the
audio message to the recipient specified in the recipient data.
21. A server as claimed in claim 20, *characterized* in that
the electronic media is a real-time electronic media.
22. A server as claimed in claim 20, *characterized* in that
the electronic media is a radio or a television.
23. A server as claimed in claim 20, *characterized* in that
the electronic media is a seemingly real-time media, whose content is deter-
mined according to the listener's preferences.
24. A server as claimed in claim 23, *characterized* in that
the server includes information about the audio program transmitted to the lis-
tener.
25. A server as claimed in claim 20, *characterized* in that
the given sections of the audio program of the electronic media in the server
include a list of pieces of music to be played.
26. A server as claimed in claim 20, *characterized* in that
the audio message is an MMS message (Multimedia Messaging Service).
27. A server as claimed in claim 20, *characterized* in that
the data transmission connection is set up from a subscriber terminal in a tele-
phone system.
28. A server as claimed in claim 27, *characterized* in that
the audio message is billed in the telephone bill of the subscriber terminal.
29. A server as claimed in claim 20, *characterized* in that
the server further comprises mixing means (132) for mixing the listener's
speech, received over the data transmission connection, into the audio mes-
sage to be generated in the server.
30. A server as claimed in claim 29, *characterized* in that
the mixing is performed seemingly in real time.
31. A server as claimed in claim 29, *characterized* in that
the server plays the selected section of the audio program to the listener, and
the mixing means (132) determine the timing of the mixing between the playing
of the section of the selected audio program and the listener's speech based
on the timing between the section of the selected audio program and the lis-
tener's speech.

32. A server as claimed in claim 20, characterized in that the server comprises means (134) for adding text and/or a picture to the audio message.

33. A server as claimed in claim 32, characterized in that the picture is the cover of a disc of a piece of music included in the selected section of the audio program or the picture of the performer of the selected section of the audio program.

34. A server as claimed in claim 20, characterized in that the selection means (128, 136) receive a dual tone multi frequency dialling.

35. A server as claimed in claim 20, characterized in that the browsing means (124, 126) are used to browse given sections forward and/or backward.

36. A server as claimed in claim 20, characterized in that the browsing means (124, 126) are used to browse sideways at a given section, i.e. browsing similar sections of different audio programs.

37. A server as claimed in claim 36, characterized in that the server further comprises means (134) for classifying the given sections of the audio program included in the audio database (120) by a predetermined criterion into different classes, the given sections belonging to the same class being similar.

38. A server as claimed in claim 20, characterized in that the recipient data include an email address or a telephone number.
FIG. 1
300 START

302 TRANSMIT AUDIO PROGRAM

304 SET UP CONNECTION TO SERVER

306 BROWSE AUDIO PROGRAM

308 SELECT GIVEN PART OF AUDIO PROGRAM TO AUDIO MESSAGE

310 MIX SPEECH INTO AUDIO MESSAGE

312 ADD TEXT AND/OR PICTURE TO AUDIO MESSAGE

314 TRANSMIT RECIPIENT DATA TO SERVER

316 GENERATE AUDIO MESSAGE IN SERVER

318 TRANSMIT AUDIO MESSAGE TO RECIPIENT SPECIFIED IN RECIPIENT DATA

320 END

FIG. 3
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04M 11/08, H04H 1/02
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)

IPC7: H04M

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

SE, DK, FI, NO classes as above

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

EPO-INTERNAL, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
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<td>US 20010009570 A1 (G.D.KNOX), 26 July 2001 (26.07.01), column 4, line 13 - column 5, line 23, figures 1-4, abstract</td>
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<td>X</td>
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X Further documents are listed in the continuation of Box C.  

X See patent family annex.

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"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

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Date of the actual completion of the international search: 19 May 2003

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