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<b>Application Data Sheet 37 CFR 1.76</b>	Attorney Docket Number	STRATOS.001C5
	Application Number	
Title of Invention	BROADCAST RESPONSE SYSTEM	
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**Inventor Information:**

<b>Inventor 1</b>					<input type="button" value="Remove"/>
<b>Legal Name</b>					
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Kelly	M.	Christensen		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	Mill Creek	<b>State/Province</b>	WA	<b>Country of Residence</b>	US

**Mailing Address of Inventor:**

<b>Address 1</b>	914 164th Street SE, #271				
<b>Address 2</b>					
<b>City</b>	Mill Creek	<b>State/Province</b>	WA		
<b>Postal Code</b>	98012	<b>Country i</b>	US		

<b>Inventor 2</b>					<input type="button" value="Remove"/>
<b>Legal Name</b>					
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Barry	D.	Thomas		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	West Hills	<b>State/Province</b>	CA	<b>Country of Residence</b>	US

**Mailing Address of Inventor:**

<b>Address 1</b>	23774 Burton Street				
<b>Address 2</b>					
<b>City</b>	West Hills	<b>State/Province</b>	CA		
<b>Postal Code</b>	91304	<b>Country i</b>	US		

<b>Inventor 3</b>					<input type="button" value="Remove"/>
<b>Legal Name</b>					
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Thomas	J.	Smyth		
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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	STRATOS.001C5	
		Application Number		
Title of Invention	BROADCAST RESPONSE SYSTEM			

City	North Hollywood	State/Province	CA	Country of Residence	US
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**Mailing Address of Inventor:**

Address 1	10723 Valley Spring Lane				
Address 2					
City	North Hollywood	State/Province	CA		
Postal Code	91602	Country i	US		
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**Application Information:**

Title of the Invention	BROADCAST RESPONSE SYSTEM		
Attorney Docket Number	STRATOS.001C5	Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	STRATOS.001C5
		Application Number	
Title of Invention	BROADCAST RESPONSE SYSTEM		
Customer Number	20995		

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Prior Application Status	Pending		<input type="button" value="Remove"/>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
	Continuation of	11562300	2006-11-21		
Prior Application Status	Patented		<input type="button" value="Remove"/>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
11562300	Continuation of	11203556	2005-08-12	7773939	2010-08-10
Prior Application Status	Patented		<input type="button" value="Remove"/>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
11203556	Continuation of	09953335	2001-09-13	6957041	2005-10-18
Prior Application Status	Expired		<input type="button" value="Remove"/>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
09953335	non provisional of	60232333	2000-09-13		
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## Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

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	Application Number	
Title of Invention	BROADCAST RESPONSE SYSTEM	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

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Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here.

Organization Name      StratosAudio, Inc.

**Mailing Address Information For Applicant:**

Address 1	5400 Carrillon Point		
Address 2			
City	Kirkland	State/Province	WA
Country <sup>j</sup>	US	Postal Code	98033
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

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First Name	Morgan	Last Name	Coates	Registration Number	64970
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Petitioner

**BROADCAST RESPONSE SYSTEM****CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** This application is a continuation of U.S. Patent Application No. 11/562,300, titled BROADCAST RESPONSE SYSTEM, filed November 21, 2006, which is a continuation of U.S. Patent Application No. 11/203,556, titled BROADCAST RESPONSE SYSTEM, filed August 12, 2005, which is a continuation of U.S. Patent Application No. 09/953,335, titled SYSTEM AND METHOD FOR ORDERING AND DELIVERING MEDIA CONTENT, filed September 13, 2001, which claims the benefit of U.S. Provisional Application No. 60/232,333, titled SYSTEM AND METHOD FOR ORDERING AND DELIVERING MEDIA CONTENT, filed September 13, 2000. Each of the foregoing applications is hereby incorporated by reference in its entirety.

**BACKGROUND**Field

**[0002]** This invention relates to processing responses to a broadcast.

Description

**[0003]** From the early days of FM broadcast transmission, stations have included ancillary signals such as background music or reading services for the blind along with a main carrier signal. The idea of transmitting data along with the main carrier signal caught on, and now many broadcast radio services either transmit an ancillary data signal or are developing a method to do so. The most current and widely used data transmission standard is the United States Radio Broadcast Data Systems (“RBDS”) standard.

**[0004]** The RBDS standard, published by the National Radio Systems Committee and sponsored by the Electronics Industry Association and the National Association of Broadcasters, describes a system for broadcasting a variety of program-related information on a subcarrier of a standard FM broadcast channel. The RBDS standard teaches a system for transmitting station identification and location information, as well as time, traffic and miscellaneous other information.

**[0005]** The RBDS standard was designed to allow stations to send information such as call letters, station format, traffic alerts and scrolling text messages to compatible radios.

**[0006]** Many stations installed RBDS encoders through a program encouraged by the FCC in the early 1990's that provided encoders at no charge. Radio stations that did not participate in this "RBDS Roll-Out" can still obtain encoders at competitive prices.

**[0007]** RBDS encoders generate what is known as a "subcarrier" that modulates along with an FM station broadcast signal and can be demodulated by special decoders. The RBDS uses a subcarrier frequency of 57khz. Commercially available RBDS encoders usually accept information via either serial or parallel data ports and format the information into the appropriate RBDS block type.

**[0008]** The RBDS data signal is a specially encoded text stream containing up to 32 repeating data "groups" transmitting at 1187.5 bits/second. The RBDS data signal does not require inclusion of all potential data group blocks of both repeating and unique data. One embodiment includes using one of several groups that are designed for data transmission functions.

**[0009]** An RBDS data group is composed of 4 blocks, each divided by checkwords used for error correction. Block 1 is a 4-digit Program Identification code (PI) which is derived from the transmitting station's call letters. Block 2 includes a 4-bit type code and a 1-bit group version code which identifies the type of information the data group contains. This block also contains a 1-bit code that identifies the transmitting station as one that broadcasts traffic information, followed by a 5-bit Program Type (PTY) code which describes the current program or format being broadcast by the station (Rock, Oldies, Talk, News, etc.). Information contained in Blocks 3 and 4 are dependent on the codes included in Block 2. Blocks 3 and 4 provide two 16-bit data slots where specific information can be sent to the special receiver.

**[0010]** For example, RBDS Group types 2A, use blocks 3 and 4 to transmit a 64-character text message known as RadioText (RT). This appears on RBDS-enabled radios as a scrolling message which some stations use to identify the song or program being broadcast. Other group types use these blocks to identify alternate frequencies where the same

programming can be available, in-house station text messages, or Emergency Alert System (EAS) communication messages. An extensive description of the RBDS standard is available through the National Association of Broadcasters and the National Radio Systems Committee.

**[0011]** A similar standard used in Europe is the European Radio Data System (RDS).

**[0012]** Broadcasters using the RBDS standard can distribute information to a large number of users. However, the standard does not allow individual users to respond to the broadcast information.

**[0013]** Currently, users listening to the radio or watching television may particularly like a song or program that they would like to purchase. While stations using RBDS/RDS may provide a user with the station call letters or the name of the song currently being broadcast, the user has no way to purchase the media at that point. Instead, the user must write down or remember the identifying information and then go to a store or online retailer to purchase the media. Not only is this inconvenient, but the user may forget the name of the song or not be able to find a store that sells the song. Additionally, the information provided by the radio station may not be enough to sufficiently identify the song. For example, the user may have the song title, but not the artist name, album name, or other necessary identifying information. Some material, such as editorial news broadcasts or live events, may not be available for purchase or may be difficult to find. Radio stations often have fund raising drives or listener surveys that require a listener to call the station or respond within a limited time. These same problems also apply to television and other forms of broadcast media.

#### SUMMARY

**[0014]** The present invention solves these and other problems by providing a system that allows an individual user to respond to a data broadcast. In one embodiment, an Automatic Purchase System (APS) provides a radio broadcast listener with the ability to conveniently purchase media content such as music or speech while listening to the radio. Additionally, the user can respond to items in the radio broadcast such as advertisements, fund raising drives such as those conducted by public radio, or interactive listener polls during the broadcast.

**[0015]** In one embodiment, the user establishes a “Creative content” purchasing account with a wireless carrier. In one embodiment, a personal URL (web address) is assigned to the user to allow the user, for example, to monitor account activity, enable or disable APS software downloads, display premiums offered by sponsors, and manage and track content or APS purchases using a Technology Enabled Radio (TER) or a personal computer.

**[0016]** In one embodiment, the user makes routing choices between the TER or the web account for content. In one embodiment, the user selects the compression type, such as MP3, RA, Liquid Audio etc.

**[0017]** In one embodiment, each broadcaster has an RBDS/RDS or similar technology enabled server onsite to, for example, generate RBDS/RDS or equivalent code for inclusion in the broadcast, validate and route purchase information to the user’s wireless carrier for billing, monitor online sales transactions for data mining, or route validated purchases to licensed creative content providers.

**[0018]** In one embodiment, radio hardware can include, for example, RBDS/RDS or equivalent decoder capability (e.g., in an internal chip with APS code); flash card slot and recording ability; or storage of multiple items such as artist name, song title, IP address of creative content provider, and time stamp for delayed purchase (e.g., in an internal chip with APS code).

**[0019]** In one embodiment, the system uses the RBDS/RDS to send a data stream in combination with a broadcast signal for identifying music or speech content available for purchase. A broadcast organization participating in the APS system is able to respond to requests for purchases placed by users who either click a button or issue a voice command to the radio at the time of the content was broadcast, at a later time by scrolling through the playlist stored in the APS module in the radio then selecting one or more items for purchase from the list stored in the radio, or by accessing a private web account via the Internet and downloading content to the personal computer. In one embodiment, purchases are made by saving requests for selected items for purchase on a flash card or storage technology and transferring that data to a personal computer for purchase through the Internet at a later time.

**[0020]** Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using the RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by the APS server software on a Data Server located at the broadcast site, a remote site or both for purposes of redundancy. Transmission of purchase requests from a Technology Enabled Radio (TER) is provided via wireless transmission, or by accessing the Internet using a personal computer or through a cellular or wireless phone. In one embodiment, activity of each sale using the above system is tracked for the purposes of aggregating data or “Data Mining” for sale to interested parties such as trade publications and record companies.

**[0021]** Portable radios can come equipped with a voice interface or a purchase button, a flash card or storage device and a port for connecting the radio to the personal computer such as a 9 pin serial, USB or wireless networking technology.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0022]** Figure 1 illustrates an electronic purchasing system with a radio station that broadcasts information to individual radio receivers.

**[0023]** Figure 2 illustrates a radio receiver that includes an automatic purchasing system module.

**[0024]** Figure 3 illustrates a television adapter that includes an automatic purchasing system module.

#### DETAILED DESCRIPTION

**[0025]** The present invention solves various problems in the prior art by providing a system that allows an individual user to respond to a data broadcast. In one embodiment, an Automatic Purchase System (APS) provides a radio broadcast listener with the ability to conveniently purchase media content such as music or speech while listening to the radio. Additionally, the user can respond to items in the radio broadcast such as advertisements, fund raising drives such as those conducted by public radio, or interactive listener polls during the broadcast.

**[0026]** One of ordinary skill in the art will recognize that there are various forms of media that can be broadcast. Where a specific type of media is used in the following examples, it is for demonstration purposes only and the examples should not be limited in that regard. Some examples of the various types of media can include music, songs, speech, text, video, etc.

**[0027]** Fig. 1 illustrates one embodiment of a system that allows a user to respond to a data broadcast. Fig. 1 shows a radio station 140 that broadcasts information to a radio receiver 100. The radio receiver 100 has a control interface 116 that allows a user to initiate a purchase of music or products based on the radio station broadcast.

**[0028]** The terms RBDS/RDS are used throughout this document, but it should be understood other data standards can also be used. In one embodiment, the radio receiver 100 comprises a Radio Frequency (RF) Demodulator Section 102, a RBDS/RDS Decoder 106, a RBDS/RDS function control interpreter 104, an audio demodulator amplifier section 108, a scrolling display 110, an Internet Download Director 112, a local memory device 114 and the control interface 116. Additionally, the receiver 100 provides for audio output by transmitting an audio signal 128 from an audio demodulator amplifier section 108 to the speaker 118.

**[0029]** In one embodiment, the RF Demodulator Section 102 splits the signal into an audio signal and a data signal, with the data signal provided to the RBDS/RDS decoder 106 and the audio signal provided to the audio demodulator amplifier section 108. The RBDS/RDS decoder 106 parses the data signal from the RF Demodulator Section 102 and transmits the data to the RBDS/RDS Function Controller 104, the Scrolling Display 110, and the Internet Download Director 112.

**[0030]** The RBDS/RDS Function Controller 104 handles codes 124 sent using the RBDS/RDS standard. The codes 124 can, for example, include a Program Service name (PS), a Program Type (PTY), a Program Identification (PI), a Traffic Program (TP), a Traffic Announcement (TA), etc.

**[0031]** In one embodiment, the data is converted to an audio signal played on one or more speakers for the user to hear. A 64 character radio text message can be transmitted in five seconds under the RBDS standard, where a Type 2A group with 4 characters is transmitted 3.2 times a second.

**[0032]** In one embodiment, a pointer to an Open Data Applications (ODA) group is transmitted in a Type 3A group. The pointer, 16 message bits and 16 bit identifier (AID) are transmitted once a second.

**[0033]** In one embodiment, an ODA group with 37 usable bits is transmitted once a second during the broadcast of a “tagged” program. The ODA group can contain, for example, a song or commercial campaign identification.

**[0034]** In one embodiment, the scrolling display 110 receives display data 122 from the RBDS/RDS Decoder 106. The display data 122 can include information such as the program service name and program type, or it can include radio text information or messages displaying purchase options.

**[0035]** Additionally, the RBDS/RDS Decoder 106 provides data to the Internet Download Director 112 that includes instructions for the location of downloadable audio. For example, a radio station 140 can broadcast data regarding the current song that is playing, such as the song name, artist, album name, and year the song was recorded. The radio station 140 can also broadcast information providing a location where the song, editorial news broadcast, collection of songs, or other program material can be downloaded or purchased, and the purchase price for the song.

**[0036]** In one embodiment, a user can place an order to download a song using the control interface 116. The control interface 116 provides a download command signal 126 to the Internet Download Director 112. The Internet Download Director 112 can then provide download instructions such as, for example, the location of the file for download and the security procedures required for access. The download information is then transmitted over, for example, a wireless internet connection 156 to the authentication and billing system 152. The authentication and billing system 152 verifies the customer information and determines whether the customer account can be debited for the cost of the order. The authentication and billing system 152 then provides an approval signal 168 indicating whether the purchase was approved. The approval signal 168 is transmitted to the purchase database server 150.

**[0037]** Once the purchase is approved, the purchase database server 150 provides purchase and download authorization to the download server 154. The download server 154 can then transmit the requested material over a network connection 158. In one embodiment,

the material is transmitted using a wireless internet connection directly to the radio receiver 100. In another embodiment, the material is made available to a personal computer. In one embodiment, the material is sent using traditional mail or parcel services. The download server 154 also communicates with the audio database and encoding server 144 to provide available sound database information 164.

**[0038]** The radio station 140 includes a radio automation or CD playback system 142, an audio database/encoding server 144, an FM transmission system 146 and a RBDS/RDS encoder 148. The radio automation or CD playback system 142 can extract information about songs or a radio program from the station playlist or by extracting information encoded on a CD or a CD-ROM. The playlist information is provided to the audio database and coding server 144. The playlist information can include the song title, artist, cut or other information. The audio database/encoding server 144 matches the information sent from the radio automation system 142 with information in the database. If there is an audio file available for download, the database/encoding server 144 formats the download information and sends it to the RBDS/RDS encoder 148. Corresponding information is uploaded to the purchase database server 150.

**[0039]** The RBDS/RDS encoder 148 transmits the RBDS/RDS information using the 57khz RBDS/RDS subcarrier 170 to the FM transmission system 146. The RBDS/RDS subcarrier signal 170 is mixed by the FM transmission system 146 with the FM baseband program signal 172 and any other subcarriers. The FM transmission system 146 then transmits an FM RF signal 162 which is received by the radio receiver 100.

**[0040]** As shown in Fig. 1, a radio station 140, using either a standard radio automation system for tracking of music content which is being broadcast, or a data-enabled audio player, broadcasts audio material and synchronously sends RBDS/RDS or similar data to an APS server 144 that assigns a unique identifier to each specific broadcast segment or song.

**[0041]** The APS server 144 compares the broadcast segment identifier with a database 150 of audio available for purchase. If the broadcasted audio is available, the APS server 144 incorporates station call letter information, and an audio download location such as IP address and a file name into a data stream that is inserted into a radio station's broadcast

using RBDS/RDS or similar technology. The information identifying the audio selected by the listener or user is routed to the APS Data Server and passed on to the location where a digital version of the audio content is stored and available for transfer to the end user. The user's radio receiver 100 receives and recognizes the encoded RBDS/RDS or other data and presents it on the radio display 110 notifying the user that the audio is available for purchase.

**[0042]** If the user elects to purchase the audio content or responds to an ad or "pledge" drive, a request including the station's data and the user's cell phone or wireless Electronic Serial Number (ESN) or other identifier, such as a credit card number, combined with the audio content information is issued by the radio and passed via the cellular or wireless phone transmission to the APS Data Server and finally routed to the source server at the record company, publisher or licensed content provider. If a "good" connection is not available using the wireless connection, or the user does not have a wireless account, the information can be stored on the internal flash card or other storage device 114 in the radio for transfer to a personal computer at a time of the user's choosing.

**[0043]** Each server typically records the purchase or response information. The storage server 154 at a source location then uploads the requested audio to the routing address associated with the user's cell phone account identifier. The user's receiver 100 then saves the audio on internal memory or a removable memory device or holds the audio content until the user chooses to download it using the Internet.

**[0044]** One embodiment includes the use of several group types reserved for "open data applications" by the RBDS/RDS standard. These groups were designed for use with data applications and are readily available for use.

**[0045]** Fig. 2 shows one example of a technology enabled radio 200. The radio 200 includes a module 202 for the Automatic Purchase System. In one embodiment, the APS provides relatively quick delivery of the purchased material. In one embodiment, quick delivery is provided by wireless transmission such that the user can receive the purchased material while traveling. In one embodiment, the system also provides delayed delivery, when, for example: the user so chooses; the user does not have a wireless account; or the user cannot obtain a good signal with a wireless connection for transmission.

**[0046]** In one embodiment, the radio 200 contains an APS module 202 configured to store identifier data 204, to provide security functions, and to assist in routing selections made by the user (using either a voice command issued to voice recognition technology 214 contained in the radio or by the press of a button 212 on the radio interface). In one embodiment, the APS module 202 is a proprietary microchip (or portion of a microchip) that implements the radio receiver-side functions of the APS. In one embodiment, the APS module 202 is a software module that runs on a processor in the radio 200.

**[0047]** The audio content can also be “tagged” for delayed purchase at a later time by scrolling through the playlist 208 stored in the APS module 202 on the radio 200 and presented on the external display 210 of the radio 200. The user can then select one or more items for purchase from the list presented on the display 210 (stored in the APS module 202 in the radio). In one embodiment, the selected items are transmitted using a wireless transmitter 218 such as a wireless telephone. In another embodiment, a user can store the playlist 208 on removable memory 220 that is readable by a personal computer 240. The user can then access a private web account via the Internet for downloading the content to the personal computer 240. At this point, the user can transfer the downloaded content to a storage device 242 such as, for example, a flash card or CD-ROM.

**[0048]** Non-automotive or portable radios containing the APS module 202 can also include either a voice interface 214, an interactive button 212, or both, to enable listener-selection of broadcast material (or for responding to advertisements, fund raising drives, or any other interactive event). A port 216 such as a 9-pin serial port, a USB port, or any other port designed to provide connectivity between the radio 200 and a personal computer 240 can also be integrated into the radio 200 for the purposes of transferring the selection list from the APS module 202 to software in a personal computer 240 or other device. APS software running on the personal computer 240 is configured to recognize an embedded security code enabling purchase of the selected material via the Internet, or respond to an advertisement or fund raising drive. Wireless technology, such as, for example, BlueTooth and the like, can also be used for the purposes of transferring the selection data between devices.

**[0049]** Automotive radios equipped with the APS module 202 and associated technologies can use a wireless interface 218 to send a purchase request (or interactive

response) complete with a user Electronic Serial Number (ESN), WIN identifiers, and routing information such as artist and song title derived from the RBDS/RDS data string accompanying the associated broadcast. The purchase request and routing information can then be directed to an APS server 260 for processing, billing approval, and delivery of the content to a particular location (such as the user's flash card or storage technology in the radio 200 or a personal account web URL), as requested by the user.

**[0050]** The flash card or storage technology 220 in the automotive radio offers the user a second option. The user can select content for purchase using the interactive voice technologies 214 or the button interface 212 to select broadcast content for purchase. If that user does not have a wireless phone, or does not have a good connection with a wireless phone connected to the radio, then the content selections can be stored on the flash card or storage technology 220 for later use.

**[0051]** In one embodiment, the APS polls the wireless network until a good connection is obtained, at which point the selection data is transferred for completion of the transaction. In cases where the user cannot obtain a good connection or the user does not have a wireless account, the flash card or storage technology 220 can later be removed by the user and inserted into a personal computer 240. The routing information for each selection stored on the flash card or storage technology 220 is passed to the APS download software running on the user's personal computer 240. Once the user has an active connection to the Internet, the APS download software allows the user to purchase the selected content and download it to a personal computer 240 as long as the content was tagged with the proper security codes obtained from the APS module 202 in the radio 200.

**[0052]** Using this system, the user can respond to a live broadcast radio advertisement to qualify for coupons, premiums or other sponsor-offered rewards. This system can also be applied to pledge drives employed by public radio stations, allowing listeners to pledge money while driving or listening to a portable radio. The system can also be used for listener polls where the broadcaster can obtain quick responses from listeners to new music, speech content or general questions such as a talk show format. In each case, the user/listener can respond by pressing a "Respond" button 212 on the radio 200. On a voice-

enabled radio 200, the user/listener can order content or provide responses by voice commands.

**[0053]** The user can also receive offers or hyperlinks posted on a personal web site presenting premiums such as discounted tickets (to events for the artists or writers for which they purchased content), suggestions of purchase for related artists or music genres, record company club offerings, or other premiums. Associated books, magazine articles, merchandise and event information can also be posted for the user to purchase using the APS. Hyperlinks can also be present for content not available on the radio but provided either through partnerships with existing digital content providers or content owners who have made direct arrangements for digital distribution through the APS web site.

**[0054]** Billing for the purchase of content and user-identification can be managed through the user's wireless phone account or the user can establish an account at an APS web site. Content purchased can be directed to Technology-Enabled Radios (TERs), or receivers using a wireless-telephone transmission, and stored on a flash card. Purchase content can also be directed to a personal web page assigned to the user upon creation of a specific account. The user can access the account over the Internet, and the user can download purchased content to a personal computer.

**[0055]** In order to protect the purchased content from piracy, various access-rights controls and copy-protections can be provided. In one embodiment, the user is allowed to copy purchased content to a CD or flash card one time only (unless additional licenses are purchased). Additional licenses can be purchased within the APS download software or in the user's web account by the click of a button or through using a third-party software package enabled with the APS security keys such as the ESN and WIN numbers from a wireless account.

**[0056]** Each sales transaction can be monitored by an APS server located at each participating radio station, by an Internet-based APS server, or both. The data collected through "data mining" of sales transactions can be sold to companies interested in tracking demographic information and music sales such as record companies and trade publications. In one embodiment, personal information regarding the users is not disclosed.

**[0057]** The system may include features such as allowing the user to establish a “Creative content” purchasing account with a wireless carrier.

**[0058]** The system may also provide a personal URL (web address) to a user, with one or more web pages that allow a user to, e.g., monitor account activity; enable or disable APS software downloads; display premiums offered by sponsors; manage and track content or APS purchases using a technology-enabled radio or a personal computer; make routing choice between a technology-enabled radio or the web account for content; and/or select compression type (e.g., MP3, RA, Liquid Audio etc.).

**[0059]** In one embodiment, a broadcaster has an RBDS/RDS or similar technology enabled server onsite to, e.g., generate RBDS/RDS or equivalent code for inclusion in the broadcast; validate and route purchase information to the user’s wireless carrier for billing; monitor online sales transactions for data mining; and/or route validated purchase to licensed creative content providers.

**[0060]** Radio hardware may also have various features such as RBDS/RDS or equivalent decoder capability (e.g., in an internal chip with APS code); flash card slot and recording ability; and/or storage capacity to store items such as artist name, song title, IP address of creative content provider, and/or time stamp for delayed purchase (e.g., in an internal chip with APS code).

**[0061]** In one embodiment, the system uses the RBDS/RDS to send a data stream in combination with a broadcast signal for identifying music or speech content available for purchase. A broadcast organization participating in the APS system is able to respond to requests for purchase placed by users who either click a button or issue a voice command to the radio at the time of the content was broadcast, at a later time by scrolling through the playlist stored in the APS module in the radio then selecting one or more items for purchase from the list stored in the radio, or by accessing a private web account via the Internet and downloading content to the personal computer. In one embodiment, purchases are made by saving requests for selected items for purchase on a flash card or storage technology and transferring that data to a personal computer for purchase through the Internet at a later time.

**[0062]** Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using the

RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by the APS server software on a Data Server located at the broadcast site, a remote site or both for purposes of redundancy. Transmission of purchase requests from a Technology Enabled Radio (TER) is provided via wireless transmission, or by accessing the Internet using a personal computer or through a cellular or wireless phone. In one embodiment, activity of each sale using the above system is tracked for the purposes of aggregating data or “Data Mining” for sale to interested parties such as trade publications and record companies.

**[0063]** Portable radios can come equipped with a voice interface or a purchase button, a flash card or storage device and a port for connecting the radio to the personal computer such as a 9 pin serial, USB or wireless networking technology.

**[0064]** Music radio stations often depend on computer-programmed and optimized playlists to ensure consistency and success of the format. Many stations use computer-based playback systems that play from hard disc libraries or control CD changers. At the start of the day, a playlist is loaded into these computers that include information. These “automation” systems provide continual logging of functions and activities and can output the “as played” information in a variety of ways, such as serial data. Data can be taken as an event occurs or can be read from a text file. Most automated systems can be programmed to send information out of the serial port.

**[0065]** Some stations have used this data to use RBDS/RDS and display song information in the RadioText group. More recently stations are using this information to feed a “now playing” message on Internet web sites.

**[0066]** Even stations that play CD’s manually from a paper playlist can provide the information needed. Professional CD players usually have serial ports (i.e. RS232, RS485) that can be programmed to transmit CD code information. This code information is similar to the song codes used by internet-enabled computers to automatically download song information from the website known as CDDB.com for a CD inserted into a CD-ROM player. Every RIAA-registered CD has a unique registered code with the RIAA. Thus, on an RIAA

registered CD, a song can be identified by the registered code number in combination with the track number. For content that is not registered with the RIAA, a registration code is provided by APS. In one embodiment, the broadcaster providing the APS service to its listeners assigns an identifier code to the content. In one embodiment, an identifier code for non-RIAA registered content is provided by an APS registering organization or service.

**[0067]** In one embodiment, the system operates by acquiring playlist data or a reference number that identifies the broadcast content. The playlist data is included in the RBDS/RDS data sub-carrier by either the APS server software or a combination of the APS server software in conjunction with a compatible RDS/RBDS encoder.

**[0068]** Once the data source is identified, a connection pathway is established between the broadcaster and the APS Data Server. APS software residing on the APS Data Server stores that information in a “look up” table. The codes representing “cut numbers”, or text song information such as artist and song title, are referenced against the internal look up table to determine if the song is available for download from the content owner such as a music publisher or record company. Once determination has been made regarding availability of the requested content, the APS software residing on the APS Data Server builds the data stream that can include the group 3 and group 4 data of the RBDS/RDS standard containing download location and/or file name. The APS software then transmits the information to a compatible RDS/RBDS encoder residing at the participating broadcaster.

**[0069]** For example: the 64-character text space contained in the RBDS standard is long enough to include an Internet IP address and directory location or reference code contained in a look up table capable of enabling the APS software to route the request for purchase from a user to the appropriate download site such as a publisher, record company or news organization.

**[0070]** The APS software residing on the APS Data Server can be employed to create the complete RBDS/RDS data signal and feed a slave encoder located at each broadcast location. The APS software also tracks each inquiry and purchase for billing verification and crediting the broadcaster for payment for their part in the sale. The APS software also conducts data mining tracking for purposes of the future sale of transaction data.

**[0071]** In one embodiment, the RBDS/RDS encoder formats and encodes the non-APS elements of the data stream (such as station identification (Call Letters), date and time, etc.) and the APS software on the APS Data Server inserts content-specific data such as song title and artist information or author and news service, into the continual RBDS/RDS data stream through the RBDS/RDS encoder's standard interfaces. The APS Data Server software can be well suited to provide content specific information but the other RBDS/RDS group applications can be better managed by broadcast equipment designed for those applications.

**[0072]** RBDS/RDS is an FM-only transmission system but one of ordinary skill in the art will recognize that APS data can be included with other radio services (e.g. AM, etc.).

**[0073]** Digital Audio Broadcasting (DAB), which includes flexible, open-source, data transmission functions along with the audio signal. Systems for adapting digital audio and data transmission to the current allocation of AM and FM stations using a technique known as In Band On Channel (IBOC) are known. IBOC includes an ancillary data stream in the broadcast signal to be used by the station for whatever purposes they see fit. The ancillary data stream signal can be used to carry APS information.

**[0074]** Other developing radio systems also include a data path that can be used to send the information used by the APS system to successfully allow the acquisition of music or other material being broadcast. Satellite DAB providers, such as XM Satellite and Sirius Satellite Radio, have access to the audio and ancillary data signals being sent to compatible receivers.

**[0075]** As other audio services develop, the capability to transmit complimentary, simultaneous data can be used as a component of the APS. The APS can be simply adapted to each new transmission form with no significant change in the overall system.

**[0076]** Wireless technology and the related developments in high-speed Internet access using systems such as BlueTooth or other wireless network technology allows faster downloads of the desired material by taking advantage of the newer, faster technology.

**[0077]** NTSC, PAL and other technologies employed to transmit television signals around the world allow for similar capabilities in transmitting subcarrier data within the carrier signal.

**[0078]** Fig. 3 shows one example of a Technology Enabled Television (TET) adapter 300. The television adapter 300 includes a module 302 for the Automatic Purchase System. In one embodiment, the television adapter 300 is incorporated into the television. In one embodiment, the television adapter 300 is a settop box. In one embodiment, the APS provides relatively quick delivery of the purchased material. The material available for purchase can cover a wide range of products, such as music, video, print, pledges of money, or consumer goods related to displayed advertisements. In one embodiment, quick delivery is provided by using a cable modem. In one embodiment, the television adapter 300 uses a modem and a telephone connection to download the data. In one embodiment, the television adapter 300 uses a network connection to download the data. In one embodiment, the system provides delayed delivery, when, for example: the user so chooses; the user does not have a cable modem; the user does not have a network account at that location; or the user cannot obtain a good signal with a wireless connection for transmission.

**[0079]** In one embodiment, a television adapter 300 contains an APS module 302 configured to store identifier data 304, to provide security functions, and to assist in routing selections made by the user (using either a voice command issued to voice recognition technology 314 contained in the television adapter or by the press of a button 312 on the television adapter interface). In one embodiment, the APS module 302 is a proprietary microchip (or portion of a microchip) that implements the television adapter-side functions of the APS. In one embodiment, the APS module 302 is a software module that runs on a processor in the television adapter 300.

**[0080]** The material can also be “tagged” for delayed purchase at a later time by scrolling through the selection list 308 stored in the APS module 302 on the television adapter 300 and presented on the external television display 380. The user can then select one or more items for purchase from the list presented on the display 380 (stored in the APS module 302 in the television adapter). In one embodiment, the selected items are transmitted using a cable modem. In one embodiment, the selected items are transmitted using a wireless transmitter 318 such as a wireless telephone. In another embodiment, a user can store the selection list 308 on removable memory 320 that is readable by a personal computer 340. The user can then access a private web account via the Internet for downloading the content to the

personal computer 340. At this point, the user can transfer the downloaded content to a storage device 342 such as, for example, a flash card or CD-ROM.

**[0081]** A port 316 such as a 9-pin serial port, a USB port, or any other port designed to provide connectivity between the television adapter 300 and a personal computer 340 can also be integrated into the television adapter 300 for the purposes of transferring the selection list from the APS module 302 to software in a personal computer 340 or other device. APS software running on the personal computer 340 is configured to recognize an embedded security code enabling purchase of the selected material via the Internet, or respond to an advertisement or fund raising drive. Wireless technology, such as, for example, BlueTooth and the like, can also be used for the purposes of transferring the selection data between devices.

**[0082]** In one embodiment, television adapters equipped with the APS module 302 and associated technologies can use a wireless interface 318 to send a purchase request (or interactive response) complete with a user Electronic Serial Number (ESN), WIN identifiers, and routing information such as artist and song title derived from the RBDS/RDS data string accompanying the associated broadcast. In one embodiment, television adapters can use a modem (e.g. a telephone modem, cable modem, etc.) or other network connection to send a purchase request. The purchase request and routing information can then be directed to an APS server 360 for processing, billing approval, and delivery of the content to a particular location (such as the user's flash card or storage technology in the television adapter 300 or a personal account web URL), as requested by the user. In one embodiment, the purchased material is delivered with traditional mail or parcel services.

**[0083]** The flash card or storage technology 320 in the television adapter offers the user a second option. The user can select content for purchase using the interactive voice technologies 314 or the button interface 312 to select broadcast content for purchase. If that user does not have a network connection, then the content selections can be stored on the flash card or storage technology 320 for later use.

**[0084]** User access to the APS is provided by the remote control, voice interaction or buttons on the actual TV. As a user views broadcast content, the user can respond to the television broadcast to make purchases, respond to an advertisement, to qualify for premiums,

or the user can respond to pledge drives on public television or an interactive event such as a talk or game show.

**[0085]** In one embodiment, the user responses are provided to a computing device such as a personal computer, set-top box, and the like (e.g., via flash card or other removable storage medium, via a network connection between the computer and the TET, via a wireless connection such as BlueTooth, etc.). The computing device is then used to transfer the content in a manner similar to that described in the radio embodiment above.

**[0086]** In one embodiment, a cable connection from the TET to the computing device is used for immediate transfer of the user response. In one embodiment, data is transferred between the TET and the computing device using a communication port such as, for example, a serial port, a USB port, infrared port, a parallel port, and Ethernet port, or other port technology.

**[0087]** In one embodiment, the APS module also provides web-enabled cable or satellite television interactive services. In one embodiment, a modem (such as ,for example, a cable modem) is included in the TET thereby allowing the TET to send a user response request directly to a content provider (such as a cable company). In one embodiment, the APS module is provided in a cable set-top box to allow the APS system to be used with a conventional television.

**[0088]** The mechanisms for routing, customer identification, security, tracking, and purchase used with the radio embodiments described above can also be used with the TET.

**[0089]** It is understood that the download server, purchase database server, audio database server and encoding server can reside on one or more computers, and that the shown organization of the servers is for clarification. One or more programs can be used to perform part or all of the functions described in this description.

**[0090]** The foregoing description of a preferred implementation has been presented by way of example only, and should not be read in a limiting sense. Although this invention has been described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art, including embodiments which do not provide all of the benefits and

features set forth herein, are also within the scope of this invention. Accordingly, the scope of the present invention is defined only by reference to the appended claims.

WHAT IS CLAIMED IS:

1. A method for configuring a communications device to receive a media broadcast comprising at least one identifiable broadcast segment as part of a broadcast stream, the method comprising:

configuring the communications device to receive the broadcast stream comprising a plurality of broadcast segments, wherein the plurality of broadcast segments comprises the at least one identifiable broadcast segment;

configuring the communications device to receive a data stream associated with the broadcast stream;

configuring at least one computer processor of the communications device to extract from the data stream data that enables a unique identification of the at least one identifiable broadcast segment from the plurality of broadcast segments;

configuring the at least one computer processor of the communications device to determine an identification of the broadcast stream;

configuring an electronic memory of the communications device to store the identification of the broadcast stream and the data that enables the unique identification of the at least one identifiable broadcast segment;

configuring the communications device to present the at least one identifiable broadcast segment;

configuring the communications device to detect an input selection corresponding to the at least one identifiable broadcast segment;

configuring the communications device to obtain an identity of a responder associated with the input selection;

configuring the communications device to create a data packet enabling the unique identification of the at least one identifiable broadcast segment, the data packet comprising at least one of the following: an identification of the identity of the responder, the identification of the broadcast stream, the data that enables the unique identification of the at least one identifiable broadcast segment; and

configuring the communications device to communicate the data packet to a server in response to the detection of the input selection.

2. The method of Claim 1, wherein the communication of the data packet to the server is accomplished by at least one of the following: communicating wirelessly, communicating using a wired connection, communicating over the internet, communicating using a removable memory storage device.

3. The method of Claim 1, wherein the association of the data stream with the broadcast stream is at least one of the following: the data stream is frequency multiplexed with the broadcast stream, the data stream is time multiplexed with the broadcast stream, the data stream is transmitted independently from the broadcast stream, the data stream is encoded in the broadcast stream.

4. The method of Claim 1, wherein the identity of the responder identifies at least one of the following: an identification of the communications device, an identification of a user of the communication device, an identification of a billing account, an identification of account details, an identification of a phone number, an identification number.

5. The method of Claim 1, further comprising:

receiving a second instance of the at least one identifiable broadcast segment from the broadcast stream containing the plurality of broadcast segments; and

extracting from the data stream a second data that enables a unique identification of the second instance of the at least one identifiable broadcast segment, whereby the second data that enables the unique identification of the second instance of the identifiable broadcast segment is discrete from the data that enables unique identification of the at least one identifiable broadcast segment.

6. The method of Claim 1, wherein the server identifies a specific instance of the at least one identifiable broadcast segment using the data that enables the unique identification of the at least one identifiable broadcast segment and a database comprising information about the at least one identifiable broadcast segment.

7. A method for interactively operating a communications device that receives a media broadcast comprising a broadcast stream, the broadcast stream comprising a plurality of broadcast segments, the method comprising:

receiving the broadcast stream comprising the plurality of broadcast segments, wherein the plurality of broadcast segments comprises at least one specific broadcast segment;

receiving a data stream associated with the broadcast stream;

extracting from the data stream identifying data that enables a unique identification of the at least one specific broadcast segment of the plurality of broadcast segments;

storing in an electronic memory the identifying data;

presenting the plurality of broadcast segments, including the at least one specific broadcast segment;

presenting, subsequent to the presentation of the at least one specific broadcast segment, a list comprising a first reference to the at least one specific broadcast segment and at least a second reference to at least one additional broadcast segment of the plurality of broadcast segments of the broadcast stream; and

detecting an input selection corresponding to the at least one specific broadcast segment subsequent to the presentation of the list, whereby the input selection initiates at least one of the following results: creation and communication of a data packet to a server, the data packet comprising at least the identifying data that enables unique identification of the specific broadcast segment, presentation of information about the at least one specific broadcast segment, storing a tag associated with the at least one specific broadcast segment, a purchase related to the at least one specific broadcast segment, obtaining data identifying the broadcast stream, a vote associated with the at least one specific broadcast segment, responding to an offer associated with the at least one specific broadcast segment.

8. The method of Claim 7, wherein the association of the data stream with the broadcast stream is at least one of the following: the data stream is frequency multiplexed with the broadcast stream, the data stream is time multiplexed with the broadcast stream, the data stream is transmitted independently from the broadcast stream, the data stream is encoded in the broadcast stream.

9. The method of Claim 7, further comprising obtaining the identification of a responder associated with the input selection, wherein the identity of the responder identifies at least one of the following: an identification of the communications device, an identification of a user of the communication device, an identification of a billing account, an identification of account details, an identification of a phone number, an identification number.

10. The method of Claim 7, wherein the communication of the data packet to the server is accomplished by at least one of the following: communicating wirelessly, communicating using a wired connection, communicating over the internet, communicating using a removable memory storage device.

11. A method for correlating media content identifying data with at least one broadcast segment received by a communication device, the method comprising:

receiving a broadcast stream comprising the at least one broadcast segment and associated media content;

receiving a data stream associated with the broadcast stream, the data stream comprising, at a minimum, the media content identifying data, wherein the media content identifying data comprises at least one element;

extracting the media content identifying data from the data stream, associating each media content identifying data element with at least one of a plurality of media content;

storing in an electronic memory of the communication device, at a minimum, media content identifying data elements into identifying data aggregates, each identifying data aggregate associated with at least one of the plurality of media content and the at least one broadcast segment, wherein the at least one broadcast segment is corollary to the at least one of the plurality of media content; and

providing for presentation of at least a portion of the data elements stored in the electronic memory of the communication device, whereby the providing provides selective outputting, using an interface, of at least one of the following: the media content identifying data, the media content, the corollary broadcast segment, a temporal position of the corollary broadcast segment of the broadcast stream.

12. The method of Claim 11, wherein at least one of the receiving, storing, aggregating, correlating operations are performed in conjunction with a database system which contains at least one of the identifying data aggregates.

13. The method of Claim 11, wherein at least one of the receiving, storing, aggregating, correlating operations are performed externally to a database system which contains at least one of the data aggregates.

14. The method of Claim 11, wherein at least one of the receiving, storing, aggregating, correlating operations are accessible by at least one of the following: a response authentication system, a broadcaster, an advertiser, a content provider, a wireless carrier, a web portal, a third party database.

15. The method of Claim 11, wherein the association of the data stream with the broadcast stream is at least one of the following: the data stream is frequency multiplexed with the broadcast stream, the data stream is time multiplexed with the broadcast stream, the data stream is transmitted independently from the broadcast stream, the data stream is encoded in the broadcast stream.

16. The method of Claim 11, wherein the data stream further comprises data that enables a unique identification of the at least one broadcast segment.

17. The method of Claim 11, further comprising:  
selecting the at least one broadcast segment;  
preparing a data packet comprising at least one of the media content identifying elements; and  
communicating the data packet to a server.

18. The method of Claim 11, further comprising detecting a selection input associated with the presentation of the stored data.

19. The method of Claim 18, further comprising creating and communicating a data packet to a server responsive to the selection input detection.

20. The method of Claim 19, wherein the communication of the data packet to the server is accomplished by at least one of the following: communicating wirelessly, communicating using a wired connection, communicating over the internet, communicating using a removable memory storage device.

## **BROADCAST RESPONSE SYSTEM**

### **ABSTRACT OF THE DISCLOSURE**

A broadcast response system provides, e.g., a radio broadcast listener with the ability to obtain media content such as music or speech while listening to the radio. The user can respond to items in the radio broadcast such as advertisements, fund raising drives, or interactive listener polls during the broadcast. Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using, e.g., the RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by broadcast response server.

15273814

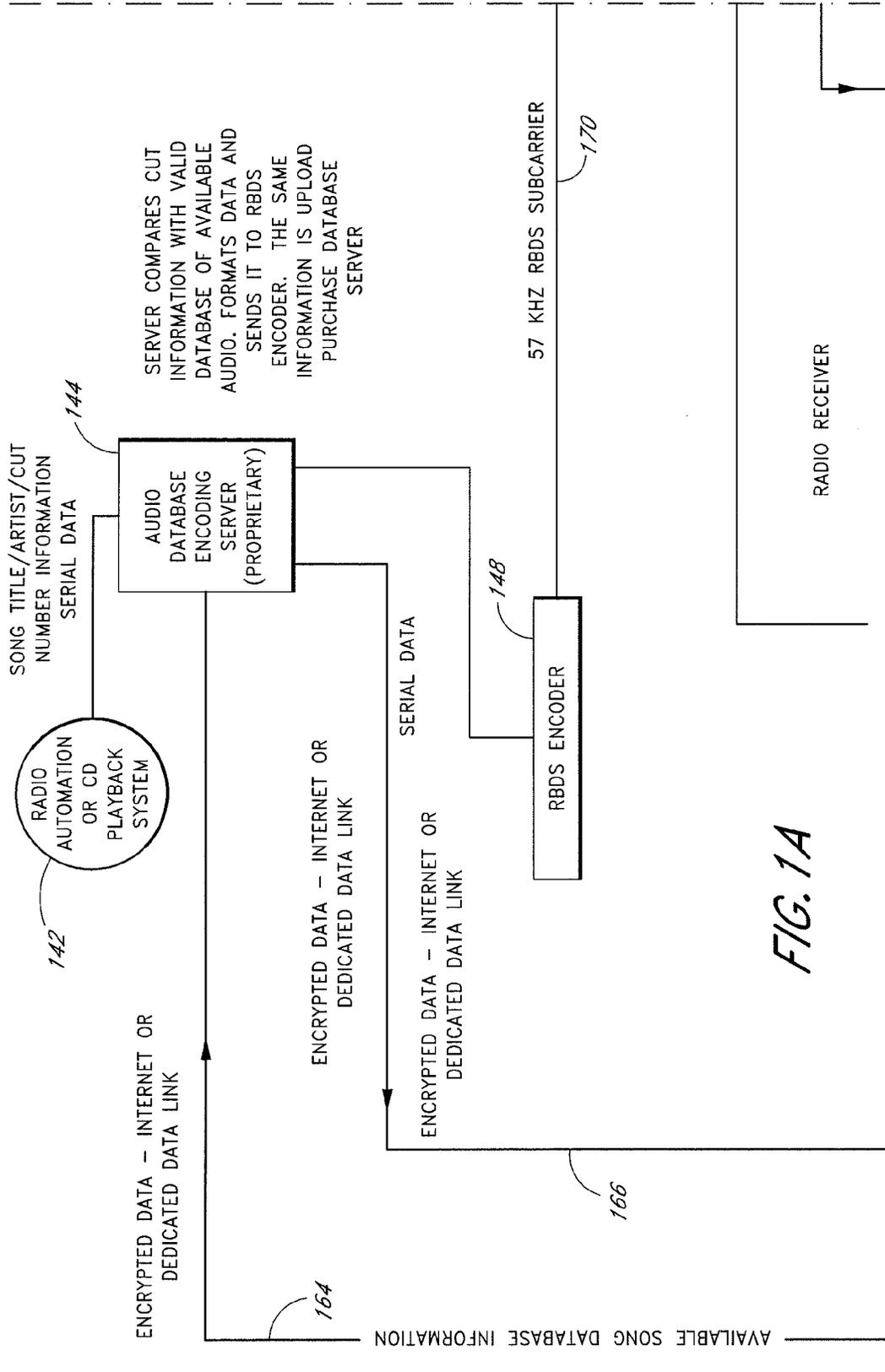
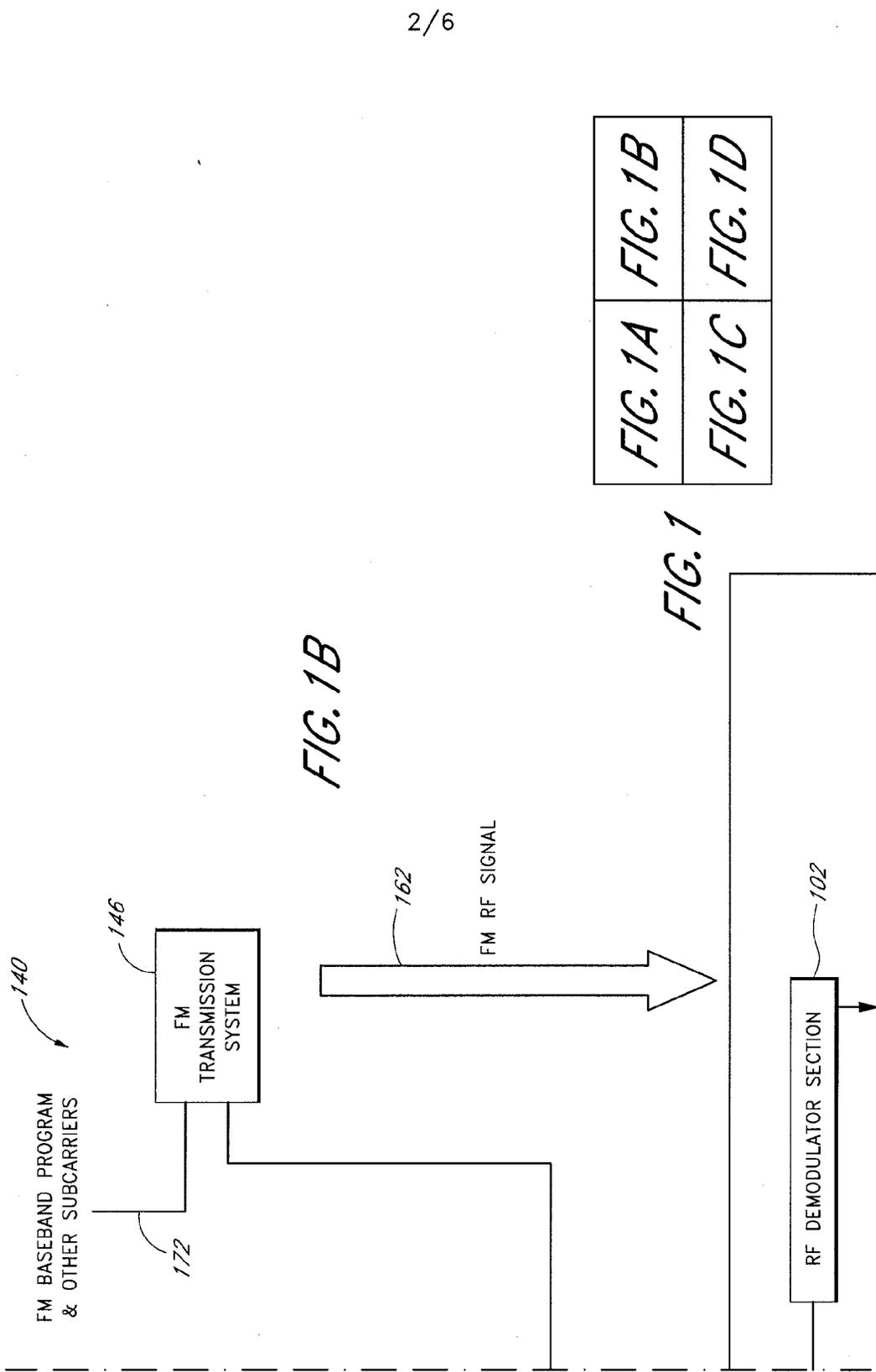


FIG. 1A



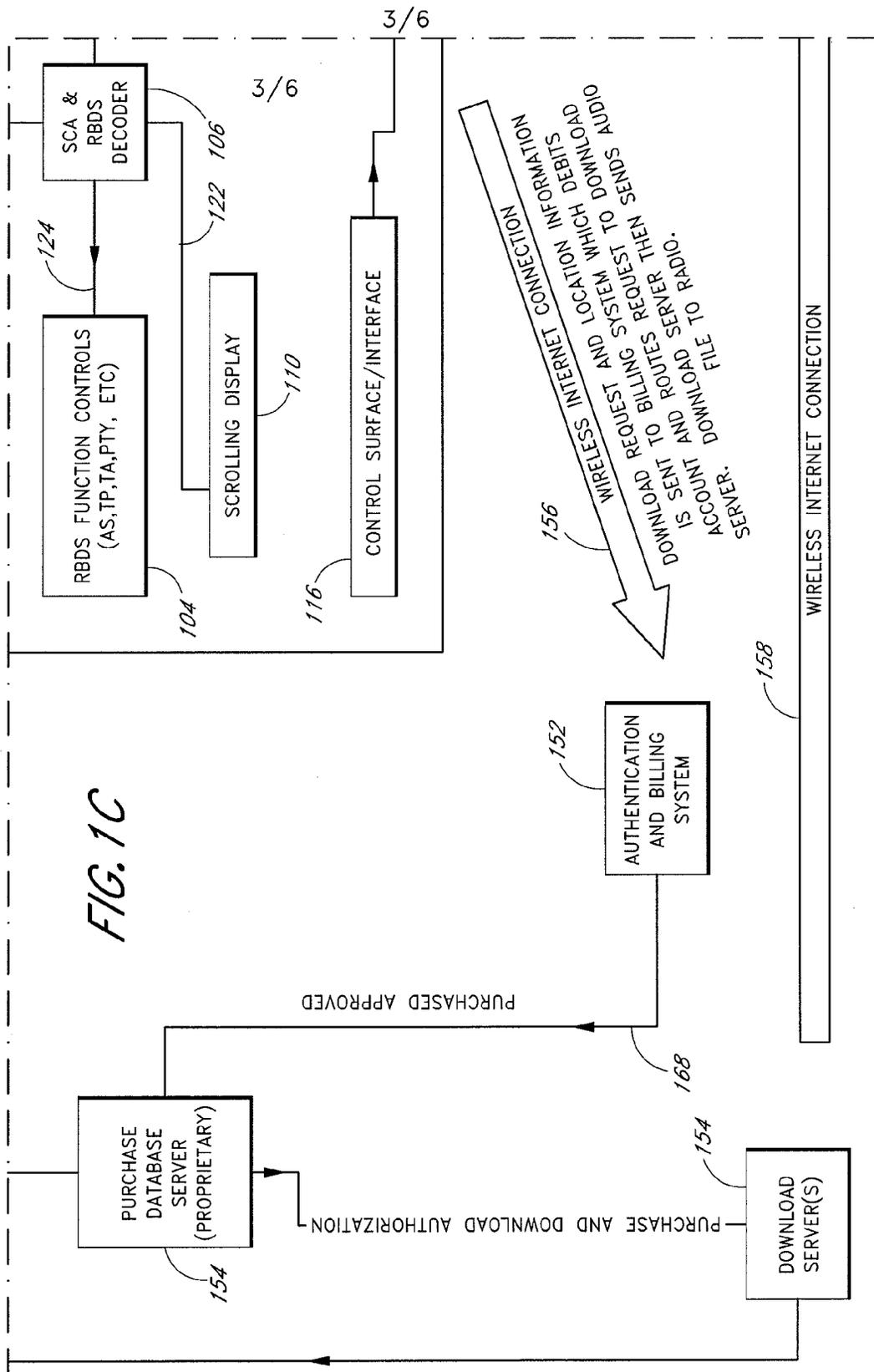


FIG. 1C

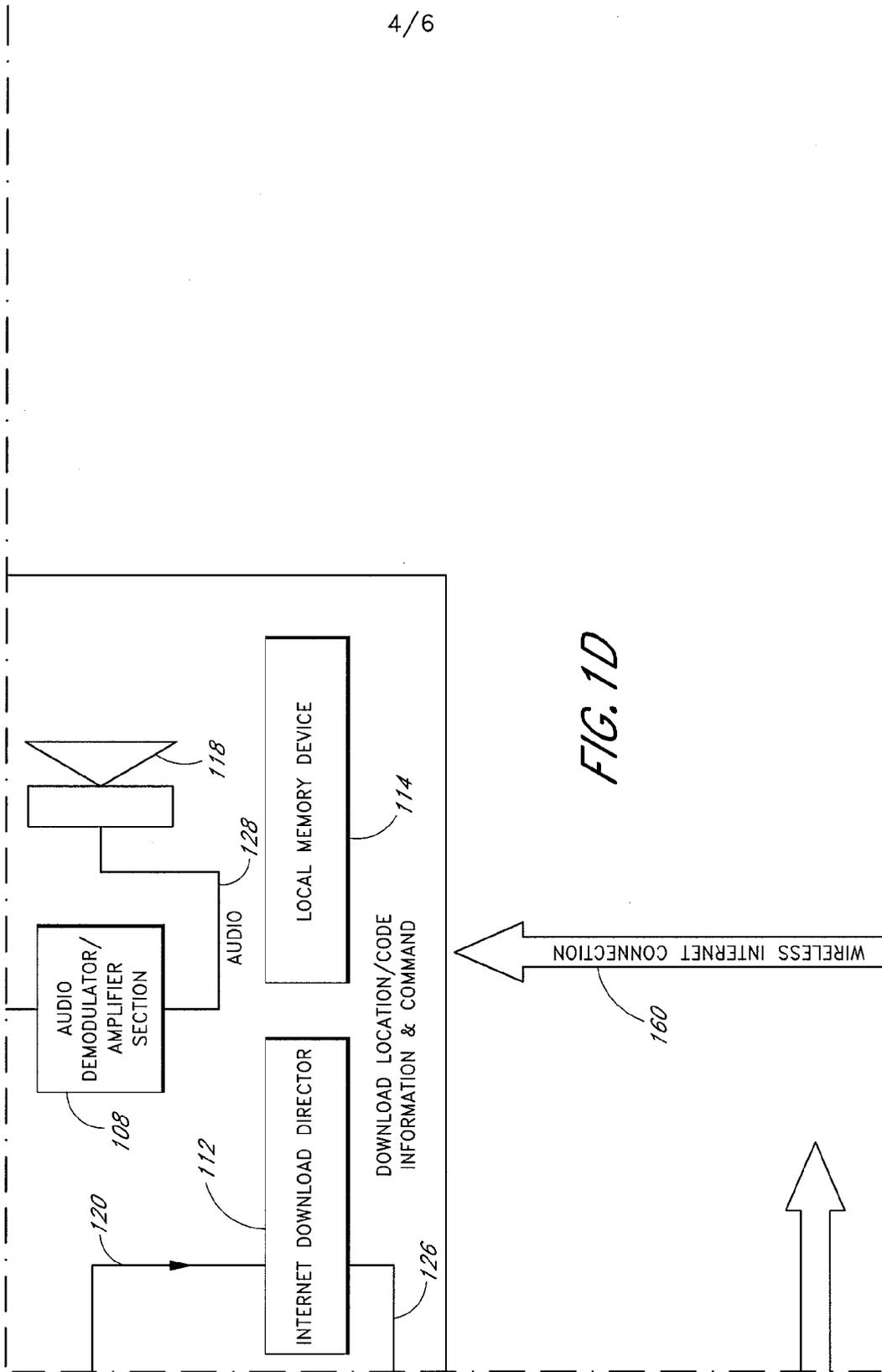


FIG. 1D

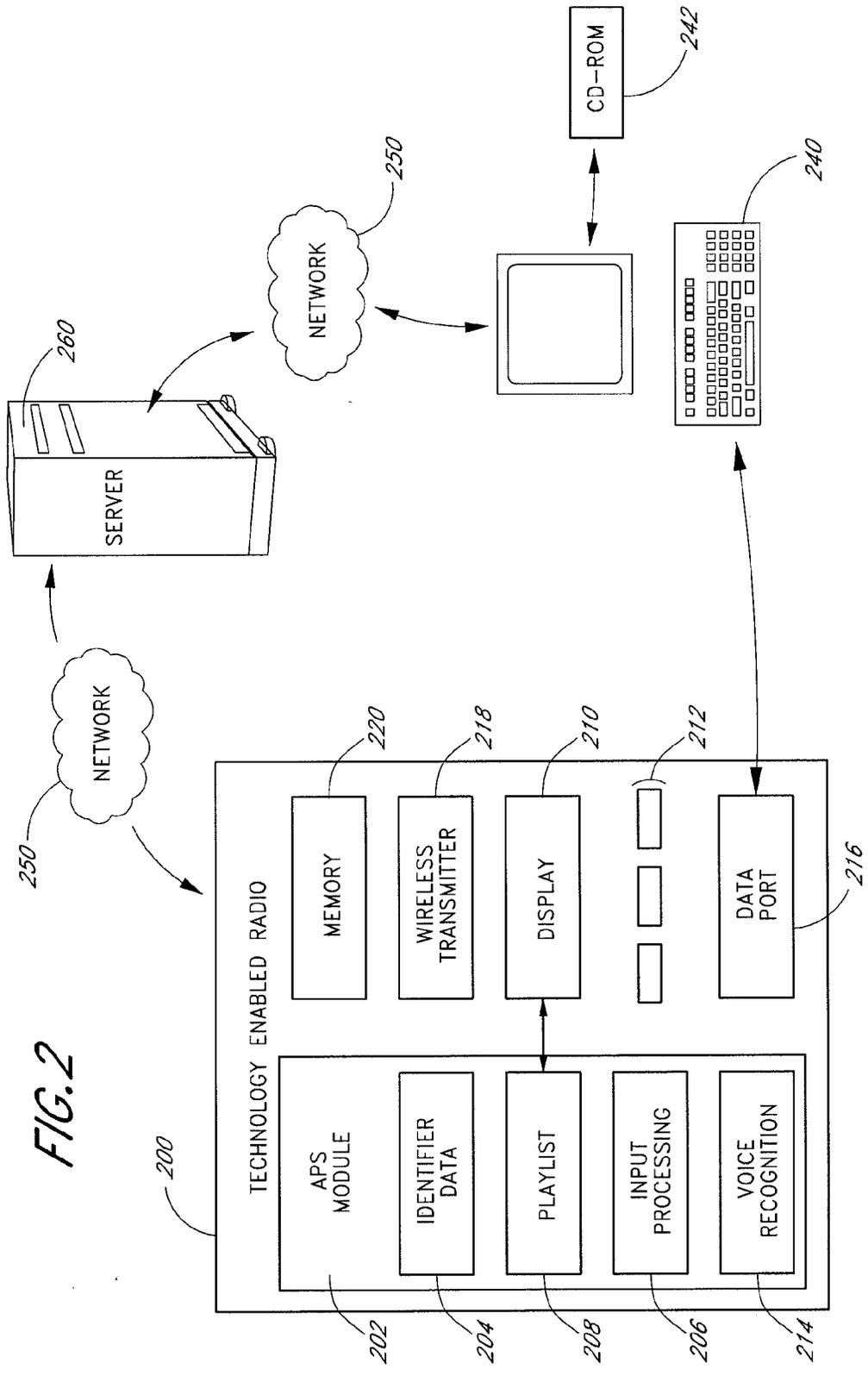
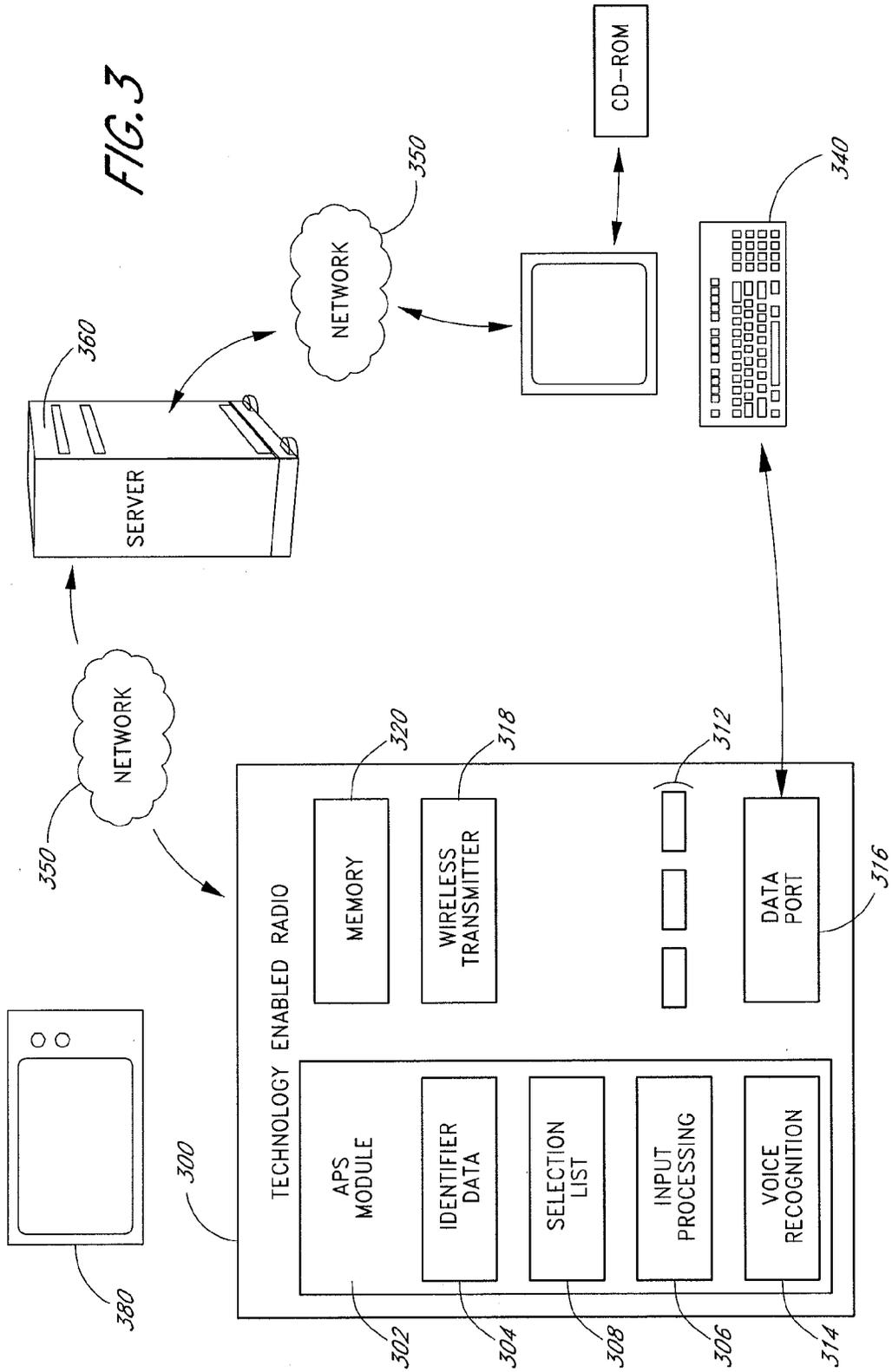


FIG. 2

FIG. 3



## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>				
<b>Filing Date:</b>				
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM			
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen			
<b>Filer:</b>	Morgan Ross Coates/Thea Thais			
<b>Attorney Docket Number:</b>	STRATOS.001C5			
Filed as Small Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
Late Filing Fee for Oath or Declaration	2051	1	70	70
<b>Petition:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
			<b>Total in USD (\$)</b>	<b>800</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	15714067
<b>Application Number:</b>	13889176
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	1927
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen
<b>Customer Number:</b>	20995
<b>Filer:</b>	Morgan Ross Coates/Valerie Jones
<b>Filer Authorized By:</b>	Morgan Ross Coates
<b>Attorney Docket Number:</b>	STRATOS.001C5
<b>Receipt Date:</b>	07-MAY-2013
<b>Filing Date:</b>	
<b>Time Stamp:</b>	18:49:21
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$800
RAM confirmation Number	5464
Deposit Account	
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part / Zip Petitioner (if appl.)	Pages (if appl.)
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1	Application Data Sheet	ADS_STRATOS001C5.pdf	337413	no	7
			0a7335d0507d9e795fb71174e6297cf290b70316		
<b>Warnings:</b>					
<b>Information:</b>					
This is not an USPTO supplied ADS fillable form					
2		spec_STRATOS001C5.pdf	1267702	yes	26
			4cc5e246d9e1b34f51f7d95564e52e4bb406a882		
	<b>Multipart Description/PDF files in .zip description</b>				
	<b>Document Description</b>		<b>Start</b>	<b>End</b>	
	Specification		1	20	
	Claims		21	25	
	Abstract		26	26	
<b>Warnings:</b>					
<b>Information:</b>					
3	Drawings-only black and white line drawings	Drawings_STRATOS001C5.pdf	97438	no	6
			f9e4385c7b2c55d640e2df09ab9a2ee5d5c85338		
<b>Warnings:</b>					
<b>Information:</b>					
4	Fee Worksheet (SB06)	fee-info.pdf	36229	no	2
			b223782035bcb3327cf439c5e17a6d72ac08fcd8e		
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			1738782		

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**



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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 13/889,176, 05/07/2013, 2649, 800, STRATOS.001C5, 20, 3

CONFIRMATION NO. 1927

FILING RECEIPT

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Date Mailed: 06/12/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

Kelly M. Christensen, Mill Creek, WA;
Barry D. Thomas, West Hills, CA;
Thomas J. Smyth, North Hollywood, CA;

Applicant(s)

StratosAudio, Inc., Kirkland, WA

Assignment For Published Patent Application

StratosAudio, Inc., Kirkland, WA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 11/562,300 11/21/2006 PAT 8467724
which is a CON of 11/203,556 08/12/2005 PAT 7773939
which is a CON of 09/953,335 09/13/2001 PAT 6957041
which claims benefit of 60/232,333 09/13/2000

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 06/05/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 13/889,176

Projected Publication Date: To Be Determined - pending completion of Corrected Papers

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

BROADCAST RESPONSE SYSTEM

**Preliminary Class**

455

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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**Title 37, Code of Federal Regulations, 5.11 & 5.15**

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---

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**PATENT APPLICATION FEE DETERMINATION RECORD**

Substitute for Form PTO-875

Application or Docket Number  
13/889,176

**APPLICATION AS FILED - PART I**

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(j))	20 minus 20 =	*
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

\* If the difference in column 1 is less than zero, enter "0" in column 2.

**SMALL ENTITY**

RATE(\$)	FEE(\$)
N/A	70
N/A	300
N/A	360
x 40 =	0.00
x 210 =	0.00
	0.00
	0.00
<b>TOTAL</b>	<b>730</b>

**OR OTHER THAN SMALL ENTITY**

RATE(\$)	FEE(\$)
N/A	
N/A	
N/A	
<b>TOTAL</b>	

**APPLICATION AS AMENDED - PART II**

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

**SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

**OR OTHER THAN SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

**SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

**OR OTHER THAN SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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Table with 4 columns: APPLICATION NUMBER (13/889,176), FILING OR 371(C) DATE (05/07/2013), FIRST NAMED APPLICANT (Kelly M. Christensen), ATTY. DOCKET NO./TITLE (STRATOS.001C5)

CONFIRMATION NO. 1927
FORMALITIES LETTER

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Date Mailed: 06/12/2013

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The substitute specification must be submitted with markings and be accompanied by a clean version (without markings) as set forth in 37 CFR 1.125(c) and a statement that the substitute specification contains no new matter (see 37 CFR 1.125(b)). The specification, claims, and/or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
- The application contains drawings, but the specification does not contain a brief description of the several views of the drawings as required by 37 CFR 1.74 and 37 CFR 1.77(b)(7).

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
All
Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

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Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

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/wtsige/

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Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor	:	Kelly M. Christensen, et al.
App. No.	:	13/889,176
Filed	:	May 7, 2013
For	:	BROADCAST RESPONSE SYSTEM
Examiner	:	Unknown
Art Unit	:	2649
Conf No.	:	1927

**RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS****Mail Stop Missing Parts**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

In response to the Notice to File Corrected Application Papers mailed June 12, 2013, enclosed in compliance with 37 C.F.R. § 1.125(c) are the following.

- (X) Substitute Specification with markings pursuant to 37 C.F.R. § 1.125.

Applicant respectfully submits that no new matter has been introduced by way of the Substitute Specification.

- (X) Clean version of the Substitute Specification.  
(X) Declaration of Kelly M. Christensen in 1 page.  
(X) Declaration of Barry D. Thomas in 1 page.  
(X) Declaration of Thomas J. Smyth in 1 page.  
(X) Request to Revisit Art.  
(X) Information Disclosure Statement.

**Amendments to the Specification** begin on page 2 of this paper.

**Remarks/Arguments** begin on page 3 of this paper.

**Application No.:** 13/889,176  
**Filing Date:** May 7, 2013

**AMENDMENTS TO THE SPECIFICATION**

Please enter the Substitute Specification submitted herewith as a “Clean Copy” and a “Marked-up Copy” in the Application. Applicant has added a reference to Figures 1A through 1D to the brief description of the drawings. No new matter has been added.

**Application No.:** 13/889,176  
**Filing Date:** May 7, 2013

**REMARKS**

In response to the Notice to File Corrected Application Papers mailed June 12, 2013, Applicant submits a Substitute Specification, including marked-up and clean versions, in compliance with 37 C.F.R. § 1.125(c). Applicant respectfully submits that the Application is in proper form for examination.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: August 7, 2013

By: Morgan Coates/

Morgan R. Coates  
Registration No. 64,970  
Attorney of Record  
Customer No. 20995  
(949) 760-0404

15964574

**BROADCAST RESPONSE SYSTEM****CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** This application is a continuation of U.S. Patent Application No. 11/562,300, titled BROADCAST RESPONSE SYSTEM, filed November 21, 2006, which is a continuation of U.S. Patent Application No. 11/203,556, titled BROADCAST RESPONSE SYSTEM, filed August 12, 2005, which is a continuation of U.S. Patent Application No. 09/953,335, titled SYSTEM AND METHOD FOR ORDERING AND DELIVERING MEDIA CONTENT, filed September 13, 2001, which claims the benefit of U.S. Provisional Application No. 60/232,333, titled SYSTEM AND METHOD FOR ORDERING AND DELIVERING MEDIA CONTENT, filed September 13, 2000. Each of the foregoing applications is hereby incorporated by reference in its entirety.

**BACKGROUND**Field

**[0002]** This invention relates to processing responses to a broadcast.

Description

**[0003]** From the early days of FM broadcast transmission, stations have included ancillary signals such as background music or reading services for the blind along with a main carrier signal. The idea of transmitting data along with the main carrier signal caught on, and now many broadcast radio services either transmit an ancillary data signal or are developing a method to do so. The most current and widely used data transmission standard is the United States Radio Broadcast Data Systems (“RBDS”) standard.

**[0004]** The RBDS standard, published by the National Radio Systems Committee and sponsored by the Electronics Industry Association and the National Association of Broadcasters, describes a system for broadcasting a variety of program-related information on a subcarrier of a standard FM broadcast channel. The RBDS standard teaches a system for transmitting station identification and location information, as well as time, traffic and miscellaneous other information.

**[0005]** The RBDS standard was designed to allow stations to send information such as call letters, station format, traffic alerts and scrolling text messages to compatible radios.

**[0006]** Many stations installed RBDS encoders through a program encouraged by the FCC in the early 1990's that provided encoders at no charge. Radio stations that did not participate in this "RBDS Roll-Out" can still obtain encoders at competitive prices.

**[0007]** RBDS encoders generate what is known as a "subcarrier" that modulates along with an FM station broadcast signal and can be demodulated by special decoders. The RBDS uses a subcarrier frequency of 57khz. Commercially available RBDS encoders usually accept information via either serial or parallel data ports and format the information into the appropriate RBDS block type.

**[0008]** The RBDS data signal is a specially encoded text stream containing up to 32 repeating data "groups" transmitting at 1187.5 bits/second. The RBDS data signal does not require inclusion of all potential data group blocks of both repeating and unique data. One embodiment includes using one of several groups that are designed for data transmission functions.

**[0009]** An RBDS data group is composed of 4 blocks, each divided by checkwords used for error correction. Block 1 is a 4-digit Program Identification code (PI) which is derived from the transmitting station's call letters. Block 2 includes a 4-bit type code and a 1-bit group version code which identifies the type of information the data group contains. This block also contains a 1-bit code that identifies the transmitting station as one that broadcasts traffic information, followed by a 5-bit Program Type (PTY) code which describes the current program or format being broadcast by the station (Rock, Oldies, Talk, News, etc.). Information contained in Blocks 3 and 4 are dependent on the codes included in Block 2. Blocks 3 and 4 provide two 16-bit data slots where specific information can be sent to the special receiver.

**[0010]** For example, RBDS Group types 2A, use blocks 3 and 4 to transmit a 64-character text message known as RadioText (RT). This appears on RBDS-enabled radios as a scrolling message which some stations use to identify the song or program being broadcast. Other group types use these blocks to identify alternate frequencies where the same

programming can be available, in-house station text messages, or Emergency Alert System (EAS) communication messages. An extensive description of the RBDS standard is available through the National Association of Broadcasters and the National Radio Systems Committee.

**[0011]** A similar standard used in Europe is the European Radio Data System (RDS).

**[0012]** Broadcasters using the RBDS standard can distribute information to a large number of users. However, the standard does not allow individual users to respond to the broadcast information.

**[0013]** Currently, users listening to the radio or watching television may particularly like a song or program that they would like to purchase. While stations using RBDS/RDS may provide a user with the station call letters or the name of the song currently being broadcast, the user has no way to purchase the media at that point. Instead, the user must write down or remember the identifying information and then go to a store or online retailer to purchase the media. Not only is this inconvenient, but the user may forget the name of the song or not be able to find a store that sells the song. Additionally, the information provided by the radio station may not be enough to sufficiently identify the song. For example, the user may have the song title, but not the artist name, album name, or other necessary identifying information. Some material, such as editorial news broadcasts or live events, may not be available for purchase or may be difficult to find. Radio stations often have fund raising drives or listener surveys that require a listener to call the station or respond within a limited time. These same problems also apply to television and other forms of broadcast media.

#### SUMMARY

**[0014]** The present invention solves these and other problems by providing a system that allows an individual user to respond to a data broadcast. In one embodiment, an Automatic Purchase System (APS) provides a radio broadcast listener with the ability to conveniently purchase media content such as music or speech while listening to the radio. Additionally, the user can respond to items in the radio broadcast such as advertisements, fund raising drives such as those conducted by public radio, or interactive listener polls during the broadcast.

**[0015]** In one embodiment, the user establishes a “Creative content” purchasing account with a wireless carrier. In one embodiment, a personal URL (web address) is assigned to the user to allow the user, for example, to monitor account activity, enable or disable APS software downloads, display premiums offered by sponsors, and manage and track content or APS purchases using a Technology Enabled Radio (TER) or a personal computer.

**[0016]** In one embodiment, the user makes routing choices between the TER or the web account for content. In one embodiment, the user selects the compression type, such as MP3, RA, Liquid Audio etc.

**[0017]** In one embodiment, each broadcaster has an RBDS/RDS or similar technology enabled server onsite to, for example, generate RBDS/RDS or equivalent code for inclusion in the broadcast, validate and route purchase information to the user’s wireless carrier for billing, monitor online sales transactions for data mining, or route validated purchases to licensed creative content providers.

**[0018]** In one embodiment, radio hardware can include, for example, RBDS/RDS or equivalent decoder capability (e.g., in an internal chip with APS code); flash card slot and recording ability; or storage of multiple items such as artist name, song title, IP address of creative content provider, and time stamp for delayed purchase (e.g., in an internal chip with APS code).

**[0019]** In one embodiment, the system uses the RBDS/RDS to send a data stream in combination with a broadcast signal for identifying music or speech content available for purchase. A broadcast organization participating in the APS system is able to respond to requests for purchases placed by users who either click a button or issue a voice command to the radio at the time of the content was broadcast, at a later time by scrolling through the playlist stored in the APS module in the radio then selecting one or more items for purchase from the list stored in the radio, or by accessing a private web account via the Internet and downloading content to the personal computer. In one embodiment, purchases are made by saving requests for selected items for purchase on a flash card or storage technology and transferring that data to a personal computer for purchase through the Internet at a later time.

**[0020]** Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using the RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by the APS server software on a Data Server located at the broadcast site, a remote site or both for purposes of redundancy. Transmission of purchase requests from a Technology Enabled Radio (TER) is provided via wireless transmission, or by accessing the Internet using a personal computer or through a cellular or wireless phone. In one embodiment, activity of each sale using the above system is tracked for the purposes of aggregating data or “Data Mining” for sale to interested parties such as trade publications and record companies.

**[0021]** Portable radios can come equipped with a voice interface or a purchase button, a flash card or storage device and a port for connecting the radio to the personal computer such as a 9 pin serial, USB or wireless networking technology.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0022]** Figure 1, comprising Figures 1A through 1D, illustrates an electronic purchasing system with a radio station that broadcasts information to individual radio receivers.

**[0023]** Figure 2 illustrates a radio receiver that includes an automatic purchasing system module.

**[0024]** Figure 3 illustrates a television adapter that includes an automatic purchasing system module.

#### DETAILED DESCRIPTION

**[0025]** The present invention solves various problems in the prior art by providing a system that allows an individual user to respond to a data broadcast. In one embodiment, an Automatic Purchase System (APS) provides a radio broadcast listener with the ability to conveniently purchase media content such as music or speech while listening to the radio. Additionally, the user can respond to items in the radio broadcast such as advertisements, fund

raising drives such as those conducted by public radio, or interactive listener polls during the broadcast.

**[0026]** One of ordinary skill in the art will recognize that there are various forms of media that can be broadcast. Where a specific type of media is used in the following examples, it is for demonstration purposes only and the examples should not be limited in that regard. Some examples of the various types of media can include music, songs, speech, text, video, etc.

**[0027]** Fig. 1 illustrates one embodiment of a system that allows a user to respond to a data broadcast. Fig. 1 shows a radio station 140 that broadcasts information to a radio receiver 100. The radio receiver 100 has a control interface 116 that allows a user to initiate a purchase of music or products based on the radio station broadcast.

**[0028]** The terms RBDS/RDS are used throughout this document, but it should be understood other data standards can also be used. In one embodiment, the radio receiver 100 comprises a Radio Frequency (RF) Demodulator Section 102, a RBDS/RDS Decoder 106, a RBDS/RDS function control interpreter 104, an audio demodulator amplifier section 108, a scrolling display 110, an Internet Download Director 112, a local memory device 114 and the control interface 116. Additionally, the receiver 100 provides for audio output by transmitting an audio signal 128 from an audio demodulator amplifier section 108 to the speaker 118.

**[0029]** In one embodiment, the RF Demodulator Section 102 splits the signal into an audio signal and a data signal, with the data signal provided to the RBDS/RDS decoder 106 and the audio signal provided to the audio demodulator amplifier section 108. The RBDS/RDS decoder 106 parses the data signal from the RF Demodulator Section 102 and transmits the data to the RBDS/RDS Function Controller 104, the Scrolling Display 110, and the Internet Download Director 112.

**[0030]** The RBDS/RDS Function Controller 104 handles codes 124 sent using the RBDS/RDS standard. The codes 124 can, for example, include a Program Service name (PS), a Program Type (PTY), a Program Identification (PI), a Traffic Program (TP), a Traffic Announcement (TA), etc.

**[0031]** In one embodiment, the data is converted to an audio signal played on one or more speakers for the user to hear. A 64 character radio text message can be transmitted

in five seconds under the RBDS standard, where a Type 2A group with 4 characters is transmitted 3.2 times a second.

**[0032]** In one embodiment, a pointer to an Open Data Applications (ODA) group is transmitted in a Type 3A group. The pointer, 16 message bits and 16 bit identifier (AID) are transmitted once a second.

**[0033]** In one embodiment, an ODA group with 37 usable bits is transmitted once a second during the broadcast of a “tagged” program. The ODA group can contain, for example, a song or commercial campaign identification.

**[0034]** In one embodiment, the scrolling display 110 receives display data 122 from the RBDS/RDS Decoder 106. The display data 122 can include information such as the program service name and program type, or it can include radio text information or messages displaying purchase options.

**[0035]** Additionally, the RBDS/RDS Decoder 106 provides data to the Internet Download Director 112 that includes instructions for the location of downloadable audio. For example, a radio station 140 can broadcast data regarding the current song that is playing, such as the song name, artist, album name, and year the song was recorded. The radio station 140 can also broadcast information providing a location where the song, editorial news broadcast, collection of songs, or other program material can be downloaded or purchased, and the purchase price for the song.

**[0036]** In one embodiment, a user can place an order to download a song using the control interface 116. The control interface 116 provides a download command signal 126 to the Internet Download Director 112. The Internet Download Director 112 can then provide download instructions such as, for example, the location of the file for download and the security procedures required for access. The download information is then transmitted over, for example, a wireless internet connection 156 to the authentication and billing system 152. The authentication and billing system 152 verifies the customer information and determines whether the customer account can be debited for the cost of the order. The authentication and billing system 152 then provides an approval signal 168 indicating whether the purchase was approved. The approval signal 168 is transmitted to the purchase database server 150.

**[0037]** Once the purchase is approved, the purchase database server 150 provides purchase and download authorization to the download server 154. The download server 154 can then transmit the requested material over a network connection 158. In one embodiment, the material is transmitted using a wireless internet connection directly to the radio receiver 100. In another embodiment, the material is made available to a personal computer. In one embodiment, the material is sent using traditional mail or parcel services. The download server 154 also communicates with the audio database and encoding server 144 to provide available sound database information 164.

**[0038]** The radio station 140 includes a radio automation or CD playback system 142, an audio database/encoding server 144, an FM transmission system 146 and a RBDS/RDS encoder 148. The radio automation or CD playback system 142 can extract information about songs or a radio program from the station playlist or by extracting information encoded on a CD or a CD-ROM. The playlist information is provided to the audio database and coding server 144. The playlist information can include the song title, artist, cut or other information. The audio database/encoding server 144 matches the information sent from the radio automation system 142 with information in the database. If there is an audio file available for download, the database/encoding server 144 formats the download information and sends it to the RBDS/RDS encoder 148. Corresponding information is uploaded to the purchase database server 150.

**[0039]** The RBDS/RDS encoder 148 transmits the RBDS/RDS information using the 57khz RBDS/RDS subcarrier 170 to the FM transmission system 146. The RBDS/RDS subcarrier signal 170 is mixed by the FM transmission system 146 with the FM baseband program signal 172 and any other subcarriers. The FM transmission system 146 then transmits an FM RF signal 162 which is received by the radio receiver 100.

**[0040]** As shown in Fig. 1, a radio station 140, using either a standard radio automation system for tracking of music content which is being broadcast, or a data-enabled audio player, broadcasts audio material and synchronously sends RBDS/RDS or similar data to an APS server 144 that assigns a unique identifier to each specific broadcast segment or song.

**[0041]** The APS server 144 compares the broadcast segment identifier with a database 150 of audio available for purchase. If the broadcasted audio is available, the APS server 144 incorporates station call letter information, and an audio download location such as IP address and a file name into a data stream that is inserted into a radio station's broadcast using RBDS/RDS or similar technology. The information identifying the audio selected by the listener or user is routed to the APS Data Server and passed on to the location where a digital version of the audio content is stored and available for transfer to the end user. The user's radio receiver 100 receives and recognizes the encoded RBDS/RDS or other data and presents it on the radio display 110 notifying the user that the audio is available for purchase.

**[0042]** If the user elects to purchase the audio content or responds to an ad or "pledge" drive, a request including the station's data and the user's cell phone or wireless Electronic Serial Number (ESN) or other identifier, such as a credit card number, combined with the audio content information is issued by the radio and passed via the cellular or wireless phone transmission to the APS Data Server and finally routed to the source server at the record company, publisher or licensed content provider. If a "good" connection is not available using the wireless connection, or the user does not have a wireless account, the information can be stored on the internal flash card or other storage device 114 in the radio for transfer to a personal computer at a time of the user's choosing.

**[0043]** Each server typically records the purchase or response information. The storage server 154 at a source location then uploads the requested audio to the routing address associated with the user's cell phone account identifier. The user's receiver 100 then saves the audio on internal memory or a removable memory device or holds the audio content until the user chooses to download it using the Internet.

**[0044]** One embodiment includes the use of several group types reserved for "open data applications" by the RBDS/RDS standard. These groups were designed for use with data applications and are readily available for use.

**[0045]** Fig. 2 shows one example of a technology enabled radio 200. The radio 200 includes a module 202 for the Automatic Purchase System. In one embodiment, the APS provides relatively quick delivery of the purchased material. In one embodiment, quick delivery is provided by wireless transmission such that the user can receive the purchased

material while traveling. In one embodiment, the system also provides delayed delivery, when, for example: the user so chooses; the user does not have a wireless account; or the user cannot obtain a good signal with a wireless connection for transmission.

**[0046]** In one embodiment, the radio 200 contains an APS module 202 configured to store identifier data 204, to provide security functions, and to assist in routing selections made by the user (using either a voice command issued to voice recognition technology 214 contained in the radio or by the press of a button 212 on the radio interface). In one embodiment, the APS module 202 is a proprietary microchip (or portion of a microchip) that implements the radio receiver-side functions of the APS. In one embodiment, the APS module 202 is a software module that runs on a processor in the radio 200.

**[0047]** The audio content can also be “tagged” for delayed purchase at a later time by scrolling through the playlist 208 stored in the APS module 202 on the radio 200 and presented on the external display 210 of the radio 200. The user can then select one or more items for purchase from the list presented on the display 210 (stored in the APS module 202 in the radio). In one embodiment, the selected items are transmitted using a wireless transmitter 218 such as a wireless telephone. In another embodiment, a user can store the playlist 208 on removable memory 220 that is readable by a personal computer 240. The user can then access a private web account via the Internet for downloading the content to the personal computer 240. At this point, the user can transfer the downloaded content to a storage device 242 such as, for example, a flash card or CD-ROM.

**[0048]** Non-automotive or portable radios containing the APS module 202 can also include either a voice interface 214, an interactive button 212, or both, to enable listener-selection of broadcast material (or for responding to advertisements, fund raising drives, or any other interactive event). A port 216 such as a 9-pin serial port, a USB port, or any other port designed to provide connectivity between the radio 200 and a personal computer 240 can also be integrated into the radio 200 for the purposes of transferring the selection list from the APS module 202 to software in a personal computer 240 or other device. APS software running on the personal computer 240 is configured to recognize an embedded security code enabling purchase of the selected material via the Internet, or respond to an advertisement or

fund raising drive. Wireless technology, such as, for example, BlueTooth and the like, can also be used for the purposes of transferring the selection data between devices.

**[0049]** Automotive radios equipped with the APS module 202 and associated technologies can use a wireless interface 218 to send a purchase request (or interactive response) complete with a user Electronic Serial Number (ESN), WIN identifiers, and routing information such as artist and song title derived from the RBDS/RDS data string accompanying the associated broadcast. The purchase request and routing information can then be directed to an APS server 260 for processing, billing approval, and delivery of the content to a particular location (such as the user's flash card or storage technology in the radio 200 or a personal account web URL), as requested by the user.

**[0050]** The flash card or storage technology 220 in the automotive radio offers the user a second option. The user can select content for purchase using the interactive voice technologies 214 or the button interface 212 to select broadcast content for purchase. If that user does not have a wireless phone, or does not have a good connection with a wireless phone connected to the radio, then the content selections can be stored on the flash card or storage technology 220 for later use.

**[0051]** In one embodiment, the APS polls the wireless network until a good connection is obtained, at which point the selection data is transferred for completion of the transaction. In cases where the user cannot obtain a good connection or the user does not have a wireless account, the flash card or storage technology 220 can later be removed by the user and inserted into a personal computer 240. The routing information for each selection stored on the flash card or storage technology 220 is passed to the APS download software running on the user's personal computer 240. Once the user has an active connection to the Internet, the APS download software allows the user to purchase the selected content and download it to a personal computer 240 as long as the content was tagged with the proper security codes obtained from the APS module 202 in the radio 200.

**[0052]** Using this system, the user can respond to a live broadcast radio advertisement to qualify for coupons, premiums or other sponsor-offered rewards. This system can also be applied to pledge drives employed by public radio stations, allowing listeners to pledge money while driving or listening to a portable radio. The system can also

be used for listener polls where the broadcaster can obtain quick responses from listeners to new music, speech content or general questions such as a talk show format. In each case, the user/listener can respond by pressing a “Respond” button 212 on the radio 200. On a voice-enabled radio 200, the user/listener can order content or provide responses by voice commands.

**[0053]** The user can also receive offers or hyperlinks posted on a personal web site presenting premiums such as discounted tickets (to events for the artists or writers for which they purchased content), suggestions of purchase for related artists or music genres, record company club offerings, or other premiums. Associated books, magazine articles, merchandise and event information can also be posted for the user to purchase using the APS. Hyperlinks can also be present for content not available on the radio but provided either through partnerships with existing digital content providers or content owners who have made direct arrangements for digital distribution through the APS web site.

**[0054]** Billing for the purchase of content and user-identification can be managed through the user’s wireless phone account or the user can establish an account at an APS web site. Content purchased can be directed to Technology-Enabled Radios (TERs), or receivers using a wireless-telephone transmission, and stored on a flash card. Purchase content can also be directed to a personal web page assigned to the user upon creation of a specific account. The user can access the account over the Internet, and the user can download purchased content to a personal computer.

**[0055]** In order to protect the purchased content from piracy, various access-rights controls and copy-protections can be provided. In one embodiment, the user is allowed to copy purchased content to a CD or flash card one time only (unless additional licenses are purchased). Additional licenses can be purchased within the APS download software or in the user’s web account by the click of a button or through using a third-party software package enabled with the APS security keys such as the ESN and WIN numbers from a wireless account.

**[0056]** Each sales transaction can be monitored by an APS server located at each participating radio station, by an Internet-based APS server, or both. The data collected through “data mining” of sales transactions can be sold to companies interested in tracking

demographic information and music sales such as record companies and trade publications. In one embodiment, personal information regarding the users is not disclosed.

**[0057]** The system may include features such as allowing the user to establish a “Creative content” purchasing account with a wireless carrier.

**[0058]** The system may also provide a personal URL (web address) to a user, with one or more web pages that allow a user to, e.g., monitor account activity; enable or disable APS software downloads; display premiums offered by sponsors; manage and track content or APS purchases using a technology-enabled radio or a personal computer; make routing choice between a technology-enabled radio or the web account for content; and/or select compression type (e.g., MP3, RA, Liquid Audio etc.).

**[0059]** In one embodiment, a broadcaster has an RBDS/RDS or similar technology enabled server onsite to, e.g., generate RBDS/RDS or equivalent code for inclusion in the broadcast; validate and route purchase information to the user’s wireless carrier for billing; monitor online sales transactions for data mining; and/or route validated purchase to licensed creative content providers.

**[0060]** Radio hardware may also have various features such as RBDS/RDS or equivalent decoder capability (e.g., in an internal chip with APS code); flash card slot and recording ability; and/or storage capacity to store items such as artist name, song title, IP address of creative content provider, and/or time stamp for delayed purchase (e.g., in an internal chip with APS code).

**[0061]** In one embodiment, the system uses the RBDS/RDS to send a data stream in combination with a broadcast signal for identifying music or speech content available for purchase. A broadcast organization participating in the APS system is able to respond to requests for purchase placed by users who either click a button or issue a voice command to the radio at the time of the content was broadcast, at a later time by scrolling through the playlist stored in the APS module in the radio then selecting one or more items for purchase from the list stored in the radio, or by accessing a private web account via the Internet and downloading content to the personal computer. In one embodiment, purchases are made by saving requests for selected items for purchase on a flash card or storage technology and transferring that data to a personal computer for purchase through the Internet at a later time.

**[0062]** Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using the RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by the APS server software on a Data Server located at the broadcast site, a remote site or both for purposes of redundancy. Transmission of purchase requests from a Technology Enabled Radio (TER) is provided via wireless transmission, or by accessing the Internet using a personal computer or through a cellular or wireless phone. In one embodiment, activity of each sale using the above system is tracked for the purposes of aggregating data or “Data Mining” for sale to interested parties such as trade publications and record companies.

**[0063]** Portable radios can come equipped with a voice interface or a purchase button, a flash card or storage device and a port for connecting the radio to the personal computer such as a 9 pin serial, USB or wireless networking technology.

**[0064]** Music radio stations often depend on computer-programmed and optimized playlists to ensure consistency and success of the format. Many stations use computer-based playback systems that play from hard disc libraries or control CD changers. At the start of the day, a playlist is loaded into these computers that include information. These “automation” systems provide continual logging of functions and activities and can output the “as played” information in a variety of ways, such as serial data. Data can be taken as an event occurs or can be read from a text file. Most automated systems can be programmed to send information out of the serial port.

**[0065]** Some stations have used this data to use RBDS/RDS and display song information in the RadioText group. More recently stations are using this information to feed a “now playing” message on Internet web sites.

**[0066]** Even stations that play CD’s manually from a paper playlist can provide the information needed. Professional CD players usually have serial ports (i.e. RS232, RS485) that can be programmed to transmit CD code information. This code information is similar to the song codes used by internet-enabled computers to automatically download song

information from the website known as CDDB.com for a CD inserted into a CD-ROM player. Every RIAA-registered CD has a unique registered code with the RIAA. Thus, on an RIAA registered CD, a song can be identified by the registered code number in combination with the track number. For content that is not registered with the RIAA, a registration code is provided by APS. In one embodiment, the broadcaster providing the APS service to its listeners assigns an identifier code to the content. In one embodiment, an identifier code for non-RIAA registered content is provided by an APS registering organization or service.

**[0067]** In one embodiment, the system operates by acquiring playlist data or a reference number that identifies the broadcast content. The playlist data is included in the RBDS/RDS data sub-carrier by either the APS server software or a combination of the APS server software in conjunction with a compatible RDS/RBDS encoder.

**[0068]** Once the data source is identified, a connection pathway is established between the broadcaster and the APS Data Server. APS software residing on the APS Data Server stores that information in a “look up” table. The codes representing “cut numbers”, or text song information such as artist and song title, are referenced against the internal look up table to determine if the song is available for download from the content owner such as a music publisher or record company. Once determination has been made regarding availability of the requested content, the APS software residing on the APS Data Server builds the data stream that can include the group 3 and group 4 data of the RBDS/RDS standard containing download location and/or file name. The APS software then transmits the information to a compatible RDS/RBDS encoder residing at the participating broadcaster.

**[0069]** For example: the 64-character text space contained in the RBDS standard is long enough to include an Internet IP address and directory location or reference code contained in a look up table capable of enabling the APS software to route the request for purchase from a user to the appropriate download site such as a publisher, record company or news organization.

**[0070]** The APS software residing on the APS Data Server can be employed to create the complete RBDS/RDS data signal and feed a slave encoder located at each broadcast location. The APS software also tracks each inquiry and purchase for billing verification and crediting the broadcaster for payment for their part in the sale. The APS

software also conducts data mining tracking for purposes of the future sale of transaction data.

**[0071]** In one embodiment, the RBDS/RDS encoder formats and encodes the non-APS elements of the data stream (such as station identification (Call Letters), date and time, etc.) and the APS software on the APS Data Server inserts content-specific data such as song title and artist information or author and news service, into the continual RBDS/RDS data stream through the RBDS/RDS encoder's standard interfaces. The APS Data Server software can be well suited to provide content specific information but the other RBDS/RDS group applications can be better managed by broadcast equipment designed for those applications.

**[0072]** RBDS/RDS is an FM-only transmission system but one of ordinary skill in the art will recognize that APS data can be included with other radio services (e.g. AM, etc.).

**[0073]** Digital Audio Broadcasting (DAB), which includes flexible, open-source, data transmission functions along with the audio signal. Systems for adapting digital audio and data transmission to the current allocation of AM and FM stations using a technique known as In Band On Channel (IBOC) are known. IBOC includes an ancillary data stream in the broadcast signal to be used by the station for whatever purposes they see fit. The ancillary data stream signal can be used to carry APS information.

**[0074]** Other developing radio systems also include a data path that can be used to send the information used by the APS system to successfully allow the acquisition of music or other material being broadcast. Satellite DAB providers, such as XM Satellite and Sirius Satellite Radio, have access to the audio and ancillary data signals being sent to compatible receivers.

**[0075]** As other audio services develop, the capability to transmit complimentary, simultaneous data can be used as a component of the APS. The APS can be simply adapted to each new transmission form with no significant change in the overall system.

**[0076]** Wireless technology and the related developments in high-speed Internet access using systems such as BlueTooth or other wireless network technology allows faster downloads of the desired material by taking advantage of the newer, faster technology.

**[0077]** NTSC, PAL and other technologies employed to transmit television signals around the world allow for similar capabilities in transmitting subcarrier data within the carrier signal.

**[0078]** Fig. 3 shows one example of a Technology Enabled Television (TET) adapter 300. The television adapter 300 includes a module 302 for the Automatic Purchase System. In one embodiment, the television adapter 300 is incorporated into the television. In one embodiment, the television adapter 300 is a settop box. In one embodiment, the APS provides relatively quick delivery of the purchased material. The material available for purchase can cover a wide range of products, such as music, video, print, pledges of money, or consumer goods related to displayed advertisements. In one embodiment, quick delivery is provided by using a cable modem. In one embodiment, the television adapter 300 uses a modem and a telephone connection to download the data. In one embodiment, the television adapter 300 uses a network connection to download the data. In one embodiment, the system provides delayed delivery, when, for example: the user so chooses; the user does not have a cable modem; the user does not have a network account at that location; or the user cannot obtain a good signal with a wireless connection for transmission.

**[0079]** In one embodiment, a television adapter 300 contains an APS module 302 configured to store identifier data 304, to provide security functions, and to assist in routing selections made by the user (using either a voice command issued to voice recognition technology 314 contained in the television adapter or by the press of a button 312 on the television adapter interface). In one embodiment, the APS module 302 is a proprietary microchip (or portion of a microchip) that implements the television adapter-side functions of the APS. In one embodiment, the APS module 302 is a software module that runs on a processor in the television adapter 300.

**[0080]** The material can also be “tagged” for delayed purchase at a later time by scrolling through the selection list 308 stored in the APS module 302 on the television adapter 300 and presented on the external television display 380. The user can then select one or more items for purchase from the list presented on the display 380 (stored in the APS module 302 in the television adapter). In one embodiment, the selected items are transmitted using a cable modem. In one embodiment, the selected items are transmitted using a wireless

transmitter 318 such as a wireless telephone. In another embodiment, a user can store the selection list 308 on removable memory 320 that is readable by a personal computer 340. The user can then access a private web account via the Internet for downloading the content to the personal computer 340. At this point, the user can transfer the downloaded content to a storage device 342 such as, for example, a flash card or CD-ROM.

**[0081]** A port 316 such as a 9-pin serial port, a USB port, or any other port designed to provide connectivity between the television adapter 300 and a personal computer 340 can also be integrated into the television adapter 300 for the purposes of transferring the selection list from the APS module 302 to software in a personal computer 340 or other device. APS software running on the personal computer 340 is configured to recognize an embedded security code enabling purchase of the selected material via the Internet, or respond to an advertisement or fund raising drive. Wireless technology, such as, for example, BlueTooth and the like, can also be used for the purposes of transferring the selection data between devices.

**[0082]** In one embodiment, television adapters equipped with the APS module 302 and associated technologies can use a wireless interface 318 to send a purchase request (or interactive response) complete with a user Electronic Serial Number (ESN), WIN identifiers, and routing information such as artist and song title derived from the RBDS/RDS data string accompanying the associated broadcast. In one embodiment, television adapters can use a modem (e.g. a telephone modem, cable modem, etc.) or other network connection to send a purchase request. The purchase request and routing information can then be directed to an APS server 360 for processing, billing approval, and delivery of the content to a particular location (such as the user's flash card or storage technology in the television adapter 300 or a personal account web URL), as requested by the user. In one embodiment, the purchased material is delivered with traditional mail or parcel services.

**[0083]** The flash card or storage technology 320 in the television adapter offers the user a second option. The user can select content for purchase using the interactive voice technologies 314 or the button interface 312 to select broadcast content for purchase. If that user does not have a network connection, then the content selections can be stored on the flash card or storage technology 320 for later use.

**[0084]** User access to the APS is provided by the remote control, voice interaction or buttons on the actual TV. As a user views broadcast content, the user can respond to the television broadcast to make purchases, respond to an advertisement, to qualify for premiums, or the user can respond to pledge drives on public television or an interactive event such as a talk or game show.

**[0085]** In one embodiment, the user responses are provided to a computing device such as a personal computer, set-top box, and the like (e.g., via flash card or other removable storage medium, via a network connection between the computer and the TET, via a wireless connection such as BlueTooth, etc.). The computing device is then used to transfer the content in a manner similar to that described in the radio embodiment above.

**[0086]** In one embodiment, a cable connection from the TET to the computing device is used for immediate transfer of the user response. In one embodiment, data is transferred between the TET and the computing device using a communication port such as, for example, a serial port, a USB port, infrared port, a parallel port, and Ethernet port, or other port technology.

**[0087]** In one embodiment, the APS module also provides web-enabled cable or satellite television interactive services. In one embodiment, a modem (such as ,for example, a cable modem) is included in the TET thereby allowing the TET to send a user response request directly to a content provider (such as a cable company). In one embodiment, the APS module is provided in a cable set-top box to allow the APS system to be used with a conventional television.

**[0088]** The mechanisms for routing, customer identification, security, tracking, and purchase used with the radio embodiments described above can also be used with the TET.

**[0089]** It is understood that the download server, purchase database server, audio database server and encoding server can reside on one or more computers, and that the shown organization of the servers is for clarification. One or more programs can be used to perform part or all of the functions described in this description.

**[0090]** The foregoing description of a preferred implementation has been presented by way of example only, and should not be read in a limiting sense. Although this invention has been

described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art, including embodiments which do not provide all of the benefits and features set forth herein, are also within the scope of this invention. Accordingly, the scope of the present invention is defined only by reference to the appended claims.

15963933

**BROADCAST RESPONSE SYSTEM****CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** This application is a continuation of U.S. Patent Application No. 11/562,300, titled BROADCAST RESPONSE SYSTEM, filed November 21, 2006, which is a continuation of U.S. Patent Application No. 11/203,556, titled BROADCAST RESPONSE SYSTEM, filed August 12, 2005, which is a continuation of U.S. Patent Application No. 09/953,335, titled SYSTEM AND METHOD FOR ORDERING AND DELIVERING MEDIA CONTENT, filed September 13, 2001, which claims the benefit of U.S. Provisional Application No. 60/232,333, titled SYSTEM AND METHOD FOR ORDERING AND DELIVERING MEDIA CONTENT, filed September 13, 2000. Each of the foregoing applications is hereby incorporated by reference in its entirety.

**BACKGROUND**Field

**[0002]** This invention relates to processing responses to a broadcast.

Description

**[0003]** From the early days of FM broadcast transmission, stations have included ancillary signals such as background music or reading services for the blind along with a main carrier signal. The idea of transmitting data along with the main carrier signal caught on, and now many broadcast radio services either transmit an ancillary data signal or are developing a method to do so. The most current and widely used data transmission standard is the United States Radio Broadcast Data Systems (“RBDS”) standard.

**[0004]** The RBDS standard, published by the National Radio Systems Committee and sponsored by the Electronics Industry Association and the National Association of Broadcasters, describes a system for broadcasting a variety of program-related information on a subcarrier of a standard FM broadcast channel. The RBDS standard teaches a system for transmitting station identification and location information, as well as time, traffic and miscellaneous other information.

**[0005]** The RBDS standard was designed to allow stations to send information such as call letters, station format, traffic alerts and scrolling text messages to compatible radios.

**[0006]** Many stations installed RBDS encoders through a program encouraged by the FCC in the early 1990's that provided encoders at no charge. Radio stations that did not participate in this "RBDS Roll-Out" can still obtain encoders at competitive prices.

**[0007]** RBDS encoders generate what is known as a "subcarrier" that modulates along with an FM station broadcast signal and can be demodulated by special decoders. The RBDS uses a subcarrier frequency of 57khz. Commercially available RBDS encoders usually accept information via either serial or parallel data ports and format the information into the appropriate RBDS block type.

**[0008]** The RBDS data signal is a specially encoded text stream containing up to 32 repeating data "groups" transmitting at 1187.5 bits/second. The RBDS data signal does not require inclusion of all potential data group blocks of both repeating and unique data. One embodiment includes using one of several groups that are designed for data transmission functions.

**[0009]** An RBDS data group is composed of 4 blocks, each divided by checkwords used for error correction. Block 1 is a 4-digit Program Identification code (PI) which is derived from the transmitting station's call letters. Block 2 includes a 4-bit type code and a 1-bit group version code which identifies the type of information the data group contains. This block also contains a 1-bit code that identifies the transmitting station as one that broadcasts traffic information, followed by a 5-bit Program Type (PTY) code which describes the current program or format being broadcast by the station (Rock, Oldies, Talk, News, etc.). Information contained in Blocks 3 and 4 are dependent on the codes included in Block 2. Blocks 3 and 4 provide two 16-bit data slots where specific information can be sent to the special receiver.

**[0010]** For example, RBDS Group types 2A, use blocks 3 and 4 to transmit a 64-character text message known as RadioText (RT). This appears on RBDS-enabled radios as a scrolling message which some stations use to identify the song or program being broadcast. Other group types use these blocks to identify alternate frequencies where the same

programming can be available, in-house station text messages, or Emergency Alert System (EAS) communication messages. An extensive description of the RBDS standard is available through the National Association of Broadcasters and the National Radio Systems Committee.

**[0011]** A similar standard used in Europe is the European Radio Data System (RDS).

**[0012]** Broadcasters using the RBDS standard can distribute information to a large number of users. However, the standard does not allow individual users to respond to the broadcast information.

**[0013]** Currently, users listening to the radio or watching television may particularly like a song or program that they would like to purchase. While stations using RBDS/RDS may provide a user with the station call letters or the name of the song currently being broadcast, the user has no way to purchase the media at that point. Instead, the user must write down or remember the identifying information and then go to a store or online retailer to purchase the media. Not only is this inconvenient, but the user may forget the name of the song or not be able to find a store that sells the song. Additionally, the information provided by the radio station may not be enough to sufficiently identify the song. For example, the user may have the song title, but not the artist name, album name, or other necessary identifying information. Some material, such as editorial news broadcasts or live events, may not be available for purchase or may be difficult to find. Radio stations often have fund raising drives or listener surveys that require a listener to call the station or respond within a limited time. These same problems also apply to television and other forms of broadcast media.

#### SUMMARY

**[0014]** The present invention solves these and other problems by providing a system that allows an individual user to respond to a data broadcast. In one embodiment, an Automatic Purchase System (APS) provides a radio broadcast listener with the ability to conveniently purchase media content such as music or speech while listening to the radio. Additionally, the user can respond to items in the radio broadcast such as advertisements, fund raising drives such as those conducted by public radio, or interactive listener polls during the broadcast.

**[0015]** In one embodiment, the user establishes a “Creative content” purchasing account with a wireless carrier. In one embodiment, a personal URL (web address) is assigned to the user to allow the user, for example, to monitor account activity, enable or disable APS software downloads, display premiums offered by sponsors, and manage and track content or APS purchases using a Technology Enabled Radio (TER) or a personal computer.

**[0016]** In one embodiment, the user makes routing choices between the TER or the web account for content. In one embodiment, the user selects the compression type, such as MP3, RA, Liquid Audio etc.

**[0017]** In one embodiment, each broadcaster has an RBDS/RDS or similar technology enabled server onsite to, for example, generate RBDS/RDS or equivalent code for inclusion in the broadcast, validate and route purchase information to the user’s wireless carrier for billing, monitor online sales transactions for data mining, or route validated purchases to licensed creative content providers.

**[0018]** In one embodiment, radio hardware can include, for example, RBDS/RDS or equivalent decoder capability (e.g., in an internal chip with APS code); flash card slot and recording ability; or storage of multiple items such as artist name, song title, IP address of creative content provider, and time stamp for delayed purchase (e.g., in an internal chip with APS code).

**[0019]** In one embodiment, the system uses the RBDS/RDS to send a data stream in combination with a broadcast signal for identifying music or speech content available for purchase. A broadcast organization participating in the APS system is able to respond to requests for purchases placed by users who either click a button or issue a voice command to the radio at the time of the content was broadcast, at a later time by scrolling through the playlist stored in the APS module in the radio then selecting one or more items for purchase from the list stored in the radio, or by accessing a private web account via the Internet and downloading content to the personal computer. In one embodiment, purchases are made by saving requests for selected items for purchase on a flash card or storage technology and transferring that data to a personal computer for purchase through the Internet at a later time.

**[0020]** Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using the RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by the APS server software on a Data Server located at the broadcast site, a remote site or both for purposes of redundancy. Transmission of purchase requests from a Technology Enabled Radio (TER) is provided via wireless transmission, or by accessing the Internet using a personal computer or through a cellular or wireless phone. In one embodiment, activity of each sale using the above system is tracked for the purposes of aggregating data or “Data Mining” for sale to interested parties such as trade publications and record companies.

**[0021]** Portable radios can come equipped with a voice interface or a purchase button, a flash card or storage device and a port for connecting the radio to the personal computer such as a 9 pin serial, USB or wireless networking technology.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0022]** Figure 1, comprising Figures 1A through 1D, illustrates an electronic purchasing system with a radio station that broadcasts information to individual radio receivers.

**[0023]** Figure 2 illustrates a radio receiver that includes an automatic purchasing system module.

**[0024]** Figure 3 illustrates a television adapter that includes an automatic purchasing system module.

#### DETAILED DESCRIPTION

**[0025]** The present invention solves various problems in the prior art by providing a system that allows an individual user to respond to a data broadcast. In one embodiment, an Automatic Purchase System (APS) provides a radio broadcast listener with the ability to conveniently purchase media content such as music or speech while listening to the radio. Additionally, the user can respond to items in the radio broadcast such as advertisements, fund

raising drives such as those conducted by public radio, or interactive listener polls during the broadcast.

**[0026]** One of ordinary skill in the art will recognize that there are various forms of media that can be broadcast. Where a specific type of media is used in the following examples, it is for demonstration purposes only and the examples should not be limited in that regard. Some examples of the various types of media can include music, songs, speech, text, video, etc.

**[0027]** Fig. 1 illustrates one embodiment of a system that allows a user to respond to a data broadcast. Fig. 1 shows a radio station 140 that broadcasts information to a radio receiver 100. The radio receiver 100 has a control interface 116 that allows a user to initiate a purchase of music or products based on the radio station broadcast.

**[0028]** The terms RBDS/RDS are used throughout this document, but it should be understood other data standards can also be used. In one embodiment, the radio receiver 100 comprises a Radio Frequency (RF) Demodulator Section 102, a RBDS/RDS Decoder 106, a RBDS/RDS function control interpreter 104, an audio demodulator amplifier section 108, a scrolling display 110, an Internet Download Director 112, a local memory device 114 and the control interface 116. Additionally, the receiver 100 provides for audio output by transmitting an audio signal 128 from an audio demodulator amplifier section 108 to the speaker 118.

**[0029]** In one embodiment, the RF Demodulator Section 102 splits the signal into an audio signal and a data signal, with the data signal provided to the RBDS/RDS decoder 106 and the audio signal provided to the audio demodulator amplifier section 108. The RBDS/RDS decoder 106 parses the data signal from the RF Demodulator Section 102 and transmits the data to the RBDS/RDS Function Controller 104, the Scrolling Display 110, and the Internet Download Director 112.

**[0030]** The RBDS/RDS Function Controller 104 handles codes 124 sent using the RBDS/RDS standard. The codes 124 can, for example, include a Program Service name (PS), a Program Type (PTY), a Program Identification (PI), a Traffic Program (TP), a Traffic Announcement (TA), etc.

**[0031]** In one embodiment, the data is converted to an audio signal played on one or more speakers for the user to hear. A 64 character radio text message can be transmitted

in five seconds under the RBDS standard, where a Type 2A group with 4 characters is transmitted 3.2 times a second.

**[0032]** In one embodiment, a pointer to an Open Data Applications (ODA) group is transmitted in a Type 3A group. The pointer, 16 message bits and 16 bit identifier (AID) are transmitted once a second.

**[0033]** In one embodiment, an ODA group with 37 usable bits is transmitted once a second during the broadcast of a “tagged” program. The ODA group can contain, for example, a song or commercial campaign identification.

**[0034]** In one embodiment, the scrolling display 110 receives display data 122 from the RBDS/RDS Decoder 106. The display data 122 can include information such as the program service name and program type, or it can include radio text information or messages displaying purchase options.

**[0035]** Additionally, the RBDS/RDS Decoder 106 provides data to the Internet Download Director 112 that includes instructions for the location of downloadable audio. For example, a radio station 140 can broadcast data regarding the current song that is playing, such as the song name, artist, album name, and year the song was recorded. The radio station 140 can also broadcast information providing a location where the song, editorial news broadcast, collection of songs, or other program material can be downloaded or purchased, and the purchase price for the song.

**[0036]** In one embodiment, a user can place an order to download a song using the control interface 116. The control interface 116 provides a download command signal 126 to the Internet Download Director 112. The Internet Download Director 112 can then provide download instructions such as, for example, the location of the file for download and the security procedures required for access. The download information is then transmitted over, for example, a wireless internet connection 156 to the authentication and billing system 152. The authentication and billing system 152 verifies the customer information and determines whether the customer account can be debited for the cost of the order. The authentication and billing system 152 then provides an approval signal 168 indicating whether the purchase was approved. The approval signal 168 is transmitted to the purchase database server 150.

**[0037]** Once the purchase is approved, the purchase database server 150 provides purchase and download authorization to the download server 154. The download server 154 can then transmit the requested material over a network connection 158. In one embodiment, the material is transmitted using a wireless internet connection directly to the radio receiver 100. In another embodiment, the material is made available to a personal computer. In one embodiment, the material is sent using traditional mail or parcel services. The download server 154 also communicates with the audio database and encoding server 144 to provide available sound database information 164.

**[0038]** The radio station 140 includes a radio automation or CD playback system 142, an audio database/encoding server 144, an FM transmission system 146 and a RBDS/RDS encoder 148. The radio automation or CD playback system 142 can extract information about songs or a radio program from the station playlist or by extracting information encoded on a CD or a CD-ROM. The playlist information is provided to the audio database and coding server 144. The playlist information can include the song title, artist, cut or other information. The audio database/encoding server 144 matches the information sent from the radio automation system 142 with information in the database. If there is an audio file available for download, the database/encoding server 144 formats the download information and sends it to the RBDS/RDS encoder 148. Corresponding information is uploaded to the purchase database server 150.

**[0039]** The RBDS/RDS encoder 148 transmits the RBDS/RDS information using the 57khz RBDS/RDS subcarrier 170 to the FM transmission system 146. The RBDS/RDS subcarrier signal 170 is mixed by the FM transmission system 146 with the FM baseband program signal 172 and any other subcarriers. The FM transmission system 146 then transmits an FM RF signal 162 which is received by the radio receiver 100.

**[0040]** As shown in Fig. 1, a radio station 140, using either a standard radio automation system for tracking of music content which is being broadcast, or a data-enabled audio player, broadcasts audio material and synchronously sends RBDS/RDS or similar data to an APS server 144 that assigns a unique identifier to each specific broadcast segment or song.

**[0041]** The APS server 144 compares the broadcast segment identifier with a database 150 of audio available for purchase. If the broadcasted audio is available, the APS server 144 incorporates station call letter information, and an audio download location such as IP address and a file name into a data stream that is inserted into a radio station's broadcast using RBDS/RDS or similar technology. The information identifying the audio selected by the listener or user is routed to the APS Data Server and passed on to the location where a digital version of the audio content is stored and available for transfer to the end user. The user's radio receiver 100 receives and recognizes the encoded RBDS/RDS or other data and presents it on the radio display 110 notifying the user that the audio is available for purchase.

**[0042]** If the user elects to purchase the audio content or responds to an ad or "pledge" drive, a request including the station's data and the user's cell phone or wireless Electronic Serial Number (ESN) or other identifier, such as a credit card number, combined with the audio content information is issued by the radio and passed via the cellular or wireless phone transmission to the APS Data Server and finally routed to the source server at the record company, publisher or licensed content provider. If a "good" connection is not available using the wireless connection, or the user does not have a wireless account, the information can be stored on the internal flash card or other storage device 114 in the radio for transfer to a personal computer at a time of the user's choosing.

**[0043]** Each server typically records the purchase or response information. The storage server 154 at a source location then uploads the requested audio to the routing address associated with the user's cell phone account identifier. The user's receiver 100 then saves the audio on internal memory or a removable memory device or holds the audio content until the user chooses to download it using the Internet.

**[0044]** One embodiment includes the use of several group types reserved for "open data applications" by the RBDS/RDS standard. These groups were designed for use with data applications and are readily available for use.

**[0045]** Fig. 2 shows one example of a technology enabled radio 200. The radio 200 includes a module 202 for the Automatic Purchase System. In one embodiment, the APS provides relatively quick delivery of the purchased material. In one embodiment, quick delivery is provided by wireless transmission such that the user can receive the purchased

material while traveling. In one embodiment, the system also provides delayed delivery, when, for example: the user so chooses; the user does not have a wireless account; or the user cannot obtain a good signal with a wireless connection for transmission.

**[0046]** In one embodiment, the radio 200 contains an APS module 202 configured to store identifier data 204, to provide security functions, and to assist in routing selections made by the user (using either a voice command issued to voice recognition technology 214 contained in the radio or by the press of a button 212 on the radio interface). In one embodiment, the APS module 202 is a proprietary microchip (or portion of a microchip) that implements the radio receiver-side functions of the APS. In one embodiment, the APS module 202 is a software module that runs on a processor in the radio 200.

**[0047]** The audio content can also be “tagged” for delayed purchase at a later time by scrolling through the playlist 208 stored in the APS module 202 on the radio 200 and presented on the external display 210 of the radio 200. The user can then select one or more items for purchase from the list presented on the display 210 (stored in the APS module 202 in the radio). In one embodiment, the selected items are transmitted using a wireless transmitter 218 such as a wireless telephone. In another embodiment, a user can store the playlist 208 on removable memory 220 that is readable by a personal computer 240. The user can then access a private web account via the Internet for downloading the content to the personal computer 240. At this point, the user can transfer the downloaded content to a storage device 242 such as, for example, a flash card or CD-ROM.

**[0048]** Non-automotive or portable radios containing the APS module 202 can also include either a voice interface 214, an interactive button 212, or both, to enable listener-selection of broadcast material (or for responding to advertisements, fund raising drives, or any other interactive event). A port 216 such as a 9-pin serial port, a USB port, or any other port designed to provide connectivity between the radio 200 and a personal computer 240 can also be integrated into the radio 200 for the purposes of transferring the selection list from the APS module 202 to software in a personal computer 240 or other device. APS software running on the personal computer 240 is configured to recognize an embedded security code enabling purchase of the selected material via the Internet, or respond to an advertisement or

fund raising drive. Wireless technology, such as, for example, BlueTooth and the like, can also be used for the purposes of transferring the selection data between devices.

**[0049]** Automotive radios equipped with the APS module 202 and associated technologies can use a wireless interface 218 to send a purchase request (or interactive response) complete with a user Electronic Serial Number (ESN), WIN identifiers, and routing information such as artist and song title derived from the RBDS/RDS data string accompanying the associated broadcast. The purchase request and routing information can then be directed to an APS server 260 for processing, billing approval, and delivery of the content to a particular location (such as the user's flash card or storage technology in the radio 200 or a personal account web URL), as requested by the user.

**[0050]** The flash card or storage technology 220 in the automotive radio offers the user a second option. The user can select content for purchase using the interactive voice technologies 214 or the button interface 212 to select broadcast content for purchase. If that user does not have a wireless phone, or does not have a good connection with a wireless phone connected to the radio, then the content selections can be stored on the flash card or storage technology 220 for later use.

**[0051]** In one embodiment, the APS polls the wireless network until a good connection is obtained, at which point the selection data is transferred for completion of the transaction. In cases where the user cannot obtain a good connection or the user does not have a wireless account, the flash card or storage technology 220 can later be removed by the user and inserted into a personal computer 240. The routing information for each selection stored on the flash card or storage technology 220 is passed to the APS download software running on the user's personal computer 240. Once the user has an active connection to the Internet, the APS download software allows the user to purchase the selected content and download it to a personal computer 240 as long as the content was tagged with the proper security codes obtained from the APS module 202 in the radio 200.

**[0052]** Using this system, the user can respond to a live broadcast radio advertisement to qualify for coupons, premiums or other sponsor-offered rewards. This system can also be applied to pledge drives employed by public radio stations, allowing listeners to pledge money while driving or listening to a portable radio. The system can also

be used for listener polls where the broadcaster can obtain quick responses from listeners to new music, speech content or general questions such as a talk show format. In each case, the user/listener can respond by pressing a “Respond” button 212 on the radio 200. On a voice-enabled radio 200, the user/listener can order content or provide responses by voice commands.

**[0053]** The user can also receive offers or hyperlinks posted on a personal web site presenting premiums such as discounted tickets (to events for the artists or writers for which they purchased content), suggestions of purchase for related artists or music genres, record company club offerings, or other premiums. Associated books, magazine articles, merchandise and event information can also be posted for the user to purchase using the APS. Hyperlinks can also be present for content not available on the radio but provided either through partnerships with existing digital content providers or content owners who have made direct arrangements for digital distribution through the APS web site.

**[0054]** Billing for the purchase of content and user-identification can be managed through the user’s wireless phone account or the user can establish an account at an APS web site. Content purchased can be directed to Technology-Enabled Radios (TERs), or receivers using a wireless-telephone transmission, and stored on a flash card. Purchase content can also be directed to a personal web page assigned to the user upon creation of a specific account. The user can access the account over the Internet, and the user can download purchased content to a personal computer.

**[0055]** In order to protect the purchased content from piracy, various access-rights controls and copy-protections can be provided. In one embodiment, the user is allowed to copy purchased content to a CD or flash card one time only (unless additional licenses are purchased). Additional licenses can be purchased within the APS download software or in the user’s web account by the click of a button or through using a third-party software package enabled with the APS security keys such as the ESN and WIN numbers from a wireless account.

**[0056]** Each sales transaction can be monitored by an APS server located at each participating radio station, by an Internet-based APS server, or both. The data collected through “data mining” of sales transactions can be sold to companies interested in tracking

demographic information and music sales such as record companies and trade publications. In one embodiment, personal information regarding the users is not disclosed.

**[0057]** The system may include features such as allowing the user to establish a “Creative content” purchasing account with a wireless carrier.

**[0058]** The system may also provide a personal URL (web address) to a user, with one or more web pages that allow a user to, e.g., monitor account activity; enable or disable APS software downloads; display premiums offered by sponsors; manage and track content or APS purchases using a technology-enabled radio or a personal computer; make routing choice between a technology-enabled radio or the web account for content; and/or select compression type (e.g., MP3, RA, Liquid Audio etc.).

**[0059]** In one embodiment, a broadcaster has an RBDS/RDS or similar technology enabled server onsite to, e.g., generate RBDS/RDS or equivalent code for inclusion in the broadcast; validate and route purchase information to the user’s wireless carrier for billing; monitor online sales transactions for data mining; and/or route validated purchase to licensed creative content providers.

**[0060]** Radio hardware may also have various features such as RBDS/RDS or equivalent decoder capability (e.g., in an internal chip with APS code); flash card slot and recording ability; and/or storage capacity to store items such as artist name, song title, IP address of creative content provider, and/or time stamp for delayed purchase (e.g., in an internal chip with APS code).

**[0061]** In one embodiment, the system uses the RBDS/RDS to send a data stream in combination with a broadcast signal for identifying music or speech content available for purchase. A broadcast organization participating in the APS system is able to respond to requests for purchase placed by users who either click a button or issue a voice command to the radio at the time of the content was broadcast, at a later time by scrolling through the playlist stored in the APS module in the radio then selecting one or more items for purchase from the list stored in the radio, or by accessing a private web account via the Internet and downloading content to the personal computer. In one embodiment, purchases are made by saving requests for selected items for purchase on a flash card or storage technology and transferring that data to a personal computer for purchase through the Internet at a later time.

**[0062]** Data such as song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored, can be transmitted using the RBDS/RDS data stream. A reference number representing song title and artist, author or publisher and the IP address for the location where the digital version of the content is stored can also be employed for ease of implementation. This reference number can reside in a lookup table to be accessed by the APS server software on a Data Server located at the broadcast site, a remote site or both for purposes of redundancy. Transmission of purchase requests from a Technology Enabled Radio (TER) is provided via wireless transmission, or by accessing the Internet using a personal computer or through a cellular or wireless phone. In one embodiment, activity of each sale using the above system is tracked for the purposes of aggregating data or “Data Mining” for sale to interested parties such as trade publications and record companies.

**[0063]** Portable radios can come equipped with a voice interface or a purchase button, a flash card or storage device and a port for connecting the radio to the personal computer such as a 9 pin serial, USB or wireless networking technology.

**[0064]** Music radio stations often depend on computer-programmed and optimized playlists to ensure consistency and success of the format. Many stations use computer-based playback systems that play from hard disc libraries or control CD changers. At the start of the day, a playlist is loaded into these computers that include information. These “automation” systems provide continual logging of functions and activities and can output the “as played” information in a variety of ways, such as serial data. Data can be taken as an event occurs or can be read from a text file. Most automated systems can be programmed to send information out of the serial port.

**[0065]** Some stations have used this data to use RBDS/RDS and display song information in the RadioText group. More recently stations are using this information to feed a “now playing” message on Internet web sites.

**[0066]** Even stations that play CD’s manually from a paper playlist can provide the information needed. Professional CD players usually have serial ports (i.e. RS232, RS485) that can be programmed to transmit CD code information. This code information is similar to the song codes used by internet-enabled computers to automatically download song

information from the website known as CDDB.com for a CD inserted into a CD-ROM player. Every RIAA-registered CD has a unique registered code with the RIAA. Thus, on an RIAA registered CD, a song can be identified by the registered code number in combination with the track number. For content that is not registered with the RIAA, a registration code is provided by APS. In one embodiment, the broadcaster providing the APS service to its listeners assigns an identifier code to the content. In one embodiment, an identifier code for non-RIAA registered content is provided by an APS registering organization or service.

**[0067]** In one embodiment, the system operates by acquiring playlist data or a reference number that identifies the broadcast content. The playlist data is included in the RBDS/RDS data sub-carrier by either the APS server software or a combination of the APS server software in conjunction with a compatible RDS/RBDS encoder.

**[0068]** Once the data source is identified, a connection pathway is established between the broadcaster and the APS Data Server. APS software residing on the APS Data Server stores that information in a “look up” table. The codes representing “cut numbers”, or text song information such as artist and song title, are referenced against the internal look up table to determine if the song is available for download from the content owner such as a music publisher or record company. Once determination has been made regarding availability of the requested content, the APS software residing on the APS Data Server builds the data stream that can include the group 3 and group 4 data of the RBDS/RDS standard containing download location and/or file name. The APS software then transmits the information to a compatible RDS/RBDS encoder residing at the participating broadcaster.

**[0069]** For example: the 64-character text space contained in the RBDS standard is long enough to include an Internet IP address and directory location or reference code contained in a look up table capable of enabling the APS software to route the request for purchase from a user to the appropriate download site such as a publisher, record company or news organization.

**[0070]** The APS software residing on the APS Data Server can be employed to create the complete RBDS/RDS data signal and feed a slave encoder located at each broadcast location. The APS software also tracks each inquiry and purchase for billing verification and crediting the broadcaster for payment for their part in the sale. The APS

software also conducts data mining tracking for purposes of the future sale of transaction data.

**[0071]** In one embodiment, the RBDS/RDS encoder formats and encodes the non-APS elements of the data stream (such as station identification (Call Letters), date and time, etc.) and the APS software on the APS Data Server inserts content-specific data such as song title and artist information or author and news service, into the continual RBDS/RDS data stream through the RBDS/RDS encoder's standard interfaces. The APS Data Server software can be well suited to provide content specific information but the other RBDS/RDS group applications can be better managed by broadcast equipment designed for those applications.

**[0072]** RBDS/RDS is an FM-only transmission system but one of ordinary skill in the art will recognize that APS data can be included with other radio services (e.g. AM, etc.).

**[0073]** Digital Audio Broadcasting (DAB), which includes flexible, open-source, data transmission functions along with the audio signal. Systems for adapting digital audio and data transmission to the current allocation of AM and FM stations using a technique known as In Band On Channel (IBOC) are known. IBOC includes an ancillary data stream in the broadcast signal to be used by the station for whatever purposes they see fit. The ancillary data stream signal can be used to carry APS information.

**[0074]** Other developing radio systems also include a data path that can be used to send the information used by the APS system to successfully allow the acquisition of music or other material being broadcast. Satellite DAB providers, such as XM Satellite and Sirius Satellite Radio, have access to the audio and ancillary data signals being sent to compatible receivers.

**[0075]** As other audio services develop, the capability to transmit complimentary, simultaneous data can be used as a component of the APS. The APS can be simply adapted to each new transmission form with no significant change in the overall system.

**[0076]** Wireless technology and the related developments in high-speed Internet access using systems such as BlueTooth or other wireless network technology allows faster downloads of the desired material by taking advantage of the newer, faster technology.

**[0077]** NTSC, PAL and other technologies employed to transmit television signals around the world allow for similar capabilities in transmitting subcarrier data within the carrier signal.

**[0078]** Fig. 3 shows one example of a Technology Enabled Television (TET) adapter 300. The television adapter 300 includes a module 302 for the Automatic Purchase System. In one embodiment, the television adapter 300 is incorporated into the television. In one embodiment, the television adapter 300 is a settop box. In one embodiment, the APS provides relatively quick delivery of the purchased material. The material available for purchase can cover a wide range of products, such as music, video, print, pledges of money, or consumer goods related to displayed advertisements. In one embodiment, quick delivery is provided by using a cable modem. In one embodiment, the television adapter 300 uses a modem and a telephone connection to download the data. In one embodiment, the television adapter 300 uses a network connection to download the data. In one embodiment, the system provides delayed delivery, when, for example: the user so chooses; the user does not have a cable modem; the user does not have a network account at that location; or the user cannot obtain a good signal with a wireless connection for transmission.

**[0079]** In one embodiment, a television adapter 300 contains an APS module 302 configured to store identifier data 304, to provide security functions, and to assist in routing selections made by the user (using either a voice command issued to voice recognition technology 314 contained in the television adapter or by the press of a button 312 on the television adapter interface). In one embodiment, the APS module 302 is a proprietary microchip (or portion of a microchip) that implements the television adapter-side functions of the APS. In one embodiment, the APS module 302 is a software module that runs on a processor in the television adapter 300.

**[0080]** The material can also be “tagged” for delayed purchase at a later time by scrolling through the selection list 308 stored in the APS module 302 on the television adapter 300 and presented on the external television display 380. The user can then select one or more items for purchase from the list presented on the display 380 (stored in the APS module 302 in the television adapter). In one embodiment, the selected items are transmitted using a cable modem. In one embodiment, the selected items are transmitted using a wireless

transmitter 318 such as a wireless telephone. In another embodiment, a user can store the selection list 308 on removable memory 320 that is readable by a personal computer 340. The user can then access a private web account via the Internet for downloading the content to the personal computer 340. At this point, the user can transfer the downloaded content to a storage device 342 such as, for example, a flash card or CD-ROM.

**[0081]** A port 316 such as a 9-pin serial port, a USB port, or any other port designed to provide connectivity between the television adapter 300 and a personal computer 340 can also be integrated into the television adapter 300 for the purposes of transferring the selection list from the APS module 302 to software in a personal computer 340 or other device. APS software running on the personal computer 340 is configured to recognize an embedded security code enabling purchase of the selected material via the Internet, or respond to an advertisement or fund raising drive. Wireless technology, such as, for example, BlueTooth and the like, can also be used for the purposes of transferring the selection data between devices.

**[0082]** In one embodiment, television adapters equipped with the APS module 302 and associated technologies can use a wireless interface 318 to send a purchase request (or interactive response) complete with a user Electronic Serial Number (ESN), WIN identifiers, and routing information such as artist and song title derived from the RBDS/RDS data string accompanying the associated broadcast. In one embodiment, television adapters can use a modem (e.g. a telephone modem, cable modem, etc.) or other network connection to send a purchase request. The purchase request and routing information can then be directed to an APS server 360 for processing, billing approval, and delivery of the content to a particular location (such as the user's flash card or storage technology in the television adapter 300 or a personal account web URL), as requested by the user. In one embodiment, the purchased material is delivered with traditional mail or parcel services.

**[0083]** The flash card or storage technology 320 in the television adapter offers the user a second option. The user can select content for purchase using the interactive voice technologies 314 or the button interface 312 to select broadcast content for purchase. If that user does not have a network connection, then the content selections can be stored on the flash card or storage technology 320 for later use.

**[0084]** User access to the APS is provided by the remote control, voice interaction or buttons on the actual TV. As a user views broadcast content, the user can respond to the television broadcast to make purchases, respond to an advertisement, to qualify for premiums, or the user can respond to pledge drives on public television or an interactive event such as a talk or game show.

**[0085]** In one embodiment, the user responses are provided to a computing device such as a personal computer, set-top box, and the like (e.g., via flash card or other removable storage medium, via a network connection between the computer and the TET, via a wireless connection such as BlueTooth, etc.). The computing device is then used to transfer the content in a manner similar to that described in the radio embodiment above.

**[0086]** In one embodiment, a cable connection from the TET to the computing device is used for immediate transfer of the user response. In one embodiment, data is transferred between the TET and the computing device using a communication port such as, for example, a serial port, a USB port, infrared port, a parallel port, and Ethernet port, or other port technology.

**[0087]** In one embodiment, the APS module also provides web-enabled cable or satellite television interactive services. In one embodiment, a modem (such as, for example, a cable modem) is included in the TET thereby allowing the TET to send a user response request directly to a content provider (such as a cable company). In one embodiment, the APS module is provided in a cable set-top box to allow the APS system to be used with a conventional television.

**[0088]** The mechanisms for routing, customer identification, security, tracking, and purchase used with the radio embodiments described above can also be used with the TET.

**[0089]** It is understood that the download server, purchase database server, audio database server and encoding server can reside on one or more computers, and that the shown organization of the servers is for clarification. One or more programs can be used to perform part or all of the functions described in this description.

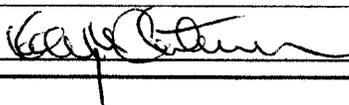
**[0090]** The foregoing description of a preferred implementation has been presented by way of example only, and should not be read in a limiting sense. Although this invention has been

described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art, including embodiments which do not provide all of the benefits and features set forth herein, are also within the scope of this invention. Accordingly, the scope of the present invention is defined only by reference to the appended claims.

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

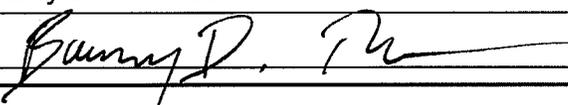
<b>Title of Invention</b>	<b>BROADCAST RESPONSE SYSTEM</b>
<p>As the below named inventor, I hereby declare that:</p> <p>This declaration is directed to: <input type="checkbox"/> The attached application, or  <input checked="" type="checkbox"/> United States application or PCT international application number <u>13/889176</u>  filed on <u>May 7, 2013</u></p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.</p> <p style="text-align: center;"><b>WARNING:</b></p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.</p>	
<p><b>LEGAL NAME OF INVENTOR</b></p> <p>Inventor: <u>Kelly M. Christensen</u> Date (Optional): <u>May 14, 2013</u></p> <p>Signature: </p>	
<p><small>Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.</small></p>	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN  
APPLICATION DATA SHEET (37 CFR 1.76)**

<b>Title of Invention</b>	<b>BROADCAST RESPONSE SYSTEM</b>
<p>As the below named inventor, I hereby declare that:</p> <p>This declaration is directed to: <input type="checkbox"/> The attached application, or  <input checked="" type="checkbox"/> United States application or PCT international application number <u>13/889176</u>  filed on <u>May 7, 2013</u></p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.</p> <p style="text-align: center;"><b>WARNING:</b></p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.</p>	
<p>LEGAL NAME OF INVENTOR</p> <p>Inventor: <u>Barry D. Thomas</u> Date (Optional): <u>5/24/2013</u></p> <p>Signature: <u></u></p>	
<p>Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.</p>	

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention

BROADCAST RESPONSE SYSTEM

As the below named inventor, I hereby declare that:

This declaration is directed to:

The attached application, or

United States application or PCT international application number 13/889176

filed on May 7, 2013

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

**WARNING:**

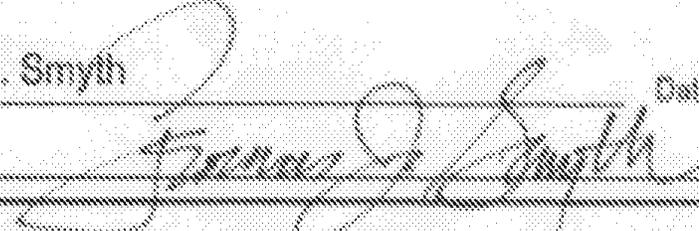
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LEGAL NAME OF INVENTOR

Inventor: Thomas J. Smyth

Date (Optional):

5-17-13

Signature: 

Note: An application data sheet (PTO/SD-14 or equivalent), including naming the entire inventive entity, must accompany the petition or must have been previously filed. Use an additional PTO/AIA-01 form for each additional inventor.

Please Direct All Correspondence to Customer Number 20995

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**RESCISSION OF ANY PRIOR DISCLAIMERS AND REQUEST TO REVISIT ART**

Inventor	:	Kelly M. Christensen, et al.
App. No	:	13/889,176
Filed	:	May 7, 2013
For	:	BROADCAST RESPONSE SYSTEM
Examiner	:	Unknown
Art Unit	:	2649
Conf #	:	1927

**Commissioner for Patents**

P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The claims of the present application are different and possibly broader in scope than the claims pursued in the parent application(s). To the extent any prior amendments or characterizations of the scope of any claim or referenced art could be construed as a disclaimer of any subject matter supported by the present disclosure, Applicant hereby rescinds and retracts such disclaimer. Accordingly, the references previously considered in the parent application(s) may need to be re-visited.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Knobbe, Martens, Olson & Bear, LLP

Respectfully submitted,

Dated: August 7, 2013

/Morgan Coates/  
Morgan R. Coates  
Registration No. 64,970  
Attorney of Record  
Customer No. 20995  
(949) 760-0404

**INFORMATION DISCLOSURE STATEMENT**

Inventor	:	Kelly M. Christensen, et al.
App. No.	:	13/889,176
Filed	:	May 7, 2013
For	:	BROADCAST RESPONSE SYSTEM
Examiner	:	Unknown
Art Unit	:	2649
Conf. No.	:	1927

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**References and Listing**

Submitted herewith in the above-identified application is an Information Disclosure Statement listing references for consideration. References numbered 64-108 are of record in U.S. patent application No. 11/562,300, filed November 21, 2006, which is the parent of this utility application, and is relied upon for an earlier filing date under 35 U.S.C. 120. Accordingly, copies of the references are not submitted pursuant to 37 CFR 1.98(d).

References numbered 36, 43, 46, 48-51, and 59-63 are Applicant's co-pending patents and applications. Applicant directs the Examiner to these references, and to their associated prosecution histories, for the Examiner to consider, now and in the future, whether the subject matter claimed, as well as the associated prosecution histories, may be relevant to the patentability of the present application (e.g., for reasons of obviousness-type double patenting).

Applicant believes that the Examiner has access to the patents and pending applications and the file histories through the Patent Office (e.g., the IFW system). Accordingly, Applicant has not provided a copy of the application or the file histories, but would be happy to do so, now or in the future, should the Examiner so request.

Pursuant to 37 C.F.R. § 1.97(g) and (h), Applicant makes no representation that the information is considered to be material to patentability. Additionally, inclusion on this list is not

**Application No.:** 13/889,176  
**Filing Date:** May 7, 2013

an admission that any of the cited documents are prior art in this application. Further, Applicants makes no representation regarding the completeness of this list, or that better art does not exist.

**Timing of Disclosure**

This Information Disclosure Statement is being filed before the receipt of a First Office Action on the merits, and presumably no fee is required. If a First Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 CFR 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,  
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: August 7, 2013

By: Morgan Coates  
Morgan R. Coates  
Registration No. 64,970  
Attorney of Record  
Customer No. 20995  
(949) 760-0404

15967835

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176	
	Filing Date	May 7, 2013	
	First Named Inventor	Kelly M. Christensen, et al.	
	Art Unit	2649	
<i>(Multiple sheets used when necessary)</i>		Examiner	Unknown
SHEET 1 OF 6		Attorney Docket No.	STRATOS.001C5

<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	4,926,255	05-15-1990	Von Kohorn	
	2	5,134,719	07-28-1992	Mankovitz	
	3	5,303,393	04-12-1994	Noreen, et al.	
	4	5,438,355	08-01-1995	Palmer	
	5	5,444,769	08-22-1995	Koen, et al.	
	6	5,539,635	07-23-1996	Larson, Jr.	
	7	5,548,828	02-20-1996	Kozaki, et al.	
	8	5,557,541	09-17-1996	Schulhof, et al.	
	9	5,579,537	11-26-1996	Takahisa	
	10	5,661,787	08-26-1997	Pocock	
	11	5,708,478	01-13-1998	Tognazzini	
	12	5,752,159	05-12-1998	Faust et al.	
	13	5,857,156	01-05-1999	Anderson	
	14	5,872,589	02-16-1999	Morales	
	15	5,903,617	05-11-1999	Kamalski	
	16	5,905,865	05-18-1999	Palmer, et al.	
	17	5,907,793	05-25-1999	Reams	
	18	5,991,601	11-23-1999	Anderson	
	19	5,991,737	11-23-1999	Chen	
	20	6,036,086	03-14-2000	Sizer, II, et al.	
	21	6,098,106	08-01-2000	Philyaw, et al.	
	22	6,202,210	03-13-2001	Ludtke	
	23	6,286,140	09-04-2001	Ivanyi	
	24	6,446,262	09-03-2002	Malaure et al.	
	25	6,463,469	10-08-2002	Yavitz	
	26	6,473,792	10-29-2002	Yavitz et al.	
	27	6,507,727	01-14-2003	Henrick	
	28	6,578,047	06-10-2003	Deguchi	

Examiner Signature	Date Considered
* <b>Examiner:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

T<sup>1</sup> - Place a check mark in this area when an English language Translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown
SHEET 2 OF 6	Attorney Docket No.	STRATOS.001C5

<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	<b>29</b>	6,611,201	08-26-2003	Bishop et al.	
	<b>30</b>	6,658,232	12-02-2003	Johnson	
	<b>31</b>	6,708,335	03-16-2004	Ozer et al.	
	<b>32</b>	6,725,022	04-20-2004	Clayton et al.	
	<b>33</b>	6,829,486	12-07-2004	McKenna, et al	
	<b>34</b>	6,928,423	08-09-2005	Yamanaka	
	<b>35</b>	6,941,154	09-06-2005	Ritter	
	<b>36</b>	6,957,041 (Our Ref. STRATOS.001A), including its prosecution history, the cited references, and the Office Actions therein.	10-18-2005	Christensen et al	
	<b>37</b>	6,970,886	11-29-2005	Conwell et al.	
	<b>38</b>	6,990,312	01-24-2006	Gioscia et al.	
	<b>39</b>	7,110,714	09-19-2006	Kay et al.	
	<b>40</b>	7,190,971	03-13-2007	Kawamoto	
	<b>41</b>	7,266,343	09-04-2007	Yli-juuti et al.	
	<b>42</b>	7,299,194	11-20-2007	Manganaris et al.	
	<b>43</b>	7,415,430 (Our Ref: STRATOS.001DV1), including its prosecution history, the cited references, and the Office Actions therein.	08-19-2008	Christensen et al.	
	<b>44</b>	7,647,609	01-12-2010	Wachtfogel et al.	
	<b>45</b>	7,765,574	07-27-2010	Maybury et al.	
	<b>46</b>	7,773,939 (Our Ref: STRATOS.001C1), including its prosecution history, the cited references, and the Office Actions therein.	12-29-2005	Christensen et al	
	<b>47</b>	7,788,693	08-31-2010	Robbins	

Examiner Signature	Date Considered
* <b>Examiner:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

T<sup>1</sup> - Place a check mark in this area when an English language Translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown
SHEET 3 OF 6	Attorney Docket No.	STRATOS.001C5

<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	<b>48</b>	7,917,130 (Our Ref. STRATOS.006A) including its prosecution history, the cited references, and the Office Actions therein.	03-29-2011	Christensen et al	
	<b>49</b>	8,166,081 (Our Ref. STRATOS.029A), including its prosecution history, the cited references, and the Office Actions therein.	04-24-2012	Christensen et al	
	<b>50</b>	8,200,203 (Our Ref. STRATOS.006C1) including its prosecution history, the cited references, and the Office Actions therein.	06-12-2012	Christensen et al	
	<b>51</b>	8,467,724 (Our Ref. STRATOS.001C2), including its prosecution history, the cited references, and the Office Actions therein.	06-18-2013	Christensen et al	
	<b>52</b>	2002/0046407	04-18-2002	Franco	
	<b>53</b>	2002/0133824	09-19-2002	Mensch	
	<b>54</b>	2003/0097338	05-22-2003	Manovich, et al.	
	<b>55</b>	2003/0208756	11-06-2003	Macrae et al.	
	<b>56</b>	2005/0021744	01-27-2005	Haitsuka et al.	
	<b>57</b>	2007/0156457	07-05-2007	Brown	
	<b>58</b>	2009/0192916	07-30-2009	Casper	
	<b>59</b>	2009/0205000 (Our Ref. STRATOS.028A) including its prosecution history, the cited references, and the Office Actions therein.	08-13-2009	Christensen et al.	
	<b>60</b>	2009/0183208 (Our Ref. STRATOS.030A) including its prosecution history, the cited references, and the Office Actions therein.	07-16-2009	Christensen et al.	

Examiner Signature	Date Considered
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown
SHEET 4 OF 6	Attorney Docket No.	STRATOS.001C5

**U.S. PATENT DOCUMENTS**

Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	<b>61</b>	2009/0104870 (Our Ref: STRATOS.001C1C1), including its prosecution history, the cited references, and the Office Actions therein.	04-23-2009	Christensen et al.	
	<b>62</b>	2009/0104872 (Our Ref: STRATOS.001C1C2), including its prosecution history, the cited references, and the Office Actions therein.	04-23-2009	Christensen et al.	
	<b>63</b>	2009/0177736 (Our Ref: STRATOS.022A) including its prosecution history, the cited references, and the Office Actions therein.	07-09-2009	Christensen et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Cite No.	Foreign Patent Document <i>Country Code-Number-Kind Code</i> Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T <sup>1</sup>
	<b>64</b>	CA 2 316 925	07-15-1999	Swisscom AG		
	<b>65</b>	DE 44 27 046 A1	02-01-1996	Fridley Technologies LTD.		
	<b>66</b>	DE 196 27 308 A1	01-02-1998	Mannesmann AG		
	<b>67</b>	EP 0 713 335 A2	05-22-1996	AT&T Corp.		
	<b>68</b>	JP 08-139624	05-31-1996	Yoshio et al.		
	<b>69</b>	JP 10-135855	05-22-1998	Sony Corp.		
	<b>70</b>	JP 2000292182 A	10-20-2000	Burndy Corp.		
	<b>71</b>	WO 00/19662	04-06-2000	Radiowave Com Inc		
	<b>72</b>	WO 01/01331	01-04-2001	Digimarc Corp.		
	<b>73</b>	WO 01/57759	08-09-2001	Minushkin, et al.		
	<b>74</b>	WO 90/00847	01-25-1990	Insight Telecast, Inc.		
	<b>75</b>	WO 92/14222	08-20-1992	Tait, et al.		
	<b>76</b>	WO 94/02909	02-03-1994	Windhall Limited Tait		
	<b>77</b>	WO 97/21291	06-12-1997	Pocock		

Examiner Signature	Date Considered
* <b>Examiner:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown
SHEET 5 OF 6	Attorney Docket No.	STRATOS.001C5

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T <sup>1</sup>
	78	WO 97/42724 A1	11-13-1997	Digital D.J. Inc.		
	79	WO 97/45814	12-04-1997	Vazvan		
	80	WO 99/43109	08-26-1999	TTP Communications Limited		
	81	WO 99/35809	07-15-1999	Connexus		
	82	WO 99/35771	07-15-1999	Swisscom AG		
	83	WO 1999/018518	04-15-1999	Polash		
	84	WO 2001/022633	03-29-2001	Motorola Inc.		
	85	WO 2001/052541	07-19-2001	NDS Limited		
	86	PCT/US01/028831 WO02/23773	02-21-2002	Christensen et al		
	87	Korean Patent Publication No. 10-1998-0078248	11-16-1998	N/A		
	88	Korean Patent Publication No. 10-1996-0033096	09-17-1996	N/A		

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>1</sup>
	89	Australian App. No. 2007200471 (Our reference STRATOS.001VRAU), including its prosecution history, and the Office Actions mailed on October 15, 2008 and January 12, 2009.	
	90	Final Office Action in Korean App. No. 10-2008-7031275 (Our Reference STRATOS.001V2KR), mailed on September 29, 2011 (both English and Korean versions).	
	91	Final Office Action in Korean App. No. 10-2008-7031275 (Our Reference STRATOS.001V2KR), mailed on December 30, 2010.	
	92	Office Action in Korean App. No. 10-2011-7010599 (Our reference STRATOS.001KRD4), mailed on September 8, 2011 (both English and Korean version).	
	93	Final Office Action in Japanese App. No. 2002-527094 (Our reference STRATOS.001VJP), mailed on December 21, 2010 (both English and Japanese versions).	
	94	Final Office Action in Japanese App No. 2002-527094 (Our reference STRATOS.001VJP), mailed on September 6, 2011 (both English and Japanese Versions).	
	95	Office Action in Korean App. No. 10-2010-7019126 (Our reference STRATOS.001V3KR), mailed on November 9, 2010 (both English and Korean versions).	
	96	Office Action in Japanese App. No. 2002-527094 (Our reference STRATOS.001VJP), mailed on February 24, 2010 (both English and Japanese versions).	

Examiner Signature	Date Considered
* <b>Examiner:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

T<sup>1</sup> - Place a check mark in this area when an English language Translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown
SHEET 6 OF 6	Attorney Docket No.	STRATOS.001C5

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>1</sup>
	<b>97</b>	Office Action in Canadian App. No. 2,421,165 (Our reference STRATOS.001VCA), mailed on February 1, 2010.	
	<b>98</b>	Office Action in Korean App. No. 10-2008-7031275 (Our reference STRATOS.001V2KR), mailed on January 28, 2010 (both English and Korean versions).	
	<b>99</b>	Office Action in Korean App. No. 10-2003-7003701 (Our reference STRATOS.001VKR), mailed on February 29, 2008 (both English and Korean versions).	
	<b>100</b>	Office Action in Korean App. No. 10-2008-7031275 (Our reference STRATOS.001V2KR), mailed on May 4, 2009 (both English and Korean versions).	
	<b>101</b>	Office Action in Korean App. No. 10-2008-7001677 (Our reference STRATOS.001VRKR), mailed on May 23, 2008 (both English and Korean versions).	
	<b>102</b>	Office Action in Korean App. No. 10-2003-7003701 (Our reference STRATOS.001VKR), mailed on September 20, 2007 (both English and Korean versions).	
	<b>103</b>	"Sirius to Add 'Instant Buy' Button". Mar. 13, 2000, Twice, V 15, n 7, p 28.	
	<b>104</b>	"Bookmark Your World", 1999-2000 Xenote, www.xenote.com	
	<b>105</b>	Jan. 25, 2000, Showcase 2000 – Xenote Press Release re Xenote iTag, www.xenote.com/html/press/releases.html	
	<b>106</b>	International Search Report dated 9-13-2001	
	<b>107</b>	European Patent Office Examination Report dated 10-17-2005	
	<b>108</b>	European Patent Office Examination Report dated 2-21-2007	

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Examiner Signature	Date Considered
<p><b>*Examiner:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>	

T<sup>1</sup> - Place a check mark in this area when an English language Translation is attached.
 Petitioner  
 Ex. 1002 - Page 105

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	16530815
<b>Application Number:</b>	13889176
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	1927
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen
<b>Customer Number:</b>	20995
<b>Filer:</b>	Morgan Ross Coates/ThuyQuyen Nguyen
<b>Filer Authorized By:</b>	Morgan Ross Coates
<b>Attorney Docket Number:</b>	STRATOS.001C5
<b>Receipt Date:</b>	07-AUG-2013
<b>Filing Date:</b>	07-MAY-2013
<b>Time Stamp:</b>	19:49:33
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	Response_STRATOS001C5.pdf	55489 a57f575a79644ef037aa9723b9dfb4c9a91bc841	no	3

### Warnings:

### Information:

Petitioner

2	Specification	SubSpecification_MarkedUp_STRATOS001C5.pdf	1013786 275a735f0931a366a8636bb054f7da5b0fe03649	no	20
<b>Warnings:</b>					
<b>Information:</b>					
3	Specification	SubSpecification_Clean_STRATOS001C5.pdf	1013768 ccd3db085a58f3405013a8352bed42c45e55ac39	no	20
<b>Warnings:</b>					
<b>Information:</b>					
4	Oath or Declaration filed	Declaration_KellyChristensen_STRATOS001C5.PDF	78969 9d68ea36e55e299e163dc34cac66997451b23ad5	no	1
<b>Warnings:</b>					
<b>Information:</b>					
5	Oath or Declaration filed	Declaration_BarryThomas_STRATOS001C5.PDF	71675 68fad93dacab1bc5fd824df30b6b2bee5a1be4f	no	1
<b>Warnings:</b>					
<b>Information:</b>					
6	Oath or Declaration filed	Declaration_TomSmyth_STRATOS001C5.PDF	186743 9ee7a045219b91d63644a113ce9a5559b181f997	no	1
<b>Warnings:</b>					
<b>Information:</b>					
7	Miscellaneous Incoming Letter	RevisitArt_STRATOS001C5.pdf	33743 c4169eb80b780383b19e148cac6a39c95057b935	no	1
<b>Warnings:</b>					
<b>Information:</b>					
8		IDS_STRATOS001C5.pdf	321015 eb4b264c119672a30bc4d77c586ca1f8dbc84d76	yes	8
	<b>Multipart Description/PDF files in .zip description</b>				
	<b>Document Description</b>		<b>Start</b>	<b>End</b>	
	Transmittal Letter		1	2	
	Information Disclosure Statement (IDS) Form (SB08)		3	8	
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			2775188		

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**PATENT APPLICATION FEE DETERMINATION RECORD**

Substitute for Form PTO-875

Application or Docket Number  
13/889,176

**APPLICATION AS FILED - PART I**

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(j))	20 minus 20 = *	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 = *	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

\* If the difference in column 1 is less than zero, enter "0" in column 2.

**SMALL ENTITY**

RATE(\$)	FEE(\$)
N/A	70
N/A	300
N/A	360
x 40 =	0.00
x 210 =	0.00
	0.00
	0.00
<b>TOTAL</b>	<b>730</b>

**OR OTHER THAN SMALL ENTITY**

RATE(\$)	FEE(\$)
N/A	
N/A	
N/A	
<b>TOTAL</b>	

**APPLICATION AS AMENDED - PART II**

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

**SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

**OR OTHER THAN SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

**SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

**OR OTHER THAN SMALL ENTITY**

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
<b>TOTAL ADD'L FEE</b>	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 13/889,176, 05/07/2013, 2649, 800, STRATOS.001C5, 20, 3

CONFIRMATION NO. 1927

UPDATED FILING RECEIPT

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Date Mailed: 08/16/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

Kelly M. Christensen, Mill Creek, WA;
Barry D. Thomas, West Hills, CA;
Thomas J. Smyth, North Hollywood, CA;

Applicant(s)

StratosAudio, Inc., Kirkland, WA

Assignment For Published Patent Application

StratosAudio, Inc., Kirkland, WA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 11/562,300 11/21/2006 PAT 8467724
which is a CON of 11/203,556 08/12/2005 PAT 7773939
which is a CON of 09/953,335 09/13/2001 PAT 6957041
which claims benefit of 60/232,333 09/13/2000

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 06/05/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 13/889,176

Projected Publication Date: 11/21/2013

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

BROADCAST RESPONSE SYSTEM

**Preliminary Class**

455

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

**LICENSE FOR FOREIGN FILING UNDER**  
**Title 35, United States Code, Section 184**  
**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

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This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

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NOTICE OF ALLOWANCE AND FEE(S) DUE

20995 7590 11/08/2013
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

Table with 2 columns: EXAMINER (AKINYEMI, AJIBOLA A), ART UNIT (2649), PAPER NUMBER (1927)

DATE MAILED: 11/08/2013

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

13/889,176 05/07/2013 Kelly M. Christensen STRATOS.001C5 1927

TITLE OF INVENTION: BROADCAST RESPONSE SYSTEM

Table with 7 columns: APPLN. TYPE, ENTITY STATUS, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

nonprovisional SMALL \$890 \$300 \$0 \$1190 02/10/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

20995                      7590                      11/08/2013  
**KNOBBE MARTENS OLSON & BEAR LLP**  
 2040 MAIN STREET  
 FOURTEENTH FLOOR  
 IRVINE, CA 92614

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/889,176	05/07/2013	Kelly M. Christensen	STRATOS.001C5	1927

TITLE OF INVENTION: BROADCAST RESPONSE SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$890	\$300	\$0	\$1190	02/10/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
AKINYEMI, AJIBOLA A	2649	455-003060

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b></p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are submitted:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (<b>Please first reapply any previously paid issue fee shown above</b>)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).</p>
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5. **Change in Entity Status** (from status indicated above)

- Applicant certifying micro entity status. See 37 CFR 1.29
- Applicant asserting small entity status. See 37 CFR 1.27
- Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/889,176 05/07/2013 Kelly M. Christensen STRATOS.001C5 1927

20995 7590 11/08/2013
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IRVINE, CA 92614

Table with 2 columns: EXAMINER, ART UNIT, PAPER NUMBER
EXAMINER: AKINYEMI, AJIBOLA A
ART UNIT: 2649

DATE MAILED: 11/08/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**Notices of Allowance and Fee(s) Due mailed between October 1, 2013 and  
December 31, 2013**

(Addendum to PTOL-85)

If the “Notice of Allowance and Fee(s) Due” has a mailing date on or after October 1, 2013 and before January 1, 2014, the following information is applicable to this application.

If the issue fee is being timely paid on or after January 1, 2014, the amount due is the issue fee and publication fee in effect January 1, 2014. On January 1, 2014, the issue fees set forth in 37 CFR 1.18 decrease significantly and the publication fee set forth in 37 CFR 1.18(d)(1) decreases to \$0.

If an issue fee or publication fee has been previously paid in this application, applicant is not entitled to a refund of the difference between the amount paid and the amount in effect on January 1, 2014.

<b>Notice of Allowability</b>	<b>Application No.</b> 13/889,176	<b>Applicant(s)</b> CHRISTENSEN ET AL.	
	<b>Examiner</b> AJIBOLA AKINYEMI	<b>Art Unit</b> 2649	<b>AIA (First Inventor to File) Status</b> No

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 05/07/2013.  
 A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
3.  The allowed claim(s) is/are 1-20. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/oph/index.jsp](http://www.uspto.gov/patents/init_events/oph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

- a)  All    b)  Some    \*c)  None of the:
1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  
 including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> <li>4. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>7. <input type="checkbox"/> Other _____.</li> </ol> |
|--|--|

/Ajibola Akinyemi/  
Primary Examiner, Art Unit 2649

1. The present application is being examined under the pre-AIA first to invent provisions.

#### REASON FOR ALLOWANCE

2. Claims 1-20 are allowable over cited prior art.

3. The following is an examiner's statement of reasons for allowance: **Regarding claim 1**, the cited prior art of record Robbins, Conwell and Casper do not disclose configuring the communications device to receive the broadcast stream comprising a plurality of broadcast segments, wherein the plurality of broadcast segments comprises the at least one identifiable broadcast segment; configuring the communications device to receive a data stream associated with the broadcast stream; configuring at least one computer processor of the communications device to extract from the data stream data that enables a unique identification of the at least one identifiable broadcast segment from the plurality of broadcast segments; configuring the at least one computer processor of the communications device to determine an identification of the broadcast stream; configuring an electronic memory of the communications device to store the identification of the broadcast stream and the data that enables the unique identification of the at least one identifiable broadcast segment; configuring the communications device to present the at least one identifiable broadcast segment; configuring the communications device to detect an input selection corresponding to the at least one identifiable broadcast segment; configuring the communications device to obtain an identity of a responder associated with the input selection; configuring the communications device to create a data packet enabling the unique identification of the at least one identifiable broadcast segment, the data packet comprising at least one of the following: an identification of the identity of the responder, the identification of the broadcast stream, the data that enables the unique identification of the at least one identifiable broadcast segment; and configuring the communications device to communicate the data packet to a server in response to the detection of the input selection.

**Regarding claims 7, 11**, the cited prior art of record Robbins, Conwell and Casper do not disclose receiving the broadcast stream comprising the plurality of broadcast segments, wherein the

Art Unit: 2649

plurality of broadcast segments comprises at least one specific broadcast segment; receiving a data stream associated with the broadcast stream; extracting from the data stream identifying data that enables a unique identification of the at least one specific broadcast segment of the plurality of broadcast segments; storing in an electronic memory the identifying data; presenting the plurality of broadcast segments, including the at least one specific broadcast segment; presenting, subsequent to the presentation of the at least one specific broadcast segment, a list comprising a first reference to the at least one specific broadcast segment and at least a second reference to at least one additional broadcast segment of the plurality of broadcast segments of the broadcast stream; and detecting an input selection corresponding to the at least one specific broadcast segment subsequent to the presentation of the list, whereby the input selection initiates at least one of the following results: creation and communication of a data packet to a server, the data packet comprising at least the identifying data that enables unique identification of the specific broadcast segment, presentation of information about the at least one specific broadcast segment, storing a tag associated with the at least one specific broadcast segment, a purchase related to the at least one specific broadcast segment, obtaining data identifying the broadcast stream, a vote associated with the at least one specific broadcast segment, responding to an offer associated with the at least one specific broadcast segment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AJIBOLA AKINYEMI whose telephone number is (571)270-1846. The examiner can normally be reached on monday- friday (8.30-5pm) Est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, YUWEN PAN can be reached on (571) 272-7855. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2649

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ajibola Akinyemi/  
Primary Examiner, Art Unit 2649

<b>Notice of References Cited</b>	Application/Control No. 13/889,176	Applicant(s)/Patent Under Reexamination CHRISTENSEN ET AL.	
	Examiner AJIBOLA AKINYEMI	Art Unit 2649	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-7,788,693	08-2010	Robbins, Thomas Dean	725/58
*	B US-6,970,886	11-2005	Conwell et al.	1/1
*	C US-2009/0192916	07-2009	Casper, Andrew	705/26
*	D US-2003/0208756	11-2003	Macrae et al.	725/34
	E US-			
	F US-			
	G US-			
	H US-			
	I US-			
	J US-			
	K US-			
	L US-			
	M US-			

**FOREIGN PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

**NON-PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)				
	U				
	V				
	W				
	X				

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.


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UNITED STATES DEPARTMENT OF COMMERCE  
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 Alexandria, Virginia 22313-1450  
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**BIB DATA SHEET**
**CONFIRMATION NO. 1927**

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO. STRATOS.001C5		
13/889,176	05/07/2013	455	2649			
<b>APPLICANTS</b> Kelly M. Christensen, Mill Creek, WA; Barry D. Thomas, West Hills, CA; Thomas J. Smyth, North Hollywood, CA; StratosAudio, Inc., Kirkland, WA  <b>** CONTINUING DATA *****</b> This application is a CON of 11/562,300 11/21/2006 PAT 8467724 which is a CON of 11/203,556 08/12/2005 PAT 7773939 which is a CON of 09/953,335 09/13/2001 PAT 6957041 which claims benefit of 60/232,333 09/13/2000  <b>** FOREIGN APPLICATIONS *****</b>  <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY **</b> 06/05/2013						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Met after Allowance AA	<b>STATE OR COUNTRY</b> WA	<b>SHEETS DRAWINGS</b> 6	<b>TOTAL CLAIMS</b> 20	<b>INDEPENDENT CLAIMS</b> 3
Verified and /AJIBOLA A AKINYEMI/ Acknowledged _____ Examiner's Signature		Initials				
<b>ADDRESS</b> KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614 UNITED STATES						
<b>TITLE</b> BROADCAST RESPONSE SYSTEM						
<b>FILING FEE RECEIVED</b> 800	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown /Ajibola Akinyemi/
SHEET 1 OF 6	Attorney Docket No.	STRATOS.001C5

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	4,926,255	05-15-1990	Von Kohorn	
	2	5,134,719	07-28-1992	Mankovitz	
	3	5,303,393	04-12-1994	Noreen, et al.	
	4	5,438,355	08-01-1995	Palmer	
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	18	5,991,601	11-23-1999	Anderson	
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	20	6,036,086	03-14-2000	Sizer, II, et al.	
	21	6,098,106	08-01-2000	Philyaw, et al.	
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	24	6,446,262	09-03-2002	Malaure et al.	
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	27	6,507,727	01-14-2003	Henrick	
	28	6,578,047	06-10-2003	Deguchi	

Examiner Signature	/Ajibola Akinyemi/	Date Considered	10/31/2013
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\***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown /Ajibola Akinyemi/
SHEET 2 OF 6	Attorney Docket No.	STRATOS.001C5

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	29	6,611,201	08-26-2003	Bishop et al.	
	30	6,658,232	12-02-2003	Johnson	
	31	6,708,335	03-16-2004	Ozer et al.	
	32	6,725,022	04-20-2004	Clayton et al.	
	33	6,829,486	12-07-2004	McKenna, et al	
	34	6,928,423	08-09-2005	Yamanaka	
	35	6,941,154	09-06-2005	Ritter	
	36	6,957,041 (Our Ref. STRATOS.001A), including its prosecution history, the cited references, and the Office Actions therein.	10-18-2005	Christensen et al	
	37	6,970,886	11-29-2005	Conwell et al.	
	38	6,990,312	01-24-2006	Gioscia et al.	
	39	7,110,714	09-19-2006	Kay et al.	
	40	7,190,971	03-13-2007	Kawamoto	
	41	7,266,343	09-04-2007	Yli-juuti et al.	
	42	7,299,194	11-20-2007	Manganaris et al.	
	43	7,415,430 (Our Ref. STRATOS.001DV1), including its prosecution history, the cited references, and the Office Actions therein.	08-19-2008	Christensen et al.	
	44	7,647,609	01-12-2010	Wachtfogel et al.	
	45	7,765,574	07-27-2010	Maybury et al.	
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	47	7,788,693	08-31-2010	Robbins	

Examiner Signature /Ajibola Akinyemi/	Date Considered 10/31/2013
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown /Ajibola Akinyemi/
SHEET 3 OF 6	Attorney Docket No.	STRATOS.001C5

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	48	7,917,130 (Our Ref. STRATOS.006A) including its prosecution history, the cited references, and the Office Actions therein.	03-29-2011	Christensen et al	
	49	8,166,081 (Our Ref. STRATOS.029A), including its prosecution history, the cited references, and the Office Actions therein.	04-24-2012	Christensen et al	
	50	8,200,203 (Our Ref. STRATOS.006C1) including its prosecution history, the cited references, and the Office Actions therein.	06-12-2012	Christensen et al	
	51	8,467,724 (Our Ref. STRATOS.001C2), including its prosecution history, the cited references, and the Office Actions therein.	06-18-2013	Christensen et al	
	52	2002/0046407	04-18-2002	Franco	
	53	2002/0133824	09-19-2002	Mensch	
	54	2003/0097338	05-22-2003	Manovich, et al.	
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	57	2007/0156457	07-05-2007	Brown	
	58	2009/0192916	07-30-2009	Casper	
	59	2009/0205000 (Our Ref. STRATOS.028A) including its prosecution history, the cited references, and the Office Actions therein.	08-13-2009	Christensen et al.	
	60	2009/0183208 (Our Ref. STRATOS.030A) including its prosecution history, the cited references, and the Office Actions therein.	07-16-2009	Christensen et al.	

Examiner Signature /Ajibola Akinyemi/	Date Considered 10/31/2013
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**U.S. PATENT DOCUMENTS**

Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	<b>61</b>	2009/0104870 (Our Ref: STRATOS.001C1C1), including its prosecution history, the cited references, and the Office Actions therein.	04-23-2009	Christensen et al.	
	<b>62</b>	2009/0104872 (Our Ref: STRATOS.001C1C2), including its prosecution history, the cited references, and the Office Actions therein.	04-23-2009	Christensen et al.	
	<b>63</b>	2009/0177736 (Our Ref: STRATOS.022A) including its prosecution history, the cited references, and the Office Actions therein.	07-09-2009	Christensen et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Cite No.	Foreign Patent Document <i>Country Code-Number-Kind Code</i> Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T <sup>1</sup>
	<b>64</b>	CA 2 316 925	07-15-1999	Swisscom AG		
	<b>65</b>	DE 44 27 046 A1	02-01-1996	Fridley Technologies LTD.		
	<b>66</b>	DE 196 27 308 A1	01-02-1998	Mannesmann AG		
	<b>67</b>	EP 0 713 335 A2	05-22-1996	AT&T Corp.		
	<b>68</b>	JP 08-139624	05-31-1996	Yoshio et al.		
	<b>69</b>	JP 10-135855	05-22-1998	Sony Corp.		
	<b>70</b>	JP 2000292182 A	10-20-2000	Burndy Corp.		
	<b>71</b>	WO 00/19662	04-06-2000	Radiowave Com Inc		
	<b>72</b>	WO 01/01331	01-04-2001	Digimarc Corp.		
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	<b>75</b>	WO 92/14222	08-20-1992	Tait, et al.		
	<b>76</b>	WO 94/02909	02-03-1994	Windhall Limited Tait		
	<b>77</b>	WO 97/21291	06-12-1997	Pocock		

Examiner Signature /Ajibola Akinyemi/	Date Considered 10/31/2013
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	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown /Ajibola Akinyemi/
SHEET 5 OF 6	Attorney Docket No.	STRATOS.001C5

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T <sup>1</sup>
	78	WO 97/42724 A1	11-13-1997	Digital D.J. Inc.		
	79	WO 97/45814	12-04-1997	Vazvan		
	80	WO 99/43109	08-26-1999	TTP Communications Limited		
	81	WO 99/35809	07-15-1999	Connexus		
	82	WO 99/35771	07-15-1999	Swisscom AG		
	83	WO 1999/018518	04-15-1999	Polash		
	84	WO 2001/022633	03-29-2001	Motorola Inc.		
	85	WO 2001/052541	07-19-2001	NDS Limited		
	86	PCT/US01/028831 WO02/23773	02-21-2002	Christensen et al		
	87	Korean Patent Publication No. 10-1998-0078248	11-16-1998	N/A		
	88	Korean Patent Publication No. 10-1996-0033096	09-17-1996	N/A		

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>1</sup>
	89	Australian App. No. 2007200471 (Our reference STRATOS.001VRAU), including its prosecution history, and the Office Actions mailed on October 15, 2008 and January 12, 2009.	
	90	Final Office Action in Korean App. No. 10-2008-7031275 (Our Reference STRATOS.001V2KR), mailed on September 29, 2011 (both English and Korean versions).	
	91	Final Office Action in Korean App. No. 10-2008-7031275 (Our Reference STRATOS.001V2KR), mailed on December 30, 2010.	
	92	Office Action in Korean App. No. 10-2011-7010599 (Our reference STRATOS.001KRD4), mailed on September 8, 2011 (both English and Korean version).	
	93	Final Office Action in Japanese App. No. 2002-527094 (Our reference STRATOS.001VJP), mailed on December 21, 2010 (both English and Japanese versions).	
	94	Final Office Action in Japanese App No. 2002-527094 (Our reference STRATOS.001VJP), mailed on September 6, 2011 (both English and Japanese Versions).	
	95	Office Action in Korean App. No. 10-2010-7019126 (Our reference STRATOS.001V3KR), mailed on November 9, 2010 (both English and Korean versions).	
	96	Office Action in Japanese App. No. 2002-527094 (Our reference STRATOS.001VJP), mailed on February 24, 2010 (both English and Japanese versions).	

Examiner Signature	/Ajibola Akinyemi/	Date Considered	10/31/2013
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	Unknown /Ajibola Akinyemi/
SHEET 6 OF 6	Attorney Docket No.	STRATOS.001C5

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>1</sup>
	97	Office Action in Canadian App. No. 2,421,165 (Our reference STRATOS.001VCA), mailed on February 1, 2010.	
	98	Office Action in Korean App. No. 10-2008-7031275 (Our reference STRATOS.001V2KR), mailed on January 28, 2010 (both English and Korean versions).	
	99	Office Action in Korean App. No. 10-2003-7003701 (Our reference STRATOS.001VKR), mailed on February 29, 2008 (both English and Korean versions).	
	100	Office Action in Korean App. No. 10-2008-7031275 (Our reference STRATOS.001V2KR), mailed on May 4, 2009 (both English and Korean versions).	
	101	Office Action in Korean App. No. 10-2008-7001677 (Our reference STRATOS.001VRKR), mailed on May 23, 2008 (both English and Korean versions).	
	102	Office Action in Korean App. No. 10-2003-7003701 (Our reference STRATOS.001VKR), mailed on September 20, 2007 (both English and Korean versions).	
	103	"Sirius to Add 'Instant Buy' Button". Mar. 13, 2000, Twice, V 15, n 7, p 28.	
	104	"Bookmark Your World", 1999-2000 Xenote, www.xenote.com	
	105	Jan. 25, 2000, Showcase 2000 – Xenote Press Release re Xenote iTag, www.xenote.com/html/press/releases.html	
	106	International Search Report dated 9-13-2001	
	107	European Patent Office Examination Report dated 10-17-2005	
	108	European Patent Office Examination Report dated 2-21-2007	

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Examiner Signature /Ajibola Akinyemi/	Date Considered 10/31/2013
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## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	591	455/3.06.ccls.	US-PGPUB	OR	OFF	2013/10/31 08:59
L4	1527	455/3.06.ccls.	US-PGPUB; USPAT	OR	OFF	2013/10/31 08:59
L5	2845	725/34,36,58.ccls.	US-PGPUB; USPAT	OR	OFF	2013/10/31 08:59
L6	6	4 and 5	US-PGPUB; USPAT	OR	OFF	2013/10/31 08:59
L7	963	broadcast near signal with identificat\$3	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:03
L8	304072	bill\$3	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:03
L9	171	7 and 8	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:03
L10	234	4 and 8	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:04
L11	591	3 and 4	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:04
L12	2	7 and 11	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:04
L13	17932	authentic\$5 same bill\$3	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:04
L14	33	4 and 13	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:05
L15	56	5 and 13	US-PGPUB; USPAT	OR	OFF	2013/10/31 09:05
L16	0	(communication adj device and media adj broadcast and stream and identification and computer adj processor and data adj packet and extract\$3).clm.	US-PGPUB	OR	OFF	2013/10/31 09:05

10/31/2013 9:06:17 AM

C:\Users\ aakinyemi\ Documents\ EAST\ Workspaces\ 12957687.wsp

Petitioner

Ex. 1002 - Page 131



<b>Issue Classification</b> 	<b>Application/Control No.</b> 13889176	<b>Applicant(s)/Patent Under Reexamination</b> CHRISTENSEN ET AL.
	<b>Examiner</b> AJIBOLA AKINYEMI	<b>Art Unit</b> 2649

US ORIGINAL CLASSIFICATION					INTERNATIONAL CLASSIFICATION								
CLASS		SUBCLASS			CLAIMED				NON-CLAIMED				
455		3.06			H	0	4	H	40 / 00 (2008.01.01)				
<b>CROSS REFERENCE(S)</b>													
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)												
725	32	34	36	58									

NONE		<b>Total Claims Allowed:</b>	
		20	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/AJIBOLA AKINYEMI/ Primary Examiner. Art Unit 2649	10/30/2013	1	1A
(Primary Examiner)	(Date)		

<b>Issue Classification</b> 	<b>Application/Control No.</b> 13889176	<b>Applicant(s)/Patent Under Reexamination</b> CHRISTENSEN ET AL.
	<b>Examiner</b> AJIBOLA AKINYEMI	<b>Art Unit</b> 2649

<input checked="" type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> <input type="checkbox"/> <b>CPA</b> <input type="checkbox"/> <b>T.D.</b> <input type="checkbox"/> <b>R.1.47</b>															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	17												
2	2	18	18												
3	3	19	19												
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13	13														
14	14														
15	15														
16	16														

NONE		<b>Total Claims Allowed:</b>	
		20	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/AJIBOLA AKINYEMI/ Primary Examiner. Art Unit 2649	10/30/2013	1	1A
(Primary Examiner)	(Date)		

<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  13889176	<b>Applicant(s)/Patent Under Reexamination</b>  CHRISTENSEN ET AL.
	<b>Examiner</b>  AJIBOLA AKINYEMI	<b>Art Unit</b>  2649

✓	<b>Rejected</b>
=	<b>Allowed</b>

-	<b>Cancelled</b>
÷	<b>Restricted</b>

N	<b>Non-Elected</b>
I	<b>Interference</b>

A	<b>Appeal</b>
O	<b>Objected</b>

Claims renumbered in the same order as presented by applicant
  CPA
  T.D.
  R.1.47

CLAIM		DATE									
Final	Original	10/30/2013									
1	1	=									
2	2	=									
3	3	=									
4	4	=									
5	5	=									
6	6	=									
7	7	=									
8	8	=									
9	9	=									
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12	12	=									
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14	14	=									
15	15	=									
16	16	=									
17	17	=									
18	18	=									
19	19	=									
20	20	=									

<b>Search Notes</b>  	<b>Application/Control No.</b>  13889176	<b>Applicant(s)/Patent Under Reexamination</b>  CHRISTENSEN ET AL.
	<b>Examiner</b>  AJIBOLA AKINYEMI	<b>Art Unit</b>  2649

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
455	3.06	10/30/2013	AA

SEARCH NOTES		
Search Notes	Date	Examiner
725/32,34,36,58	10/30/2013	AA

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
See PgPub. Text Search		10/30/2013	AA

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Table with 4 columns: APPLICATION NUMBER (13/889,176), FILING OR 371(C) DATE (05/07/2013), FIRST NAMED APPLICANT (Kelly M. Christensen), ATTY. DOCKET NO./TITLE (STRATOS.001C5)

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PUBLICATION NOTICE

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614



Title: BROADCAST RESPONSE SYSTEM

Publication No. US-2013-0309960-A1
Publication Date: 11/21/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>	Application No.	13/889,176
	Filing Date	May 7, 2013
	First Named Inventor	Kelly M. Christensen, et al.
	Art Unit	2649
<i>(Multiple sheets used when necessary)</i>	Examiner	AKINYEMI, AJIBOLA A
SHEET 1 OF 1	Attorney Docket No.	STRATOS.001C5

**U.S. PATENT DOCUMENTS**

Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	<b>1</b>	6,035,177	03-07-2000	Moses et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Cite No.	Foreign Patent Document <i>Country Code-Number-Kind Code</i> Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name of Patentee or Applicant	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T <sup>1</sup>
	<b>2</b>	GB 2346472	08-09-2000	International Business Machines Corporation		
	<b>3</b>	JP 09-163346	06-20-1997	Toshiba Corp		
	<b>4</b>	JP 2000-236306	08-29-2000	International Business Machines Corporation		

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>1</sup>

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T<sup>1</sup> - Place a check mark in this area when an English language Translation is attached.Petitioner  
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(71) Applicant(s)

**International Business Machines Corporation  
(Incorporated in USA - New York)  
Armonk, New York 10504, United States of America**

(72) Inventor(s)

**Neal Jon Alewine  
Martin Kienzle**

(74) Agent and/or Address for Service

**IBM United Kingdom Limited  
Intellectual Property Department, Mail Point 110,  
Hursley Park, WINCHESTER, Hampshire, SO21 2JN,  
United Kingdom**

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U1S S2124 S2204 S2206 S2207 S2212**

(56) Documents Cited

**GB 1573795 A GB 1531698 A WO 98/31132 A2  
WO 98/06193 A1 WO 95/35606 A1 WO 95/12278 A1  
US 5630203 A US 5557334 A**

(58) Field of Search

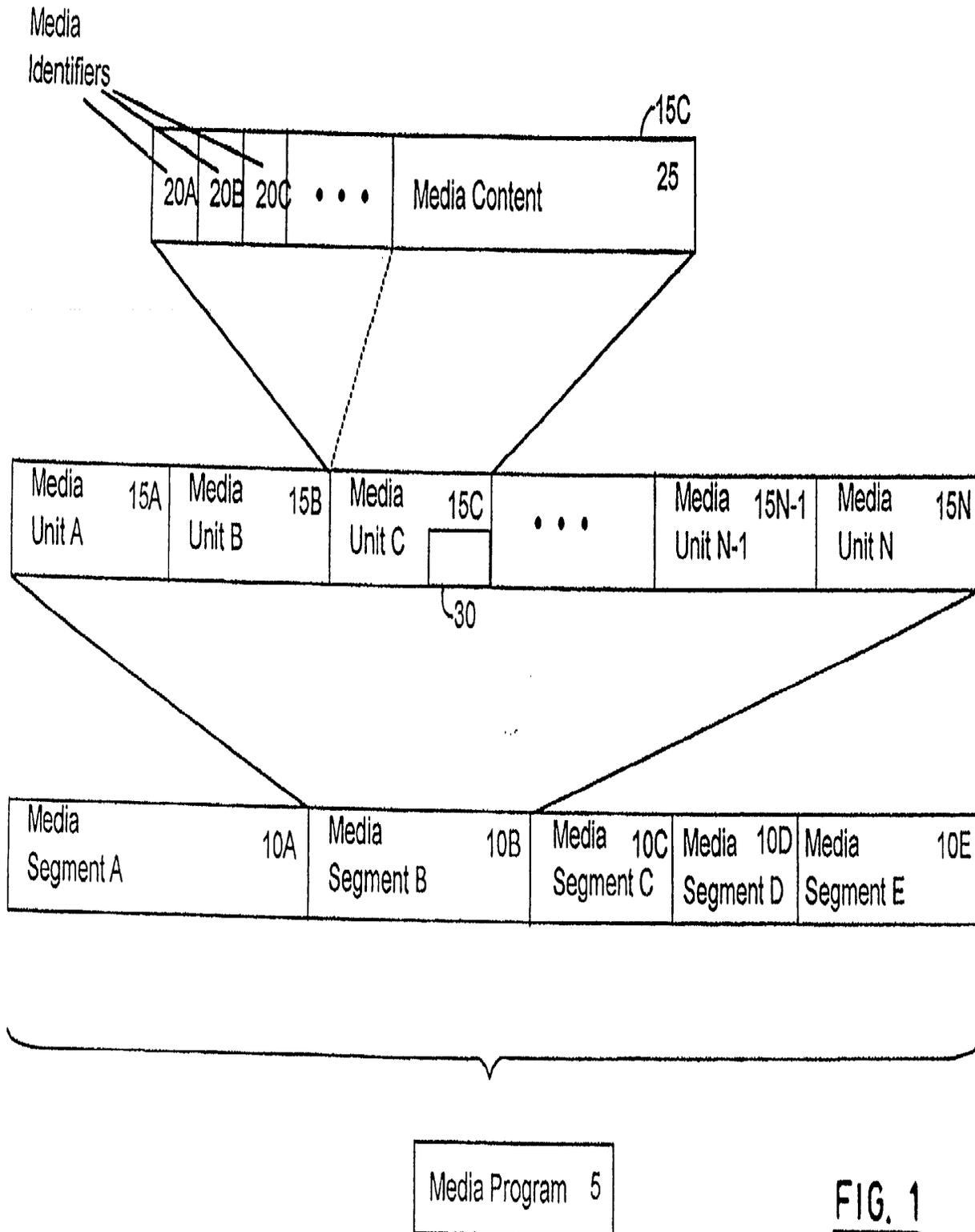
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HTJ  
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(54) Abstract Title

**Providing proof of reception of media transmission**

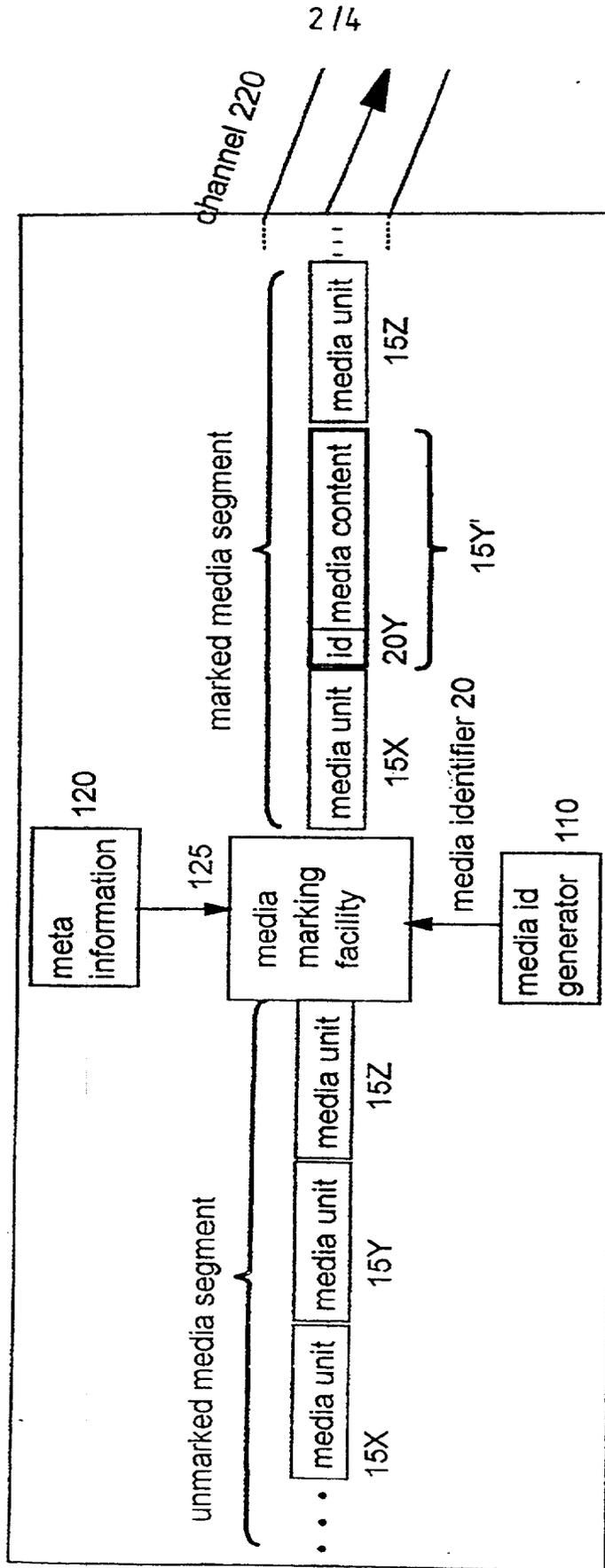
(57) In a convenient and efficient mechanism for proving that a particular piece of media has been received by a destination from a source, proof of reception involves three steps: 1) embedding at least one media identifier at the media source directly into a piece of media 2) at the destination, combining the at least one media identifier with a destination identifier to produce at least one combined identifier, and 3) transmitting the combined identifier to one or more collection points for processing. Due to the fact that the identifier is associated not with a channel or the source, but with the piece of media whose reception needs to be proven, the inventive mechanism produces little extraneous data, as compared to an active trace of user behaviour. The mechanism is fine grained and can be attached to one or all of the beginning, middle and end of the media transmission with as much detail as is required for observation of the viewer's behaviour (e.g. including monitoring a viewer's switching of channels during commercials). The mechanism supports tracking of a media segment from its source across multiple distributors, allowing multiple evaluations, for example, by source, by distributor, by media, etc. based on whoever has added to the media identifier. The combined identifier can also easily be associated with a time of reception. Broadly applicable to all kinds of media, the mechanism is extensible in conjunction with other technology to avoid tampering, and reveal proof of viewing.

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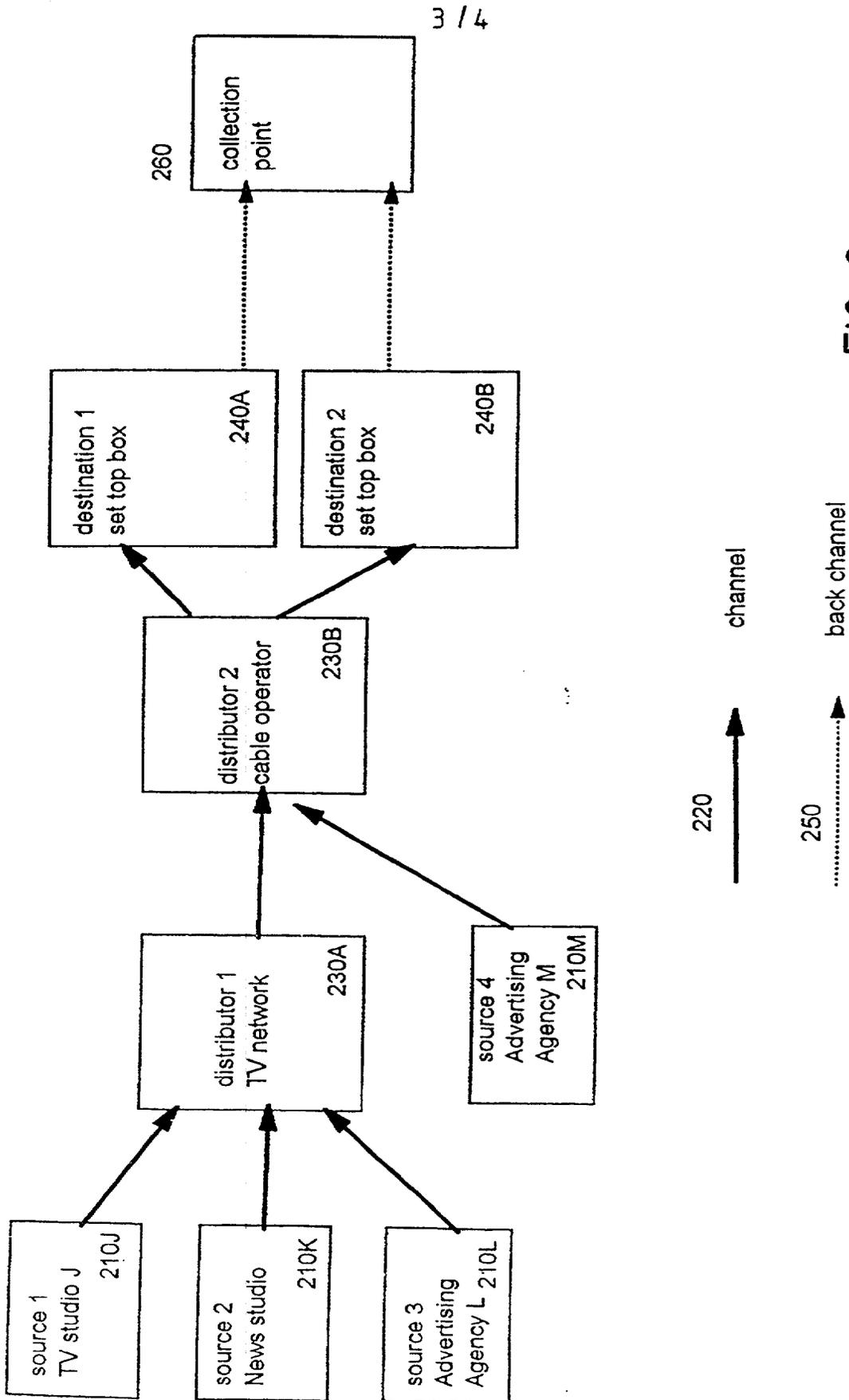


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**FIG. 1**



**FIG. 2**



**FIG. 3**

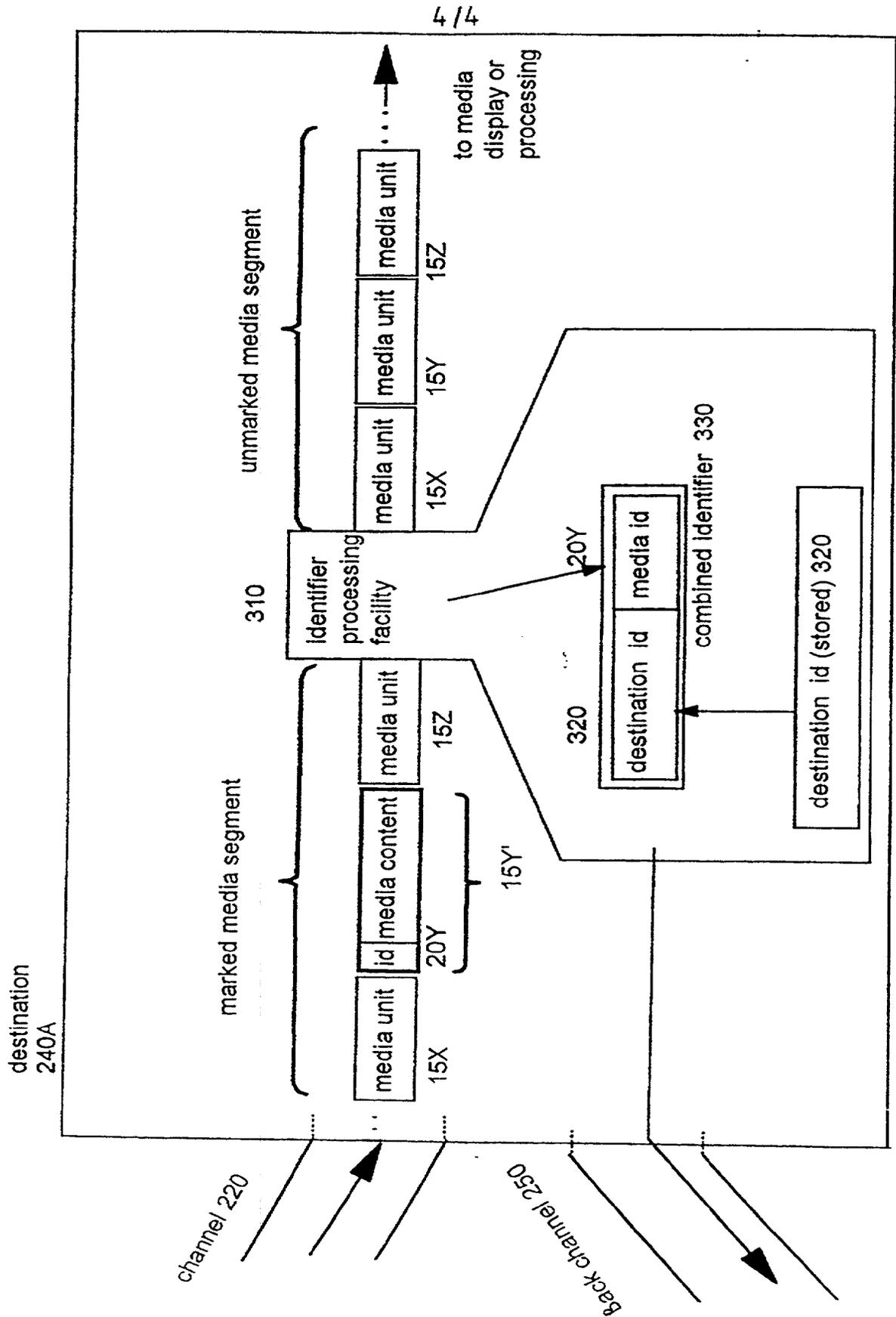


FIG. 4

## PROVIDING PROOF OF RECEPTION OF MEDIA TRANSMISSION

Field of the Invention

5 This invention relates to the field of media delivery systems and ,  
more particularly, to a system and method for establishing that a  
particular piece of media (audio, video, image, text, etc.) has been  
received by the intended system.

Background of the Invention

10 In the various venues for media delivery, it is becoming  
increasingly desirable to have a mechanism for proving that someone has  
received and viewed a particular piece of media. In television, and in  
15 Internet services, an advertiser wants to find out how many individuals,  
or demographically which groups of people having certain shared  
characteristics, have watched a commercial. In addition, an advertiser  
wants to be sure that a provider station has transmitted their  
advertisement. In education, a person who is required to have viewed  
20 mandatory training material may need to prove to a third party that  
he/she has reviewed the material. Across multiple media formats, a  
content owner may wish to prove that somebody has viewed material,  
triggering a payment and that somebody received material, showing  
fulfilment of an order.

25 In television, accounting for the number of viewers of a program or  
a commercial is important, since both measures are used to determine the  
value of the advertisements that support the programming. The current  
methods for obtaining viewing statistics, such as installing special  
30 devices in selected households to record viewers in those households,  
followed by extrapolating to all viewers, are cumbersome, expensive, and  
somewhat inaccurate. With increased numbers of media delivery channels,  
the number of samples required must be increased to maintain accuracy.  
Behaviours, such as viewers switching channels when a commercial appears,  
35 are difficult to monitor. One proposed method to improve this situation  
is to record all the viewers' actions (e.g., turning a television set on,  
switching channels, etc.) and to analyze these actions to obtain a  
precise history of viewer behaviour. This method involves very large  
amounts of data, and is rather complex and tedious. What is desirable is  
40 a fine-grained, focused method which produces only the desired data.

Distance learning using digital media in a distributed computer  
environment is becoming increasingly important in the areas of continuing  
education, and in licensing of professionals. In other networked

computer applications, such as corporate communication, it is also becoming important to determine who has obtained access to certain digital media, including both authorized and unauthorized viewers. Moreover, the sheer numbers of viewers visiting a given site (e.g., on the Internet) is often highly valuable information.

Finally, as delivery of digital information products over a network infrastructure, becomes more pervasive, it is important for the seller to gather viewer information, for example for showing that an order has been fulfilled and for detecting and identifying all people receiving the information, to gather demographic data and to ensure payment.

Currently, there is no direct solution to the problem of media delivery tracking in the domain of distributed computing. An indirect solution is to build complex authentication and non-repudiation algorithms into the various applications. However, the high complexity and indirectness of the approach make this a cumbersome solution with limited proof value.

#### Disclosure of the Invention

The present invention provides a convenient and efficient mechanism for proving that a particular piece of media has been received by a destination from a source. This proof of reception involves three steps: 1) embedding at least one media identifier at the media source directly into a piece of media 2) at the destination, combining the at least one media identifier with a destination identifier to produce at least one combined identifier, and 3) transmitting the combined identifier to one or more collection points for processing. Due to the fact that the identifier is associated not with a channel or the source, but with the piece of media whose reception needs to be proven, the inventive mechanism produces little extraneous data, as compared to an active trace of user behaviour. The mechanism is fine grained and can be attached to one or all of the beginning, middle and end of the media transmission with as much detail as is required for observation of the viewer's behaviour (e.g., including monitoring a viewer's switching of channels during commercials). The mechanism supports tracking of a media segment from its source across multiple distributors, allowing multiple evaluations, for example, by source, by distributor, by media, etc. based on whoever has added to the media identifier. The combined identifier can also easily be associated with a time of reception. Broadly applicable to all kinds of media, the mechanism is extensible in conjunction with other technology to avoid tampering, and reveal proof of viewing only to authorized parties.

### Brief Description of the Drawings

The invention will now be described, by way of example only, with reference to the accompanying drawings in which:

5 Figure 1 shows the relationship between a media program, a media segment and a media unit;

10 Figure 2 shows the media marking facility that inserts the media identifiers into the media units;

Figure 3 shows the components of a video distribution system; and

15 Figure 4 shows the identifier processing facility at the destination device.

### Detailed Description of the Invention

20 The inventive mechanism provides for tracking of transmitted content in any media which can be appended to include media identifiers to be transmitted with the media content. The media identifier segment of the media transmission must include additional bandwidth so that destination sites can append the segment to include destination  
25 identifiers, thereby producing combined identifiers which are returned to collection points. Appropriate media for implementing the invention include, but are not limited to, analog video (which has the vertical blanking interval available to insert media identifiers), digital video, analog audio, digital audio, etc. whether delivered by infrared (IR)  
30 means, cable or other terrestrial television programming delivery, radio transmission, Internet posting, satellite transmission, etc. For the sake of clarity, only the television embodiment will be detailed hereinafter, although it is clearly intended that the invention not be limited to only a television implementation.

35 A television environment has many types of media sources, including film studios for entertainment material, news studios for news shows, advertising agencies for commercials, and freelance producers for feature films. These sources pass the media over channels to distributors, such as television networks, that either transmit the media directly to the  
40 consumer, or to another distributor, such as a cable television head-end, that transmits the media to the consumer.

The key to tracking the reception of transmissions under the present invention is that the source and each distributor may insert into

the media a new element: one or more media identifiers. At the ultimate destination where the media is viewed, the destination device combines the media identifier with its own destination identifier. Then, the destination device transmits the combined media and destination identifiers (hereinafter referred to as "combined identifiers") over a back channel to a collection point for processing to create proof-of-reception reports. Each intermediary entity may add to the media identifier, thereby providing tracking of each entities' "value add", and each may generate intermediate combined identifiers which are sent to one or more collection points. Depending upon the content of the media transmission, it may be desirable to insert multiple media identifiers at various locations in the media transmission, as further detailed below.

The process by which the media is marked with media identifiers will first be detailed; followed by a description of the overall operation of the invention; and, finally, by examples of the use of the invention by several applications. For purposes of the ensuing description, the following terms will be used:

Media: information to be transmitted, such as information comprising video, audio, image, text or animation; it can be in analog or digital form.

Media Segment: a logically self-contained piece of media, such as a scene of a movie, a commercial, etc.

Media unit: a unit of media to be transmitted. This is the unit to be marked and whose reception is to be tracked.

Media identifier: a digital identifier for a media segment, or a subset of a media segment. A media identifier is always associated with one media unit. A media identifier may be unique to a media unit, or it may be shared between media units / segments that form a class (e.g., all advertisements originating from a particular consumer products company)

Media marking facility: facility to attach a media identifier to a media unit

Marked media unit: a unit of media that has been marked with a media identifier

Marked media segment: a media segment that contains one or more marked media units;

Source: origin of the media

Destination: device for display of the media;

5 Destination identifier: a unique identifier for a destination

Viewer: person who watches the destination device

10 Channel: transmission medium for the media

Back channel: channel over which the destination transmits the identifier groups to the collection point (s)

15 Distributor point: where the media content is received from a source and transmitted to destinations or other distributors. At a distributor, media from several channels / sources may be combined

20 Combined Identifiers: set of identifiers consisting of a destination identifier and one or more media identifiers

Collection point: a system to which destination devices can occasionally connect and transmit identifier groups for further processing.

25 With reference to Figure 1, a logical unit of media is called a media segment (10A through 10E). Examples of media segments are movies, commercials, or video clips of news events. A sequence of media segments forms a media program (5). For transmission purposes, and for purposes of processing, media segments are divided into media units (15A-15N).  
30 Media units may be very small. For video, a media unit may be a single video frame, or a small set of video frames, such as a Group of Pictures (GOP) in an MPEG encoded video. Figure 1 shows the relationship of media units, media segments, and media programs.

35 A media unit (e.g., 15C) may be marked with none, one, or more media identifiers (20A-20C). The media identifier can be inserted into the media unit in many formats, with the specific format depending upon the particular media representation. Digital media tend to have a well-defined stream syntax with extension options, making digital media particularly well-suited for this method. In the present embodiment, it  
40 is assumed that the media is digital video, and that the video is encoded using the MPEG standard. The MPEG standard allows the addition of data to the video and audio streams in a way that does not interfere with the transmission and display of the media. Whether the media is in digital or analog form, there is an assigned syntax according to which a media

identifier can be inserted into a stream, and easily recognized, read and/or removed by the destination device. Furthermore, the identifiers are ideally embedded in a way that does not interfere with the operation of those destination devices which are not adapted to identify and remove the media identifiers from the media.

A media unit, (specifically 15C in Figure 1) that has at least one associated media identifier (20A-20C) will be hereinafter referred to as a "marked media unit". Similarly, a media segment (10B of Figure 1) containing one or more marked media units will be referred to as a "marked media segment". If a marked media segment is handled by multiple parties, each party may add a media identifier to one or more media units, so that the entire path of the media segment from the source to the destination device can be determined by inspecting the media identifiers. For instance, the original creator of content (e.g., a movie studio), an initial distributor (e.g., a television network), and the final distributor (e.g., a cable television operator), all may add media identifiers to some or all of the media units prior to the media being delivered to the ultimate destination (i.e., the viewer location) at which another destination identifier will be added and a combined identifier generated for delivery to one or more collection points. As noted above, combined identifiers may be generated by each of the intermediary entities, as appropriate for tracking purposes.

Figure 2 shows the media marking facility (125) that inserts media identifier (20) into one of the media units (15X-15Z). An unmarked media segment enters the facility. Meta information (120) describes which media units are to be marked by insertion of media identifiers. The meta information may be customized by a commercial scheduling system (not shown), for example, which coordinates when and where commercials may be inserted into a stream for display. The media marking facility (125) reads the meta information while it processes the stream of media units. Whenever it encounters a media unit that, according to the meta information, is to be marked (e.g., 15Y in Figure 2), the marking facility (125) obtains a media identifier (20) to mark the unit. The marking facility may obtain this identifier from the media id generator (110), from the meta-information (120), from some other source, or from any combination of the foregoing; and, may modify the media identifier according to the meta information. Next, the marking facility adds the media identifier (20Y) to the media content (25) of the media unit (15Y), and inserts the newly marked media unit (15Y') back into the media segment which now becomes a marked media segment. A media marking facility may, if specified by the meta information (120), add more than one media identifier to a media unit.

Media identifiers can be static, that is, particular media segments obtain their identifiers and maintain them for their entire lifetime. For such an implementation, the marking system can "permanently" mark the media segments and store the marked media segments for later transmission. Alternatively, media identifiers can be inserted dynamically, for instance, at the time of transmission for each particular broadcast, or when the media is shipped to a particular distributor or destination. This allows the tracking of particular copies of the media, or of particular uses. Static and dynamic media identifiers need not be distinguishable other than by their use.

The media identifiers used may be unique to a particular media segment, or they may be unique to a particular transmission of a media segment. On the other hand, if only general reception statistics are to be reported that apply to classes of media rather than to individual media segments, the media identifiers may be unique to an entire media classes. For instance, a media identifier may identify all transmissions or all content emanating from a particular source.

A media identifier preferably includes the address of one or more collection points, or the name(s) indicating the address(es) of the collection point(s), to which the combined identifier is to be routed. This way, reception information can be sent to more than one collection point, thereby supporting more than one application.

The use of marked media will now be detailed with reference to Figure 3. Media producers, such as TV studios or news studios, are the sources (210J-210L) of the media. The producers insert media identifiers into the media, and then transmit it over a channel to a distributor (e.g., 230A and 230B). A distributor (e.g., 230A), such as a TV network, combines media from different sources into a media program and transmits this media program over a channel, either to a further distributor (230B), or to the final destination (240A or 240B) such as the set-top box that a viewer uses to receive digital television. As each of the distributors transmits the program, they may insert additional identifiers into the segments.

In the case of a cable distribution system, the cable head-end is a distributor (230B), which receives the program over a channel (not shown) from the TV network, which is also a distributor (230A). The cable head-end acts as a second distributor. It may add additional commercials into the program, and insert its own media identifiers, so as to allow calculation of its viewer share, and proof of transmission. The cable distributor then transmits the program over its channel, the cable

distribution system, to the destination (240A and/or 240B). Each intermediate entity, for example the distributors of Figure 3, may have both a media marking facility (Figure 2) for inserting media identifiers and an identifier processing facility (Figure 4) for reading media identifiers and adding destination identifiers thereby creating combined identifiers, or the two functions may be combined into a single facility having all relevant functionality.

The destinations (240A and 240B of Figure 3) are the TV set-top-boxes (STBs) that are needed to receive and decode digital TV transmissions. The STBs are enhanced to include an identifier processing facility (310 of Figure 4) to process the media identifiers. The STBs may additionally be provided with a "back channel" for providing combined identifiers to the collection points without having to wait for their main reception channel to be free. Each destination device has a destination identifier (320). Figure 4 shows a representative identifier processing facility in a destination device. When the destination device (240A) receives a marked media unit (15Y'), the identifier processing facility (310) automatically reads and/or removes the media identifier (20Y) from the marked media unit. Removal of the media identifier from the bit stream may not be absolutely necessary, depending upon whether the ultimate display device can ignore the extraneous information. Once the media identifier has been read and/or removed, the identifier processing facility automatically combines the media identifier with the destination identifier (320) to form a combined identifier (330). If a particular marked media segment has more than one media identifier, more than one media identifier and one copy of the destination identifier (320) may form one or a plurality of combined identifiers (330). A combined identifier (330) contains at least one destination identifier (320) and one or more media identifiers. Combining several media identifiers with one destination identifier in a destination will result in more efficient transmission and processing of the combined identifiers, if all are destined for the same collection point. When a combined identifier (330) is ready for transmission, the destination (240) preferably transmits it over the aforementioned back channel to the collection point (260). The back channel may be a telephone connection which the set-top-box establishes with the collection point, or it may be a return channel that is part of the cable television infrastructure. Reporting to a collection point may be done periodically (e.g., every 20 minutes), based on a threshold amount of collected information (e.g., once the system has aggregated 10MB of combined identifier data for a given collection point), or individually for each received transmission.

In many cases, the destination identifier is unique to the destination. For instance, in pay-per-view applications, the destination identifiers should be unique to a particular household or a particular set-top-box. However, if privacy concerns are important, or if the goal is to obtain only demographic data, the destination identifiers can be unique to any group as defined by the entity that assigns destination identifiers to set-top-boxes.

The collection point is the place where the combined identifiers are evaluated according to various criteria, and where proof-of-reception reports are generated. Examples of some of the applications evaluating combined identifiers are listed below. A collection point may be operated by the source (210) or by one of the distributors (230), or it may be an independent agency, such as the television ratings company. The collection point (260) need not be on the path of channels over which the media is transmitted from the source (210) to the destination (240). The collection point collects the combined identifiers (330), and either processes and stores them, or aggregates them to build information on demographic groups.

Several specific implementations will now be described:

Pay-per-view: All pay per view material is encoded to contain unique media identifiers. The set-top box collects the media identifiers, combines them with the destination identifier, and transmits the combined identifier to the collection point to generate a billing record. This permits easy impulse buying. The act of viewing triggers the charge, with no administrative action such as a phone call needed. To insure that the viewer willingly incurs the charge, a confirmation action local to the set-top box can be generated, such as showing a message on the screen when the set-top box encounters the first media identifier, and requesting that the viewer acknowledge acceptance of the charge by pressing a key on the remote control. The viewer could even be asked to enter a password to identify the viewer, rather than just the set-top box, for example, when only one person can authorize payment for entertainment material. If a particular viewer has to be identified, this invention can be combined with prior art, such as smart cards to reliably identify a particular viewer.

Proof-of-transmission for commercials: For this implementation, ideally, the beginning and the end of each commercial contains a media identifier. In each over-the-air broadcast market, or in each cable television area served by a head-end, at least one set-top box is set up to collect the media identifiers, create combined identifiers, and

transmit them to a collection point. The collection point compares the media identifiers from the combined identifiers with a list of commercials and sends messages to the advertisers, confirming that the commercials have been run. In this case the destination identifier indicates the particular broadcast domain to which the commercial has been transmitted.

Collection of Viewing Statistics: The collection of viewing statistics which are today collected more or less manually can be automated using the present invention. Media identifiers are periodically included with all material transmitted. The set-top boxes either return combined identifiers immediately over the back channel, or store the combined identifiers and transmit them periodically. By analyzing the combined identifiers it can be determined what was watched on each of the televisions. This information can either be aggregated into statistics on viewer groups, or used individually by viewer. In any case, the information of who saw what can be associated with other information about the viewers to yield better target advertising. The advertising agency providing the commercials can add multiple media identifiers to a particular commercial, for instance, one media identifier at the beginning, one in the middle, and one at the end of the commercial. By analyzing which of these identifiers have been included in a returned combined identifier, the agency can determine how many people switched channels during the commercial, and whether they switched in the first half or the second of the commercial, by comparing the number of combined identifiers received from each of the three positions.

Tell-me-more buttons: In this implementation, when the viewer wants to know more about an advertised product, or anything else in a TV show, he/she just needs to press a single key on the remote control. The combined identifier identifies both the viewer and the material. The collection point can automatically cause additional information to be sent to the user, through means such as printed material, e-mail, or by opening a window on the television screen to a web site.

Many other applications can be based on knowledge of when a particular user has watched what media material. If a user wishes to store the received information for later viewing and/or repeated usage, the inventive mechanism will provide that the media identifier be maintained with the media content, rather than removed from same upon receipt, so that a new combined identifier can be created each time the stored media is accessed, thereby providing long-term tracking of usage for both statistical and billing purposes. While all the above examples

used video, the method applies to audio material and to graphics material as well.

5 In order to record the time at which the material was received, the destination device can attach a time stamp to the identifier group. Alternatively, in the case where the combined identifier is transmitted immediately upon reception to the collection point, the collection point can note the time at which it has received the material.

10 In order to avoid tampering with the media identifiers, they can be encrypted at the point of insertion. The encryption keys must be transmitted to the collection point for successful decryption and processing. In this way, it can be assured that the distributors or the destination do not modify the media identifier. If it is important to avoid tampering with the destination identifiers, the destination  
15 identifier can be stored in the STB in encrypted form. This will prohibit a destination to masquerade as another destination. Also, it can ensure that the proof-of-reception information is revealed only to authorized parties.

20 This invention can be used to show proof of reception of any kind of data, not just media data. For instance, it can be used in the context of information distribution or software distribution to show that a particular party has received any kind of information. The data  
25 received are not confined to use within an STB. The STB can serve as a gateway, and provide proof of reception, while transmitting the data to other devices, such as PCs, for use.

30 The media identifier can contain the network address of collection point. This way different collection points can serve for different applications. For instance, a movie studio may want to receive proof of reception any time its movies are shown. Simultaneously, a rating agency may want to receive viewing statistics of a particular transmission. By  
35 embedding the network address of each collection point into appropriate media identifiers, different collection points can serve these different applications.

40 Another embodiment of this invention is possible in the domain of a computer infrastructure. As more and more video is created in digital form, it is increasingly distributed from computer servers as sources over computer networks to computer clients. Examples of applications in this domain are computer-based education and training, computer-based information distribution and advertisement. Examples of applications in the computer domain include the following: an insurance company providing

a discount in malpractice insurance to physicians who can show that they viewed certain continuing education material; a web advertiser wanting to collect independent viewing statistics; a store wanting to show that a customer viewed product information to avoid liability suits; and, a software distributor wanting to prove that a particular user has received a piece of software, such that the media identifier is automatically transmitted to the collection point as part of the software installation process.

It is obvious to one skilled in the art that the invention can be applied using a client / server system in a computer environment. The server computer acts as the source, the computer network acts as the channel, and the client acts as the destination device. All the technical extensions described above can be operated in a computer environment as well.

## CLAIMS

5 1. A method for providing verification of receipt of a media transmission at one of a plurality of destinations comprising the steps of:

10 providing at least one media identifier to the transmission;  
transmitting said transmission with said at least one media identifier to at least one of said plurality of destinations; and  
15 automatically generating at least one receipt identifier at said at least one destination for delivery to at least one collection point.

20 2. A method as claimed in Claim 1 wherein each of said plurality of destinations has a unique destination identifier and wherein said automatically generating at least one receipt identifier comprises  
25 combining said at least one media identifier and said destination identifier.

30 3. A method as claimed in Claim 1 wherein said at least one of said destinations comprises an intermediate location for transmitting said transmission to another of said at least one destinations and wherein said method further comprises inserting at least one additional media identifier into said transmission.

35 4. A method for providing automatic tracking of a media transmission to at least one of a plurality of locations comprising the steps of:

40 providing at least one media identifier to the transmission;  
transmitting said transmission with said at least one media identifier;

45 receiving said transmission with said at least one media identifier in at least one of said plurality of locations; and  
automatically generating at least one receipt identifier based on said at least one media identifier at said at least one of a plurality of locations.

50 5. A method as claimed in Claim 2 or Claim 4 wherein each of said plurality of locations has a unique location identifier and wherein said automatically generating at least one receipt identifier comprises  
55 combining said at least one media identifier and said location identifier.

6. A method as claimed in Claim 4 wherein each of said plurality of locations has a unique location identifier and wherein said

automatically generating at least one receipt identifier comprises including said unique location identifier as a successive media identifier.

5           7.     A method as claimed in Claim 1 or Claim 4 further comprising the step of transmitting said at least one receipt identifier to at least one collection point.

10           8.     A method as claimed in Claim 2 or Claim 5 wherein said automatically generating is preceded by removing said at least one media identifier from said transmission.

15           9.     A method as claimed in Claim 1 or Claim 4 wherein said providing comprises including more than one different media identifier to said transmission.

20           10.    A method as claimed in Claim 1 or Claim 4 wherein said providing comprises including at least one identifier in more than one location in said transmission.

25           11.    A system for providing tracking of a transmission comprising:  
            a plurality of media marking components for generating marked transmissions by providing at least one media identifier to each of said

30                      a plurality of identifier processing components each of which is adapted for automatically creating at least one receipt identifier upon receipt of one of said marked transmission based upon said at least one media identifier.

35           12.    A system as claimed in Claim 11 wherein a first of said plurality of media marking components is located at the source of said transmission.

            13.    A system as claimed in Claim 12 wherein at least one successive media marking component is located at a site between said source of said transmission and a destination for said transmission.

40           14.    A system as claimed in Claim 13 wherein said site additionally comprises one of said plurality of identifier processing components.

15. A system as claimed in Claim 11 further comprising at least one collection point for said at least one receipt identifier.

5 16. A system as claimed in Claim 15 wherein said of said identifier processing components is associated with at least one communication component for providing said at least one receipt identifier to said at least one collection point.



Application No: GB 0000813.6  
Claims searched: 1-16

Examiner: Mike Davis  
Date of search: 7 April 2000

Patents Act 1977  
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:  
UK Cl (Ed.R): G4H (HTJ, HNMA, HNMB, HNMC, HNNC)  
Int Cl (Ed.7): H04H, H04N  
Other: Online: WPI, EPODOC, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 1573795 (BLOCK ET AL) eg page 2 lines 88-126 and page 6 lines 104-114	1-16
X	GB 1531698 (TELEGLOBE...) eg page 1 lines 31-90	"
X	WO 98/31132 A2 (JANOV) eg pages 4-5	"
X	WO 98/06193 A1 (GREENE ET AL) eg abstract, page 8 and page 15 lines 7-18	"
X	WO 95/35606 A1 (GREENE ET AL) eg abstract	"
X	WO 95/12278 A1 (NIELSEN) eg abstract and pages 24-25	"
X	US 5630203 (WEINBLATT) eg abstract	"
X	US 5557334 (LEGATE) eg abstract, columns 1-2 and column 5 lines 22-30	"

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.



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## 【特許請求の範囲】

【請求項1】 複数の双方向テレビが通信回線網を介して接続され、前記双方向テレビ上で提供されている番組に対する視聴者の応答データを番組内容に応じて処理するテレビ応答サーバシステムにおいて、

番組毎に番組IDが定められ、番組に対する応答データの処理内容を含む番組情報を登録した番組情報データベースと、

前記双方向テレビで番組提供を受ける視聴者の個人IDが、個人が利用する各双方向テレビ毎に認証情報と共に登録された認証情報データベースと、

番組に対して応答データを入力した視聴者の個人IDが番組IDと共に応答データに付加されて前記双方向テレビから送られてくると、当該応答データを番組IDに基づいて該当する番組の応答データリストに登録する応答処理手段と、

前記応答データに付加されていた個人IDに基づいて前記認証情報データベースから応答データを入力した視聴者本人の個人認証情報を取得する認証処理手段と、

前記番組情報データベースから番組IDに基づいて検索した処理内容により前記応答データリスト及び個人認証情報を処理して集計結果を得る集計処理手段とを具備したことを特徴とするテレビ応答サーバシステム。

【請求項2】 複数の双方向テレビが通信回線網を介して接続され、前記双方向テレビ上で提供されている番組に対する視聴者の応答データを番組内容に応じて処理するテレビ応答サーバシステムにおいて、

番組毎に番組IDが定められ、番組に対する応答データの処理内容を含む番組情報を登録した番組情報データベースと、

前記双方向テレビで番組提供を受ける視聴者の認証情報が各双方向テレビのテレビIDに基づいて登録された認証情報データベースと、

テレビ製造メーカを示すメーカIDの登録されたテレビIDが番組IDと共に応答データに付加されて前記双方向テレビから送られてくると、当該応答データを番組IDに基づいて該当する番組の応答データリストに登録する応答処理手段と、

前記応答データに付加されてきたメーカIDに基づいて当該応答データを返してきた双方向テレビの製造メーカを認識するメーカ認識手段と、

前記メーカ認識手段で認識した製造メーカ情報を保存する保存手段と、

前記応答データに付加されていたテレビIDに基づいて前記認証情報データベースから応答データを入力した視聴者の認証情報を取得する認証処理手段と、

前記番組情報データベースから番組IDに基づいて検索した処理内容により前記応答データリストを集計処理する集計処理手段とを具備したことを特徴とするテレビ応答サーバシステム。

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【請求項3】 請求項2に記載のテレビ応答サーバシステムにおいて、

前記双方向テレビから応答データに付加して送信するテレビIDに、前記メーカIDに加えてテレビの機種を判別するための機種ID及び製造ロット番号を登録する製造メーカ情報フィールドを設けたことを特徴とするテレビ応答サーバシステム。

【請求項4】 複数の双方向テレビが通信回線網を介して接続され、前記双方向テレビ上で提供されている番組に対する視聴者の応答データを番組内容に応じて処理するテレビ応答サーバシステムにおいて、

番組毎に番組IDを定めて応答データの処理内容を含む番組情報が登録されており番組によっては応答データを入力した視聴者を確認するための本人確認処理が定められた番組情報データベースと、

前記双方向テレビで番組提供を受ける視聴者の認証情報が視聴者のパスワードと共に各双方向テレビのテレビIDに基づいて登録された認証情報データベースと、

番組に対して応答データを入力した視聴者のパスワードが登録されたテレビIDが番組IDと共に応答データに付加されて前記双方向テレビから送られてくると共に、当該応答データを番組IDに基づいて該当する番組の応答データリストに登録する応答処理手段と、

前記番組情報データベースに本人確認処理が定められているとき前記応答データに付加されたテレビIDに登録されているパスワードと前記認証情報データベースに登録されている当該視聴者のパスワードとを照合するパスワード照合手段と、

前記パスワード照合手段でパスワードの一致が確認された応答データについて前記番組情報データベースに登録されている処理内容に基づいて集計処理する集計処理手段とを具備したことを特徴とするテレビ応答サーバシステム。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、視聴者からデータ送信が可能ないわゆる双方向テレビに提供されている番組に対する視聴者の応答データを集計処理して種々のサービスを提供するテレビ応答サーバシステムに係り、特に応答データに付加されたテレビIDを応答サーバ側で解析し、応答データの集計処理を行うテレビ応答サーバシステムに関する。

【0002】

【従来の技術】放送局から放送電波を送信すると共に放送電波をテレビ受信機で受けてテレビ映像を表示させるテレビジョン放送の分野では、テレビ映像信号の垂直帰線期間の隙間を利用して文字多重放送を行っている。文字多重放送は、複数の番組を放送電波に多重化して送信し、受信側で必要な番組を選択受信してテレビ映像信号に変換して表示させるものである。

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【0003】このような文字多重放送の技術を使用することにより、通常のテレビジョン放送に加えて複数の文字番組または動画像による番組を視聴者に提供できることになる。例えば、ある番組でコマーシャル放送されている商品の説明や購買方法などをそれに多重化した番組（多重化番組）で提供できる。

【0004】ところが、現在のテレビジョン放送は放送局から視聴者に対して一方的に情報を提供するものであるので、例えば番組内で紹介された複数の商品の中から視聴者が希望する商品の補足情報を選択的に表示したり、番組の中で視聴者に呼び掛けを行い、それに対する視聴者からの応答をリアルタイムで集計して番組に反映させるといった適用を行うことはできなかった。

【0005】番組提供者から視聴者に対して一方的に情報を提供するだけでなく、視聴者が番組に対して応答を返せるようにするためには、番組を表示しているテレビにおいて応答データを受け付けて集計センタ等へ送信する機能を持った双方向テレビを利用することができる。本出願人は、番組に対する応答を双方向テレビで受け付け、その応答データにテレビのテレビIDを付加して双方向テレビから公衆回線を介して応答サーバへ送信し、応答サーバにおいてテレビIDに基づいて登録しておいた個人認証情報を抽出するようにした双方向テレビ応答サーバシステムを特願平7-190728号として既に特許出願済みである。

【0006】かかる双方向テレビ応答サーバシステムにおいては、1台のテレビに対して1つの固有のテレビIDを定めておき、応答サーバ側にテレビIDに対応するテレビ所有者の氏名、住所等の個人情報を登録している。そして、応答データに付加されていたテレビIDから応答データを送ってきた視聴者を識別している。

【0007】【発明が解決しようとする課題】しかしながら、1台のテレビを複数人で共用している場合は、代表者の個人情報しか登録されていないため実際に応答データを入力した視聴者本人まで正確に識別することはできず、テレビ機体の特定に留っていた。

【0008】また、双方向テレビを利用したテレビショッピング等の番組では注文を行った個人を応答サーバ側で確認する必要があるが、応答サーバではテレビ所有者等の代表視聴者までしか確認することができなかった。

【0009】また、応答サーバにおいて応答データに付加されてきたテレビIDは視聴者の識別及び認証情報の抽出にしか使われておらずテレビ自体に関する情報に利用することができなかった。

【0010】本発明は以上のような実情に鑑みてなされたもので、双方向テレビから応答データに付加して応答サーバへ送信するテレビIDの登録情報を有効に活用することにより、1台のテレビを複数人で共用している場合であってもテレビに応答データを入力した本人を識別

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することができたり、または応答データを返してきた双方向テレビの製造メーカーや機種を識別することができ、さらには応答データを入力した視聴者の確認をとることができるテレビ応答サーバシステムを提供することを目的とする。

【0011】

【課題を解決するための手段】本発明は、上記目的を達成するために以下のような手段を講じた。請求項1に対応する本発明は、複数の双方向テレビが通信回線網を介して接続され、前記双方向テレビ上で提供されている番組に対する視聴者の応答データを番組内容に応じて処理するテレビ応答サーバシステムにおいて、番組毎に番組IDが定められ、番組に対する応答データの処理内容を含む番組情報を登録した番組情報データベースと、前記双方向テレビで番組提供を受ける視聴者の個人IDが、個人が利用する各双方向テレビ毎に認証情報と共に登録された認証情報データベースと、番組に対して応答データを入力した視聴者の個人IDが番組IDと共に応答データに付加されて前記双方向テレビから送られてくると、当該応答データを番組IDに基づいて該当する番組の応答データリストに登録する応答処理手段と、前記応答データに付加されていた個人IDに基づいて前記認証情報データベースから応答データを入力した視聴者本人の個人認証情報を取得する認証処理手段と、前記番組情報データベースから番組IDに基づいて検索した処理内容により前記応答データリスト及び個人認証情報を処理して集計結果を得る集計処理手段とを備える。

【0012】本発明のテレビ応答サーバシステムによれば、1つの双方向テレビを複数人で共用する場合、応答データを入力した視聴者個人の個人IDがその双方向テレビのテレビIDに登録されて応答サーバ側へ送信される。一方、応答サーバ側では認証情報データベースに視聴者の認証情報が個人IDに基づいて個人情報に区分されている。したがって、双方向テレビから送られてきた個人IDを見ることにより番組に対して実際に応答データを入力した視聴者本人を認識することができる。1台の双方向テレビを使用できるものが複数人いる場合であっても認証情報データベースから応答者本人の個人認証情報を取得することができる。

【0013】請求項2に対応する本発明は、複数の双方向テレビが通信回線網を介して接続され、前記双方向テレビ上で提供されている番組に対する視聴者の応答データを番組内容に応じて処理するテレビ応答サーバシステムにおいて、番組毎に番組IDが定められ、番組に対する応答データの処理内容を含む番組情報を登録した番組情報データベースと、前記双方向テレビで番組提供を受ける視聴者の認証情報が各双方向テレビのテレビIDに基づいて登録された認証情報データベースと、テレビ製造メーカーを示すメーカーIDの登録されたテレビIDが番組IDと共に応答データに付加されて前記双方向テレビ

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から送られてくると、当該応答データを番組IDに基づいて該当する番組の応答データリストに登録する応答処理手段と、前記応答データに付加されてきたメーカーIDに基づいて当該応答データを返してきた双方向テレビの製造メーカーを認識するメーカー認識手段と、前記メーカー認識手段で認識した製造メーカー情報を保存する保存手段と、前記応答データに付加されていたテレビIDに基づいて前記認証情報データベースから応答データを入力した視聴者の認証情報を取得する認証処理手段と、前記番組情報データベースから番組IDに基づいて検索した処理内容により前記応答データリストを集計処理する集計処理手段とを備える。

【0014】本発明のテレビ応答サーバシステムによれば、応答データに付加されてきたテレビIDにメーカーIDが登録されているので、応答データを返してきた双方向テレビの製造メーカーを認識することができる。したがって、メーカー認識手段によって応答データをテレビ製造メーカー別に分けると共に、メーカー認証処理手段により認証情報データベースから応答データを入力した視聴者の認証情報を取り出して各応答データに付加することにより、製造メーカー毎の応答者リストを作成することができる。

【0015】請求項3に対応する本発明は、上記したテレビ応答サーバシステムにおいて、前記双方向テレビから応答データに付加して送信するテレビIDに、前記メーカーIDに加えてテレビの機種を判別するための機種ID及び製造ロット番号を登録する製造メーカー情報フィールドを設けた。

【0016】本発明のテレビ応答サーバシステムによれば、製造メーカー毎に作成された応答者リストに機種ID及び製造ロット番号の情報が含まれる。したがって、各テレビ製造メーカーではテレビ機種毎に顧客管理できると共に、特定の機種について製造ロット番号から製造ラインや製造日時を特定できる。

【0017】請求項4に対応する本発明は、複数の双方向テレビが通信回線網を介して接続され、前記双方向テレビ上で提供されている番組に対する視聴者の応答データを番組内容に応じて処理するテレビ応答サーバシステムにおいて、番組毎に番組IDを定めて応答データの処理内容を含む番組情報が登録されており番組によっては応答データを入力した視聴者を確認するための本人確認処理が定められた番組情報データベースと、前記双方向テレビで番組提供を受ける視聴者の認証情報が視聴者のパスワードと共に各双方向テレビのテレビIDに基づいて登録された認証情報データベースと、番組に対して応答データを入力した視聴者のパスワードが登録されたテレビIDが番組IDと共に応答データに付加されて前記双方向テレビから送られてくると共に、当該応答データを番組IDに基づいて該当する番組の応答データリストに登録する応答処理手段と、前記番組情報データベース

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に本人確認処理が定められているとき前記応答データに付加されたテレビIDに登録されているパスワードと前記認証情報データベースに登録されている当該視聴者のパスワードとを照合するパスワード照合手段と、前記パスワード照合手段でパスワードの一致が確認された応答データについて前記番組情報データベースに登録されている処理内容に基づいて集計処理する集計処理手段とを備えた。

【0018】本発明のテレビ応答サーバシステムによれば、双方向テレビから送信するテレビIDに視聴者個人のパスワードを入力すると共に、応答サーバ側の認証情報データベースに視聴者のパスワードを登録したので、双方向テレビから応答データを入力した者が本人であるか否か判断することができる。

【0019】

【発明の実施の形態】以下、本発明の実施の形態について説明する。(第1の実施形態)図1は第1の実施形態に係るテレビ応答サーバシステムの機能ブロックを示している。放送局1から発信された放送電波を受信して番組を表示させる双方向テレビ2が応答サーバ3に公衆回線網を介して接続可能になっている。応答サーバ3は放送局1及びIP/SP会社サーバ(不図示)がWAN等の広域通信網を介して接続される。放送局1及びIP/SP会社サーバは共に応答サーバ3から応答データの集計結果等のデータ提供を受けることができる。IP/SP会社サーバは、応答サーバ3で取得される集計結果等の加工データを利用する情報提供者が運営するサーバである。

【0020】双方向テレビ2は、放送局1から送信された放送電波から、通常のテレビ番組の映像及び音声情報を番組情報として分離すると共に、そこに多重化されている多重番組の音声及び映像を多重化番組情報として分離する機能と、番組選択要求に応じて該当テレビ番組または多重番組をテレビ信号に変換して表示させる機能と、多重番組に対して視聴者から選択入力された応答データを応答サーバ3へ送信する応答機能とを有する。

【0021】双方向テレビ2は、放送電波から分離した番組プログラムを実行するプログラム制御部4を備えている。プログラム制御部4が番組プログラムを実行することにより視聴者の応答データを収集することができる。具体的には、リモコン操作受信部5が番組リモートコントローラ(リモコン)6から受信した視聴者からの番組選択要求信号をプログラム制御部4へ渡し、プログラム制御部4が放送電波から分離した番組情報の番組プログラムを実行してテレビ画面に番組内容に対応した情報を表示する。例えばテレビショッピング番組であれば各商品に関する商品説明及び商品番号等を表示する。視聴者がリモコン6で指示した商品番号(選択項目)をリモコン操作受信部5で受信してプログラム制御部4へ渡す。プログラム制御部4が視聴者の応答データを番組ID

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D. テレビIDを付加して通信制御部7へ送出する。番組IDは放送局1から双方向テレビ2に番組プログラムを送るときに放送電波に載せて同時に送られてくる。テレビIDは各双方向テレビ2において設定される。

【0022】テレビIDの情報フィールドは、テレビ機体情報フィールドと個人情報フィールドとから構成されている。テレビ機体情報フィールドには、個々の双方向テレビ2に固有のテレビ機体IDがセットされ、個人情報フィールドには該双方向テレビ2を複数人(家族等)で共用する場合に回答データを入力する視聴者を特定するための個人IDがセットされる。

【0023】図2は、リモコン6の裏面に設けたDIPスイッチの斜視図を示している。リモコン6の裏面にDIPスイッチ8が設けられている。DIPスイッチ8はそれぞれ「上」「下」の2状態に設定可能な4つのつまみ8a~8dからなり、つまみ8a~8dの「上」

「下」の組み合わせで個人IDが設定できるようになっている。同一の双方向テレビ2を使用する複数人に対して別々に専用のリモコン6を用意し、各リモコン6に各人の個人IDを設定する。又は、一つのリモコン6を複数人で使用する場合は、双方向テレビ2に回答を返す際に本人の個人IDをDIPスイッチ8にて設定するようにする。リモコン6から双方向テレビ2に対して回答データを返すときはDIPスイッチ8に設定された個人IDと一緒に発信する。

【0024】プログラム制御部4は、リモコン6から受信した個人IDと当該双方向テレビ2に固有のテレビ機体IDとを組み合わせるテレビIDを作成する。図3はプログラム制御部4が作成したテレビIDを示している。

【0025】回答サーバ3は、公衆回線網を介しての双方向テレビ2との回線接続を通信制御部10により行っている。回答サーバ3には、双方向テレビ2から送られてきた回答データの回答データファイルを作成する回答処理アプリケーション11、回答データファイルのデータを集計処理する集計処理アプリケーション12、認証情報を抽出する認証処理アプリケーション13の各機能が備えられている。さらに、図示していないが、スケジューラから与えられるタイミングで各アプリケーションの起動や不要になったデータを回答データファイルから削除する運用アプリケーション等の機能も備えている。

【0026】回答サーバ3には、番組情報データベース14及び認証情報データベース15が配置されている。番組情報データベース14は、双方向テレビ2で提供される全番組の番組IDが登録されており、番組IDに基づいて各番組のサービス内容に応じた番組情報が格納されている。認証情報データベース15は、登録されている全ての双方向テレビのテレビIDに対応させて氏名、住所等の個人情報が登録されている。

【0027】図4は認証情報データベース15のデータ構造を示している。認証情報データベース15は、登録視聴者全員の認証情報がテレビIDに基づいて区分して登録されている。1つのテレビID(双方向テレビ)について複数の個人IDが設定可能であり、予めそれぞれの個人ID毎に各種認証情報がそれぞれ登録されている。即ち、一台の双方向テレビ2について任意の人数分の認証情報が登録されている。認証情報は、氏名、住所、年齢、性別等の他に、パスワード、地域コード等から構成されている。

【0028】図5は番組情報データベース14のデータ構造を示している。番組情報データベース14には、当該番組の番組ID、番組の放送時間、回答処理の内容、集計処理の内容、集計結果の送出タイプ等が定められている。

【0029】次に、以上のように構成されたテレビ応答サーバシステムの動作について説明する。ここではクイズ番組で視聴者の回答を応答サーバ3で集計して放送局1へ通知する場合を例にして説明する。

【0030】放送局1からクイズ番組の放送電波にのせてクイズの選択問題を視聴者に選択させる画面イメージや番組プログラムからなる番組データを双方向テレビ2へ放送する。すなわち、クイズ番組の放送電波に回答選択番組の番組データを多重化して放送する。この番組データには番組情報データベース13に登録している番組情報に対応した番組IDが含まれている。

【0031】双方向テレビ2では、クイズ番組の放送電波から回答選択番組の番組データを分離しており、視聴者から回答選択番組の表示を要求する信号がリモコン6によって双方向テレビ2へ発信される。この表示要求がリモコン操作受信部5を介してプログラム制御部4へ与えられると、プログラム制御部4が該当する回答選択番組の番組データをテレビ信号に変換して、視聴者に回答を選択させる選択メニューをテレビ画面に表示させる。

【0032】視聴者がボタン操作によってリモコン6に回答番号を入力すると、この回答番号が該リモコン6のDIPスイッチ8に設定されている個人IDデータと共に双方向テレビ2に送信される。

【0033】双方向テレビ2では、プログラム制御部4がリモコン6から回答番号(回答データ)と個人IDデータとを受取り、個人IDデータと該双方向テレビ2のテレビ機体IDとからテレビIDを作成する。視聴者から受取った回答番号(回答データ)に、個人IDを含んだテレビIDと上記番組IDとを付加して通信制御部7へ渡す。通信制御部7が双方向テレビ2から公衆回線網を介して回答サーバ3の通信制御部10に回線接続の要求を出す。通信制御部7、10間の回線接続後に番組ID、テレビID及び回答データが双方向テレビ2から応答サーバ3へ送られる。

【0034】多数の双方向テレビ2が公衆回線網を介し

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て応答サーバ3に回答データを送って来る。応答サーバ3では、応答処理アプリケーション11が回答データに付加された番組IDをキーにして番組情報データベース13から当該回答選択番組の応答処理内容を読み込んで応答処理内容に示された処理を実行する。ここでは応答処理アプリケーション11が回答選択番組についてテレビIDと回答データとを対応させた回答データファイル17を作成する。複数種の番組が同時期に提供されているので番組単位で回答データファイル17が作成される。

【0035】集計処理アプリケーション12は、回答データファイル17が作成された番組の番組IDをキーにして番組情報データベース14から当該番組に対する集計処理内容を読み込む。集計処理内容として、テレビIDに対応する個別認証情報に基づいた処理が指定されている場合は、認証処理アプリケーション13が起動される。クイズ番組の回答集計であれば、「クイズに対する回答を、年齢別・性別で集計せよ」といった集計処理内容を指示することができる。

【0036】認証処理アプリケーション13は、集計処理アプリケーション12から指定された番組の回答データファイル17に登録されている個々の回答データに対するテレビIDを認識する。認識したテレビIDが「XXXX01」であれば、双方向テレビ2に回答データを入力可能な複数人の中から「太郎」の認証情報（年齢・性別）を抽出する。同一の双方向テレビ2からの回答データであってもテレビIDが「XXXX02」であれば個人IDが「花子」を示しているので「花子」の認証情報（年齢・性別）を抽出する。同様にして、回答データファイル17に登録されている全ての回答データに対してテレビID（テレビ機器ID+個人ID）に基づいて認証情報を抽出する。

【0037】集計処理アプリケーション12は、認証処理アプリケーション13が抽出した認証情報を使って回答データを集計処理する。年齢別・性別に基づいて全回答を集計する。この集計結果は番組情報データベース14に登録されている送出タイプに応じた形態で出力する。放送局1で、回答の集計結果をテレビ番組中で使う場合は「リアルタイム送信」を番組情報データベース14に指定しておくことになる。応答サーバ3、放送局2間の通信回線を接続しておきWANを介して放送局2へ集計結果を送信する。

【0038】以上の説明ではクイズ番組で視聴者の回答を集計する例を示したが、放送局1から放送電波に多重化する番組と、その番組に対応して番組情報データベース14に予め格納する番組情報との組み合わせにより、応答サーバ3で処理可能な番組内容を自由に変更できる。

【0039】例えば、コマmercial放送している商品のカタログ請求を双方向テレビにて行うことができる。コ

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マercial放送時間帯に、商品カタログを請求するための画面イメージ及びプログラムからなる番組データを番組IDと共に放送電波に多重化して放送する。

【0040】双方テレビ2に対してリモコン6からカタログ請求番組の表示要求があれば、プログラム制御部4がカタログ請求番組のプログラムを実行してカタログ請求のための情報をテレビを画面に表示する。表示しているカタログ請求画面を見ている視聴者からリモコン6によりカタログ請求のためのボタン操作がなされる。このボタン操作で示される回答データと共に個人IDデータがリモコン6から双方向テレビ2のリモコン操作受信部5へ送信される。プログラム制御部4は、個人IDデータとテレビ機体IDを組み合わせることでテレビIDを作成し、このテレビID及び番組IDを回答データに付加して応答サーバ3へ送信する。

【0041】応答サーバ3では、番組情報データベース14に予め当該カタログ請求に対する番組情報を番組IDと共に登録している。応答処理アプリケーション11がカタログ請求の回答データからカタログ請求番組の回答データファイル17を作成する。そして集計処理アプリケーション12が回答データファイル17が作成されたカタログ請求番組の番組IDに基づいて番組情報データベース14からカタログ請求に必要な集計処理内容を取り出す。認証処理アプリケーション13に対してカタログ請求を行った個人の氏名及び住所等の個人情報を抽出するように指示がなされる。認証処理アプリケーション13が各回答データに対するテレビIDに基づいて認証情報データベース16からカタログ請求を行った個人の氏名及び住所等の個人情報を抽出する。

【0042】ここで、各回答データに付加されているテレビIDには双方向テレビ2の機体IDのみならず実際に回答データを入力した個人（カタログ請求した本人）を示す個人IDが登録されている。したがって、カタログ請求した本人に関する氏名及び住所等の個人情報を抽出できる。

【0043】集計処理アプリケーション12は、この個人情報と番組IDとから請求されているカタログの種別と送付先とを対応させたカタログ請求リストを作成する。カタログ請求リストはリアルタイムでIP/SP会社に送信する必要がないので、集計データファイル18を作成してカタログ請求リストを蓄積しておき、契約しているIP/SP会社のサーバへバッチ処理で送信することができる。カタログ請求リストをバッチ処理で送信する場合は、番組情報データベース14の送出タイプの項目に「バッチ処理」と指定しておく。また、応答サーバ3に対して放送局1又はIP/SP会社サーバから送信要求があったときに一括して送信する場合は、番組情報データベース14の送出タイプの項目に「オンデマンド」と指定しておく。

【0044】また本実施形態では、番組内容によって本

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入であることを証明するためパスワードを視聴者から双方向テレビ2に対して入力してもらうようにしている。例えば、テレビショッピング等の番組で注文を受け付けるときにパスワードを入力してもらう。双方向テレビ2のプログラム制御部4がテレビショッピング番組を放送しているときに図6に示すようなパスワードの入力を促す画面を表示してパスワードの入力を指示する。テレビ単位又は個人単位で銀行のキャッシュカードの暗証番号と同様にパスワードを決めておき認証情報データベース16に登録しておく。図4は個人単位でパスワードが登録されている認証情報データベース16を示す。

【0045】双方向テレビ2では、リモコン6からパスワードの入力があると、プログラム制御部4が図7に示すように番組ID、個人IDを含んだテレビID、応答データに加えてパスワードをセットして通信制御部7へ送出する。パスワードは応答データと共に応答サーバ3へ送信される。

【0046】応答サーバ3では、予め個人IDに基づいて認証情報データベース16の該当該場所にパスワードをそれぞれ設定している。番組情報データベース14には当該番組の応答処理内容又は集計処理内容として「パスワードチェック」の処理を定めている。本実施形態では集計処理アプリケーション12にて「パスワードチェック」を実行するものとする。

【0047】双方向テレビ2から応答データを受信した応答処理アプリケーション11は、番組情報データベース14から取り出した当該番組に対する応答処理内容に基づいてテレビIDと応答データ(商品の注文)とからなる応答データファイル17を作成する。

【0048】集計処理アプリケーション12が、応答データファイル17の番組IDをキーにして番組情報データベース14から「パスワードチェック」を定めた集計処理内容を取り出す。認証処理アプリケーション13にテレビIDを指示して認証情報データベース16から指示されたテレビIDに対するパスワードを取り出す。認証情報データベース16に登録されているパスワードと応答データに付加した送られてきたパスワードとが一致するか否か検査する。両パスワードが一致すれば本人の商品注文であると判断できるので当該商品注文を受け付ける。一方、両パスワードが一致しなければ本人の商品注文であると判断できないので当該商品注文の受け付けを拒否する。

【0049】本人の商品注文であると判断した応答データについては、氏名、住所等の個人情報を取り出し、例えば注文商品ごとに氏名及び住所からなる注文リストに並べ変える処理を実行する。このようにして作成した商品毎の注文リストは、商品販売会社または放送局1へオンライン等で送られる。

【0050】なお、テレビショッピングに限らず、応答データと本人との一致を確認しなければならない内容の

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番組については上記同様に応答データと共にパスワードを入力してもらい応答サーバ3においてパスワードチェックを行うようにする。

【0051】このように本実施形態によれば、双方向テレビ2において応答データに付加するテレビIDに個人情報フィールドを設けてテレビ機体IDだけで無く応答データを入力した各人の個人IDをセットして応答サーバ3へ転送し、応答サーバ3に配置した認証情報データベース15にテレビ機体ID及び個人IDを組合わせてなるテレビIDに基づいて個人情報を登録したので、1台の双方向テレビ2に登録された1人の代表者のみならず、その双方向テレビ2を共用する複数の他の視聴者まで個々に識別することができる。したがって、1台の双方向テレビ2を複数人で共用している場合であっても、応答サーバ3において応答データを集計処理する際に応答データを入力した本人の個人情報に基づいた集計が可能となり、正確な集計処理が可能となり、集計結果の信頼性を上げることができる。

【0052】本実施形態によれば、双方向テレビ2において応答データに付加するテレビIDに個人情報フィールドを設けて、応答データを入力した個人から入力されたパスワードをセットして応答サーバ3へ送信し、応答サーバ3に配置した認証情報データベース15にテレビIDまたは個人IDに対応させてパスワードを登録して応答サーバ上で照合するようにしたので、応答サーバ3に送られてきた応答データが正確に本人の意思で入力されたものであるか否か判断することができる。したがって、テレビショッピング番組等で本人でないものがいたずらにボタン操作して本人の意思に反して商品が注文されてしまう等の不具合を防止することができる。また、盗難された双方向テレビ2において本人の知らない間に商品の購入指示が出されてしまうといった不具合も防止できる。

【0053】なお、上記した第1の実施形態では、リモコン6の裏面にDIPスイッチ8を設けて個人IDデータを双方向テレビ2に入力するようにしているが、プログラム制御部4が図8に示すフローチャートに従って個人IDを入力させるようにしても良い。すなわち、プログラム制御部4によって提供できる番組名の一覧を示すメニュー画面を表示しているときに一つの番組を選択するメニュー選択ボタンが押されたとする。これを受けて図9に示すような個人IDの入力を促す画面をテレビ画面に表示させる。リモコン6のボタン操作により個人IDデータが入力されたならば、個人IDをテレビIDの個人情報フィールドにセットする。なお、視聴者から個人IDを入力してもらうタイミングは応答データを応答サーバ3へ送信するのに間に合えばいつでも構わない。

【0054】(第2の実施形態)図10は第2の実施形態に係るテレビ応答サーバシステムのうち応答サーバの

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機能ブロックを示している。本実施形態のテレビ応答サーバシステムは、上述した第1の実施形態と同様に、放送局1から放送した放送電波を受信して番組を表示する双方向テレビ2が応答サーバ3に公衆回線網4を介して接続可能になっている。以下、第1の実施形態と同一機能の部分に対しては同一の参照符号を付して説明する。

【0055】第2の実施形態は、双方向テレビ2から応答サーバ3へ伝送するテレビIDにテレビ機体情報フィールドとテレビ製造メーカを示すメーカIDを登録するためのテレビ製造メーカ情報フィールドとを設けている。個々の双方向テレビ2でテレビ機体ID及びメーカIDは予め既知であり固定であるので予め双方向テレビ2にテレビIDにして設定しておく。双方向テレビ2のプログラム制御部4が、予め設定されているテレビ機体ID及びメーカIDからなるテレビIDを応答データに付加して応答サーバ3へ伝送するようにしている。

【0056】応答サーバ3は、応答処理アプリケーション11が、応答データから応答データファイル17を作成すると共に、応答データに付加されているテレビIDからなるテレビIDファイル21を作成する。一方、応答サーバ3にメーカIDに対応させてテレビ製造メーカ名を登録したテレビ製造メーカデータベース22を配置している。製造メーカ分類アプリケーション23は、テレビIDファイル21に登録されたメーカIDに対応するメーカ名をテレビ製造メーカデータベース22から抽出して、テレビIDをメーカ別に分類したメーカ別テレビIDファイル24を作成する。

【0057】メーカ別テレビIDファイル24は、テレビ製造メーカ毎の顧客情報として利用できる。例えば、テレビ製造メーカAのメーカ別テレビIDファイル24に登録されているテレビIDをキーにして認証情報データベース15から該当する個人情報(氏名、住所等)を抽出してテレビ製造メーカAのテレビを所有している顧客の名簿を作成できる。また、メーカ別テレビIDファイル24に登録された応答者について地域や年齢で認証情報データベース15に検索を掛けて集計処理すれば、各メーカの地域、年齢毎の普及度などを調べることができる。その他にもキーワードを任意に組み合わせることにより希望する顧客情報を作成することができる。

【0058】このように本実施形態によれば、双方向テレビ2においてテレビIDにベンダーフィールドを設けてメーカIDをセットして応答サーバ3へ伝送し、応答サーバ3でテレビIDを取り出してメーカ別に分類したメーカ別テレビIDファイル24を作成するようにしたので、応答サーバ3でテレビ製造メーカ別の顧客情報を取得することができる。

【0059】(第3の実施形態)図11は第3の実施形態に係るテレビ応答サーバシステムのうち応答サーバの機能ブロックを示している。本実施形態のテレビ応答サーバシステムは、上述した第1、第2の実施形態と同様

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に、放送局1から放送した放送電波を受信して番組を表示する双方向テレビ2が応答サーバ3に公衆回線網4を介して接続可能になっている。以下、第1、第2の実施形態と同一機能の部分に対しては同一の参照符号を付して説明する。

【0060】第3の実施形態は、双方向テレビ2から応答サーバ3へ伝送するテレビIDにテレビ機体情報フィールドとテレビ製造メーカが任意の情報を設定するベンダーフィールドとを設けている。ここでは、テレビの製造メーカ名を示すメーカID、テレビの機種を示す機種ID、製造ロット番号をベンダーフィールドに設定している。このベンダ情報とテレビ機体IDとを組合わせてテレビIDを構成している。ベンダ情報及びテレビ機体IDは固定化された情報であるので予め双方向テレビ2に設定しておくことができる。

【0061】双方向テレビ2のプログラム制御部4が、予め設定されているテレビ機体ID及びベンダ情報からなるテレビIDを応答データに付加して応答サーバ3へ伝送するようにしている。

【0062】応答サーバ3は、応答処理アプリケーション11が応答データから応答データファイル17を作成すると共に、応答データに付加されているテレビIDからなるテレビIDファイル21を作成する。製造メーカ分類アプリケーション23'は、上記同様にしてテレビIDをメーカ別に分類すると共に、認証情報データベース15から各テレビIDに対応した個人情報を取り出して、個人情報が付加されたテレビIDをメーカ別に分類してなるメーカ別テレビIDファイル24'を作成する。

【0063】このようにして応答サーバ3で作成したメーカ別テレビIDファイル24'を各テレビ製造メーカへオンライン又は配達等の形態で送るようにする。図にはA社用のテレビIDファイル24'をテレビメーカAへ渡す場合が示されている。

【0064】テレビメーカAでは、応答サーバ3から受け取ったテレビIDファイル24'をファイル格納部25に保存する。機種別分類アプリケーション26がファイル格納部25から取り出したテレビIDファイル24'をテレビ情報データベース27を参照してテレビ機種単位の顧客情報ファイル28A、28Bに変換する。テレビ情報データベース27は、テレビメーカAが製造している機種名に対応させて機種IDが登録されている。したがって、機種別分類アプリケーション26がテレビIDファイル24'のテレビID(個人情報を含む)をその機種IDで分類し、機種IDをキーにしてテレビ情報データベース27から各機種IDに対応する機種名を検索することにより、機種IDで分類した各データ群に対応する機種名を付けて機種顧客情報ファイル28A、28Bを作成することができる。

【0065】このように本実施形態によれば、双方向テレビ2から応答サーバ3へ伝送するテレビIDにテレビ

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の機種ID、製造ロット番号を含め、応答サーバ3でメーカー別のテレビIDファイル24'を作成するようにしたので、応答データを応答サーバ3へ送ってきた視聴者の所有するテレビのメーカー名、機種名、製造ロット番号及び視聴者の個人情報を知ることができる。

【0066】例えば、テレビIDファイル24'を利用することにより製造欠陥等に伴うリコールに対処することができる。機種名及び製造ロット番号をキーにしてテレビIDファイル24'を検索することにより該当テレビを割り出すことができ、この割り出したテレビのテレビIDに付加されている個人情報から所有者の氏名及び住所まで割り出すことができる。

【0067】また、テレビ製造メーカーにとっては、自社のテレビIDファイル24'を利用することにより、どの機種がどの程度売れているのか調べることができ、また地域や年代毎の普及状態を調べることができる。テレビIDファイル24'に対して任意のキーワードを組み合わせて検索を掛けることにより必要な市場データを抽出できる。

【0068】以上の説明では、放送局1から双方向テレビ2に放送した放送電波に全ての番組を多重化して送っているが、番組の開始メニューだけを放送局1から双方向テレビ2に送り、実施際の番組は応答サーバ3から双方向テレビ2に提供するようにすることができる。

【0069】図12は番組の開始メニューだけを放送局1から双方向テレビ2に送り、実施際の番組は応答サーバ3から双方向テレビ2に提供するようにしたテレビ応答サーバシステムのシステム構成を示している。

【0070】番組開始時の選択画面となる番組開始メニューのみが放送電波に多重化されて双方向テレビ2に送られて分離される。リモコン6のボタン操作によって、放送電波から分離された番組情報(番組プログラムを含む)が読み出され、所望の番組が指定されると応答サーバ3に対して当該応答データにヘッダを付けて送信する。ヘッダは応答データをオンライン・サービス・マネージャへ渡すための識別子となる。

【0071】応答サーバ3では、オンライン・サービス・マネージャが応答データに付加されている番組IDに基づいて番組情報データベース14を検索し、接続すべきアプリケーションを指定する。番組情報データベース14には、接続先アプリ情報がセットされている。所定の番組提供アプリケーションに接続された後は、該番組提供アプリケーションから双方向処理部30を介して双方向テレビ2に番組が提供される。

【0072】なお、番組提供アプリケーションは応答サーバ3の中に配置されている場合(アプリケーション41)と、応答サーバ3の中ではなく外部のサーバに配置されている場合(アプリケーション40-1, 40-2)もある。

【0073】このようにすれば、最初に番組開始メニュー

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ーだけを放送局1から双方向テレビ2に送るだけで、それ以降の手続きを応答サーバ3側のアプリケーションが提供することができる。従って、放送電波の負荷を増大させることなく、双方向テレビを使ったオンラインショッピング、カタログ請求が可能になる。また、放送中のコマーシャルやテレビ番組に関連した商品の番組開始メニューを双方向テレビで選択できるようにすることができる。

【0074】また、上記した例では番組開始メニューを放送局1から双方向テレビ2に送っているが、放送中のコマーシャルやテレビ番組に関連しない番組開始メニューであれば双方向テレビ2のROM上に予め記憶しておき、いつでも番組開始メニューを表示できるようにすることができる。

【0075】図13は、双方向テレビ2のROM上に予め番組開始メニューを記憶しておき、いつでも番組開始メニューを表示できるようにしたテレビ応答サーバシステムのシステム構成を示している。

【0076】双方向テレビ2の記憶媒体上にサーバ側からの提供番組メニューを予め記憶しておき、視聴者がリモコン6のボタン操作によって双方向テレビ2上で番組を選択できるようにしている。

【0077】双方向テレビ2は、リモコン6からの信号で視聴者から提供番組のメニュー表示要求を受けると、ROM等の記憶媒体に予め記憶していたメニューを表示させる。視聴者がリモコン6の操作で番組を選択すると、その選択番組の開始要求となるデータ、テレビIDに双方向通信を要求するヘッダを付加して双方向テレビの通信制御部7から応答サーバ3へ送信される。以降の処理は、上記した例と同様である。

【0078】このようにすれば、放送局の放送とは無関係に双方向テレビ2によるオンラインショッピング、カタログ請求などを行うことができる。本発明は上記実施形態に限定されるものではなく、本発明の要旨を逸脱しない範囲内で種々変形実施可能である。

【0079】

【発明の効果】以上詳記したように本発明によれば、双方向テレビから応答データに付加して応答サーバへ伝送するテレビIDの登録情報を有効に活用することにより、1台のテレビを複数人で共用している場合であってもテレビに応答データを入力した本人を識別することができたり、または応答データを返してきた双方向テレビの製造メーカーや機種を識別することができ、さらには応答データを入力した視聴者の確認をとることができるテレビ応答サーバシステムを提供できる。

【図面の簡単な説明】

【図1】本発明の第1の実施形態に係るテレビ応答サーバシステムの構成図である。

【図2】第1の実施形態で使用されるリモコン裏面に設けたDIPスイッチを示す図である。

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【図3】第1の実施形態における個人IDを含んだテレビIDのデータ構造を示す図である。

【図4】第1及び第2の実施形態における認証情報データベースの構成例を示す図である。

【図5】第1及び第2の実施形態における番組情報データベースの構成例を示す図である。

【図6】パスワード入力画面の表示例を示す図である。

【図7】第1の実施形態におけるパスワードを含んだテレビIDのデータ構造を示す図である。

【図8】テレビIDを作成する変形例のフローチャートである。

【図9】図8に示す変形例での個人ID入力画面の表示例を示す図である。

【図10】本発明の第2の実施形態に係るテレビ応答サーバシステムの応答サーバ部分の構成図である。 \*

\*【図11】本発明の第3の実施形態に係るテレビ応答サーバシステムの応答サーバ部分の構成図である。

【図12】応答サーバ側から番組提供するテレビ応答サーバシステムの変形例を示す図である。

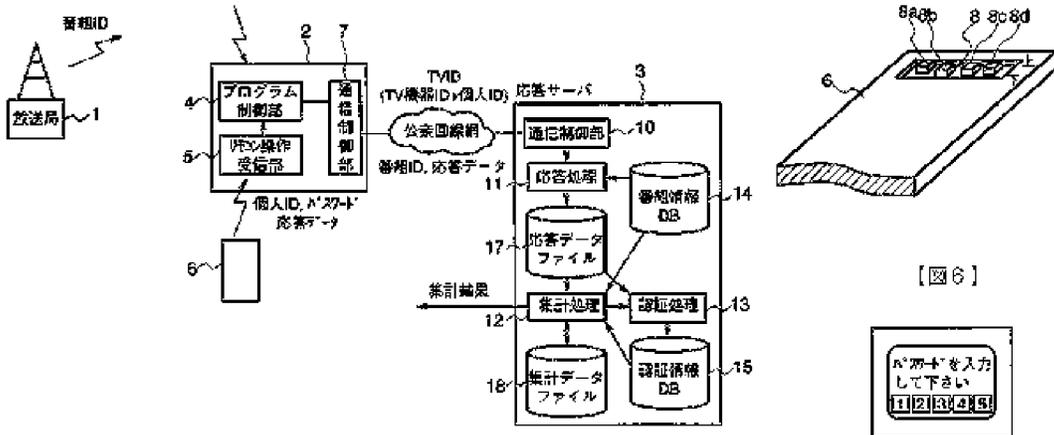
【図13】応答サーバ側から番組提供するテレビ応答サーバシステムの他の変形例を示す図である。

【符号の説明】

1…放送局、2…双方向テレビ、3…応答サーバ、4…プログラム制御部、5…リモコン操作受信部、6…リモコン、7、10…通信制御部、11…応答処理アプリケーション、12…集計処理アプリケーション、13…認証処理アプリケーション、14…番組情報データベース、15…認証情報データベース、17…応答データファイル、18…集計データファイル。

【図1】

【図2】



【図3】

【図4】

【図9】

テレビID		個人情報データ		認証情報データベース					
TV機体ID	個人ID	テレビID	個人ID	氏名	住所	年齢	性別	パスワード	地域コード
XXXX	01	太郎							
	02	花子							
	03								
YYYY	01								
	12								

【図7】

テレビID	パスワード	応答データ
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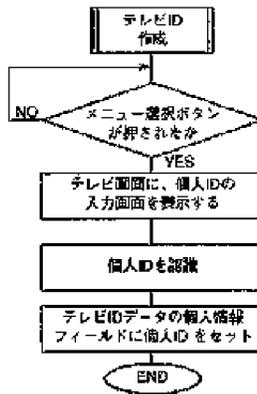
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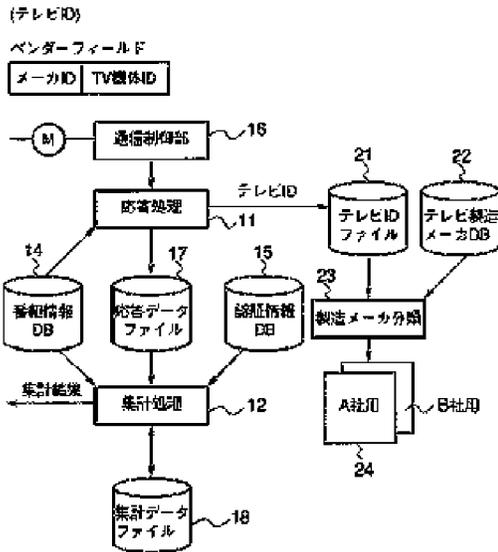
【図5】

番組ID×××					
番組ID×××					
放送時間	応答処理 内容	データ保持 期限	応答タイプ	集計処理 内容	送信 タイプ

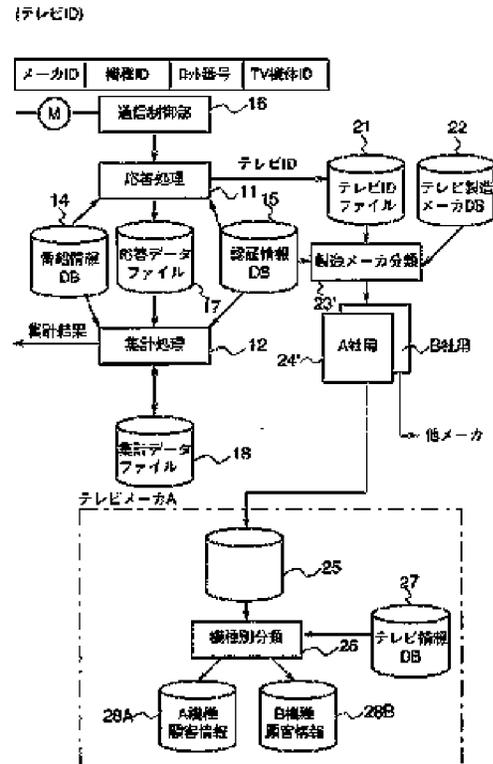
【図8】



【図10】



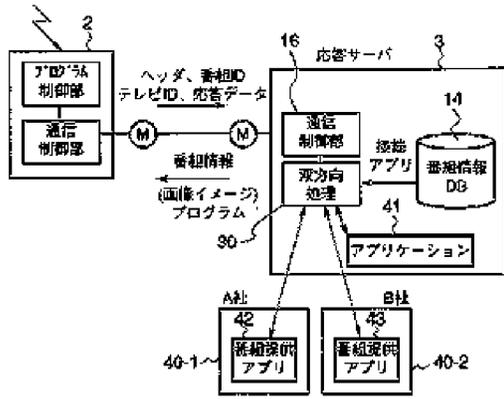
【図11】



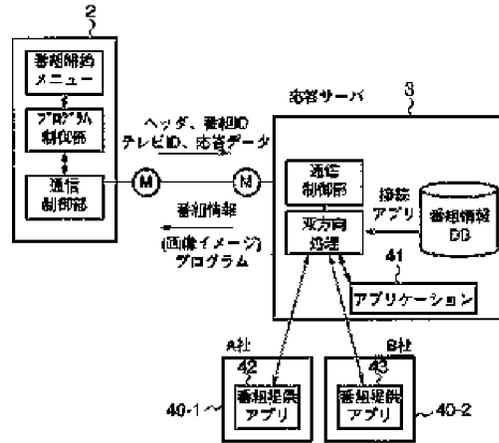
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【図12】



【図13】



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(33) 優先権主張国 米国 (US)

(71) 出願人 390009531

インターナショナル・ビジネス・マシーンズ・コーポレーション  
INTERNATIONAL BUSINESS MACHINES CORPORATION  
アメリカ合衆国10504、ニューヨーク州  
アーモンク (番地なし)

(72) 発明者 ニール・ジョン・アーレウイン  
アメリカ合衆国33463、フロリダ州、レイクワース、ポセイドン・プレイス 4701

(74) 代理人 100086243  
弁理士 坂口 博 (外1名)

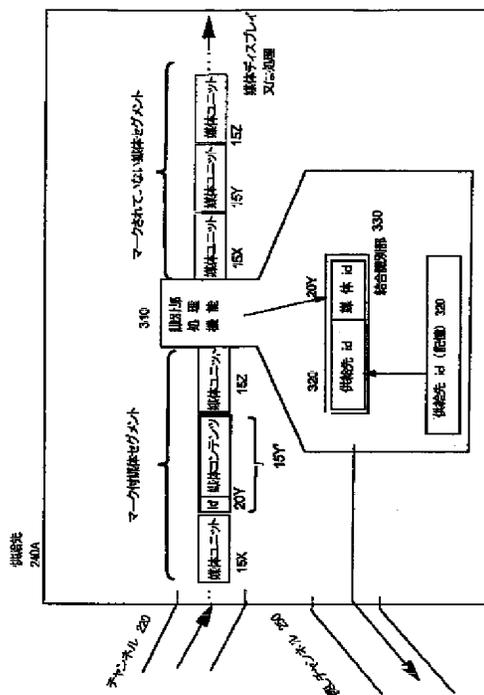
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(54) 【発明の名称】 媒体通信の受信ブレードを与えるためのシステム及び方法

(57) 【要約】

【課題】 媒体通信の受信ブレードを与えるためのシステム及び方法を提供する。

【解決手段】 供給元から供給先へと特定の媒体製品が受信されたことを証明するための利便性があり、かつ有効なメカニズムを開示する。この受信ブレードは、1) 媒体製品へと媒体供給元において直接少なくとも1つの媒体識別部 (20Y) を与え、2) 供給先において、少なくとも1つの媒体識別部 (20Y) と供給先識別部 (320) とを結合させて、少なくとも1つの結合識別部 (330) を形成し、3) 該結合識別部 (330) を1つ以上の集積ポイントへと通信して処理を行う。



【特許請求の範囲】

【請求項1】 通信に少なくとも1つの媒体識別部を含ませるステップと、

少なくとも1つの前記媒体識別部を含む前記通信を、複数の供給先のうちの少なくとも1つへと送信するステップと、

少なくとも1つの集積ポイントへと送信するために、少なくとも1つの前記供給先において少なくとも1つの受信識別部を自動的に発生させるステップとを含む、複数の供給先の1つに対する媒体通信の受信証明方法。

【請求項2】 複数の前記供給先が、それぞれ固有の供給先識別部を使用し、少なくとも1つの前記受信識別部を自動的に発生させるステップは、少なくとも1つの前記媒体識別部と前記供給先識別部とを結合させるステップを含む、請求項1に記載の方法。

【請求項3】 さらに、少なくとも1つの前記受信識別部を少なくとも前記集積ポイントの1つへと送信するステップを含む、請求項1に記載の方法。

【請求項4】 前記自動的な発生の前に、前記通信から少なくとも1つの前記媒体識別部を除去する、請求項2に記載の方法。

【請求項5】 前記供給先の少なくとも1つは、前記通信を少なくとも1つの前記供給先のうちの別の1つへと送信するための中継位置を含み、前記方法は、さらに前記通信へと少なくとも1つの媒体識別部を追加するステップを含む、請求項1に記載の方法。

【請求項6】 前記媒体識別部を与えるステップは、前記通信へと1つ以上の異なる媒体識別部を加えるステップを含む、請求項1に記載の方法。

【請求項7】 前記媒体識別部を与えるステップは、1つ以上の中継位置において少なくとも1つの媒体識別部を前記通信へと加えるステップを含む、請求項1に記載の方法。

【請求項8】 通信に少なくとも1つの媒体識別部を含ませるステップと、

少なくとも1つの前記媒体識別部と共に前記通信を送信するステップと、

複数の位置のうちの1つにおいて、少なくとも1つの前記媒体識別部を含む前記通信を受信するステップと、

複数の前記位置のうちの少なくとも1つにおいて、少なくとも1つの前記媒体識別部により少なくとも1つの受信識別部を自動的に発生させるステップとを含む、複数の位置の少なくとも1つへの媒体通信の自動追跡方法。

【請求項9】 複数の前記位置は、それぞれ固有の位置識別部を使用し、少なくとも1つの前記受信識別部を自動的に発生させるステップは、少なくとも1つの前記媒体識別部と前記位置識別部とを結合させるステップを含む、請求項8に記載の方法。

【請求項10】 複数の前記位置は、それぞれ固有の位置識別部を使用し、少なくとも1つの前記受信識別部を

自動的に発生させるステップは、連なった媒体識別部として固有の前記位置識別部を含ませるステップを含む、請求項8に記載の方法。

【請求項11】 さらに、少なくとも1つの前記受信識別部を少なくとも1つの前記集積ポイントへと送信するステップを含む、請求項8に記載の方法。

【請求項12】 前記自動的な発生の前に、前記通信から少なくとも1つの前記媒体識別部を除去する、請求項9に記載の方法。

【請求項13】 前記媒体識別部を与えるステップは、前記通信へと1つ以上の異なる媒体識別部を与えるステップを含む、請求項8に記載の方法。

【請求項14】 前記媒体識別部を与えるステップは、前記通信における1つ以上の位置において少なくとも1つの識別部を加えるステップを含む、請求項8に記載の方法。

【請求項15】 各通信にそれぞれ少なくとも1つの媒体識別部を含ませることによりマーク付通信を発生させる複数の媒体マーケティング手段と、

前記マーク付通信の1つを受信すると少なくとも1つの媒体識別部により、少なくとも1つの受信識別部をそれぞれ自動的に発生する複数の識別部処理手段と、を含む通信追跡システム。

【請求項16】 前記複数の媒体マーケティング手段のうち最初の媒体マーケティング手段は、前記通信の供給元に配置されている、請求項15に記載のシステム。

【請求項17】 少なくとも1つの連携する媒体マーケティング手段は、前記通信の前記供給元と前記通信の供給先との間のサイトに配置されている、請求項16に記載のシステム。

【請求項18】 前記サイトは、複数の前記識別部処理手段のうちの1つを含む、請求項17に記載のシステム。

【請求項19】 さらに、少なくとも1つの前記受信識別部のための少なくとも1つの集積ポイントを含む、請求項15に記載のシステム。

【請求項20】 前記識別部処理手段は、少なくとも1つの前記集積ポイントへと少なくとも1つの前記受信識別部を送信するための少なくとも1つの通信手段を有する、請求項19に記載のシステム。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、媒体供給システムの分野に関し、より詳細には特定の媒体製品（オーディオ、ビデオ、画像、テキスト等）が所望するシステムにより受信されるためのシステム及び方法に関する。

【0002】

【従来の技術】媒体供給のための種々の場においては、特定の媒体製品を誰が受け取り、閲覧したか、ということを確認するためのメカニズムを備えていることがあ

ます望まれるようになってきている。テレビジョン及びインターネットサービスにおいては、広告を行う者は、どれだけ多くの個人、すなわち統計的に所定の割り当てられた特性を有する人々のどのようなグループが、コマーシャルを見たかということを見出す要求がある。これに加えて、広告を行う者は、プロバイダステーションが広告を行う者の宣伝を通信したことを確認することを希望する。教育においては、月毎のトレーニング番組を視聴することが必要とされる人々は第三者に対し、これらの人々がすでにその番組を見たことを証明する必要があることもある。多数の媒体フォーマットにわたり、コンテンツの所有者は、誰がその番組を見て、支払いに対する引き金となり、誰が番組を受信して満足して発注するか、ということを明らかにすることを希望する場合がある。

【0003】プログラム又はコマーシャルは、双方ともプログラムを維持するため、宣伝の価値を決定する尺度として用いられるので、テレビジョンにおいては、プログラム又はコマーシャルの視聴者の数を考慮することが重要となる。視聴率統計を得るための、例えば選択した家庭に特殊な装置を導入してこれらの家庭内における視聴者を記録し、その後すべての視聴者へと外挿する現在の方法は、労力を必要とし、コストがかかり、またある程度不正確である。媒体供給チャンネルの数が増えるにつれ、精度を維持させるために必要となるサンプル数を増加させる必要が生じる。コマーシャルが現れた際に視聴者がチャンネル切替を行う行動は、モニタすることが困難である。これを改善するために提案されている方法は、例えばテレビをつけ、チャンネルを切り替える等、すべての視聴者の動作を記録し、これらの動作を正確な視聴者行動履歴として得ることである。この方法は、きわめて大量のデータを含み、むしろ複雑で単調なものとなる。所望するデータのみを発生させ、詳細、かつ焦点の合った方法が望まれている分散コンピュータ環境におけるデジタル媒体を用いる遠距離学習は、生涯学習や、資格取得の分野においてますます重要となってきた。企業における通信といった別のネットワーク化されたコンピュータ用途においては、許可された閲覧者及び許可されない閲覧者を含む双方について、所定のデジタル媒体にアクセスした者を決定することが重要となってきた。さらには、例えばインターネット所定のサイトを閲覧しようとする閲覧者が選択する回数は、しばしば高い価値を有する情報となる。

【0004】最後に、ネットワークインフラ構造を介してデジタル情報製品を供給することがより悪用されるようになってくるにつれて、販売者は、例えば注文が適切であることを示したり、情報を得るすべての人々を決定し、かつ同定するといった閲覧者情報を集め、統計的データを収集し、支払いを確実なものとするのが重要とされる。

【0005】近年における分散コンピューティングシス

テムの領域においては、媒体供給追跡の問題に対して、直接的な対処法は見出されていない。間接的な対処法では、種々のアプリケーションに対して複雑な認証及び非拒絶アルゴリズムを導入する。しかしながら、この手法は、高度に複雑で間接的なもので、この対処法が煩雑となり、証明の価値を制限してしまうことになっている。

【0006】

【発明が解決しようとする課題】したがって、本発明の目的は、媒体通信の受信を証明するための一般的なメカニズムを提供することにある。

【0007】本発明の別の目的は、基本となる通信の受信に加え、受信者の行動をモニタすることを可能とする媒体供給追跡システムを提供することを目的とする。

【0008】さらに、本発明の別の目的は、最終的な送付先への媒体コンテンツの供給において、複数の媒体相互間で追跡を行うための自動化された手段を提供することを目的とする。

【0009】

【課題を解決するための手段】本発明の上述した目的及びその他の目的は、供給元からの特定の媒体製品が供給先で受信されたことを証明するため、利便性を有すると共に、有効なメカニズムを提供することにある。受信の証明は、1) 1つの媒体製品へと媒体供給元において、直接少なくとも1つの媒体識別部を含ませるステップと、2) 供給先において少なくとも1つの媒体識別部と、供給先識別部とを結合させて1つ以上の結合識別部を発生させるステップと、3) 1つ以上の収集ポイントへと結合識別部を送信して処理するステップといった3つのステップを含んでいる。この識別部は、チャンネル又は供給元に随伴するものではなく、受信の証明が必要とされる媒体製品に随伴するため、本発明のメカニズムは、ユーザの挙動を能動的に追跡することに比較して僅かにしか余剰データを発生させない。このメカニズムは、詳細化されており、媒体通信の最初、中間、及び終了時の1つ又はすべてにおいて付与することができると共に、例えば、コマーシャルの間における視聴者のチャンネル切替をモニタする等、視聴者の挙動を観察するために必要となるのと同程度の詳細性を有する。このメカニズムは、供給元から多重のディストリビュータを介する媒体セグメントの追跡をサポートし、誰が媒体識別部を付与したかに応じて、例えば供給元、ディストリビュータ、媒体等により多重の評価を行うことを可能とする。結合識別部にはまた、容易に受信時間を含ませることができる。すべての種類の媒体に広く適用できる可能性を有しているので、このメカニズムを別の技術と組み合わせるべく展開して、不正取引の防止や、許可された集団にのみ閲覧されたことを証明することが可能となる。

【発明の実施の形態】本発明のメカニズムは、媒体コンテンツと共に媒体識別部を含ませて通信することが可能な、通信されたいかなる媒体のコンテンツの追跡を提供

するものである。媒体通信の媒体識別部セグメントは、付加的な帯域幅を含むことが必要であり、このため供給先サイトは、該セグメントに対し供給先識別部を付与することが可能となり、この結果、集積ポイントへと送信される結合識別部が得られる。本発明を適用することができる適切な媒体としては、赤外（IR）手段、ケーブル、又は別の地上テレビプログラム供給者、ラジオ通信、インターネットポスティング、衛星通信等により供給されるを問わず、媒体識別部を挿入するために用いることができる仮想的な空白間隔を有するアナログビデオ、デジタルビデオ、アナログオーディオ、デジタルオーディオ等を挙げることができるが、これらに制限されるものではない。明確化の目的のため、テレビジョンの態様をもって以下に詳細に説明するが、本発明は、テレビジョンに対して適用することのみを意図するものではない。

【0010】テレビジョン環境は、多くのタイプの媒体源を有しており、娯楽番組のための撮影スタジオ、ニュースショーのためのニューススタジオ、コマーシャルのための広告代理店、及び将来撮影を行うフリーランスのプロデューサを挙げることができる。これらの供給元は、媒体を複数のチャンネルを介してテレビジョンネットワークといったディストリビュータへと渡しており、このディストリビュータは、消費者へと媒体を直接通信するか、又は消費者へと媒体を通信するケーブルテレビジョン集配局といった別のディストリビュータへと通信する。

【0011】本発明により通信の受信を追跡するのは、要するに供給元と、それぞれのディストリビュータとが、媒体に対して1つ以上の媒体識別部という新たな要素を付け加えることにより行われる。媒体が視聴される最終供給先では、供給先デバイスは、媒体識別部を、供給先固有の識別部と結合させる。その後、供給先デバイスは、この結合された媒体識別部及び供給先識別部（以後、“結合識別部”という。）を、戻しチャンネルを介して受信レポートブーフを発生させるための集積ポイントへと通信する。媒体間に介在するそれぞれの集団は、媒体識別部を追加して、各集団による“価値付加”された追跡を与えることになり、それぞれが1つ以上の集積ポイントへと送信される中間結合識別部を発生する。媒体通信のコンテンツに応じて、媒体通信における種々の位置において多重の媒体識別部を挿入することが望ましいこともあり、以下これについて詳述する。

【0012】媒体識別部で媒体をマークするプロセスについてまず詳しく説明し、次いで本発明の全体の動作について説明し、最後にいくつかの用途へと本発明を適用した実施例について説明する。説明を明確化させるために以下の用語を用いる。

【0013】媒体とは、例えばビデオ、オーディオ、画像、テキスト又はアニメーションを含む情報等、通信さ

れるべき情報をいい、媒体は、アナログ形態でもデジタル形態でも良い。

【0014】媒体セグメントとは、映画のシーン、コマーシャル等といった論理的に媒体の一部に含まれるものをいう。

【0015】媒体ユニットとは、通信されるべき媒体のユニットをいう。これがマークされるべきユニットであり、その受信が追跡されるものである。

【0016】媒体識別部とは、媒体セグメント又は媒体セグメントのサブセットのためのデジタル識別部をいう。媒体識別部は、常に1つの媒体ユニットに伴われている。媒体識別部は、媒体ユニットに対して固有なものとしてされているか、又はクラス（例えば、特定のコンシューマプロダクト会社から与えられるすべての広告等）を形成する媒体ユニット/セグメントの間に振り分けることも可能である。

【0017】媒体マーキング機能とは、媒体ユニットに媒体識別部を付加する機能を言う。

【0018】マーク付媒体ユニットとは、媒体識別部によりマークされた媒体ユニットをいう。

【0019】マーク付媒体セグメントとは、1つ以上のマーク付媒体ユニットを含む媒体セグメントをいう。

【0020】供給元とは、媒体の起点をいう。

【0021】供給先とは、媒体を表示するデバイスをいう。

【0022】供給先識別部とは、供給先に固有の識別部をいう。

【0023】視聴者とは、供給先デバイスを見る者をいう。

【0024】チャンネルとは、媒体のための通信媒介をいう。

【0025】戻しチャンネルとは、供給先が集積ポイント又は複数の集積ポイントへと識別部のグループを通信するためのチャンネルをいう。

【0026】ディストリビュータポイントとは、供給元から媒体コンテンツを受け取り、供給先又は別のディストリビュータへと通信を行うポイントをいう。ディストリビュータにおいては、いくつかのチャンネル/供給元からの媒体が組み合わせられても良い。

【0027】結合識別部とは、供給先識別部と1つ以上の媒体識別部とからなる識別部のセットをいう。

【0028】集積ポイントとは、供給先デバイスが間欠的に接続して、識別部グループを通信して、さらに処理を行うシステムをいう。

【0029】図1を参照すると、媒体セグメントと呼ぶ媒体の論理ユニット（10A~10E）が示されている。媒体セグメントとしては、例えば映画、コマーシャル、又はニュース事件のビデオの断片を挙げることができる。媒体セグメントのシーケンスは、媒体プログラム（5）となる。通信の目的のため、及び処理のため、媒

体セグメントは、媒体ユニット（15A-15N）へと分割される。媒体ユニットは、きわめて小さなものとする事ができる。ビデオの場合には、媒体ユニットは、単一のビデオフレーム、又はMPEGでコード化されたビデオの画像群（Group of Pictures:GOP）といったビデオフレームの小さなセットとすることができる。図1は、媒体ユニットと、媒体セグメントと、媒体プログラムとの関係を示す。

【0030】媒体ユニット（例えば15C）には、媒体識別部の与えられていないもの、1つ与えられたもの、1つ以上与えられたもの（20A-20C）で示されるようにマークを付与することができる。この媒体識別部は、多くのフォーマットとして媒体中に挿入することができ、その際の特定のフォーマットは、特定の媒体表現に応じたものとなる。デジタル媒体は、オプションを広げることが可能とする良好に規定されたストリーム規則を有する傾向があるので、本発明の方法にはデジタル媒体が特に好ましい。この態様においては、媒体は、デジタルビデオとされ、このビデオは、MPEG規格を用いてコード化されている。このMPEG規格は、媒体の通信及びディスプレイを妨げることなく、ビデオストリーム及びオーディオストリームに対してデータを付加することを可能とする。媒体がデジタル形態かアナログ形態かに応じて、媒体識別部をストリームへと挿入し、容易に認識とし、読取り可能とし、及び／又は供給先デバイスから除去することができるような規則が存在する。さらに、識別部は、理想的には、媒体から媒体識別部を識別・除去するように適合されていない、上述した供給先デバイスの動作を妨げないような方法により埋め込むこともできる。

【0031】少なくとも1つの媒体識別部（20A-20C）を含む媒体ユニット（特に図1の15C）を、以下“マーク付媒体ユニット”として参照する。同様に、1つ以上のマーク付媒体ユニットを含む媒体セグメント（図1の10B）を、“マーク付媒体セグメント”として参照する。マーク付媒体セグメントが多数の集団により取り扱われる場合には、各集団は、1つ以上の媒体ユニットへと媒体識別部を付加させることが可能なので、供給元から供給先デバイスまでの媒体セグメントの全体の経路が媒体識別部を検査することにより決定できることになる。例えば、映画スタジオといったコンテンツのオリジナルクリエイタ、例えばテレビジョンネットワークといった最初のディストリビュータ、例えばケーブルテレビジョンオペレータといった最終ディストリビュータはすべて、最終供給先、すなわち視聴者側へと媒体が供給される前にいくつか又はすべての媒体ユニットへと媒体識別部を付加することができ、別途供給先識別部が加えられて結合識別部が形成され、1つ以上の集積ポイントへと送信される。上述したようにして、結合識別部は、適切な追跡目的のために媒体間に介在する集団それ

ぞれにより形成されても良い。

【0032】図2は、媒体ユニット（15X-15Z）の1つへと、媒体識別部を挿入するための媒体マーキング機能（125）を示す。マークされていない媒体セグメントがマーキング機能へと入力される。メタ情報（120）には、どの媒体が媒体識別部の挿入によりマークされるべきかが記載されている。このメタ情報は、市販のスケジューリングシステム（図示せず）によりカスタム化、例えばコマーシャルがディスプレイするためのストリームへと挿入される時点及び場所と連携するようにされている。媒体マーキング機能（125）は、メタ情報を読取ると共に、媒体ユニットのストリームを処理する。媒体マーキング機能（125）が媒体ユニットを見出すとメタ情報にしたがってマークが行われ（例えば図2の15Y）、マーキング機能（125）は、マークする媒体識別部（20）を受け取る。マーキング機能は、この媒体識別部を、媒体idジェネレータ（110）、メタ情報（120）、いくつかの別のソース、又はこれらのいかなる組合せたものから得ると共に、メタ情報にしたがって媒体識別部を変更させることができる。次いで、マーキング機能は、媒体識別部（20Y）を媒体ユニット（15Y）の媒体コンテンツ（25）へと加え、この新たにマークされた媒体ユニット（15Y'）を媒体セグメントへと戻し、この媒体セグメントがこの時点で、マークされた媒体セグメントとされる。媒体マーキング機能は、メタ情報（120）により特定される場合には、媒体ユニットへと1つ以上の媒体識別部を付け加えることもできる。

【0033】媒体識別部は、静的、すなわち特定の媒体セグメントがそれらの識別部を得、それらの全ライフタイムの間、識別部を保持するようにさせることができる。このような場合には、マーキングシステムは、“永久的”に媒体セグメントをマークして、後の通信のためマークされた媒体セグメントを記憶する。これとは別に、媒体識別部は、例えばそれぞれ特定の放送の通信時において、又は媒体が特定のディストリビュータ又は供給先へと送信される場合に動的に挿入されても良い。このようにすることにより、媒体の特定のコピー又は特定の使用を追跡することが可能となる。静的及び動的な媒体識別部は、それらの使用以外には、識別される必要がない。

【0034】用いることができる媒体識別部は、特定の媒体セグメントに固有なもの、又はこれらは媒体セグメントの特定の通信に固有なものとする事ができる。他方では、概ねの受信統計が個々の媒体セグメントではなくむしろ媒体のクラスに適用されることが報告されている場合には、媒体識別部は、1つの媒体クラス全体に固有のものとする事ができる。例えば、媒体識別部は、特定の供給元から送出されるすべての通信、又はすべてのコンテンツを識別するようにされていても良い。

【0035】媒体識別部は、結合識別部が送信される1つ以上の集積ポイントのアドレスを含んでも良く、又は集積ポイントのアドレス又は複数のアドレスを示すネーム又は複数のネームを含んでも良い。このようにして受信情報を1つ以上の集積ポイントへと送ること、1つ以上の用途をサポートすることができる。

【0036】マーク付媒体の使用を、図3を参照して詳細に示す。TVスタジオ又はニューススタジオといった媒体作成側が、媒体の供給元(210J-210L)である。作成側は、媒体識別部を媒体へと挿入し、その後、媒体識別部をチャンネルを介してディストリビュータ(例えば230A, 230B)へと通信する。TVネットワークといったディストリビュータ(例えば230A)は、異なった供給元からの媒体を組み合わせて媒体プログラムとし、この媒体プログラムをチャンネルを介してさらなるディストリビュータ(230B)、又は視聴者がデジタルテレビジョンを受信するために用いるセットトップボックスといった最終供給先(240A又は240B)へと通信する。それぞれのディストリビュータがプログラムを通信する際に、ディストリビュータは、付加的な識別部をセグメントへと挿入する。

【0037】ケーブル供給システムにおいては、ケーブル集配局が、ディストリビュータ(230B)であり、このディストリビュータは、チャンネル(図示せず)を介してまたディストリビュータ(230A)であるTVネットワークからプログラムを受信する。ケーブル集配局は、第2のディストリビュータとして機能する。この第2のディストリビュータは、プログラムへと付加的なコマercialを加え、固有の識別部を挿入することにより、その視聴者の配分及び通信のプルーフを計画することが可能となる。ケーブルのディストリビュータは、その後そのチャンネルと、ケーブル供給システムとを介して、供給先(240A及び/又は240B)へとプログラムを通信する。各中間集団、例えば図3のディストリビュータは、媒体識別部を挿入するための媒体マーキング機能(図2)と、媒体識別部を読み取り、供給先識別部を加えて結合識別部を発生させるための識別部処理機能(図4)の双方、又は2つの機能の相互の機能すべてを含む単一の機能を有していても良い。

【0038】供給先(図3の240A及び240B)は、デジタルTV通信を受信してデコード化するために必要とされるTVのセットトップボックス(STBs)である。このSTBsは、媒体識別部を処理するための識別部処理機能(図4の310)を含むように改良されている。加えてこのSTBsには、それらのメイン受信チャンネルへと負担をかけずに無料で集積ポイントへと結合識別部を送信するための“戻しチャンネル”が付け加えられていても良い。各供給先デバイスは、供給先識別部(320)を有している。図4は、供給先デバイスにおける代表的な識別部処理機能を示す。供給先デ

バイス(240A)がマーク付媒体ユニット(15Y')を受信すると、識別部処理機能(310)は、自動的にマーク付媒体ユニットから媒体識別部(20Y)を読み取り及び/又は除去する。ビットストリームからの媒体識別部の除去は、絶対的に必要とされるものではなく、最終ディスプレイデバイスが、余分な情報を無視することができるか否かに依存する。媒体識別部が一度読み取られ、及び/又は除去されると、識別部処理機能は、自動的に媒体識別部を供給先識別部(320)と結合させて、結合識別部(330)を形成する。特定のマーク付媒体セグメントが1つ以上の媒体識別部を含む場合には、1つ以上の媒体識別部と、供給先識別部(320)の1つのコピーとにより、1つ又は複数の結合識別部(330)を形成することが可能となる。結合識別部(330)は、少なくとも1つの供給先識別部(320)及び1つ以上の媒体識別部(20Y)を含む。いくつかの媒体識別部を1つの供給先識別部と供給先において結合させることにより、すべての識別部について同一の集積ポイントが指定されている場合には、結合識別部のより効率的な通信及び処理を行うことができる。結合識別部(330)に対する通信準備がなされると、供給先(240)は、集積ポイント(260)へと上述した戻しチャンネルを介して結合識別部(330)を通信することが好ましい。この戻しチャンネルは、セットトップボックスが集積ポイントと確立する電話接続とすることができるし、又ケーブルテレビジョンインフラ構造の一部として設けられる戻しチャンネルとすることができる。集積ポイントへのレポートは、蓄積された情報のしきい値量(例えば、システムが所定の集積ポイントについて結合識別部データが10MBの統計処理を完了した時点等)に基づいて、例えば、20min毎に周期的に行うことができる。

【0039】多くの場合、供給先識別部は、供給先に固有のものとしてされている。例えば、視聴する毎に課金される用途においては、供給先識別部は、特定の家庭又は特定のセットトップボックスに対して固有のものとする必要がある。しかしながら、プライバシーの問題が重要な場合、又は統計的データを得ることのみが目的とされる場合には、供給先識別部を、供給先識別部がセットトップボックスに指定されている集団により規定されるすべてのグループに対して固有なものとする事ができる。

【0040】集積ポイントは、結合識別部が種々の基準に従って評価される場所であり、かつ受信プルーフレポートが形成される場所である。供給先識別部を評価する用途のうちのいくつかの実施例について、下記に示す。集積ポイントは、供給元(210)又はディストリビュータ(230)によって操作することができるようにされているか、又は集積ポイントは、テレビジョン評価会社といった独立した代理店とされていても良い。集積ポイント(260)は、媒体が供給元(210)から供給先

(240)へと通信されるチャンネルの経路上に設けられている必要はない。集積ポイントは、結合識別部(330)を集積し、複数の結合識別部を処理・蓄積するか、又は統計的なグループについての情報を確立させるため、統計処理を結合識別部について行う。

【0041】いくつかの特定の場合をもって以下に説明する。

【0042】視聴毎の課金：視聴毎に課金する番組はすべて、固有の媒体識別部を含むようにコード化される。セットトップボックスは、媒体識別部を集めてこれらを供給先識別部と結合させ、この結合識別部を集積ポイントへと通信して課金記録を発生させる。このようにすることにより、容易に随時購入を行うことが可能となる。課金の引き金となるのは、視聴する行為であり、電話するといった意識的な行為は必要とされない。視聴者の意志により課金されることを確認するため、例えばセットボックスが最初の媒体識別部を見出すとスクリーンへとメッセージを示して、視聴者に対して遠隔制御装置のキーを押すことにより、課金を認めるように提示するといった、セットトップボックスの確認動作が行われる。視聴者は、例えば唯一の者のみが娯楽番組に対して支払いを行うことが認められている場合には、セットボックスについて説明したとは異なり、視聴者を同定するためのパスワードの入力が要求されることもあり得る。特定視聴者を同定する場合には、本発明は、特定視聴者を信頼性良く同定するためのスマートカードといった種々のカードによる従来技術と組み合わせることもできる。

【0043】コマーシャルのための通信プルーフ：この場合には、理想的には各コマーシャルの最初及び終了時に媒体識別部が組込まれる。空中を伝搬させて放送を行う各市場において、又は集配局により供給される各ケーブルテレビジョン区域においては、少なくとも1つのセットトップボックスが設けられていて、媒体識別部を集め、結合識別部を発生させ、これらの結合識別部を集積ポイントへと通信する。この集積ポイントは、結合識別部のうちから媒体識別部をコマーシャルのリストと比較して、宣伝を行う者へとメッセージを送り、コマーシャルが放送されたことを確認させる。この場合には、供給先識別部は、コマーシャルが通信される特定の放送区域を示すものとされる。

【0044】視聴率統計の集積：今日においては多かれ少なかれ手作業により集められている視聴率統計の集積は、本発明を用いることにより自動化することが可能となる。媒体識別部は、通信されるすべての番組へと定期的に与えられる。セットトップボックスは、戻しチャンネルを介して直ちに結合識別部を戻すようにされているか、又は結合識別部を記憶しておき、定期的に結合識別部を通信するようにされる。結合識別部を分析することにより、各テレビジョンで何が視聴されたかを決定することが可能となる。この情報は、視聴者グループについ

ての統計へと統計処理されるか、又は個々の視聴者について用いることができる。どの場合においても、誰が何を見たかの情報は、視聴者に対してより良好にターゲットを絞った宣伝を行うことを可能とする他の情報を伴うことになる。コマーシャルを提供する広告代理店は、例えば広告の開始時に1つの媒体識別部、中間時に別の識別部、終了時にさらに別の識別部というように、特定の広告へと多重の媒体識別部を加えることが可能となる。これらの識別部のうち、送信された結合識別部に含まれる識別部を分析することにより、代理店は、どの程度多くの人が、コマーシャルの間にチャンネルを切り換えたか、及び視聴者が広告の前半又は後半でチャンネルを切り換えたかを、上述した3つの時点それぞれから得られる結合識別部を比較することによって決定することができる。

【0045】テルミーモアボタン：この場合には、視聴者が宣伝された製品について、又はTVショーの何らかについてより知りたい場合に、視聴者が遠隔制御装置の1つのキーを押すことだけが必要となる。結合識別部は、視聴者及び番組を同定する。集積ポイントにおいては、印刷物、eメール、又はテレビジョンスクリーン上にウェブサイトへのウィンドウを開くことにより、ユーザへと送るべき付加的な情報を自動的に発生させる。

【0046】多くの別の用途は、どのような媒体番組を、特定のユーザが何時見ているかについての知識を基にすることができる。ユーザが後に見たり、繰り返して使用したり、又はそれら双方を行うために受信した情報を記憶させることを希望する場合には、本発明のメカニズムは、受信されると媒体コンテンツから除去されるのではなく、媒体識別部を媒体コンテンツに保持されるようにして、新たな結合識別部を記憶された媒体にアクセスする度毎に発生させることにより、統計及び課金目的の双方のために用いられる長期間追跡を行うことができるようにされている。上述したすべての実施例は、ビデオを用いているが、本発明の方法は、オーディオ番組及びグラフィック番組についても同様に適用することができる。

【0047】番組が受信された時間を記録するために、供給先デバイスには、識別部グループに対して時間を記録させることも可能である。これとは別に、受信直後に集積ポイントへと結合識別部が通信される場合には、集積ポイントが番組の受信時間を記録することができる。

【0048】媒体識別部による不正を避けるために、媒体識別部は、挿入ポイントにおいてコード化することができる。このコード化のキーは、良好なデコード化及び処理のために集積ポイントへと通信される必要がある。この方法により、確実にディストリビュータ又は供給先が媒体識別部を変更しないようにすることができる。供給先識別部を用いた不正を避けることが重要な場合に

は、供給先識別部を、コード化した形態でSTB中に記憶させることができる。このようにすることにより、1つの供給先が別の供給先であるかのうように偽装されるのを防止できる。また、受信プルーフ情報を、確実に許可されたのみ集団へと閲覧させることができる。

【0049】本発明は、媒体データだけではなく、いかなる種類のデータ受信のプルーフを提示するために用いることが可能である。例えば、本発明を情報供給又はソフトウェア供給に用いることにより、特定の集団がいかなる種類の情報を受信したかを示すことができる。受信されたデータは、STB内で用いられることに限定されるものではない。STBを、ゲートウェイとして用いて、PCs等に用いるための別のデバイスへとデータ通信を行いつつ、受信プルーフを与えるようにすることができる。

【0050】媒体識別部には、集積ポイントのネットワークアドレスを含ませることもできる。このようにすることで、異なった集積ポイントを異なった用途のために提供できるようになる。例えば、映画スタジオは、その映画が上映されているどの時点においても受信プルーフを受け取ることを希望することがある。同時に、評価代理店は、特定通信の視聴率統計を受け取りたい場合もある。適切な媒体識別部へと、それぞれの集積ポイントのネットワークアドレスを含ませることにより、異なった集積ポイントを異なった用途へと提供できる。

【0051】本発明の別の態様としては、コンピュータインフラ構造の分野における可能性を挙げることができる。ビデオがよりデジタル形態においてクリエートされるようになるにつれ、供給元としてのコンピュータサーバからコンピュータクライアントへとますます供給されることになる。この分野における用途としては、例えばコンピュータに基づいた教育及びトレーニング、コンピュータに基づいた情報供給及び宣伝を挙げることができる。コンピュータ分野における用途の実施例としては、以下に挙げるように、医療事故における割引を、医師が所定の連続教育番組を視聴することを示すことにより行う保険会社や、個別の視聴率統計を収集することを望むウェブ広告を行う者、消費者が視聴した製品情報を示してプロダクトライアビリティ裁判を回避したいと希望する小売業者、ソフトウェアインストールプロセスの一部として媒体識別部が集積ポイントへと自動的に通信されるようにすることで、特定のユーザがソフトウェア製品を受信したことを証明することを望むソフトウェア供給業者を挙げることができる。

【0052】当業者によれば、本発明がコンピュータ環境においてはクライアント/サーバシステムを用いて適用することができることは明らかである。サーバコンピュータが供給元となり、コンピュータネットワークがチャンネルとして機能し、クライアントが供給先デバイスとして機能する。上述した技術的拡張性は、コンピュー

タ環境においても同様に機能させることができる。本発明のメカニズムへの変更は、特許請求の範囲に示される趣旨及び範囲から逸脱することなく行うことが可能である。

【0053】以下、本発明をまとめる。

(1) 通信に少なくとも1つの媒体識別部を含ませるステップと、少なくとも1つの前記媒体識別部を含む前記通信を、複数の供給先のうちの少なくとも1つへと送信するステップと、少なくとも1つの集積ポイントへと送信するために、少なくとも1つの前記供給先において少なくとも1つの受信識別部を自動的に発生させるステップとを含む、複数の供給先の1つに対する媒体通信の受信証明方法。

(2) 複数の前記供給先が、それぞれ固有の供給先識別部を使用し、少なくとも1つの前記受信識別部を自動的に発生させるステップは、少なくとも1つの前記媒体識別部と前記供給先識別部とを結合させるステップを含む、(1)記載の方法。

(3) さらに、少なくとも1つの前記受信識別部を少なくとも前記集積ポイントの1つへと送信するステップを含む、(1)に記載の方法。

(4) 前記自動的な発生の前に、前記通信から少なくとも1つの前記媒体識別部を除去する、(2)に記載の方法。

(5) 前記供給先の少なくとも1つは、前記通信を少なくとも1つの前記供給先のうちの別の1つへと送信するための中継位置を含み、前記方法は、さらに前記通信へと少なくとも1つの媒体識別部を追加するステップを含む、(1)に記載の方法。

(6) 前記媒体識別部を与えるステップは、前記通信へと1つ以上の異なった媒体識別部を加えるステップを含む、(1)に記載の方法。

(7) 前記媒体識別部を与えるステップは、1つ以上の中継位置において少なくとも1つの媒体識別部を前記通信へと加えるステップを含む、(2)に記載の方法。

(8) 通信に少なくとも1つの媒体識別部を含ませるステップと、少なくとも1つの前記媒体識別部と共に前記通信を送信するステップと、複数の位置のうちの1つにおいて、少なくとも1つの前記媒体識別部を含む前記通信を受信するステップと、複数の前記位置のうちの少なくとも1つにおいて、少なくとも1つの前記媒体識別部により少なくとも1つの受信識別部を自動的に発生させるステップとを含む、複数の位置の少なくとも1つへの媒体通信の自動追跡方法。

(9) 複数の前記位置は、それぞれ固有の位置識別部を使用し、少なくとも1つの前記受信識別部を自動的に発生させるステップは、少なくとも1つの前記媒体識別部と前記位置識別部とを結合させるステップを含む、(9)に記載の方法。

(10) 複数の前記位置は、それぞれ固有の位置識別部

を使用し、少なくとも1つの前記受信識別部を自動的に発生させるステップは、連なった媒体識別部として固有の前記位置識別部を含ませるステップを含む、(8)に記載の方法。

(11) さらに、少なくとも1つの前記受信識別部を少なくとも1つの前記集積ポイントへと送信するステップを含む、(8)に記載の方法。

(12) 前記自動的な発生の前に、前記通信から少なくとも1つの前記媒体識別部を除去する、(9)に記載の方法。

(13) 前記媒体識別部を与えるステップは、前記通信へと1つ以上の異なる媒体識別部を与えるステップを含む、(8)に記載の方法。

(14) 前記媒体識別部を与えるステップは、前記通信における1つ以上の位置において少なくとも1つの識別部を加えるステップを含む、(8)に記載の方法。

(15) 各通信にそれぞれ少なくとも1つの媒体識別部を含ませることによりマーク付通信を発生させる複数の媒体マーキング手段と、前記マーク付通信の1つを受信すると少なくとも1つの媒体識別部により、少なくとも1つの受信識別部をそれぞれ自動的に発生する複数の識別部処理手段と、を含む通信追跡システム。

(16) 前記複数の媒体マーキング手段のうちの最初の媒体マーキング手段は、前記通信の供給元に配置されている、(15)に記載のシステム。

(17) 少なくとも1つの連携する媒体マーキング手段は、前記通信の前記供給元と前記通信の供給先との間のサイトに配置されている、(16)に記載のシステム。

(18) 前記サイトは、複数の前記識別部処理手段のうちの一つを含む、(17)に記載のシステム。

(19) さらに、少なくとも1つの前記受信識別部のための少なくとも1つの集積ポイントを含む、(15)に記載のシステム。

(20) 前記識別部処理手段は、少なくとも1つの前記集積ポイントへと少なくとも1つの前記受信識別部を送信するための少なくとも1つの通信手段を有する、(19)に記載のシステム。

【図面の簡単な説明】

【図1】媒体プログラムと、媒体セグメントと、媒体ユニットとの間の関係を示した図。

【図2】媒体ユニットへと媒体識別部を挿入する媒体マーキング機能を示した図。

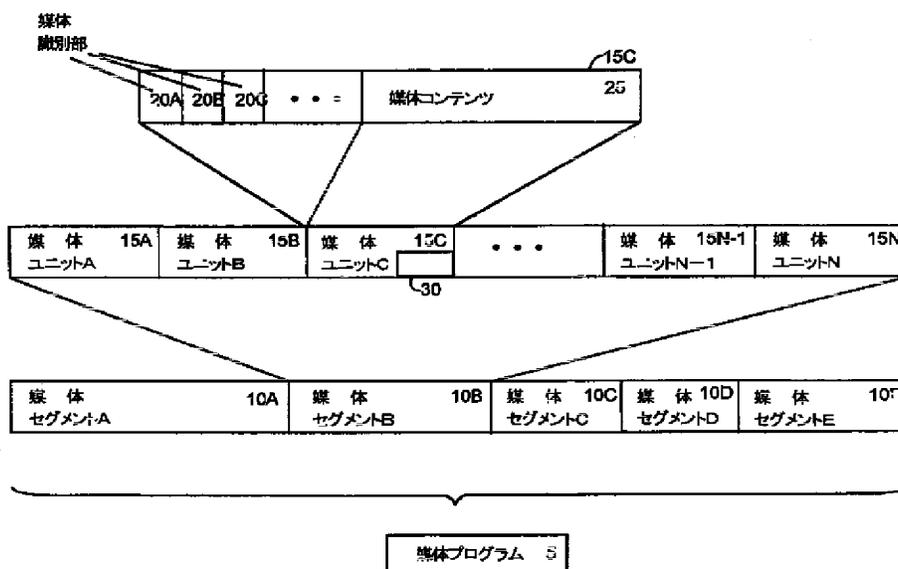
【図3】ビデオ供給システムの各手段を示した図。

【図4】供給先デバイスでの識別部処理機能を示した図。

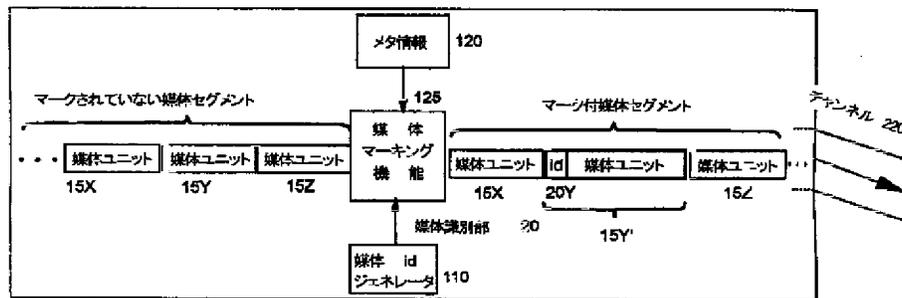
【符号の説明】

- 10A~10E...媒体セグメント
- 15A~15N...媒体ユニット
- 15X~15Z...媒体ユニット
- 15Y'...新たにマークされた媒体ユニット
- 20...媒体識別部
- 20A~20C...媒体識別部
- 20Y...媒体識別部
- 25...媒体コンテンツ
- 110...idジェネレータ
- 120...メタ情報
- 125...媒体マーキング機能
- 210J-210L...供給元
- 230A, 230B...ディストリビュータ
- 240A, 240B...最終供給先

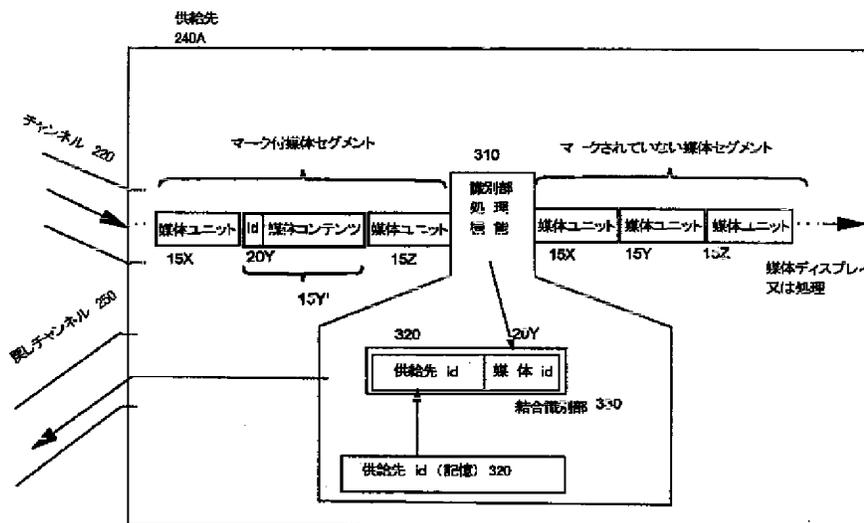
【図1】



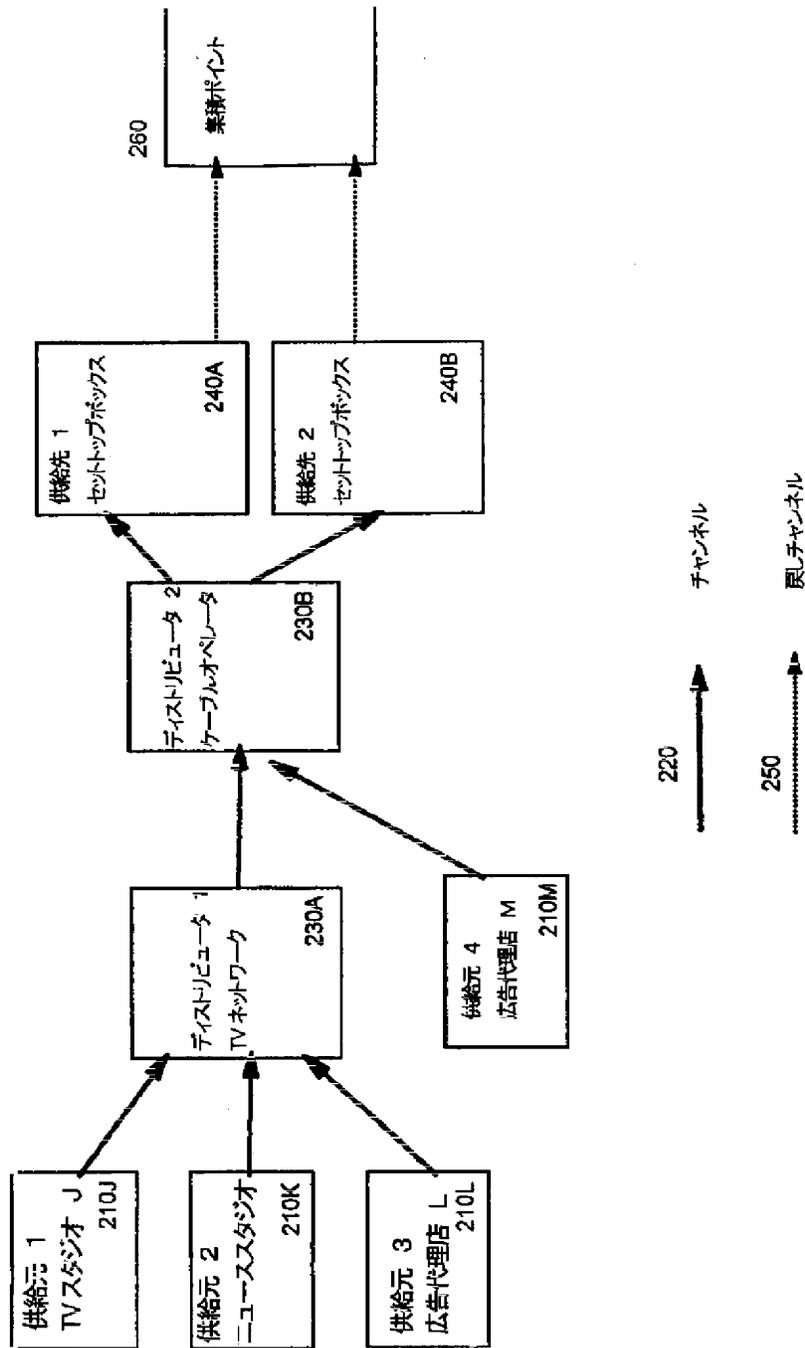
【図2】



【図4】



【図3】



フロントページの続き

(51)Int. Cl. <sup>7</sup>	識別記号	F I	(参考)
H 0 4 L 9/32		G 0 6 F 15/401	3 2 0 A
H 0 4 N 7/173	6 2 0	H 0 4 L 9/00	6 7 5 Z

(72)発明者 マルティン・ジー・キーンズル  
アメリカ合衆国10510、ニューヨーク州  
バリアークリフ・マナー、ウッドフィー  
ルド・ロード 19

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	18118333
<b>Application Number:</b>	13889176
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	1927
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen
<b>Customer Number:</b>	20995
<b>Filer:</b>	Morgan Ross Coates
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	STRATOS.001C5
<b>Receipt Date:</b>	05-FEB-2014
<b>Filing Date:</b>	07-MAY-2013
<b>Time Stamp:</b>	12:06:50
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		1IDS1C5.pdf	75735 <small>64bb281c0664e077d9ea063507ce7586f28 cea35</small>	yes	3

Multipart Description/PDF files in .zip description			
	Document Description	Start	End
	Transmittal Letter	1	2
	Information Disclosure Statement (IDS) Form (SB08)	3	3

**Warnings:**

**Information:**

2	Foreign Reference	2GB2346472.pdf	925891 b14c68c29979c15fba1fb8c87f55fe4bd160f310	no	21
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**Warnings:**

**Information:**

3	Foreign Reference	3JP09163346.pdf	700687 6df2f5f891a691443eddc65477a8dac28dc9fd41	no	12
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**Warnings:**

**Information:**

4	Foreign Reference	4JP2000236306.pdf	646705 ad35e6d624b932aab859f932ccaacf15ec2760	no	12
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**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>			2349018		
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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

**INFORMATION DISCLOSURE STATEMENT**

Inventor	:	Kelly M. Christensen, et al.
App. No.	:	13/889,176
Filed	:	May 7, 2013
For	:	BROADCAST RESPONSE SYSTEM
Examiner	:	AKINYEMI, AJIBOLA A
Art Unit	:	2649
Conf. No.	:	1927

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**References and Listing**

Submitted herewith in the above-identified application is an Information Disclosure Statement listing references for consideration. Copies of any listed foreign and non-patent literature references are being submitted.

Pursuant to 37 C.F.R § 1.97(g) and (h), Applicant makes no representation that the information is considered to be material to patentability. Additionally, inclusion on this list is not an admission that any of the cited documents are prior art in this application. Further, Applicants makes no representation regarding the completeness of this list, or that better art does not exist.

**Timing of Disclosure**

This Information Disclosure Statement is being filed after the mailing date of a final action or after the mailing date of a Notice of Allowance. To the extent that this Information Disclosure Statement cannot be considered, Applicant requests that this Information Disclosure Statement along with the accompanying PTO/SB/08 be placed in the file in accordance with 37 C.F.R. 1.97(i).

**Application No.:** 13/889,176  
**Filing Date:** May 7, 2013

Respectfully submitted,  
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: February 5, 2014

By: Morgan Coates/  
Morgan R. Coates  
Registration No. 64,970  
Attorney of Record  
Customer No. 20995  
(949) 760-0404

17195674

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
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 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

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20995 7590 11/08/2013  
**KNOBBE MARTENS OLSON & BEAR LLP**  
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 IRVINE, CA 92614

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/889,176	05/07/2013	Kelly M. Christensen	STRATOS.001C5	1927

TITLE OF INVENTION: BROADCAST RESPONSE SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	<del>\$890</del> \$480	<del>\$300</del> \$0	\$0	<del>\$1190</del> \$480	02/10/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
AKINYEMI, AJIBOLA A	2649	455-003060

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b></p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.</p> <p>1 <u>Knobbe Martens</u></p> <p>2 <u>Olson &amp; Bear LLP</u></p> <p>3 _____</p>
---	---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: **StratosAudio, Inc.**

(B) RESIDENCE: (CITY and STATE OR COUNTRY) **Kirkland, WA**

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are submitted:</p> <p><input checked="" type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (<b>Please first reapply any previously paid issue fee shown above</b>)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number <u>11-1410</u> (enclose an extra copy of this form).</p>
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5. **Change in Entity Status** (from status indicated above)

- Applicant certifying micro entity status. See 37 CFR 1.29
- Applicant asserting small entity status. See 37 CFR 1.27
- Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Authorized Signature /Morgan Coates/

Date February 5, 2014

Typed or printed name Morgan R. Coates

Registration No. 64,970

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor	: Kelly M. Christensen, et al.
App. No.	: 13/889,176
Filed	: May 7, 2013
For	: BROADCAST RESPONSE SYSTEM
Examiner	: AKINYEMI, AJIBOLA A
Art Unit	: 2649
Conf No.	: 1927

**COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Applicant respectfully submits the following comments on the Examiner's Statement of Reasons for Allowance. Applicant acknowledges the Statement of Reasons for Allowance in the above referenced patent application and agrees that the claimed subject matter is patentable. However, Applicant takes no position regarding the Reasons for Allowance presented by the Examiner and therefore respectfully traverses them. Therefore, the Examiner's Reasons for Allowance should not be attributed to Applicant as an indication of the basis for Applicant's belief that the claims are patentable. Applicant respectfully traverses the Examiner's Statement of Reasons for Allowance to the extent it may suggest that a given claim requires limitations that are not explicitly recited therein. As an example, in distinguishing Claim 11 from the cited art, the Examiner refers to features of Claim 7 that are not present in Claim 11. Applicant assumes that the Examiner did not intend to make such a suggestion, but rather addressed the claims collectively merely for purposes of convenience. Moreover, to the extent there is any implication that the patentability of the dependent claims is solely attributable to those claims being dependent on an allowable independent claim, Applicant respectfully traverses the Examiner's Reasons for Allowance. The dependent claims are patentable for the additional reason that they recite additional features that further distinguish the claims from the cited art of record. Applicant

**Application No.:** 13/889,176  
**Filing Date:** May 7, 2013

reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the application's disclosure. Accordingly, reviewers of this or any child or related prosecution history shall not reasonably infer that the Applicant has made any disclaimers or disavowals of any subject matter.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: February 5, 2014

By: /Morgan Coates/  
Morgan R. Coates  
Registration No. 64,970  
Attorney of Record  
Customer No. 20995  
(949) 760-0404

17196628

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13889176
<b>Filing Date:</b>	07-May-2013
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen
<b>Filer:</b>	Morgan Ross Coates
<b>Attorney Docket Number:</b>	STRATOS.001C5

Filed as Small Entity

### Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl Issue Fee	2501	1	480	480

**Extension-of-Time:**

Petitioner

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>480</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	18120490
<b>Application Number:</b>	13889176
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	1927
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen
<b>Customer Number:</b>	20995
<b>Filer:</b>	Morgan Ross Coates/Heide Young
<b>Filer Authorized By:</b>	Morgan Ross Coates
<b>Attorney Docket Number:</b>	STRATOS.001C5
<b>Receipt Date:</b>	05-FEB-2014
<b>Filing Date:</b>	07-MAY-2013
<b>Time Stamp:</b>	14:49:12
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$480
RAM confirmation Number	932
Deposit Account	111410
Authorized User	KNOBBE MARTENS OLSON AND BEAR

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Petitioner

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1		1C5IssueFee.pdf	157758 2b5a5bd41c4d2a87bed63dcf95a0f99f46dd7b5a	yes	4
<b>Multipart Description/PDF files in .zip description</b>					
<b>Document Description</b>			<b>Start</b>	<b>End</b>	
Issue Fee Payment (PTO-85B)			1	2	
Miscellaneous Incoming Letter			3	4	
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	30218 2be203de307aaa2ccd6548d5f1243c175751fa59	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			187976		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/889,176 05/07/2013 Kelly M. Christensen STRATOS.001C5 1927
EXAMINER AKINYEMI, AJIBOLA A
ART UNIT 2649 PAPER NUMBER
NOTIFICATION DATE 03/04/2014 DELIVERY MODE ELECTRONIC

7590 03/04/2014
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

NOTICE OF NON-COMPLIANT INFORMATION DISCLOSURE STATEMENT

An Information Disclosure Statement (IDS) filed 02-05-14 in the above-identified application fails to meet the requirements of 37 CFR 1.97(d) for the reason(s) specified below. Accordingly, the IDS will be placed in the file, but the information referred to therein has not been considered.

The IDS is not compliant with 37 CFR 1.97(d) because:

- X The IDS lacks a statement as specified in 37 CFR 1.97(e).
The IDS lacks the fee set forth in 37 CFR 1.17(p).
The IDS was filed after the issue fee was paid. Applicant may wish to consider filing a petition to withdraw the application from issue under 37 CFR 1.313(c) to have the IDS considered. See MPEP 1308.

Handwritten signature of Shmoy Bejalar

571-272-4200 or 1-888-786-0101
Application Assistance Unit
Office of Data Management



APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/889,176	04/01/2014	8688028	STRATOS.001C5	1927

20995 7590 03/12/2014  
KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

### ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

#### **Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)** (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

STRATOSAUDIO, INC., KIRKLAND, WA, Assignee (with 37 CFR 1.172 Interest);  
Kelly M. Christensen, Mill Creek, WA;  
Barry D. Thomas, West Hills, CA;  
Thomas J. Smyth, North Hollywood, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](http://SelectUSA.gov).

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	13/889176
Filing Date	May 7, 2013
First Named Inventor	Kelly M. Christensen
Title	BROADCAST RESPONSE SYSTEM
Art Unit	2649
Examiner Name	Ajibola A. Akinyemi
Attorney Docket Number	STRATOS.001C5

**SIGNATURE of Applicant or Patent Practitioner**

Signature	/Morgan Coates/	Date (Optional)	March 31, 2014
Name	Morgan R. Coates	Registration Number	64,970
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

**NOTE:** This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

\*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

# POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

20995

OR

I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

**Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:**

The address associated with the above-mentioned Customer Number

OR

The address associated with Customer Number: 20995

OR

Firm or Individual Name				
Address				
City	State		Zip	
Country				
Telephone		Email		

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

StratosAudio, Inc.

- Inventor or Joint Inventor (title not required below)
- Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

**SIGNATURE of Applicant for Patent**

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Kelly M. Christensen		
Title	CEO		

**NOTE:** Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	18631801
<b>Application Number:</b>	13889176
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	1927
<b>Title of Invention:</b>	BROADCAST RESPONSE SYSTEM
<b>First Named Inventor/Applicant Name:</b>	Kelly M. Christensen
<b>Customer Number:</b>	20995
<b>Filer:</b>	Morgan Ross Coates/Gustavo Lopez
<b>Filer Authorized By:</b>	Morgan Ross Coates
<b>Attorney Docket Number:</b>	STRATOS.001C5
<b>Receipt Date:</b>	31-MAR-2014
<b>Filing Date:</b>	07-MAY-2013
<b>Time Stamp:</b>	17:31:30
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Stratos1C5POA.pdf	114277 a3eebe3311bd535ba6a4794b67dbcbcb9e ea361d	no	2

### Warnings:

### Information:

Petitioner

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/889,176	05/07/2013	Kelly M. Christensen	STRATOS.001C5

**CONFIRMATION NO. 1927**

**POWER OF ATTORNEY NOTICE**

20995  
KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614



Date Mailed: 04/23/2014

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 03/31/2014.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/sharris/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/889,176	05/07/2013	Kelly M. Christensen	STRATOS.001C5

**CONFIRMATION NO. 1927**

**POA ACCEPTANCE LETTER**

20995  
KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614



Date Mailed: 04/23/2014

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 03/31/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/sharris/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 4 columns: APPLICATION NUMBER (13/889,176), PATENT NUMBER (8688028), GROUP ART UNIT (2649), REQUEST ID (23768)

PAIR Correspondence Address/Fee Address Change

The following fields have been changed to Customer Number 197 on 08/23/2016 via Private PAIR in view of the certification copied below that authorized the change.

- Maintenance Fee Address

The address for Customer Number 197 is:

197
CPA GLOBAL LIMITED
2318 Mill Road 12th Floor
ALEXANDRIA, VA 22314

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Table with 2 columns: Signature (/Morgan Coates/), Name (Morgan Coates), Registration Number (64970)

AO 120 (Rev. 08/10)

Case No.: 6:20-cv-1126

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF STRATOSAUDIO, INC.		DEFENDANT MAZDA MOTOR OF AMERICA, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8166081	4/24/2012	StratosAudio, Inc.
2 8688028	4/1/2014	StratosAudio, Inc.
3 8903307	12/2/2014	StratosAudio, Inc.
4 9584843	2/28/2017	StratosAudio, Inc.
5 8200203	6/12/2012	StratosAudio, Inc.
6 9294806	3/22/2016	StratosAudio, Inc.
7 9355405	5/31/2016	StratosAudio, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK
1	
2	
3	
4	
5	

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

AO 120 (Rev. 08/10)

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF STRATOSAUDIO, INC.		DEFENDANT VOLKSWAGEN GROUP OF AMERICA, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8166081	4/24/2012	StratosAudio, Inc.
2 8688028	4/1/2014	StratosAudio, Inc.
3 8903307	12/2/2014	StratosAudio, Inc.
4 9584843	2/28/2017	StratosAudio, Inc.
5 8200203	6/12/2012	StratosAudio, Inc.
6 9294806	3/22/2016	StratosAudio, Inc.
7 9355405	5/31/2016	StratosAudio, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK
1	
2	
3	
4	
5	

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
--	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF STRATOSAUDIO, INC.		DEFENDANT VOLVO CARS OF NORTH AMERICA, LLC and VOLVO CAR USA, LLC

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8166081	4/24/2012	StratosAudio, Inc.
2 8688028	4/1/2014	StratosAudio, Inc.
3 8903307	12/2/2014	StratosAudio, Inc.
4 9584843	2/28/2017	StratosAudio, Inc.
5 8200203	6/12/2012	StratosAudio, Inc.
6 9294806	3/22/2016	StratosAudio, Inc.
7 9355405	5/31/2016	StratosAudio, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK
1	
2	
3	
4	
5	

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF STRATOSAUDIO, INC.		DEFENDANT HYUNDAI MOTOR AMERICA

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8166081	4/24/2012	StratosAudio, Inc.
2 8688028	4/1/2014	StratosAudio, Inc.
3 8903307	12/2/2014	StratosAudio, Inc.
4 9584843	2/28/2017	StratosAudio, Inc.
5 8200203	6/12/2012	StratosAudio, Inc.
6 9294806	3/22/2016	StratosAudio, Inc.
7 9355405	5/31/2016	StratosAudio, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK
1	
2	
3	
4	
5	

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
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CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF STRATOSAUDIO, INC.		DEFENDANT SUBARU OF AMERICA, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8166081	4/24/2012	StratosAudio, Inc.
2 8688028	4/1/2014	StratosAudio, Inc.
3 8903307	12/2/2014	StratosAudio, Inc.
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VOLKSWAGEN GROUP OF AMERICA, INC.,  
Petitioner,

v.

STRATOSAUDIO, INC.,  
Patent Owner.

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IPR2021-00716  
Patent 8,688,028 B2

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Before JUSTIN T. ARBES, HYUN J. JUNG, and KEVIN C. TROCK,  
*Administrative Patent Judges.*

ARBES, *Administrative Patent Judge.*

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Petitioner Volkswagen Group of America, Inc. filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 11, 14–16, and 18 of U.S. Patent No. 8,688,028 B2 (Ex. 1001, “the ’028 patent”) pursuant to 35 U.S.C. § 311(a). Patent Owner StratosAudio, Inc. filed a Preliminary Response (Paper 6, “Prelim. Resp.”) pursuant to 35 U.S.C. § 313. With our

authorization (Paper 11), Petitioner filed a Reply (Paper 12, “Reply”) and Patent Owner filed a Sur-Reply (Paper 14, “Sur-Reply”) directed solely to the issue of whether we should exercise our discretion to deny the Petition under 35 U.S.C. § 314(a).

Pursuant to 35 U.S.C. § 314(a), the Director may not authorize an *inter partes* review unless the information in the petition and preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” *See* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). For the reasons that follow, we institute an *inter partes* review as to claims 11, 14–16, and 18 of the ’028 patent on all grounds of unpatentability asserted in the Petition.

#### *B. Related Matters*

The parties indicate that the ’028 patent is the subject of the following district court cases: *StratosAudio, Inc. v. Volkswagen Group of America, Inc.*, Case No. 6:20-cv-1131 (W.D. Tex.) (“the Volkswagen case”), *StratosAudio, Inc. v. Hyundai Motor America*, Case No. 6:20-cv-1125 (W.D. Tex.), *StratosAudio, Inc. v. Mazda Motor of America, Inc.*, Case No. 6:20-cv-1126 (W.D. Tex.), *StratosAudio, Inc. v. Subaru of America, Inc.*, Case No. 6:20-cv-1128 (W.D. Tex.), and *StratosAudio, Inc. v. Volvo Cars of North America, LLC*, Case No. 6:20-cv-1129 (W.D. Tex.) (collectively, “the district court cases”). *See* Pet. 1; Paper 5, 1. Petitioner filed a petition challenging claims of a patent related to the ’028 patent in Case IPR2021-00712, and petitions challenging claims of other patents asserted in the district court cases in Cases IPR2021-00717, IPR2021-00718, IPR2021-00719, IPR2021-00720, and IPR2021-00721. A different

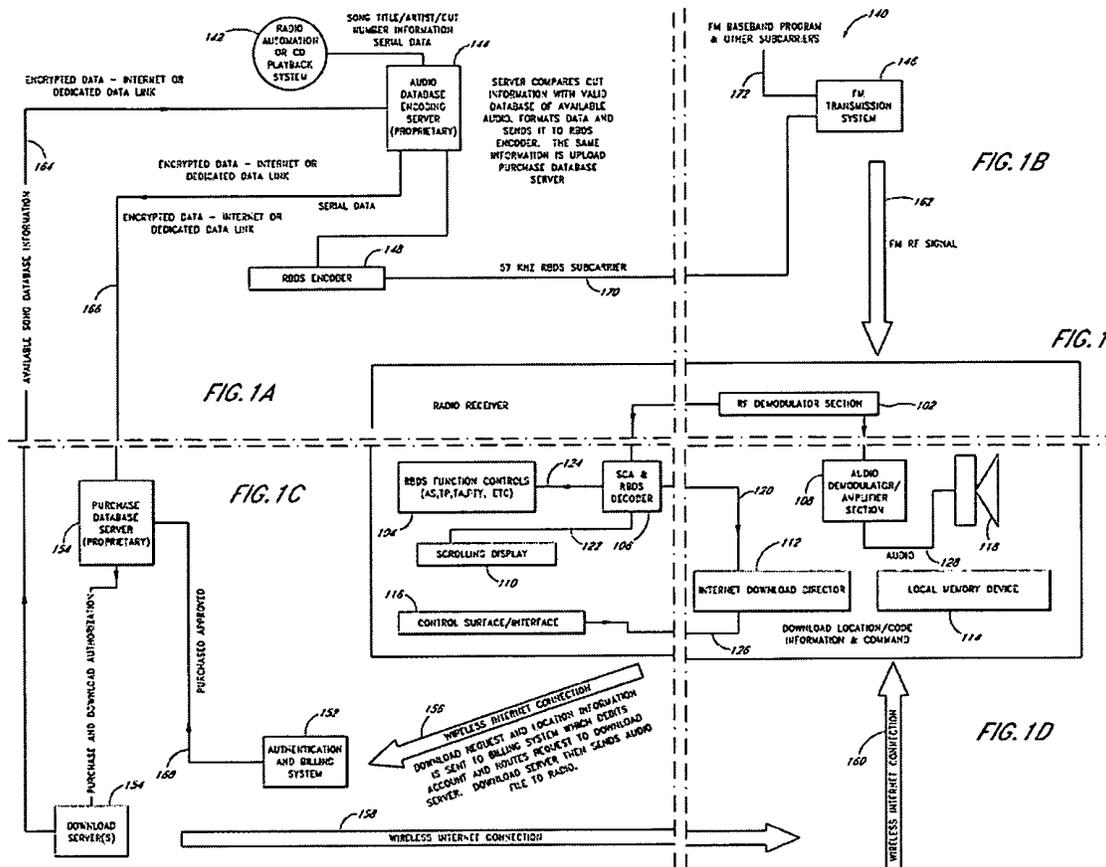
IPR2021-00716  
Patent 8,688,028 B2

petitioner filed a petition challenging claims of the '028 patent in Case IPR2021-01303 and petitions challenging claims of other patents asserted in the district court cases in Cases IPR2021-01267, IPR2021-01305, and IPR2021-01371.

### *C. The '028 Patent*

The '028 patent discloses “[a] broadcast response system [that] provides, e.g., a radio broadcast listener with the ability to obtain media content such as music or speech while listening to the radio.” Ex. 1001, code (57). “From the early days of FM broadcast transmission, stations have included ancillary signals such as background music or reading services for the blind along with a main carrier signal.” *Id.* at col. 1, ll. 26–28. “The most current and widely used data transmission standard is the United States Radio Broadcast Data Systems (‘RBDS’) standard” in which a system “broadcast[s] a variety of program-related information,” such as station “call letters, station format, traffic alerts and scrolling text messages,” on a “subcarrier of a standard FM broadcast channel.” *Id.* at col. 1, ll. 32–53. The '028 patent states that “[b]roadcasters using the RBDS standard can distribute information to a large number of users,” but “the standard does not allow individual users to respond to the broadcast information.” *Id.* at col. 2, ll. 26–29. For example, a user listening to the radio may like a particular song that he or she would like to purchase, but “must write down or remember the identifying information and then go to a store or online retailer to purchase the media.” *Id.* at col. 2, ll. 30–37. The '028 patent purportedly solves that problem by allowing the user to respond to the broadcast and purchase media content. *Id.* at col. 2, ll. 53–58.

The '028 patent includes Figures 1A–D, which are reproduced together below.



Figures 1A–D depict radio station 140, radio receiver 100, and various other devices. *Id.* at col. 4, ll. 22–25. Radio automation or CD playback system 142 “extract[s] information about songs or a radio program” from various sources and provides playlist information to Automatic Purchase System (APS) server 144, which matches the extracted information with information in a database of audio files available to download. *Id.* at col. 5, ll. 41–52. If such a file is available, APS server 144 provides download information to RBDS/RDS encoder 148. *Id.* at col. 5, ll. 52–55. RBDS/RDS encoder 148 then “transmits the RBDS/RDS information using the 57 khz RBDS/RDS subcarrier 170 to the FM transmission system 146. The RBDS/RDS

subcarrier signal 170 is mixed by the FM transmission system 146 with the FM baseband program signal 172 and any other subcarriers.” *Id.* at col. 5, ll. 57–62. “The FM transmission system 146 then transmits an FM [radio frequency (RF)] signal 162 which is received by the radio receiver 100.” *Id.* at col. 5, ll. 62–63.

The ’028 patent describes various types of information that can be provided to the radio user using the data subcarrier signal, such as a song title, artist, album name, purchase price of the song, and IP address for the location where the digital version of the song is stored. *Id.* at col. 3, ll. 39–45, col. 5, ll. 4–13, 48–49. A “reference number” representing the information stored in a lookup table accessed by APS server 144 “can also be employed for ease of implementation.” *Id.* at col. 3, ll. 42–48.

RF demodulator section 102 “splits the [received FM RF signal] into an audio signal and a data signal.” *Id.* at col. 4, ll. 39–43. Audio demodulator amplifier section 108 receives the audio signal and converts it to audio signal 128 that can be output on speaker 118. *Id.* at col. 4, ll. 35–38, 53–54. RBDS/RDS decoder 106 receives the data signal and processes it to display information to the user on scrolling display 110. *Id.* at col. 4, ll. 39–47, col. 4, l. 66–col. 5, l. 3.

The ’028 patent further describes a process whereby “a user can place an order to download a song using the control interface 116” of radio receiver 100. *Id.* at col. 5, ll. 14–15. Radio receiver 100 provides a signal to authentication and billing system 152 (e.g., over wireless Internet connection 156) and, when the purchase is approved, download server 154 provides the requested material to radio receiver 100 (e.g., over wireless Internet connection 158). *Id.* at col. 5, ll. 15–40. The ’028 patent discloses that “[i]n one embodiment, activity of each sale using the [disclosed] system is

tracked for the purposes of aggregating data or ‘Data Mining’ for sale to interested parties such as trade publications and record companies.” *Id.* at col. 3, ll. 52–55.

*D. Illustrative Claim*

Challenged claim 11 of the ’028 patent is independent. Claims 14–16 and 18 each depend directly from claim 11. Claim 11 recites (with letter designations used in the Petition to refer to the various limitations):

11. A method for correlating media content identifying data with at least one broadcast segment received by a communication device, the method comprising:

[a] receiving a broadcast stream comprising the at least one broadcast segment and associated media content;

[b] receiving a data stream associated with the broadcast stream, the data stream comprising, at a minimum, the media content identifying data, wherein the media content identifying data comprises at least one element;

[c] extracting the media content identifying data from the data stream, associating each media content identifying data element with at least one of a plurality of media content;

[d] storing in an electronic memory of the communication device, at a minimum, media content identifying data elements into identifying data aggregates, each identifying data aggregate associated with at least one of the plurality of media content and the at least one broadcast segment, [e] wherein the at least one broadcast segment is corollary to the at least one of the plurality of media content; and

[f] providing for presentation of at least a portion of the data elements stored in the electronic memory of the communication device, whereby the providing provides selective outputting, using an interface, of at least one of the following: the media content identifying data, the media content, the corollary broadcast segment, a temporal position of the corollary broadcast segment of the broadcast stream.

*E. Evidence*

Petitioner relies on the following prior art:

U.S. Patent No. 6,317,784 B1, filed Sept. 29, 1998, issued Nov. 13, 2001 (Ex. 1005, “Mackintosh”); and

U.S. Patent No. 5,579,537, issued Nov. 26, 1996 (Ex. 1004, “Takahisa”).

*F. Prior Art and Asserted Grounds*

Petitioner asserts that claims 11, 14–16, and 18 of the ’028 patent are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	Reference/Basis
11, 14–16, 18	102(b) <sup>1</sup>	Takahisa
11, 14–16, 18	103(a)	Mackintosh

II. ANALYSIS

*A. Discretionary Denial Under 35 U.S.C. § 314(a)*

Institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an [*inter partes* review (IPR)] proceeding.”); 35 U.S.C. § 314(a) (“The Director *may not* authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood

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<sup>1</sup> The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102, 103, and 112. Because the challenged claims of the ’028 patent have an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102, 103, and 112. *See* Pet. 3.

that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” (emphasis added)). In the Preliminary Response, Patent Owner argues that we should exercise our discretion to deny the Petition in view of the district court cases. Prelim. Resp. 4–22. According to Patent Owner, instituting an *inter partes* review in this proceeding “would be entirely duplicative of the five [district court cases] and would risk the two tribunals reaching inconsistent results.” *Id.* at 6.

The Board has held that the advanced state of a parallel district court action is a factor that may weigh in favor of denying a petition under § 314(a). See *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential) (“*NHK*”); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019), 58 & n.2, available at <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“Trial Practice Guide”). We consider the following factors to assess “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding”:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

*Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). In evaluating these factors, we “take[] a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* at 6. Upon consideration of these factors, we decline to exercise our discretion to deny the Petition.

*1. Whether the Court Granted a Stay or Evidence Exists That One May Be Granted if a Proceeding is Instituted*

According to the parties, the district court has not issued a stay in the Volkswagen case. *See* Prelim. Resp. 7; Reply 2. Patent Owner argues that the district court’s “historical record” makes the district court cases “unlikely to be stayed” pending review by the Board. Prelim. Resp. 7–8, 11, 21. Petitioner, however, points out that “neither party has requested a stay,” and asserts that “this factor is neutral here.” Reply 2.

We decline to infer how the district court may rule on a motion to stay any of the district court cases pending *inter partes* review. Given that neither party has requested such a stay from the district court, we view this factor as neutral.<sup>2</sup>

*2. Proximity of the Court’s Trial Date to the Board’s Projected Statutory Deadline For a Final Written Decision*

According to Patent Owner, the district court set a trial date for the Volkswagen case of October 3, 2022. Prelim. Resp. 12. Petitioner,

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<sup>2</sup> Patent Owner asserts, and we agree, that if “factor 1 does not favor denying institution because neither Petitioner nor Patent Owner has requested a stay, at most, factor 1 would be neutral.” *See* Prelim. Resp. 11 n.5 (citing *Supercell Oy v. Gree, Inc.*, IPR2020-01628, Paper 9 at 7 (PTAB Feb. 17, 2021)).

however, asserts that this trial date is tentative and that “[t]he tentatively scheduled trial date here is particularly in doubt as it is for five separate defendants.” Reply 2.

The projected statutory deadline for the final written decision in this case is late October 2022. As currently scheduled, the trial date in the Volkswagen case is only slightly earlier than the due date for the final written decision. Where the trial date and the projected date of our final written decision are at or around the same time, as they are here, the efficiency and fairness concerns that underlie the *Fintiv* analysis are not as strong, and the decision whether to institute will instead implicate other factors. See *Fintiv*, Paper 11 at 9 (“If the court’s trial date is at or around the same time as the projected statutory deadline, . . . the decision whether to institute will likely implicate other factors discussed herein, such as the resources that have been invested in the parallel proceeding.”).

Because the scheduled trial in the Volkswagen case is currently set for less than a month before the projected statutory deadline for our final written decision, we view this factor as neutral.

### 3. *Investment in the Parallel Proceeding by the Court and the Parties*

Patent Owner argues that this factor favors denial of institution because “[t]he parties have already invested substantial time in the district court litigations.” Prelim. Resp. 16. Patent Owner states that the parties have exchanged preliminary infringement and invalidity contentions, a *Markman* hearing was scheduled for October 5, 2021, and fact discovery begins the day after the *Markman* hearing. *Id.* at 16–17.

Petitioner, however, argues that this factor favors institution because relatively little work has been done that would “justify denial of institution.”

Reply 3–4 (citing *Sand Revolution II, LLC v. Continental Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 (PTAB June 16, 2020) (informative) (“*Sand Revolution*”)).

Based on the current record, it appears that only a modest amount of work has been done in the Volkswagen case that may be relevant to the issues raised in the Petition with respect to the ’028 patent. Although Petitioner served preliminary invalidity contentions and a *Markman* hearing was held on September 28, 2021, fact discovery has only just begun and expert discovery has not yet commenced. *See* Ex. 2016, 4.

Moreover, the parties have not advised us whether any of the issues addressed in the *Markman* hearing have any direct bearing on the challenged claims of the ’028 patent and asserted grounds in this proceeding. A review of the Joint Claim Construction Statement filed by the parties in the district court cases indicates that “[t]he five cases have been briefed together for claim construction proceedings.” Ex. 3001. With respect to the ’028 patent, Petitioner asserts that three claim terms are indefinite and Patent Owner asserts that the terms should be construed to have their “[p]lain and ordinary meaning.” *Id.* at 1–2. Given this information, it is difficult to see how any of the work done by the parties and the district court with respect to the *Markman* hearing in the district court cases has any bearing or probative value with respect to the patentability issues raised in the Petition with respect to the ’028 patent.

Petitioner also argues that it exercised diligence in filing the Petition in this case. Reply 5. Under *Fintiv*, a petitioner’s diligence or delay in filing a petition may be relevant when assessing factor 3. *See Fintiv*, Paper 11 at 11–12. “If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being

asserted, this fact has weighed against” denying institution. *Id.* at 11 (citing *Intel Corp. v. VLSI Tech. LLC*, IPR2019-01192, Paper 15 at 12–13 (PTAB Jan. 9, 2020); *Illumina, Inc. v. Natera, Inc.*, IPR2019-01201, Paper 19 at 8 (PTAB Dec. 18, 2019)).

Petitioner indicates that it filed its Petition “within four months of Patent Owner’s filing of a seven-patent infringement complaint.” Reply 5.<sup>3</sup> In a conference call with the parties held on September 8, 2021, to discuss supplemental briefing with respect to the § 314(a) issues raised in Patent Owner’s Preliminary Response, Petitioner explained that it filed the Petition only four months after service of the complaint, which was prior to the district court setting a schedule and trial date in its July 2021 Scheduling Order. Paper 11, 2 (citing Ex. 2006).

The complaint filed by Patent Owner alleges infringement of seven different patents against Petitioner, among them the ’028 patent. Ex. 3002. With respect to the ’028 patent, Patent Owner broadly alleges that Petitioner “makes, uses, offers for sale, sells, and/or imports into the United States certain products and services that directly infringe, literally and/or under the doctrine of equivalents, one or more claims of the ’028 patent, *including but not limited to claims 11, 14–16, and 18*, and continue[d] to do so since the issuance of the ’028 patent.” Ex. 3002 ¶ 27 (emphasis added). The complaint does not limit, or precisely identify, the claims of the ’028 patent that Petitioner will have to defend itself against at trial. Put another way, the complaint leaves open the option of asserting any, or all of, the claims of the ’028 patent against Petitioner.

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<sup>3</sup> The complaint in the Volkswagen case was filed on December 11, 2020. Petitioner filed its Petition in this proceeding on April 16, 2021.

We determine that Petitioner was diligent in filing the Petition only four months after the filing of the complaint in the Volkswagen case. Indeed, at the time of filing its Petition, Petitioner did not have the benefit of Patent Owner's preliminary infringement contentions, which were served on May 13, 2021, approximately one month after the Petition in this case was filed. *See Ex. 2007; Fintiv*, Paper 11 at 11 & n.21 (explaining that "it is often reasonable for a petitioner to wait to file its petition until it learns which claims are being asserted against it in the parallel proceeding," and citing an earlier case finding that a petitioner was "diligent in filing the petition within two months of [the] patent owner narrowing the asserted claims in the district court proceeding").

Because of the relatively early stage of the Volkswagen case, the modest amount of work that appears to have been done that might be relevant to the issues raised in the Petition with respect to the '028 patent, and Petitioner's diligence in filing its Petition, we find that this factor weighs strongly against the exercise of discretionary denial.

#### 4. *Overlap Between Issues Raised in the Petition and in the Parallel Proceeding*

Patent Owner contends that "there is *complete* overlap between the invalidity positions asserted in the Petition and the invalidity contentions served by Petitioner and the four other defendants in the parallel litigations." Prelim. Resp. 18. Patent Owner also points out that Petitioner "incorporated its grounds for this [*inter partes* review (IPR)] proceeding into the invalidity contentions" in the Volkswagen case. *Id.* (citing Ex. 2009, 50). Petitioner, however, "has agreed to stipulate that, if this IPR is instituted, it will not assert in [the Volkswagen case] any ground of invalidity presented in this

IPR.” Reply 4 (citing Ex. 1015). Stipulations, such as Petitioner’s affirmative stipulation here, mitigate to some extent concerns of duplicative efforts between the Board and the Volkswagen case with respect to the challenges raised in the Petition. *See Sand Revolution*, Paper 24 at 11–12. Therefore, given the facts here and Petitioner’s stipulation, we find that this factor weighs marginally against exercising discretionary denial.

5. *Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party*

“If a petitioner is unrelated to a defendant in an earlier court proceeding, the Board has weighed this fact against exercising discretion.” *Fintiv*, Paper 11 at 13–14. Here, Patent Owner argues that “[t]here is no dispute that the parties here are the same as in [the Volkswagen case].” Prelim. Resp. 20. Petitioner does not contest this assertion. *See* Pet. 1; Reply 5. Petitioner, however, argues that “[b]ecause it is uncertain whether the district court proceeding or the IPR will conclude first, the fifth *Fintiv* factor is neutral.” Reply 5 (citing *Juniper Networks, Inc. v. WSOU Investments, LLC*, IPR2021-00538, Paper 9 (PTAB Aug. 18, 2021) (“*Juniper*”)). The analysis of *Fintiv* factor 5 in *Juniper* relies on a Board decision in *Huawei Techs. Co., Ltd. v. WSOU Investments, LLC*, IPR2021-00222, Paper 10 (PTAB June 7, 2021) (“*Huawei*”), which stated that *Fintiv* factor 5 “favors denial if trial precedes the Board’s Final Written Decision and favors institution if the opposite is true.” *See Huawei*, Paper 10 at 18; *Juniper*, Paper 9 at 16.

Here, the parties are the same but the trial date is currently set only a few weeks before the projected statutory deadline for a final written decision. Because of the close proximity between the currently scheduled

trial date and the projected statutory deadline for a final written decision, we view this factor as only slightly in favor of discretionary denial or neutral.

6. *Other Circumstances That Impact the Board's Exercise of Discretion, Including the Merits*

The last *Fintiv* factor evaluates the merits and other relevant aspects of this case. *Fintiv*, Paper 11 at 14–15. Patent Owner argues that “none of the grounds set forth in the Petition meet the institution standard.” Prelim. Resp. 22. We disagree. As explained below, on the preliminary record, the merits of Petitioner’s case are straightforward and strong, at least as to the asserted ground based on Takahisa, and Patent Owner has not yet made a persuasive response to Petitioner’s allegations. *See infra* Section II.E. Petitioner’s arguments on this record appear to be consistent with the disclosure of Takahisa. *See id.* Because of this, instituting *inter partes* review “may serve the interest of overall system efficiency and integrity because it allows the proceeding to continue in the event that the parallel proceeding settles or fails to resolve the patentability question presented.” *Fintiv*, Paper 11 at 15. Given the merits of the case, we determine that this factor weighs against exercising discretionary denial.

7. *Holistic Assessment of Fintiv Factors*

We consider the above factors and take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv*, Paper 11 at 6. In our view, the facts weighing against exercising discretion to deny institution collectively outweigh those favoring denial and concerns about potential inefficiency or integrity of the

system. For these reasons, we decline to exercise our discretion to deny institution under § 314(a).

*B. Legal Standards*

“Anticipation requires that every limitation of the claim in issue be disclosed, either expressly or under principles of inherency, in a single prior art reference,” *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1255–56 (Fed. Cir. 1989), and that the claim limitations be “arranged or combined in the same way as recited in the claim,” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). However, “the reference need not satisfy an *ipsissimis verbis* test.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009). “In an anticipation analysis, the dispositive question is whether a skilled artisan would ‘reasonably understand or infer’ from a prior art reference that every claim limitation is disclosed in that single reference.” *Acoustic Tech., Inc. v. Itron Networked Solutions, Inc.*, 949 F.3d 1366, 1373 (Fed. Cir. 2020) (citation omitted).

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a) (2006)). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, secondary considerations, such as “commercial success, long felt but unsolved needs, failure of others, etc., might be utilized

to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.” *Id.* When conducting an obviousness analysis, we consider a prior art reference “not only for what it expressly teaches, but also for what it fairly suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (citation omitted).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted); *see KSR*, 550 U.S. at 418 (for an obviousness analysis, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”).

“Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to *how* or *why* the references would be combined to produce the claimed invention.’” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (citation omitted). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *accord In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to

an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’” (citation omitted); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

### *C. Level of Ordinary Skill in the Art*

Petitioner argues that at the time of the ’028 patent (September 2000), a person of ordinary skill in the art would have had “a B.S. in computer science or electrical engineering (or a related field), and approximately three years of experience working in the communications- or Internet-related industries, or, alternatively, an advanced degree (such as a master’s degree) in computer science or electrical engineering (or a related field).” Pet. 8 (citing Ex. 1003 ¶ 44); *see* Ex. 1003 ¶ 29. Patent Owner does not address the level of ordinary skill in the art in its Preliminary Response. Based on the record presented, including our review of the ’028 patent and the types of problems and solutions described in the ’028 patent and cited prior art, we agree with Petitioner’s proposed definition of the level of ordinary skill in the art and apply it for purposes of this Decision. *See, e.g.*, Ex. 1001, col. 1, l. 25–col. 2, l. 49 (describing in the “Background” section of the ’028 patent various FM broadcast and other communication methods).

*D. Claim Interpretation*

We interpret the challenged claims

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b) (2020). “In determining the meaning of [a] disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006). Claim terms are generally given their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

In its Petition, Petitioner proposes interpretations for five terms in the challenged claims. Pet. 8–15. Patent Owner responds that “[t]he Board should not construe the terms, as doing so risks reaching a different construction than that of the district court and would lead to inconsistent outcomes,” but “[t]o the extent the Board construes these terms, . . . plain and ordinary meaning applies because each word in each of the five terms

has a well-known and common meaning.” Prelim. Resp. 38. Patent Owner, however, does not state what it believes to be the plain and ordinary meaning of the claim terms or explain why Petitioner’s proposed interpretations are incorrect.

We have reviewed the parties’ papers and conclude that only the terms “broadcast segment” and “media content” require express interpretation to determine whether to institute an *inter partes* review in this proceeding. See *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“Because we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy,’ we need not construe [a particular claim limitation] where the construction is not ‘material to the . . . dispute.’” (citation omitted)).

Claim 11 recites “[a] method for correlating media content identifying data with at least one broadcast segment received by a communication device,” where the method comprises “receiving a broadcast stream comprising the at least one broadcast segment and associated media content” and “the at least one broadcast segment is corollary to the at least one of the plurality of media content.” Petitioner argues that “broadcast segment” should be interpreted to mean “‘a distinguishable piece or portion of a broadcast stream,’ such as an individual song, speech, or video,” and “media content” should be interpreted to mean “any form of media content that, when translated from the signal-form in which it is transmitted, is discernible to humans.” Pet. 11–12.

Based on the current record, we agree with Petitioner’s proposed interpretations, as they appear to be consistent with the Specification of the ’028 patent. For example, the Specification states that “[o]ne of ordinary skill in the art will recognize that there are various forms of media that can

be broadcast,” and “[s]ome examples of the various types of media can include music, songs, speech, text, video, etc.” Ex. 1001, col. 2, ll. 55–58 (“media content such as music or speech”), col. 4, ll. 16–21. In the exemplary embodiment of Figure 1, radio station 140 transmits audio content to radio receiver 100 in the form of FM RF signal 162. *Id.* at col. 5, ll. 57–63. The Specification further discloses that

radio station 140, using either a standard radio automation system for tracking of *music content which is being broadcast*, or a data-enabled audio player, broadcasts audio material and synchronously sends RBDS/RDS or similar data to an APS server 144 that assigns a unique identifier to each specific *broadcast segment or song*.

*Id.* at col. 5, l. 64–col. 6, l. 2 (emphasis added). APS server 144 “compares the broadcast segment identifier with a database 150 of audio available for purchase” and incorporates information into a “data stream that is inserted into [the] radio station’s broadcast” (as a RBDS/RDS subcarrier signal transmitted as part of FM RF signal 162). *Id.* at col. 5, ll. 57–63, col. 6, ll. 3–9; *see also id.* at col. 3, ll. 23–25 (describing “send[ing] a data stream in combination with a broadcast signal for identifying music or speech content available for purchase”), col. 9, ll. 6–8 (same). Radio receiver 100 “splits the signal into an audio signal and a data signal,” decodes and processes the data signal, and converts and plays the audio signal “on one or more speakers for the user to hear.” *Id.* at col. 4, ll. 39–54. Thus, the Specification appears to be consistent with Petitioner’s reading of a “broadcast segment” being part of the signal-form broadcast stream and “media content” being the underlying content, such as music, that must be translated from signal-form into a form that can be played as audio on a speaker.

We note, however, that claim 11 recites “receiving a broadcast stream comprising the at least one broadcast segment and associated media content.” The use of the conjunction “and” in that context could be read to require receiving (1) a broadcast stream comprising at least one broadcast segment, and (2) associated media content. Alternatively, “and” could apply to the broadcast stream itself, such that the broadcast stream must comprise two different things: a “broadcast segment” and “associated media content.”<sup>4</sup> See *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, the clear implication of the claim language is that those elements are ‘distinct component[s] of the patented invention.’ (citations and quotation marks omitted)); *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004) (determining that, where the claim at issue recited an apparatus comprising two things, the first was “a distinct component, separate from” the second); *but see Google LLC v. Personal Audio, LLC*, 743 F. App’x 978, 985 (Fed. Cir. 2018) (unpublished) (stating “the principle that in [an] infringement or obviousness analysis, a single element, feature, or mechanism can ordinarily satisfy multiple claim limitations, including by performing multiple claimed functions”).

Petitioner’s proposed interpretations read the claim language as encompassing the same underlying content (e.g., a song) in two different forms—the “broadcast segment” being a distinguishable piece or portion of

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<sup>4</sup> Notably, the other two independent claims of the ’028 patent recite only one thing that the stream comprises. Claim 1 recites “receiv[ing] a media broadcast comprising at least one identifiable broadcast segment as part of a broadcast stream.” Claim 7 recites “receiv[ing] a media broadcast comprising a broadcast stream, the broadcast stream comprising a plurality of broadcast segments.”

the broadcast stream itself, which is in signal-form, and the “media content” being the content after it has been translated from signal-form into a form that is discernible to humans. As explained above, that reading appears, based on the current record, to be consistent with the Specification.

We encourage the parties to address the interpretation of the full “receiver” limitation in their papers during trial. The parties also are encouraged to address the interpretation of the word “corollary” in claim 11, as the term does not appear in the ’028 patent outside of claim 11. *See* Pet. 37 (interpreting the term to mean “related to”).

Finally, we note that Petitioner argued in the Volkswagen case that various phrases with the terms “associating” and “associated” in claims 11 and 18, and the additional limitation recited in claim 14, are indefinite under 35 U.S.C. § 112, second paragraph, and Patent Owner argued that the phrases should be given their “[p]lain and ordinary meaning.” Ex. 3001, 1–2. The parties are encouraged to address the interpretation of these phrases as well.

On this record, we interpret “broadcast segment” to mean a distinguishable piece or portion of a broadcast stream, such as an individual song, speech, or video, and interpret “media content” to mean any form of media content that, when translated from the signal-form in which it is transmitted, is discernible to humans.

*E. Anticipation Ground Based on Takahisa*

Petitioner contends that claims 11, 14–16, and 18 are anticipated by Takahisa under 35 U.S.C. § 102(b), citing the testimony of Vijay Madiseti, Ph.D., as support. Pet. 24–47 (citing Ex. 1003). We are persuaded that

Petitioner has established a reasonable likelihood of prevailing on this asserted ground as to claims 11, 14–16, and 18.

*1. Takahisa*

Takahisa discloses “a system for transmitting data associated with audio or video program material to provide a listener or viewer with useful information regarding the program material.” Ex. 1004, col. 1, ll. 11–15. The disclosed system comprises transmission system 100 in communication with receiving system 200. *Id.* at col. 2, ll. 46–54, Figs. 1, 2. Transmission system 100 includes a “conventional radio broadcasting transmitter with main channel and subcarrier channel input capabilities, such as that typically installed in modern FM broadcasting stations.” *Id.* at col. 3, ll. 48–52; *see also id.* at col. 1, ll. 16–28 (describing the RBDS standard). Program material recognizer 106 of transmission system 100 compares program material provided by various sources (e.g., a compact disc player) “with a database of known program material” and, if there is a match, “sends pertinent program data, for instance the title of the program material, the composer, and the performer, to data stream generator 105.” *Id.* at col. 3, ll. 56–64, col. 4, ll. 53–57. Data stream generator 105 converts the program data “into a form that may be directly applied to a conventional subcarrier channel input of transmitter 110.” *Id.* at col. 4, ll. 7–10.

Receiving system 200 includes antenna 211 for receiving the broadcast signal, demodulator 201 for demodulating the signal into “audio and data components,” data memory 205 for storing the “[d]ata associated with the program material,” and user interface apparatus 206 for displaying the data and permitting “user selection of portions of the transmitted data.” *Id.* at col. 6, ll. 14–41.

Figure 3 of Takahisa is reproduced below.

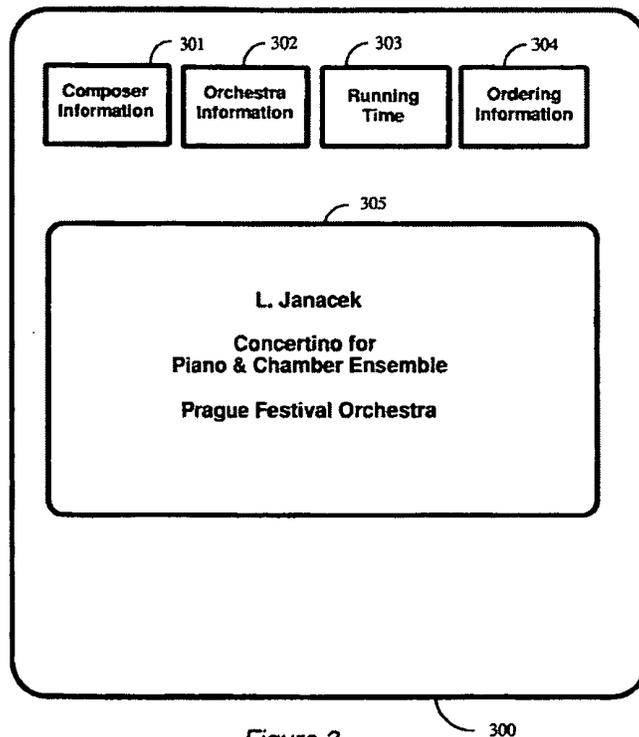


Figure 3

Figure 3 depicts display panel 300 of user interface apparatus 206. *Id.* at col. 7, ll. 8–9. “Display panel 300 includes four menu button areas 301–304 and a larger information window 305,” and, in a preferred embodiment, is a “conventional liquid crystal design, with conventional touch-screen technology being used to implement switches over the menu button areas 301–304.” *Id.* at col. 7, ll. 9–14. Information window 305 “indicates composer, title, and performer data stored in memory 205, corresponding to program material contemporaneously being received by receiving system 200.” *Id.* at col. 7, ll. 19–22. Menu button areas 301–304 allow the user to select various options, such as “requesting another screen with further information about this composer” (menu button area 301) or “requesting ordering information for this recording” (menu button area 304). *Id.* at col. 7, ll. 22–31.

Takahisa also describes an alternate embodiment in which “users may recall data from several preceding selections, if desired.” *Id.* at col. 8, ll. 26–28. “For example, if users hear a musical selection that they like, but that they do not realize they would like to order until after the selection is complete, they may still access ordering information for that selection after the next selection begins.” *Id.* at col. 8, ll. 28–32. “Conventional techniques well known to those skilled in the art may be used to store and retrieve such information from previous selections.” *Id.* at col. 8, ll. 32–34.

Figure 7 of Takahisa is reproduced below.

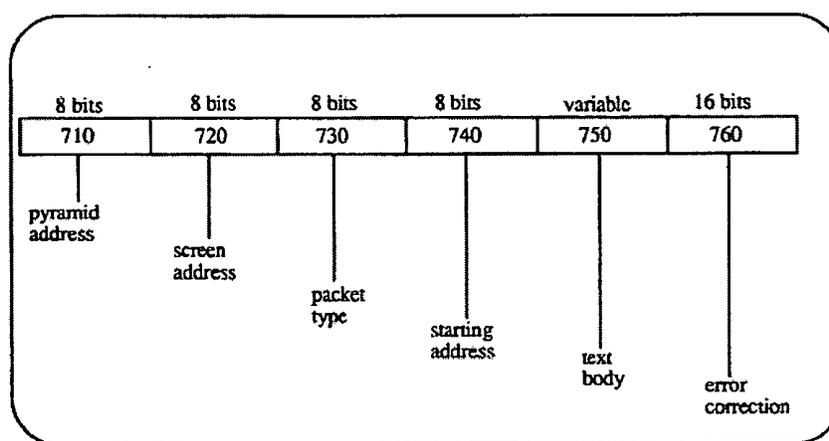


Figure 7

Figure 7 depicts data packet 700 used to communicate program data in the disclosed system. *Id.* at col. 9, ll. 10–11. “To provide a flexible structure for presenting data on a receiver display,” such as display panel 300 shown in Figure 3, “data are transmitted in variable-length packets” comprising several elements. *Id.* at col. 9, ll. 11–18. For example, 8-bit pyramid address 710 “identif[ies] the data to be sent as corresponding to a particular selection of program material. Thus, if a musical selection is being broadcast, all data pertaining to that musical selection will have identical pyramid addresses.” *Id.* at col. 9, ll. 14–20. 8-bit packet type identifier 730

“provides data indicative of whether the packet 700 is one providing screen text, one setting a parameter for such screen text (e.g., the font of the text), or one providing only control information.” *Id.* at col. 9, ll. 25–33.

Variable-length text body segment 750 contains the text to be displayed on display panel 300. *Id.* at col. 9, ll. 42–44.

## 2. Claim 11

Petitioner argues that Takahisa discloses all of the limitations of claim 11. Pet. 24–41.

With respect to the preamble of claim 11,<sup>5</sup> Petitioner contends that Takahisa discloses a method for correlating “media content identifying data” (i.e., composer, title, and performer information contained in text body segment 750 of data packet 700) with a “broadcast segment” (i.e., a broadcasted program, such as a song) received by a “communication device” (i.e., receiving system 200). *Id.* at 24–27. Petitioner argues that Takahisa’s system correlates media content identifying data with a broadcast segment by displaying “the data that is associated with the particular song that is being played by the user.” *Id.* at 27.

With respect to limitation 11[a], Petitioner contends that Takahisa discloses receiving (via receiving system 200 with antenna 211) a “broadcast stream” (i.e., FM radio broadcast signal containing a stream of multiple

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<sup>5</sup> Based on the current record, we determine that the preamble is limiting because the body of the claim refers to the preamble for antecedent basis for the terms “media content identifying data,” “at least one broadcast segment,” and “communication device.” See *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) (“When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention.”).

songs) comprising “at least one broadcast segment and associated media content.” *Id.* at 28–29. Petitioner argues that “each song or advertisement (in its signal form) is a distinguishable portion of the broadcast stream, and, when translated from signal-form by the computer, each song or advertisement is discernible to humans.” *Id.* at 29. Petitioner’s argument is premised on its proposed interpretations of “broadcast segment” and “media content,” with which we preliminarily agree for the reasons explained above. *See id.* at 28–29; *supra* Section II.D.

With respect to limitation 11[b], Petitioner argues that receiving system 200 receives a “data stream” (i.e., stream of data packets 700) comprising the “media content identifying data compris[ing] at least one element” (i.e., at least one of the composer, title, and performer information contained in text body segment 750 of data packet 700). Pet. 30–32.

With respect to limitation 11[c], Petitioner contends that Takahisa discloses extracting (using the components of receiving system 200 depicted in Figure 2, including microprocessor 204) the composer, title, and performer information for a song from the stream of data packets, associating each piece of information with media content. *Id.* at 32–34. According to Petitioner, the fact that Takahisa displays the information on a display panel “as the user listens to the song/advertisement” shows that the system is performing the recited associating. *Id.* at 34.

With respect to limitation 11[d], Petitioner argues that Takahisa discloses storing in an “electronic memory” (i.e., data memory 205) the composer, title, and performer information for a song. *Id.* at 34–35. Petitioner asserts, with supporting testimony from Dr. Madisetti and citations to various disclosures in Takahisa, that a person of ordinary skill in the art would have understood that the composer, title, and performer

information for a particular song “are ‘aggregated’ into an ‘identifying data aggregate’ for that particular song and broadcast segment, and that the identifying data aggregates are saved in the computer’s main memory.” *Id.* at 35 (citing Ex. 1003 ¶ 133; Ex. 1004, col. 6, ll. 15–32, col. 7, ll. 18–22). Further, because the user in Takahisa can access a history of previous songs that were played, an ordinarily skilled artisan would have understood from Takahisa’s disclosures that “previously played songs/broadcast segments are aggregated into a history aggregate—which is an aggregate of song aggregates.” *Id.* at 36 (citing Ex. 1003 ¶¶ 134–135; Ex. 1004, col. 8, ll. 22–34).

With respect to limitation 11[e], Petitioner argues that at least one “broadcast segment” (i.e., a distinguishable portion of the radio broadcast, such as a song or advertisement, broadcasted in signal-form) in Takahisa is “corollary” to (i.e., related to) a “media content” (i.e., the media of a song or advertisement translated from signal-form to an audible form discernible to humans). *Id.* at 37.

With respect to limitation 11[f], Petitioner contends that Takahisa discloses displaying (via display panel 300) the composer, title, and performer information for a song that was received and stored in memory. *Id.* at 37–41.

Patent Owner in its Preliminary Response argues that Petitioner’s anticipation ground is deficient for two reasons. First, Patent Owner contends that we should “disregard[]” and give “no weight” to Dr. Madisetti’s declaration because many paragraphs of the declaration are “a verbatim copy of the attorney argument in the Petition, with the mere addition of boilerplate phrases, such as ‘it is my opinion that.’” Prelim. Resp. 23–29 (citing Ex. 1003 ¶¶ 103–125, 127, 128, 130–166).

The weight that is afforded a declarant's testimony depends on the level of detail and substantive analysis in the declaration. Cursory or insufficiently explained testimony typically is given less weight than detailed, well-explained, and supported testimony. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). We evaluate Dr. Madisetti's testimony in that context, and do not agree that his declaration should be disregarded in its entirety. Although Patent Owner is correct that some paragraphs of his declaration mirror the arguments in the Petition, much of that testimony includes quotations from Takahisa itself and Dr. Madisetti's opinions as to what a person of ordinary skill in the art would have understood those disclosures to mean. *See* Ex. 1003 ¶¶ 104–147. Patent Owner will have the opportunity to cross-examine Dr. Madisetti and explore the bases for his statements, and our ultimate determination of the weight to be given to his testimony will be based on the complete record at the end of trial. At this early stage, however, we cannot say that his testimony should be disregarded in its entirety, as Patent Owner contends.

Second, Patent Owner argues that Petitioner's anticipation ground “lack[s] particularity” and is “not sufficiently developed” under 35 U.S.C. § 312(a)(3). Prelim. Resp. 29–30. According to Patent Owner, Petitioner fails to show that Takahisa discloses all of the limitations of claim 11 and “[t]o the extent Petitioner relies on common knowledge of a [person of ordinary skill in the art] to supply those limitations (which would convert Petitioner's anticipation ground into an obviousness argument), Petitioner neither makes that reliance apparent nor provides any factual evidence to support such reliance.” *Id.* at 30.

We disagree based on the current record. Patent Owner does not identify any particular limitation of claim 11 for which Petitioner allegedly has made an insufficient showing or relied on common knowledge. Indeed, the words “common knowledge” do not appear in the Petition. Rather, it appears that Petitioner in a number of contexts argues that a person of ordinary skill in the art would have understood statements in Takahisa to disclose limitations of claim 11. *See* Pet. 28–29, 33–38.

For example, when discussing the audio component of Takahisa’s broadcast signal, Petitioner points to Takahisa’s statement that “[a]udio program information from demodulator 201 [in receiving system 200] is applied to conventional program material reproduction circuitry 202” and asserts that a person of ordinary skill in the art would have understood circuitry 202 to be, for example, “speakers for playing audio material to the listener.” *Id.* at 28–29, 38 (quoting Ex. 1004, col. 6, ll. 24–26). Dr. Madisetti further explains that it is electronic circuitry in circuitry 202 that allows the signal to be “reproduced in audible form for the listener.” Ex. 1003 ¶¶ 117, 141. Based on the current record, Petitioner’s analysis is consistent with the disclosure of Takahisa and persuasive. Although Takahisa does not use the word “speakers,” it expressly discloses that its system allows a “listener” to receive information about program material, audio originates in what may be a “typical radio broadcast station” broadcasting FM radio, receiving system 200 receives the broadcast signal in signal-form, and demodulator 201 demodulates it “into audio and data components in a conventional manner,” where “[a]udio program information” is “applied” to circuitry 202 and data is error corrected, processed, stored, and displayed. Ex. 1004, col. 1, ll. 11–15, col. 3, ll. 41–52, col. 6, ll. 17–32.

Similarly, when addressing limitation 11[d], Petitioner argues that a person of ordinary skill in the art would have understood, based on how Takahisa discloses storing composer, title, and performer information for a particular song, that the individual pieces of information for that song are stored as an “identifying data aggregate[.]” Pet. 35–36; *see* Ex. 1003 ¶¶ 133–136. Again, based on the current record, Petitioner’s analysis is consistent with the disclosure of Takahisa and persuasive. Although Takahisa does not use the word “aggregate,” it repeatedly describes the three pieces of information about a song together, shows them being displayed on a single display panel in Figure 3, and expressly discloses that they are stored in data memory 205 and that information is sent to receiving system 200 in text body segment 750 of data packets 700, with pyramid address 710 identifying the data as being for a particular “musical selection.” Ex. 1004, col. 3, ll. 60–64, col. 6, ll. 27–33, col. 7, ll. 18–31, col. 9, ll. 14–20, 42–44.

Whether a reference anticipates is assessed from the perspective of an ordinarily skilled artisan. *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1336 (Fed. Cir. 2008) (“[T]he meaning of a prior art reference requires analysis of the understanding of an artisan of ordinary skill.”). Anticipation is established when “one skilled in the art would reasonably understand or infer from the prior art reference’s teaching that every claim [limitation] was disclosed in that single reference.” *CRFD Research, Inc. v. Matal*, 876 F.3d 1330, 1338 (Fed. Cir. 2017) (citation omitted); *accord Acoustic*, 949 F.3d at 1373. “Expert testimony may shed light on what a skilled artisan would reasonably understand or infer from a prior art reference.” *Acoustic*, 949 F.3d at 1373; *accord Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368–69 (Fed. Cir. 2003) (“Typically, testimony concerning anticipation must be testimony from one skilled in the art and must identify

each claim element, state the witnesses' interpretation of the claim element, and explain in detail how each claim element is disclosed in the prior art reference." (citation omitted)). Based on the current record, and given the cited support from Takahisa itself and the level of ordinary skill in the art determined above, we disagree that Petitioner and Dr. Madiseti's explanations as to what a person of ordinary skill in the art would have understood Takahisa to disclose are insufficiently particular or developed.<sup>6</sup> *See supra* Section II.C.

We are persuaded, based on the current record, that Petitioner has made a sufficient showing that Takahisa discloses all of the limitations of claim 11. Accordingly, Petitioner has shown a reasonable likelihood of prevailing on its assertion that claim 11 is anticipated by Takahisa.

### 3. *Claims 14–16 and 18*

Claims 14–16 and 18 depend from claim 11. Petitioner explains how each limitation of the dependent claims is disclosed by Takahisa. *See* Pet. 42–47. For example, claim 15 recites that

the association of the data stream with the broadcast stream is at least one of the following: the data stream is frequency multiplexed with the broadcast stream, the data stream is time multiplexed with the broadcast stream, the data stream is transmitted independently from the broadcast stream, the data stream is encoded in the broadcast stream.

Petitioner argues that Takahisa's data stream generator 105 includes NHK encoder 152, which encodes data via a protocol using minimum-shift

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<sup>6</sup> To the extent the parties disagree as to the interpretation of "identifying data aggregate" in claim 11, the parties are encouraged to provide in their papers during trial proposed interpretations for the term and cite support in the Specification of the '028 patent for their respective interpretations.

keying (MSK), which is “a type of continuous phase frequency shift keying” and would have been understood by a person of ordinary skill in the art to be “a type of frequency multiplexing.” *Id.* at 43–44. Petitioner’s contentions are supported by the testimony of Dr. Madisetti and are persuasive based on the current record. *See id.* at 42–47; Ex. 1003 ¶¶ 148–166. Patent Owner addresses Petitioner’s anticipation ground as a whole and does not argue the challenged dependent claims separately. *See* Prelim. Resp. 23–30. Based on the current record, we disagree with Patent Owner’s arguments for the reasons explained above. *See supra* Section II.E.2. On this record, we are persuaded that Petitioner has shown a reasonable likelihood of prevailing on its assertion that claims 14–16 and 18 are anticipated by Takahisa.

*F. Obviousness Ground Based on Mackintosh*

Petitioner contends that claims 11, 14–16, and 18 are unpatentable over Mackintosh under 35 U.S.C. § 103(a). Pet. 47–75. Patent Owner argues that, like Petitioner’s anticipation ground, the obviousness ground based on Mackintosh fails because it relies on testimony from Dr. Madisetti that mirrors the arguments in the Petition. Prelim. Resp. 30–35. As explained above, we do not agree that his declaration should be “disregarded” in its entirety and instead assign weight based on the level of detail and substantive analysis in the declaration. *See id.; supra* Section II.E.2. Regardless, given our determination that Petitioner has demonstrated a reasonable likelihood of prevailing on its asserted ground based on Takahisa, we also institute a trial on Petitioner’s other asserted ground based on Mackintosh. *See PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting 35 U.S.C. § 314 to require “a simple yes-or-no institution choice respecting a petition, embracing all

challenges included in the petition”); Trial Practice Guide at 5–6 (“In instituting a trial, the Board will either (1) institute as to all claims challenged in the petition and on all grounds in the petition, or (2) institute on no claims and deny institution.”).

### III. CONCLUSION

Based on the arguments presented in the Petition, we conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the ’028 patent challenged in the Petition. Accordingly, we institute a trial on all claims and all grounds asserted in the Petition. The Board has not made a final determination under 35 U.S.C. § 318(a) with respect to the patentability of the challenged claims.

### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 11, 14–16, and 18 of the ’028 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the ’028 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

IPR2021-00716  
Patent 8,688,028 B2

FOR PETITIONER:

Eric S. Lucas  
David J. Cooperberg  
SHEARMAN & STERLING LLP  
eric.lucas@shearman.com  
david.cooperberg@shearman.com

FOR PATENT OWNER:

John Scheibeler  
Jonathan Lamberson  
Ashley T. Brzezinski  
WHITE & CASE LLP  
jscheibeler@whitecase.com  
jonathan.lamberson@whitecase.com  
ashley.brzezinski@whitecase.com