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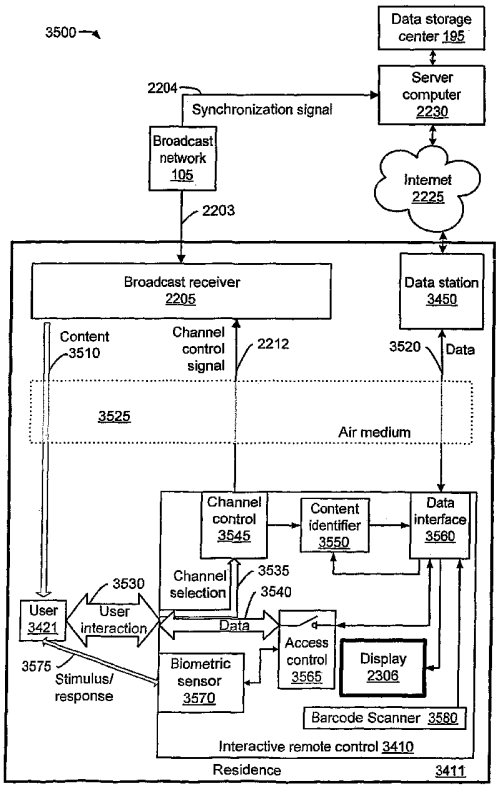

(57) Abstract: A remote control that tunes an appliance, such as a television or a radio, can scan marks on physical media, such as barcodes on products, publications, and print media. The remote control can present a user with a question regarding advertising content on a physical medium to immerse the user in such advertising content. The user can receive a reward, such as a coupon for a discounted purchase, for correctly answering the question. The remote control can generate a shopping list by scanning and identifying products that a consumer or household consumes. A remote server that is affiliated with a particular manufacturer or distributor can maintain the shopping list as a consumer service. The shopping list service can be, a vehicle for promoting product brands associated with the manufacturer or distributor.

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METHOD AND SYSTEM FOR INTERACTING WITH A WRITING

TECHNICAL FIELD

The present invention relates to remote control devices for tuning broadcast receivers, such as televisions, and more specifically to interactive remote controls that can read barcodes from products and printed materials and can display content, such as questions about such items.

BACKGROUND

In the traditional advertising model, broadcast media (e.g., TV networks, radio stations, newspapers, magazines) develop entertainment content (e.g., a TV show) of interest to consumers. The consumers are persons who may use an Advertiser's commodity or service, and who view, hear, read, or otherwise absorb or become exposed to the entertainment content, as well as advertising content ("ads"). The Advertisers are entities that distribute the ads to induce the consumers to buy, use, or do something. The media deliver the entertainment content and the ads to the consumers (e.g., over the air, by cable transmission, by print media mass distribution, outdoor media, Internet, and private networks). Media may charge the consumers for the entertainment content delivery, but typically media receive most revenue from the Advertisers in exchange for delivering ads with the entertainment content.

Promoters initiate, develop, generate, and/or distribute entertainment content, attracting many of the consumers and, in turn, attracting the Advertisers. The Advertisers sponsor the entertainment content by paying the Promoters to deliver the ads with the entertainment content. Advertising fees generally increase as the number of the consumers exposed to the ads increases. The Promoters use the advertising fees to offset the Promoters' costs to produce and distribute the advertising content and to make a profit. The consumers usually do not pay to see, hear, or otherwise absorb or become exposed to the entertainment content. The consumers also do not receive payment for seeing, hearing, or otherwise absorbing or becoming exposed to the ads. The consumers' traditional reward is the ability to see, hear, and enjoy the entertainment content for little or no charge in exchange for tolerating the ads.

Recent technological advancements (i.e., the Internet) have caused an increase in possible entertainment outlets. With this increase, the consumers are distracted by multiple entertainment forms. As a result, the Advertisers have more difficulty reaching

mass numbers of the consumers. In addition, the Promoters have more difficulty guaranteeing that many of the consumers will watch, hear, read, or otherwise absorb or become exposed to the entertainment content and the ads. This phenomenon has led to lower advertising fees and lower profits for the Promoters.

The Advertisers' goal is to provide the consumers with memorable ads that include information on the Advertisers' product or service. However, the consumers typically ignore or avoid the ads. The consumers often "tune out," change the channel, skip a printed page, or walk away when the ads are presented. In addition, the consumers increasingly turn to less advertising-dependent entertainment forms (e.g., premium channels), or use technology (e.g., video recorders, personal recording devices (PRDs), remote controls, etc.) to skip the ads.

Perhaps the most ubiquitous device for avoiding advertising is the handheld remote control that allows a consumer to rapidly navigate among television channels. Remote controls have been recognized as the second most frequently used household appliance in the United States, behind only the refrigerator. Consumers often purchase new remote controls with enhanced features in conjunction with acquiring entertainment appliances such as televisions, stereos, digital versatile disc ("DVD") players, and video cassette recorders ("VCRs"). The new and enhanced remote control can interact with the acquired appliances as well as the consumer's preexisting or "legacy" appliances. While remote controls with capabilities for tuning one or more electronic appliances are widely available, hand-held devices that can facilitate interaction between readers and printed media are less common. Such hand-held devices are often limited to providing low-level textual interaction, for example reading printed words via optical character recognition ("OCR").

Advertising, whether delivered via a printed or an electronic medium, can be divided into two classes: mass media advertising and targeted advertising. Mass media advertising (e.g., over a broadcast network such as TV, cable, satellite, radio, newspaper, magazine, mass mail, mass e-mail, streaming Internet, etc.) sends broadly based advertising messages to a wide spectrum of the consumers. Mass media broadcasting of advertisements comprises presenting one or more advertisements through the broadcast network such that anyone receiving the broadcast network receives the same advertising content, regardless of the person's demographics or other criteria. For example, each

person tuning into the same TV channel, streaming Internet website, or radio station, or reading the same magazine page, newspaper page, or billboard, will receive the same entertainment and advertisement content. Accordingly, those advertisements comprise mass media broadcast advertisements. On the other hand, targeted advertising focuses on delivering specific, personalized advertising to the consumers that meet a demographic profile specified by the Advertisers. Mass media advertising is usually less expensive per impression than targeted advertising. However, targeted advertising is usually more effective and has become less expensive per impression as technology has progressed. As a result, the effectiveness of mass media advertising has been questioned.

Both mass media advertising and targeted advertising find value in estimating the size and demographics of the audience for each segment of content offered to the consumers. Characterization of the audience facilitates a promoter pricing advertisement delivery at a level that accurately reflects value. With the proliferation of networking technologies, consumers often have an array of media alternatives from which a specific content selection can be made. This array of alternatives causes complexities in conventional methods for estimating audiences. For example, a segment of an audience that could be statistically insignificant from a mass advertising perspective might be a very significant portion of a highly targeted audience.

Often, one or more private content distribution networks offer content choices to a consumer or household of consumers. The access controls of such private networks can limit accurately estimating and characterizing an audience for a specific content segment. For example, an owner of a private network, such as a cable television network, may restrict access to the network, thus hampering audience estimation by an independent party.

In one conventional approach to audience estimation, a content distribution network broadcasts content choices to each broadcast receiver, such as a television, on the network. Each broadcast receiver interfaces with the content distribution network via a device, known as a set top box, through with a consumer can make a channel selection to show content on a specific channel. Recording the channel selections on a representative sample of set top boxes provides data that can be processed to estimate the audience. For such audience estimation, the set top boxes involved in audience estimation send the channel selections upstream on the broadcast network to a central site which aggregates

the data from each set top box. One drawback of this arrangement is that sending the channel selection upstream on the broadcast distribution network typically requires a content distribution network that is bidirectional, and many content distribution networks are unidirectional or lack sufficient upstream bandwidth.

Another potential issue with characterizing an audience based on information from a set top box is that the set top box resides on the content distribution network and consequently may not be independent from the business entities involved in content distribution. Since the results of the audience characterization may financially impact those business entities, their motivation to conduct an unbiased estimation of the audience may conflict with their financial motivations.

Audiences may comprise households of people that consume a variety of products, such as food, cleaning supplies, clothing, sporting goods, toys, etc. These consumers often have busy lifestyles that leave little time for tracking or managing a household's stock of products, for example to replenish depletable items. Unexpectedly running out of a needed product, such as a laundry detergent, the consumer may hurry to a convenience store to purchase whatever brand the store carries, often at a premium price. Thus, impromptu purchases and unstructured management of a household's inventory of products can lead to consumers acquiring products of undesirable brands at high prices. For a manufacturer or promoter of a brand that the consumer prefers or should prefer, unmanaged or unplanned product purchases can result in lost sales when the consumer purchases a competitive product.

To address those representative deficiencies in the art, a need exists for enhancing an audience's interaction with a broadcast and engaging active audience participation. A need also exists for a cost-effective, entertaining, rewarding, and effective way of enticing consumers to become immersed in printed content to a level that stimulates a product purchase or achieves brand recognition. Another need exists for a handheld device that a consumer can use to interact with both appliances that deliver electronic-based content and printed materials such as newspapers, magazines, books, and product packages. Another need exists for managing a household's stock of products to benefit the household's consumers and the suppliers of these products. Yet another need exists for characterizing an audience of a broadcast without bias and without using the network that broadcasts content to consumers. A capability fulfilling these needs would offer an audience a more

rewarding experience while offering Advertisers and Promoters a heightened level of advertising effectiveness.

SUMMARY OF THE INVENTION

The present invention supports interacting with the contents of writings such as printed materials, publications, newspapers, magazines, products, product packaging, or other physical media having attached text or graphics. Engaging a reader in interacting with a writing can stimulate the reader to respond favorably to advertising or promotional content of the writing.

In one aspect of the present invention, a hand-held device can scan a machine-readable mark from a writing that a user is viewing and transmit data associated with the mark to a computer at a remote site. The machine readable mark can identify the writing or the content of the writing and can comprise a barcode, for example. The remote computer can generate a question about the content of the writing and send the question back to the hand-held device. The question can concern advertising content of the writing, a product associated with the writing, or another aspect of the writing's content. The hand-held device can display the question to the user. The user can respond to the question by entering an answer to the question into the hand-held device. The hand-held device can send the user's answer to the remote computer for processing or evaluation. The remote computer can return an evaluation of the user's answer to the hand-held device, which can display the evaluation results to the user. If processing at the remote computer determines that the answer is acceptable, the user can receive a reward. The user's reward can be a product discount, a coupon, a free product, or entry in a contest, for example.

In another aspect of the present invention, the hand-held device or another household device can identify products that a consumer or a household consumes. A scanner, barcode reader, or radio frequency identification system can identify a product by scanning the product, the product's package, or a writing associated with the product. A computer-based processing center can compile a list of products that the consumer has consumed. The list can comprise a shopping list. The computer-based processing center can have a financial motivation to promote one or more specific brands of products in preference to other products that may be competitive. When the consumer consumes a

product of one brand, the computer-based processing center can promote another brand by offering the consumer an enticement to switch brands. Such an enticement can comprise, for example, a financial incentive, a coupon, a discount, a free product, or an entry into a contest for a prize. The shopping list can include a reference to the enticement. A discount or coupon can be electronically attached to the shopping list in association with an entry corresponding to a consumed product. That is, the shopping list can comprise appended promotional sales terms. The computer-based processing center can communicate the shopping list to a store or other sales outlet that can provide the consumer with the products specified on the shopping list. The purchase price of the products can take into account applicable discounts, coupons, or other purchase enticements.

In another aspect of the present invention, the hand-held device can remotely control a household appliance that receives signals broadcast over a broadcast network. The household appliance can comprise a radio or television and can receive signals via a cable, satellite, radio, or television network, for example. The user of the hand-held device can swap between using the device for channel selection of the appliance and interacting with a writing.

In yet another aspect of the present invention, the user of the hand-held device can interact with content presented on a broadcast receiver, which can comprise a television or other household appliance coupled to a communication infrastructure. Interacting with content can include responding to advertisements shown on the broadcast receiver. A user can place an order for a product advertised on television, for example. The hand-held device can present a question to the user about a televised commercial or advertisement. The user can receive a reward for correctly answering such a question. Querying users about televised advertisements can promote audience attentiveness, facilitate product purchases, and enhance brand awareness.

Those and other aspects, objects, and features of the present invention will become apparent from the following detailed description of the exemplary embodiments, read in conjunction with, and reference to, the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram illustrating the components of a system according to an exemplary embodiment of the present invention.

Figure 2 is a flow diagram illustrating an overview of an exemplary CRĀV Ad process according to an exemplary embodiment of the present invention.

Figure 3 is a flow diagram illustrating an exemplary process describing how the Promoters sell the CRĀV Ads to the Advertisers according to an exemplary embodiment of the present invention.

Figure 4 is a flow diagram illustrating an exemplary process describing how the Promoters and the Advertisers use the broadcast network to promote future CRĀV Ads according to an exemplary embodiment of the present invention.

Figure 5 is a flow diagram illustrating an exemplary process describing how the privacy option applies according to an exemplary embodiment of the present invention.

Figure 6 is a flow diagram illustrating an exemplary process describing how the Promoters use the broadcast network, the device, the information gathering system, and the data storage center to communicate the CRĀV Ads to the consumers and to interact with the consumers according to an exemplary embodiment of the present invention.

Figure 7 is a flow diagram illustrating an exemplary process describing how the Promoter communicates the alert, the vignette, and the query using the broadcast network according to an exemplary embodiment of the present invention.

Figure 8 is a flow diagram illustrating an exemplary process describing how the consumers answer the CRĀV Ads according to an exemplary embodiment of the present invention.

Figures 9A and 9B, together comprising Figure 9, are picture diagrams illustrating an exemplary nationwide network for gathering CRĀV Ad responses according to an exemplary embodiment of the present invention.

Figure 10 is a picture diagram illustrating how the information gathering system sends the registration and the response information to the data storage center according to an exemplary embodiment of the present invention.

Figure 11 is a flow diagram illustrating an exemplary process describing how the Promoters select winners and distribute prizes.

Figure 12 is a flow diagram illustrating an exemplary process describing an overview of a CRĀV Ad process according to an exemplary embodiment of the present invention.

Figure 13 is a flow diagram illustrating an exemplary process describing how the ad slots are sold according to an exemplary embodiment of the present invention.

Figure 14 is a chart illustrating how the ad price is determined according to an exemplary embodiment of the present invention.

Figure 15 is a picture flow diagram illustrating an exemplary CRĀV Ad process for ABS and ACME to promote future CRĀV Ads according to an exemplary embodiment of the present invention.

Figure 16 is a chart illustrating a CRĀV record according to an exemplary embodiment of the present invention.

Figure 17 is a flow chart illustrating how ABS broadcasts the CRĀV Ads according to an exemplary embodiment of the present invention.

Figure 18 illustrates the CRĀV Ad the consumers see according to an exemplary embodiment of the present invention.

Figure 19 is a flow diagram illustrating how the CRĀV Ads are answered by the consumers in an exemplary embodiment.

Figure 20 is a flow diagram illustrating how the data storage center selects winners and distributes prizes according to an exemplary embodiment of the present invention.

Figure 21 illustrates a CRĀV Ad broadcast over a convergence of mass media formats according to an exemplary embodiment of the present invention.

Figure 22 is a block diagram depicting a system for remotely interacting with broadcast content according to an exemplary embodiment of the present invention.

Figure 23 is block diagram depicting an interactive remote control according to an exemplary embodiment of the present invention.

Figure 24 is a flowchart depicting a method for remotely interacting with broadcast content according to an exemplary embodiment of the present invention.

Figure 25 is a flowchart depicting a method for tuning a broadcast receiver to the desired station channel according to an exemplary embodiment of the present invention.

Figure 26 is a flowchart illustrating a method for presenting a query on the interactive remote control according to an exemplary embodiment of the present invention.

Figure 27 is a flowchart depicting a method for communicating a response to the query via the interactive remote control according to an exemplary embodiment of the present invention.

Figure 28 is a flowchart depicting a method for remotely controlling presentation of broadcast content according to an exemplary embodiment of the present invention.

Figure 29 is a flowchart depicting a method for tuning a broadcast receiver to the station channel on which the receiver will present broadcast content according to an exemplary embodiment of the present invention.

Figure 30 is a block diagram depicting an interactive remote control according to an alternative exemplary embodiment of the present invention.

Figure 31 illustrates the form factor of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 32 is a flow chart depicting a method for real-time capturing of audience share information for broadcast content according to an exemplary embodiment of the present invention.

Figure 33 is a flow chart depicting a method for determining whether a particular recipient received broadcast content according to an exemplary embodiment of the present invention.

Figure 34 is a functional block diagram illustrating residences coupled to a broadcast network and to the Internet according to an exemplary embodiment of the present invention.

Figure 35 is a functional block diagram illustrating a residence with a user of an interactive remote control interacting with a broadcast receiver coupled to a broadcast network and a with data network according to an exemplary embodiment of the present invention.

Figure 36 is a functional block diagram illustrating an interactive remote control with a biometric sensor according to an exemplary embodiment of the present invention.

Figure 37 is a functional block diagram illustrating an access control module of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 38 is a functional block diagram illustrating a transmitter module of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 39 is a functional block diagram illustrating a data station coupled to an interactive remote control and to the Internet according to an exemplary embodiment of the present invention.

Figure 40 is a functional block diagram illustrating an interactive remote control with a speaker and a microphone according to an exemplary embodiment of the present invention.

Figure 41 is a functional block diagram illustrating a processor of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 42 is a flow chart illustrating a process for controlling access to features of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 43 is a flow chart illustrating a process for identifying an authorized user of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 44 is a flow chart illustrating a process for characterizing an unknown user of an interactive remote control according to an exemplary embodiment of the present invention.

Figure 45 is a functional block diagram illustrating a user in a residence interacting with an interactive remote control that tracks viewership of content by monitoring the channel selections entered by the user into the interactive remote control according to an exemplary embodiment of the present invention.

Figures 46A and 46B are flow charts illustrating a process for identifying content presented on a broadcast receiver by monitoring the tuning commands input by a user into an interactive remote control according to an exemplary embodiment of the present invention.

Figure 47 is a functional block diagram illustrating an interactive remote control with a barcode scanner according to an exemplary embodiment of the present invention.

Figure 48 illustrates an interactive remote control scanning a paper and displaying a question regarding printed content of the paper according to an exemplary embodiment of the present invention.

Figure 49 is a flow chart illustrating a process for interacting with printed content using an interactive remote control according to an exemplary embodiment of the present invention.

Figures 50A and 50B are a flow chart illustrating a process for scanning products with an interactive remote control according to an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

The interactive remote query-response device according to the present invention can allow a recipient to interact with broadcast content without moving from the viewing or listening area in which the broadcast content is presented. For example, the recipient can view broadcast content and can respond to a query about the broadcast content via the interactive remote query-response device coupled to the Internet. Accordingly, the recipient does not have to leave the viewing area to respond to the query from a personal computer, and the consumer does not have to carry a separate personal computer such as a laptop computer or personal digital assistant. The interactive remote query-response device also can automatically or manually tune a broadcast receiver to the station channel upon which the broadcast content will be presented.

Promoters can increase an ad's appeal via interaction via the present invention, while substantially and cost-effectively enhancing an Advertiser's promotion and retention of its products and services. When compared to traditional mass media advertising, an exemplary embodiment delivers ads that cause the consumers to fully immerse themselves in the ad. An exemplary embodiment can deliver ads in print, by radio, by TV, as a game show, or by any other method that communicates with the consumers.

Immersion is a heightened attention level that causes the consumers to remember the ads. Immersion is the highest, most effective, and valuable attention level. Immersion

helps the Advertisers achieve a maximized share of the consumers' mind for their product. Products are remembered easier and faster than competing products.

Immersion is enhanced by several methods. First, immersion is enhanced when the ad triggers an immediate emotional response within the brain, such as a warning or alert signal. This signal causes the consumers to pay more attention to the ads, and increases the likelihood the consumers will remember the ads. When the consumers interact with the ads, as opposed to passively viewing or hearing the ads, the consumers are more likely to remember the ads. A memorization request also increases immersion by testing the consumers' ability to recall the ads. In addition, extended exposure, which is obtained by a longer effective ad length, increases the likelihood of immersion. Effective length begins from the first moment one recognizes the brand advertised. Another advertising technique that increases immersion is using alternate, multiple media vehicles for distributing advertising (i.e., using print or Internet-based advertising simultaneously, or following, TV advertising). Rewards also help to create immersion because the consumers like challenges and rewards, and likable ads are more readily and easily recalled.

CRĀV Ad Description

Consumer Rewarded Advertising Vehicle Immersive Ad Bundles ("CRĀV Ads") provide a process for Promoters to increase viewership and immersion, as described in U.S. Patent No. 6,606,745, which is hereby fully incorporated herein by reference. A CRĀV Ad example will be discussed while referring to Figure 18 later in this document. However, for purpose of defining the CRĀV Ad, it is useful to refer to Figure 18 at this time.

Turning now to Figure 18, an exemplary CRĀV Ad is displayed. The CRĀV Ad is an ad including at least an advertising vignette ("vignette") 1810 and a verification query ("query") 1820. An immersion alert ("alert") 1805 also can be included. In addition, an optional correct answer ("answer") 1830 may be added. Those parts create a CRĀV Ad that may be any duration. The CRĀV Ad may be visual and/or audible. The CRĀV Ad may be spoken, printed, displayed, heard, or communicated by any other possible means, or any combination of possible means. A CRĀV Ad, or a series of CRĀV Ads, may also be the basis for an entire show.

Some or all of the components of the query 1820 may be "detached" from the vignette 1810 (i.e., the vignette 1810 may be in print and the query 1820 may be posted on-line or by phone). In addition, the response time for the query 1820 may be limited to cause the consumers to memorize the vignette 1810 for expedited recall (from memory) when asked the query 1820. Similarly, the alert 1805 and/or the answer 1830 may be detached from the vignette 1810 and/or the query 1820. Accordingly, the vignette, query, alert, and offer of a reward can be communicated via the same communications media or different communications media. The communications media can comprise a broadcast network 105 or a response device 111.

The alert 1805, which is optional (as indicated by the dashed lines), is a warning to the consumers that the upcoming vignette 1810 should be memorized so the consumers may become eligible to win a reward. The alert 1805 could be any cue or operational procedure that leads the consumers to believe that immersion may lead to a reward. The alert 1805 may be as simple as a logo (such as a CRĀV logo), a sound, or some other discrete notice. The alert 1805 may also include much more extensive data. The alert 1805 may include the product's brand name and information on the identity of the available rewards. By providing branding during the alert 1805, the Advertisers effectively begin the CRĀV Ad's exposure time. The alert 1805 is an urgency signal and a memorization request. Those advertising techniques increase the likelihood of the consumer remembering the ad. The alert 1805 may be any duration.

Following the alert 1805, a vignette 1810 is broadcast. The vignette 1810 may be a conventional commercial for a product or service or any other information designed for presentation to a consuming audience. This may include key product or service benefits, pricing information, image building information, etc. The vignette 1810 may be any duration.

Following the vignette 1810 broadcast, the query 1820 is broadcast. The query 1820 includes one or more questions. One question may be linked to the vignette 1810. This question is designed to require the consumers to remember certain information. The other questions may ask for public opinion, trivia, or other information, and those questions may be asked on-line or off-line. The query 1820 questions may be displayed on a separate screen following the vignette 1810, asked by a crawl-line below the entertainment content, or shown in an alternative way, such as off-line. The query 1820

may serve to increase the effective length of the CRĀV Ad, even though the traditional ad (i.e., video or audio clip) extends for a conventional duration, because the consumers must continue concentrating on the product as advertised during the immersion verification and query-response process. During the query 1820, the Promoters or the Advertisers may provide potential multiple choice answers or require the consumers to provide the answer without the aid of multiple choice answers. The query 1820 includes one or more questions and may include reward information, registration or login instructions, multiple choice answers, a "time remaining" counter, and brand information. The CRĀV Ad may end following the query 1820.

The answer 1830 may be added and is optional, as shown by the dashed lines in the answer 1830. The answer 1830 extends the CRĀV Ad's effective length. The answer 1830 includes the answer or answers to the query's 1820 one or more questions, where applicable. The answer 1830 also may include logo or other information. The answer 1830 may be broadcast via a TV medium, or distributed by an alternate communications medium (e.g., radio, print, Phone 145, Internet 130).

Another option, called the "sneak peek" vignette, may be incorporated. The sneak peek may be identical to the CRĀV Ad vignette 1810. The sneak peek may also contain other information to help the consumers answer the query 1820. The sneak peek is not shown during the actual CRĀV Ad, but is shown prior to the CRĀV Ad. The sneak peek may be featured several minutes, hours, days, weeks, etc. before the CRĀV Ad. The sneak peek vignette may be indicated by a logo, sound, or another method. Alternatively, the consumers may be informed only that the sneak peek will occur at some point during a particular show. The consumers are told one or more ads are CRĀV Ad sneak peek vignettes. The consumers will then pay greater attention to the particular commercial, or all the possible commercials so they may get additional information to help them answer the CRĀV Ad query 1820. For example, a sneak peek could read: "1 of the following 6 ads will be featured in a CRĀV Ad next Sunday. Please pay attention to ALL of them, because we will not tell you at this time which ad is the CRĀV Ad." This same process could apply to the vignettes, in addition to the Sneak Peaks. Thus, for example, during the communication of numerous ads, an alert in the form of a logo could appear on the corner of the ads, which are in the form of vignettes. After communicating the vignettes, one or more Queries with immersion verification questions for one or more of the vignettes

would be shown (i.e., at the bottom of the screen while the entertainment content continues). When the user calls, the user could be required to answer one or more of the shown immersion verification questions.

CRĀV Ad System

Figure 1 is a block diagram illustrating components of a system in accordance with an exemplary embodiment of the present invention. Turning to Figure 1, the CRĀV Ad system 100 includes a broadcast network 105, the consumers 110, an answering device ("device") 111, an information gathering system 112, and a data storage center 195. The consumers 110, the Advertisers, the Promoters, or other entities, use the present invention. The consumers 110 are the recipients of the ads and are persons who may use the Advertiser's commodity or service, who view, hear, read, or otherwise absorb the entertainment content and the ads. The Advertisers are entities that distribute the ads to induce the consumers to buy, use, or do something. The Promoters initiate, develop, generate, and/or distribute entertainment content attracting many of the consumers, and in turn attracting the Advertisers. While the invention is described in the context of the consumers, the Advertiser, and the Promoters, those experienced in the art will recognize that other entities can be used.

The broadcast network 105 is a means of connecting the consumers 110 with the entertainment content and the ads. The broadcast network can comprise TV, cable, radio, printed media (magazines, newspapers) outdoor media (billboards, signs, buses) mass mail, mass e-mail, streaming Internet, private networks, or any other mass media broadcast.

The device 111 is a means of communicating the registration and the response information to the information gathering system 112. The device 111 also can be a means of communicating with the consumers 110 by broadcasting an immersion verification question and other questions, and subsequently forwarding related registration and response information to the information gathering system 112. The information gathering system 112 is a means of forwarding the registration and the response information to the data storage center 195. The data storage center 195 is a means for storing the registration and response information.

The broadcast network 105 may include a Broadcast TV Network 120, a Private Network 125, a Cable Network 135, an Internet Network 130, a Satellite Network 140, or any Other Network 141 (e.g., newspaper). Those experienced in the art will recognize numerous communications networks and systems (including presently available systems and future systems) may be substituted or interchanged with the broadcast network 105. For example, the broadcast network 105 also can comprise any of radio, outdoor media (billboards, signs, buses), print media (newspapers, magazines), direct mail, or other broadcast network.

The response device 111 can comprise a Phone 145, a Personal Digital Assistant ("PDA") 150, an Interactive TV 155, an Internet Computer 130, a Hospitality Industry Private Network (i.e., a Sports Bar and Pub device) 165, or any other device 166. In an exemplary embodiment, the other response device 166 can comprise a printed response device, which can be completed by a consumer and delivered subsequently to the data storage center 195. For example, the printed response device can comprise a handwritten or typewritten response.

The devices 111 can include computer-related devices such as cellular phone networks, two-way pagers, and two-way contained network devices such as proprietary NTN systems found in numerous restaurants and pubs throughout the United States. Different instructions and methods may be used to register or answer. Those experienced in the art will recognize numerous devices (including presently available devices and future devices) may be substituted or interchanged as the device 111. In addition, those experienced in the art will recognize that one device 111 can be used to register, and another device 111 used to respond to the CRÃV Ad.

The information gathering system 112 may include numerous service providers ("SPs"), including a Phone Company SP 170, a PDA SP 175, a TV SP 180, an Internet SP 185, a Private Network SP 190, and any other information gathering system 191. For example, the other information gathering system 191 can comprise a private delivery network, such as the U.S. Postal Service, a facsimile machine, or other system. Those experienced in the art will recognize numerous distribution systems (including presently available systems and future systems) may be substituted or interchanged as the information gathering system 112.

The information gathering system 112 connects to a data storage center 195, which stores data gathered by the information gathering system 112. The data storage center 195 may include a Personal Data Center ("PDC") Database 197 and a Data Compiling and Storage ("DCS") Center Database 196. The data storage center 195 includes registration information and response information, random winner selection, and long-term storage of data collected for future data mining ventures. The PDC 197 stores the consumers' personal information, which may include the name, address, social security number (which is typically obtained only from prize winners for tax reporting purposes), personal ID number, phone number, etc. The DCS 196 may store demographic data collected during registration, a CRĀV ID, and CRĀV Ad query 1820 answers.

The data storage center 195 may also include a Privacy Database 199. The Privacy Database 199 is used when the Promoters decide to implement privacy protection for the consumers 110 that respond to the CRĀV Ads, who have provided personal and confidential data while registering. The Privacy Database 199 requires records from the PDC 197 and the DCS 196 to match before consumers' identities are matched with demographic and historical records. This matching helps ensure security, data protection, and isolation levels.

CRĀV Ad Process Overview

Figure 2 is a flow diagram illustrating an overview of an exemplary CRĀV Ad process. Turning now to Figure 2, an exemplary CRĀV Ad process 200 is initiated at the "START" step 201. In step 205, the Promoters sell the CRĀV Ads to the Advertisers. In step 210, the Promoters and the Advertisers use the broadcast network 105 to promote future CRĀV Ads. In step 215, the Promoters use the broadcast network 105, the device 111, the information gathering system 112, and the data storage center 195 to communicate the CRĀV Ads to the consumers 110 and to interact with the consumers 110. In step 220, the Promoters use the device 111, the information gathering system 112, and the data storage center 195 to gather the consumers' registration information and response information. In step 225, it is determined whether or not the registration and/or the response information will be used for purposes other than awarding prizes. If the answer to step 225 is "YES" and the registration and/or the response information will be used, the process moves to step 226, where the Promoters edit and/or distribute the

registration and the response information to the Advertisers and other interested entities. If the answer to step 225 is "NO" and the registration and the response information will not be used, the process moves directly to step 230. In step 230, the Promoters use the data storage center to select the winners and distribute the prizes. The process then proceeds to the "END" step 299 and terminates.

CRĀV Ads are Sold

Figure 3 is a flow diagram illustrating an exemplary process describing how the Promoters sell the CRĀV Ads to the Advertisers, as set forth in step 205 of Figure 2. Turning now to Figure 3, an exemplary CRĀV Ad process 205 is initiated at the "START" step 301. In step 305, the Promoters decide how many of the CRĀV Ads and the regular ads to communicate and how much to charge for each ad. In step 310, the Promoters sell the CRĀV ads and the regular ads. The process then moves to step 210 of Figure 2.

The CRĀV Ads may be priced in numerous ways. For example, the price may be dependent on the program's audience size (i.e., ratings), or may be priced based on an auction or bidding process, where the CRĀV Ads are rewarded to the highest bidder. To establish pricing, the Promoters may analyze the existing program profitability based on standard production, promotion, and broadcast costs. This may be offset by standard advertising fees for standard advertising. The Promoters' CRĀV Ad price may include the value of a larger audience size and a higher quality of immersion among consumers 110. This legitimizes a higher cost-per-minute advertising fee, with the additional fee revenues helping to offset CRĀV Ad reward costs, CRĀV Ad licensing and promotion costs, and query 1820 response management process costs.

When determining CRĀV Ad prices, the following may also be considered: the promotion costs, the simultaneous broadcast venues used, the number and type of immersion rewards, the number of questions in the query 1820 (i.e., immersion verification question, polling question, trivia-based questions of varied difficulties to reduce the number of fully correct responses), on-air versus off-air immersion verification responses, registration requirements, query 1820 response gathering methodology, and winner selection and prize awarding responsibility. The Promoters must also determine if the consumers 110 will be required to answer one or more special Advertiser-designed

questions during the immersion verification process. This market data may be very valuable to the Advertisers, and may further substantiate the fee being charged by the Promoters. The Promoters may also elect to add one or more special public opinion questions to the query 1820. This data may be related to the Promoters' other programs, may determine the consumers' 110 interest levels to certain programming types, or may address any other marketing related issues. Those public opinion questions may also be conducted as a service to public opinion agencies, which may pay the Promoters for providing the public opinion response results.

CRĀV Ad is Presented to Consumers

Figure 4 is a flow diagram illustrating an exemplary process describing how the Promoters and the Advertisers use the broadcast network 105 to promote future CRĀV Ads, as set forth in step 210 of Figure 2. The public can be notified about the broadcast of the CRĀV Ad to maximize the program's audience size. Prior to the communication including the CRĀV Ad, the Promoters provide advance warning to the consumers 110 who may receive programs where the CRĀV Ads will be communicated. This advanced warning may include educational, general public information informing the consumers 110 about the CRĀV Ads, and how successful immersion may result in the consumers 110 receiving substantial rewards. Those advance warnings also may include specific prize information, reveal the name and/or logo, and invite registration by the consumers 110 prior to the broadcast. The Promoters and the Advertisers may provide this advanced notice.

Turning now to Figure 4, an exemplary CRĀV Ad process 210 is initiated at the "START" step 401. In step 405, the Promoters determine whether or not to give advanced notice of the future CRĀV Ad broadcast. If the answer is "NO," then the process moves to step 215 of Figure 2. If the answer is "YES," the process moves to step 410, where the Promoters and the Advertisers choose the broadcast network 105 for the advanced notice. The broadcast network 105 that can be used for the advanced notice includes the Broadcast TV Network 120, the Private Network 125, the Cable Network 135, the Internet 130, the Satellite Network 140, or any Other System 141. In step 415, the Promoters and the Advertisers communicate the availability of future CRĀV Ads to the consumers 110 using the chosen broadcast network(s) 105. In step 416, the Promoter decides whether to

allow the consumers 110 to pre-register. If the answer is "NO," then the process moves to step 215 of Figure 2. If the answer is "YES," the process moves to step 420.

In step 420, the consumers 110 decide whether or not to register to respond to the CRĀV Ads using the device 111. If the answer to step 420 is "NO," the process moves to step 215 of Figure 2. In one alternative exemplary embodiment, the CRĀV Ad system is simple, and registration is not required. However, in alternative exemplary embodiments, registration is required during the process. Registration allows the Promoters and the Advertisers to collect detailed information about the consumers 110. If the answer to step 420 is "YES," the consumers 110 register, as set forth in step 425. The process then moves to step 215 of Figure 2.

Figure 5 is a flow diagram illustrating an exemplary process describing how the privacy option applies to the registration process, as set forth in step 425 of Figure 4. Turning now to Figure 5, an exemplary CRĀV Ad process 425 is initiated at the "START" step 501. In step 505, the Promoters decide whether to implement the privacy option. The privacy option segregates confidential personal data from demographic data. If the privacy option is used, the data storage center 195 includes the Privacy Database 199, as set forth in step 510. The process then moves to step 515. If the privacy option is not implemented, the process moves directly from step 505 to step 515. In step 515, the consumers 110 register using the device 111, and the process moves to step 215 of Figures 2.

The privacy option is important because it allows the consumers 110 to be less concerned that their personal registration information will be matched with their demographic and response information by outside parties.

Registration

Because the query 1820 may be short in duration, the consumers 110 may not be able to fully register and respond to the CRĀV Ad within the allocated CRĀV Ad time. Therefore, the consumers 110 will usually want to register before the CRĀV Ad is broadcast. Several registration options are available.

Registration information may include a variety of data. In one exemplary embodiment, the Promoters do not want to use demographic information and simply seek to identify the consumers 110 for tracking and prize awarding purposes. The consumers

110 are thus asked to provide simple information where they may be reached and identified if selected as a winner. This information may include a phone number, a social security number (or portion thereof), a birthday, a name, and an address. After providing the registration information, the consumers 110 are provided with a unique "CRĀV ID". This number may be a randomly generated unique number, or an easily remembered number or a series of numbers (such as a birthday and phone number combination), which may also provide ID information within the number.

In another exemplary embodiment for registration, the Promoters may wish to obtain ID information, product-related information, or public opinion-related information. The demographic profile of each consumer 110 may include age, sex, race, weight, height, zip code, physical home or e-mail address, occupation, individual annual earning, educational background, political affiliation, religious affiliation, family size, number of TVs and computers, Advertiser-related or public opinion survey questions, and prior CRĀV Ad answers (historical response information). A detailed registration may be required for each CRĀV Ad. However, gathering this information for each CRĀV Ad makes the registration process time-consuming, costly, and redundant, and may deter the consumers 110 from submitting a response. Thus, a one-time registration process is also available. In this mode, only changed/updated demographic or ID information (such as a change in marital status, phone number, etc.) is added for each CRĀV Ad response after the original registration. Under this scenario, the original registration information is stored in the PDC 197. As new responses or update information are transmitted to the data storage center 195, the data storage center 195 is updated.

In another alternative embodiment for registration, when only one registration is used (as described above), the Advertisers may have the consumers 110 with existing CRĀV IDs enter additional demographic information to be qualified for the rewards. In this case, new "response" information is added for each additional CRĀV Ad response after the original registration. Under this scenario, the original registration information would be stored in the DCS 196, and as new responses are transmitted to the data storage center 195, the registration information can be added to the data storage center 195. The CRĀV ID would be required before allowing additions to CRĀV Ad records.

Broadcast CRĀV Ad and Interaction with Consumers

Figure 6 is a flow diagram illustrating an exemplary process describing how the Promoters use the broadcast network 105, the device 111, the information gathering system 112, and the data storage center 195 to communicate the CRĀV Ads to the consumers 110 and to interact with the consumers 110, as set forth in step 215 of Figure 2. Turning now to Figure 6, an exemplary CRĀV Ad process 215 is initiated at the "START" step 601. In step 605, the Promoter communicates the alert 1805, the vignette 1810, and the query 1820 using the broadcast network 105. The alert 1805 is a warning to the consumers that the upcoming vignette 1810 should be memorized so the consumers may become eligible to win a reward. The vignette 1810 may be a conventional commercial for a product or service or any other information designed for presentation to a consuming audience. The query 1820 includes one or more questions. In step 610, the consumers 110 answer the query 1820. In step 615, the option to communicate the answer 1830 is provided, based on whether or not the Promoters wish to use this option. The answer 1830 includes the answer to at least one of the query's 1820 question or questions. If the answer to step 615 is "NO", and the answer 1830 is not communicated, the process moves to step 220 of Figure 2. If the answer to step 615 is "YES", the Promoter communicates the answer 1830 after the counter time has expired using the broadcast network 105, as set forth in step 620. The process then moves to step 220 of Figure 2.

Figure 7 is a flow diagram illustrating an exemplary process describing how the Promoter communicates the alert 1805, the vignette 1810, and the query 1820 using the broadcast network 105, as set forth in step 605 of Figure 6. Turning now to Figure 7, an exemplary CRĀV Ad process 605 is initiated at the "START" step 701. In step 705, the Promoter communicates the alert 1805 using the broadcast network 105. The alert 1805 may include a prize description and an Advertiser and/or Promoter logo. The alert 1805 may also include any other information the Promoters, or some other entity, wishes to display. In step 710, the Promoter communicates the vignette 1810 using the broadcast network 105. The vignette 1810 may include an Ad and the Advertiser and/or Promoter logo. The vignette 1810 may also include any other information the Promoters, or some other entity, wishes to display. In step 715, the Promoter communicates the query 1820 using the broadcast network 105. Alternatively, the Promoter can communicate the query 1820 using one or more of the response devices 111. The query 1820 may include

questions, possible answers, login response information, a time remaining counter, and the Advertiser and/or Promoter logo. The CRĀV Ad query 1820 may also include any other information the Promoter wishes to include. The process then moves to step 610 of Figure 6.

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CRĀV Ad is Answered

Figure 8 is a flow diagram illustrating an exemplary process describing how the consumers 110 answer the CRĀV Ads, as set forth in step 610 of Figure 6. Turning now to Figure 8, an exemplary CRĀV Ad process 610 is initiated at the "START" step 801. In step 802, the device 111 prompts the consumers 110 to enter their CRĀV ID. In step 805, it is determined whether or not consumers 110 have entered a CRĀV ID. If the answer to step 805 is "NO" and the consumers 110 do not enter a CRĀV ID, registration may be allowed, as set forth in step 811. If registration is allowed, the process moves to step 815. If registration is not allowed, the consumers 110 are informed that they must register before they can submit a response to the CRĀV Ad, as set forth in step 816. The process then moves to step 615 of Figure 6.

If the answer to step 805 is "YES", and the consumers 110 have entered a CRĀV ID using the device 111, the device 111 accepts the CRĀV ID as set forth in step 810. The CRĀV ID may be a number assigned by the Promoter or the Advertiser. It may be stored in memory to eliminate the need for manual entry. Examples of how to store the CRĀV ID into memory include using a cookie over the Internet, or entering a stored number into a phone (speed dial memory function). In step 815, the broadcast network 105 or device 111 communicates the first question of the CRĀV Ad query 1820 and the answer choices. The question can be an immersion verification question, a polling question, a trivia question, or any other type of question. The answer choices may be a set of predetermined response options a, b, c, d, etc., or the consumers 110 may be required to enter the answer itself. The options for answering may include the broadcast of unique numbers or letters that may differ between broadcasters, which allow subsequent decoding by the data storage center 195 to determine the broadcast medium or location used by the consumers 110 to view the CRĀV Ad. In step 820, the consumers 110 enter their answer into the device 111. In step 825, the Promoters may communicate another question as part of the same query 1820 using the broadcast network 105 or device 111. This question

may be another immersion verification question, or a question used to get information about the consumers 110. This information may include demographic information or other information. If the Promoter chooses "YES" to decision step 825, the process moves to step 830, and the device 111 communicates the new question. In step 835, the consumer enters the answer into the device 111. The process then moves back to step 825 and is repeated. If the answer to step 825 is "NO", and no other questions will be asked, the process moves to step 826. In step 826, it is determined whether or not the consumer 110 entered a CRĀV ID in step 805. If the answer to step 826 is "YES", the process moves to step 615 of Figure 6. If the answer to step 826 is "NO", the process moves to step 827, where consumers 110 have the option to register. If the answer to step 827 is "YES", and the consumers 110 register, the process moves to step 615 of Figure 6. If the answer is "NO", and the consumers 110 don't register, or don't completely register, the process moves to step 828 and the responses are discarded. The process then moves to step 615 of Figure 6.

CRĀV Ad Answers are Gathered

Figures 9A and 9B, together comprising Figure 9, are picture diagrams illustrating an exemplary nationwide network for gathering the registration and response information, as set forth in step 220 of Figure 2. The query 1820 gathering network is designed to accommodate two variables in any data collection activity. First, expected traffic and geographic/time zone requirements must be met. Second, the registration and the response information must be sent to the data storage center 195. Figure 9A illustrates the United States map, and shows how conventional Phones 145 forward the registration and the response information to the Phone Company SP 170. Figure 9B illustrates the United States map, and shows how the Internet computer 130 forwards the registration and the response information to the Internet SP 185. Although the Figures illustrate the United States, one experienced in the art will recognize that the collection system may be implemented in any country, or in multiple countries.

Turning now to Figure 9A, a network is illustrated showing how consumer responses are forwarded by the Phone 145 to the Phone Company SP 170. Those experienced in the art will recognize the multiple ways to meet expected traffic and geographic/time zone requirements. Similar to traffic terminology, the traveling

information is called "traffic", the length between two points is "distance", and impeded traffic is "congestion." In an exemplary embodiment, a single Web site and a single phone number would be sufficient to handle query 1820 responses. However, in most cases, multiple lines are necessary to handle the numerous response traffic.

For telecommunication lines, design elements may assist in reducing distance and avoiding congestion. For example, multiple phone numbers (connected to one or multiple information gathering systems 112) may be located in geographically centered locations. In addition, one published phone number, which incorporates a switch directing incoming calls to one or multiple information gathering systems 112, may be located in geographically centered locations, directed based on the incoming call's origin point. Figure 9A illustrates the option of the Phones 145 forwarding the registration and the response information to the Phone Company SP 170.

For responses provided over a network such as the Internet Network 130, the following design elements may assist to reduce distance and avoid congestion: mirrored Web sites with unique Web site addresses (each serving as a information gathering system 112) located in geographically centered locations; one published Web site address, which is redirected to one or more mirrored Web sites ideally located in geographically centered locations near the user's SP 112; and unique Web sites hosted by individual Internet SPs 185 or approved information gathering systems 112. Figure 9B illustrates the option of the Internet computer 160 forwarding the registration and the response information to the Internet SP 185.

Figure 10 shows how the information gathering system 112 sends the registration and the response information to the data storage center 195. The registration and the response information are sent to the information gathering systems 112 that may be hosted by a SP network. A CRĀV Web site may also be set up to be the information gathering system 112. This CRĀV Web site may be housed at the same location as the data storage center 195. Once the CRĀV Ad has concluded, the information gathering system 112 forwards the registration and the response information to the data storage center 195 on a time scheduled synchronized basis. Once the consumers' 110 data is received and verified by the data storage center 195, the response information may be programmed for automatic erasure by the information gathering system 112. Figure 10 illustrates three

information gathering systems 112 for forwarding registration and response information: an Internet SP 185, a Phone Company SP 170, and a private network SP 190.

CRĀV Ad Winners Selected and Prizes Distributed

Figure 11 is a flow diagram illustrating an exemplary process describing how the Promoters select winners and distribute prizes, as set forth in step 230 of Figure 2. Turning now to Figure 11, an exemplary CRĀV Ad process 230 is initiated at the "START" step 1101. In step 1105, the data storage center 195 stores the registration information in the PDC 197 and the response information in the DCS 196. In step 1110, the Promoters or a third party service provider randomly choose winners and alternate winners from the DCS 196 database. The DCS 196 database includes a list of the consumers 110 who have correctly answered all required questions. The Promoters, the Advertisers, or a third party service provider, also contact the potential winners. (This third party service provider may also offer fulfillment services including information on consumer answers and coupons.) Based upon the process selected by the Promoters or the Advertisers, the potential winner identities and the truthfulness of the potential winners' registration and response information may be verified. If this option is used, the Promoters verify the identity by authenticating the consumers' registration and response information. The Promoters may require potential winners to verify demographic or confidential data prior to awarding the prize. The Promoters may repeat the one or more questions in the query 1820. The Promoters may elect to disqualify potential winners who fail to provide responses that match their query 1820 responses.

In step 1120, it is determined if the winners are qualified for the prizes. If the answer to step 1120 is "NO", the process moves to step 1125, and the next alternate winner is selected from the list of alternate winners. In step 1131, it is determined if the alternate winner is qualified. If the answer to step 1131 is "NO", the process moves back to step 1125 and is repeated. If the answer to step 1131 is "YES", the process then moves to step 1132.

If the answer to step 1120 is "YES", the process moves to step 1132, and the verified winner is added to the list of winners and the winner count is increased. In step 1135, it is determined if all winners are qualified. If the answer to step 1135 is "NO", the process moves to step 1110 and is repeated. If the answer to step 1135 is "YES", the

process moves to step 1140. In step 1140, the winner information and other opted information (i.e., demographically pertinent data and query 1820 response results) may be forwarded to Advertisers and/or other interested entities, particularly if consumers 110 have approved the forwarding of said information. The Promoters, the Advertisers, or a third party service provider also announce the winners. In step 1145, the Promoters, the Advertisers, or third party service provider forwards the prizes to the winners. The process then ends in step 1199.

Other Applications for CRĀV Ads

While the above description is ideally suited for visual mass media technology such as the TV and the Internet 130, it may also be utilized in alternate mass media channels, using audio-only technology like radio, or visual-only broadcast mediums, such as a magazine or newspaper ad. The CRĀV Ads may be answered with complicated, highly-developed computer devices 111, or simply by using the Phone 145. Those practiced in the art will recognize the above invention may be implemented with any broadcast medium and response medium. In addition, the invention is not limited to providing ads within entertainment content, but can be extended to providing other types of information. Finally, while the invention has been discussed in the context of the consumers 110, the Promoters, and the Advertisers, those experienced in the art will recognize that other entities can be used. For example, a third party service provider can be responsible for: gathering the registration and response information, screening the registration and response information to validate it, mining the registration and response information to extract pertinent data, randomly selecting the winners and alternate winners, and providing prize fulfillment and delivery verification services.

Example

To better illustrate the CRĀV Ad process, a representative example is provided. The Promoter is ABS Broadcasting Company ("ABS") and the Advertiser is ACME Motors ("ACME"). The consumers 110 are a four person family in Largo, Florida. Mr. Daly is 60 years old and Mrs. Daly is 58. Two sons live at home. Mike is 25, Mark is 23.

Figure 12 is a flow diagram illustrating a CRĀV Ad example. An exemplary process is initiated in step 1201. In step 1205, ABS sells two two-minute CRĀV Ad slots

to ACME Motors ("ACME"). In step 1210, ABS and ACME advertise the future broadcast of CRĀV Ads, and as a result, the Dalys register. In step 1215, the CRĀV Ads are broadcast. In step 1220, the CRĀV AD responses are gathered. In step 1225, the DCS is utilized to use the gathered information for purposes other than awarding prizes. In step 1226, the DCS mines, extracts, edits and forwards the non-prize winner related information. In step 1230, the DCS is utilized to select the winners and distributes the prizes.

Figure 13 is a flow diagram illustrating how the Ad slots are sold, as set forth in step 1205 of Figure 12. Turning now to Figure 13, ABS decides to sell the two CRĀV Ads for $1,700,000 each and the twenty-four regular ads for $375,000 each, as set forth in step 1305. ABS sells the two CRĀV Ads to ACME and the twenty-four regular ads to other Advertisers, as set forth in step 1310. The process then moves to step 1210 of Figure 12.

To determine the ad price, ABS follows the chart set forth in Figure 14. ABS determines the average profit for a show "Lawyers in Love". "Lawyers in Love" is shown at 8 PM EST/8 PM MST (broadcast over delayed time slots) and has a length of 60 minutes. The show's average viewing audience is 7 million consumers 110. ABS has allocated 16 advertising minutes (32 30-second spots) for the show. ABS charges $300,000 per 30-second spot to Advertisers, earning $9.6 million revenue per show. The show expenses are $8,000,000. Thus, the average profit is show revenue ($9.6 million) - show expenses ($8 million) = net profit ($1.6 million). The average cost to the Advertiser per 1000 consumers 110 is $42.86, without taking the CRĀV Ads into account.

ABS then determines the substitution analysis. The two CRĀV Ads priced at $1,700,000 replace (8) 30-second ad slots, for which ABS had formerly garnered $2.4 million in revenue. ABS also wishes to allocate $1 million for prizes, bringing the CRĀV Ad price to $3.4 million. The CRĀV data gathering cost is $510,000. ABS pays this fee to TPR, a third party information warehousing and collection organization equipped with CRĀV related registration and information gathering system 112. TPR will also select winners and alternates, authenticate winner responses, provide a list to ABS and ACME, and will handle the prize distribution process. ABS spends $400,000 promoting the future CRĀV Ads.

ABS estimates the CRĀV Ad contest will increase the audience by 30%. ABS therefore increases the traditional ad price by 25%. The new ad price is $375,000 for each 30-second slot. The Advertisers are therefore paying $375,000 per 30-second regular ad (as opposed to $300,000), but are in exchange potentially achieving higher immersion levels, and their regular ads are being broadcast to a larger audience at a lower cost per impression. The new cost per 1000 consumers 110 is lower: $42.21.

This $75,000 increase per slot, over 24 slots, adds $1.8 million in additional revenues to ABS. This is offset by the $400,000 additional cost to promote the upcoming CRĀV Ads, plus $510,000 for CRĀV information collection, compilation and winner selection/verification. Thus, ABS realizes $890,000 in additional net profit. This increases the show's profitability by over 55%.

Figure 15 is a picture flow diagram illustrating an exemplary CRĀV Ad process for ABS and ACME to promote future CRĀV Ads, as set forth in step 1210 of Figure 12. In step 1501, the process 1210 is initiated at the "START" button 1501. In step 1505, ABS and ACME elect to promote and give advanced notice of the CRĀV Ads. In step 1510, ABS chooses to promote the CRĀV Ads on TV, the Internet 130, e-mail, and TV guide, and ACME chooses to promote the CRĀV Ads on the Internet 130, e-mail, and cable TV. As set forth in step 1515, during the weeks before the broadcast, ABS promotes the upcoming "CRĀV/ACME New Car Giveaway" promotion on its own ABS network. ABS also purchases TV guide magazine ads, posts information on the ABS Web site, and sends out information to its e-mail lists. Also promoting the CRĀV Ads are ACME's own banners on its Web site and e-mail notification to its 3.5 million subscribers. ACME also advertises on the HiTechTV cable channel network. Mr. Daly sees the CRĀV Ads promoted on ABS. Mrs. Daly sees the CRĀV Ads promoted on ACME's Web site while surfing the Internet 130. Mike sees the CRĀV Ads promoted on HiTechTV cable. Mark does not see the CRĀV Ads promoted. The CRĀV Ad promotion states: "Watch 'Lawyers in Love' on Sunday at 8:00 EST and you may win 1 of 50 new ACME convertibles. Register at www.CRĀV.tv or by calling 1-800-CRĀVNOW." All broadcast promotions for the future ACME CRĀV Ads include this registration information. Registration is conducted by TPR.

Following step 1520, Mr. Daly and Mrs. Daly choose to register. Mike chooses not to register at this time. Mark does not know he may register, and therefore does not

register. As set forth in step 1525, Mr. Daly registers using the Phone 145, and Mrs. Daly registers using the Internet computer 160. The process then moves forward to step 1215.

The registration process involves having Mr. Daly and Mrs. Daly enter registration information. Figure 16 shows a sample CRĀV record, which may include a name, Social Security number, phone number, PIN, birthday, e-mail, address, and any wins. The Promoters may also ask the consumers 110 to enter demographic information, which may include sex, zip code, number of children, marital status, race, weight, height, occupation, annual earnings, education, political affiliation, and religious affiliation. This information may be supplemented and updated with information including: the number of TVs and computers owned, the number of vehicles owned, and the favorite TV network. The historical response information provides information on the responses the consumers 110 have given to prior CRĀV Ads.

While the consumers 110 may enter demographic information during the registration process, the query 1820 also provides an opportunity to gather demographic information. This information may be added to the CRĀV demographic information, or may be added to the historical response data. In this case, a Level II demographic record may be incorporated into the record, for easier search and compilation in the future. Level II demographic information is collected after the initial registration point and thus may contain information for some, but not all, consumers 110. As a result, Level II demographic information may limit the total survey population, as opposed to the primary Level I demographic information, which is provided by all registrants at initial registration.

Figure 17 is a flow chart illustrating an exemplary embodiment of step 1215, where ABS broadcasts the alert 1805, the vignette 1810, and the query 1820. Turning now to Figure 17, the process 1215 is initiated at the "START" step 1701. In step 1705, ACME elects to utilize the MultiSimulcast concept, by offering simultaneous ACME CRĀV Ad broadcasts over multiple devices. ACME chooses to show the ACME CRĀV Ad on ABS, ACME's Web site, HiTechTV Cable, and the R-BAR Network simultaneously at 8:33 PM EST on Sunday. Therefore, identical ACME CRĀV Ads are MultiSimulcast on those mediums at 8:33 PM EST. Mr. Daly sees the ACME CRĀV Ad while watching "Lawyers in Love" on ABS 120. Mrs. Daly sees the ACME CRĀV Ad while logged on to the Internet 130. (Mrs. Daly already provided her CRĀV ID when she

logged on.) Mike is watching HiTechTV Cable 135 in his room, and sees the ACME CRĀV Ad. Mark sees the ACME CRĀV Ad at a local bar, using the R-Bar Network 125. In step 1710, the consumers 110 answer. Mr. Daly answers using the Phone 145. Mrs. Daly answers using the Internet computer 160. Mike answers using his Palm Pilot PDA 150, although Mike has not yet registered. Mark answers using the R-Bar device 165. The answer 1830 to the query 1820 is shown only on ABS, as set forth in step 1715-1720. The answer 1830 is not shown on the Internet 130, the HiTechTV Cable 135, and the R-Bar Network 125.

Figure 18 illustrates the CRĀV Ad the consumers 110 see, as set forth in Figure 17. In step 1805, the alert 1805 is pictured. The alert 1805 states: "Memorizing the following ACME CAR COMPANY CRĀV Ad may make you a winner of 1 of 50 new ACME convertibles." This alert 1805 is shown for 10 seconds. In step 1810, the vignette 1810 is broadcast. The vignette 1810 is a 60-second entertaining and informative ad suitable for broadcast in non-CRĀV Ads as well. In step 1820, the query 1820 is broadcast. The query 1820 includes three questions: an immersion verification question 1820a broadcast over broadcast network 105, including ABS, ACME's web site, HiTechTV, and R-BAR private broadcast network; and an Advertiser question 1820b, and polling question 1820c, both of which are distributed via devices 111, including a telephone network, ACME's Web Site, R-Bar private Network, and Palm Pilot PDA Network. The immersion verification question 1820a asks "What new ACME model features side impact air bags?" The multiple choice responses are displayed or vocalized: 1) SD2020, 2) XP2030, 3) XX2040, 4) XYZ123. The second question, the Advertiser question 1820b, is communicated. This is a question designed by the Advertiser, posed to the consumers 110 while responding through the various devices 111. This question asks "When do you plan on buying a new car?" The multiple choice responses are displayed or vocalized: 1) 2 years or over, 2) within 2 years, 3) within 1 year, 4) within 6 months. In step 1820c, the third question, the polling question 1820c, is displayed or vocalized. This question is designed for a contracted pollster, posed to the consumers 110 while responding through the various devices 111. This question asks "Assuming the following choices, for whom do you plan to vote for U.S. President in 2008?" The multiple choice responses are displayed or vocalized: 1) Hillary Clinton, 2) Colin Powell 3) Jeb Bush

4) Frank Maggio. In step 1830, the correct answer to question 1 is displayed or vocalized: XP2030.

Figure 19 is a flow diagram illustrating how the CRĀV Ads are answered by the Dalys, as set forth in step 1710 of Figure 17. For Mr. Daly, the process is as follows. Mr. Daly answers using the Phone 145, by dialing a phone number he was given when he registered. The phone number connects to an answering service, which asks Mr. Daly for his CRĀV ID, as set forth in step 1902. Mr. Daly has already registered, so he enters his CRĀV ID and it is accepted in step 1910. In step 1930, the Phone 145 plays Mr. Daly the first question 1820a with answer choices. In step 1935, he answers "SD2020" by pressing 1 on his touch-tone Phone 145, as prompted. (This is not the correct response.) Another question is asked, so the process moves from step 1940 to step 1945. In step 1945, Mr. Daly is asked the second question 1820b with answer choices. In step 1950, Mr. Daly answers "2 years and over" by pressing 1 on his Phone 145. A third question 1820c is asked, so the process moves from step 1940 to step 1945. In step 1945, Mr. Daly is asked the third question. In step 1950, Mr. Daly answers he will vote for "Frank Maggio" for President by pressing 4 on his Phone 145. (This is evidence of his political acumen.)

For Mrs. Daly, the process is as follows: Mrs. Daly answers using the Internet Computer 160. As Mrs. Daly already provided her CRĀV ID automatically when she logged on (steps 1902-1910), she only needs to answer the questions. In step 1930, the Internet 130 shows the immersion verification question 1820a. In step 1935, Mrs. Daly selects "XP2030". In step 1945, the Internet Network 130 shows the Advertiser question 1820b with answer choices. In step 1950, Mrs. Daly selects "within 2 years". Because there is another question, the process moves from step 1940 to step 1945 again. In step 1945 the polling question 1820c with answer choices is shown. In step 1950, Mrs. Daly selects "Frank Maggio" representing her choice for President. (Intelligence runs in the Daly household.)

For Mike, the process is as follows: Mike uses his Palm Pilot 150 to access the Web site shown on HiTechTV Cable 135. Mike has not registered, but registration is allowed, so the process moves from step 1905, to step 1925, where registration is allowed, and then to step 1930. In step 1930, the immersion verification question 1820a with answer choices is displayed. In step 1935, Mike answers 3 ("XX2040"). There is another question so the process moves from step 1940 to 1945. In step 1945, the Advertiser

question 1820b with answer choices is displayed. In step 1950, Mike answers 3 ("within one year"). The same process is followed for the polling question 1820c, and Mike answers it. There are no additional questions, so the process moves from step 1940 to step 1926. In step 1926, because Mike does not have a CRĀV ID, the process moves to step 1927 and Mike registers and gets a CRĀV ID, which is automatically entered. The process then moves to step 1720.

For Mark, the process is as follows: Mark uses the bar's private network, which broadcasts the CRĀV Ads and presents the query 1820 to the consumers 110 located within the bar who are connected to the private network and who have enrolled to play. Mark is asked for his CRĀV ID in step 1902. Mark has not pre-registered, so Mark types "NONE", and the process moves to step 1905, and then to 1925. In step 1925, registration is allowed during the CRĀV Ad, so the process moves to step 1930. In step 1930, the immersion verification question 1820a with answer choices is displayed. In step 1935, Mark answers 3 ("XX2040"). Another question is asked, so the process moves from step 1940 to 1945. In step 1945, the Advertiser question 1820b with answer choices is displayed. In step 1950, Mark answers 3 ("within 1 year"). Another question is asked, so the process moves from step 1940 to 1945. In step 1945, the polling question 1820c with answer choices is displayed. In step 1950, Mark answers 1 ("Hillary Clinton"). No other questions are asked, so the process moves from step 1940 to step 1926. In step 1926, the device recognizes that Mark does not have a CRĀV ID. The process moves to step 1927, and Mark is asked if he wishes to follow the registration process (to obtain a CRĀV ID) or lose his query 1820 response information. Mark starts to complete the registration information, but is distracted and logs off. Because he does not complete the registration, he is not assigned a CRĀV ID, and his responses are discarded, as set forth in step 1928.

In step 1220 of Figure 12, the CRĀV Ad answers are gathered. This is done by the Phone Company SP 170, the Internet SP 185, the PDA SP 175, and the R-Bar Private Network SP 190 forwarding the response and applicable registration information to TPR's DCS 195.

Figure 20 is a flow diagram illustrating how TPR uses the data storage center 195 to select winners and distribute the prizes, as set forth in step 1226 and 1227 of Figure 12. In step 2001, the process is initiated at the "START" button. In step 2005, TPR's data storage center 195 stores the registration information (for those who registered during

game play) and the DCS 196 stores the response information for all the registered consumers 110, including Mr. Daly, Mrs. Daly, and Mike. In step 2010, the potential and alternates winners are randomly chosen and extracted from all the correct answers for question 1820a stored within the DCS 196. Mike is chosen as a one of 50 winners and Mrs. Daly is chosen as the first of 50 alternate winners. TPR begins the verification process by contacting all 50 winners. Each winner is qualified in step 2020, and as each winner is verified their name is added to the list of verified winners in step 2035, and the winner counter is increased. Ultimately, TPR contacts Mike in step 2010 to verify his CRĀV ID, registration information, and response information in step 2020. Mike's registration information was falsified (he said he was 60 when registering, but in reality he is 25), so he is disqualified, because truthful answers are required as a condition of winning according to ABS Promotion rules. All of Mike's data is also purged from the data storage center 195 to avoid potentially false or misleading information. This is done to maintain data base integrity. According to step 2020, because Mike's information is not correct, the first alternate winner at the top of the list is chosen, as set forth in step 2025. Mrs. Daly is the first alternate winner, so her information is verified in step 2025. Because Mrs. Daly's immersion verification question was correct, and her demographic data is proven to be accurate and verified in step 2031, so she is selected as a verified winner and added to the list in step 2032.

In step 2035, once all 50 winners have been selected and verified, the process moves to step 2040, where TPR forwards to ABS the information as to the identities of all winners, including Mrs. Daly. In step 2040, ABS and ACME also jointly announce the name of all winners, including Mrs. Daly. Included in the information passed to ABS from TPR in step 2040 is a report including demographic information for all consumer responses for the ACME and pollster designed questions, which ABS may elect to pass along to ACME or to survey organizations that have contracted ABS to acquire polling statistics. This report is derived and data mined from the registration and response data. This information includes statistics indicating that of the 5.532 million female consumers 110, 534,461 live in households with average incomes in excess of $75,000 per year. This information also indicates that, of those, 6.5% live in the state of Florida and are over 50 years old, and 3.443% expect to purchase a car within the next six months, 5.2% live in the metropolitan NYC area, and .8429% expect to purchase a new car within the next six

months. The statistics also indicate that across all age groups, and all occupations, Frank Maggio will be elected President in 2008 by a 59.8% share of the popular vote.

In step 2045, TPR forwards a convertible to Mrs. Daly and the other winners. The process ends in step 2099.

Other Applications

While the above description is ideally suited for visual mass media broadcast technology such as the Broadcast TV 120, Cable TV 135, Satellite TV 140, Private Networks 125, Other Networks 141, and streaming Internet 130, it may also be utilized in alternate mass media channels, using audio-only technology like radio, or visual-only broadcast mediums, such as a magazine or newspaper ad. The CRĀV Ads may be answered with complicated, highly developed computer devices 111, or simply by using the Phone 145. Those practiced in the art will recognize the above invention may be implemented with any broadcast medium and response medium.

The CRĀV system and process can be utilized across any mass media broadcast network 105. For example, the mass media broadcast network 105 can comprise TV, cable, satellite, radio, outdoor media (billboards, signs, buses), print media (newspapers, magazines), direct mail, the Internet, or other broadcast network, as well as private networks. Private networks can comprise networks having connected Personal Recording devices such as a TiVo®. Additionally, a convergence of multiple mass media broadcast networks 105, when utilized together, can broaden the reach and effectiveness of CRĀV ads.

Radio

Radio programs are distributed over the airwaves, and/or over the Internet. As with the television industry, ad revenues garnered by radio stations are utilized to offset the costs of content (music, news, sports, etc.) and its production, as well as overhead costs such as staff and marketing. As with television, ads and ad pods are embedded between content segments. Consumers tend to avoid radio ads by switching channels, listening to alternate forms of entertainment (such as CDs, DVDs, television, etc.), or by turning off the radio.

Within radio program segments, single CRĀV ads or CRĀV ad pods can be broadcast. Some or all ads within the program may be CRĀV ads. CRĀV ads can contain

"alert" tones or specific alert wording to entice immersion. The alert can be provided at the beginning of a program or program segment, or at the beginning or end of an ad or ad pod. After the ads (audio "vignettes") are broadcast, listeners can be provided with log-in instructions. The instructions can suggest immersion verification via telephone or cellular phone. Additionally, the instructions can suggest immersion verification through any of the response devices 111. Accordingly, consumers can register and/or provide query responses to immersion verification or other queries through the response devices 111. The Queries can be broadcast on air, before or after the CRĀV ad. Alternatively, the Queries can be provided during the query-response interaction process utilizing devices 111 over networks provided by Service Providers 112.

Promoters may desire to provide multiple queries to make cheating more difficult. For example, cheating can include one consumer learning the content and providing the query and answer to subsequent players. Promoters may also desire to limit the amount of time allowed for interaction. In addition to Immersion Verification queries, other queries can be included. For example, the other queries can comprise sponsor-designed questions, polling questions, demographic questions, etc., similarly to television use of CRĀV ads.

Aspects of the television industry's use of CRĀV ads discussed above mirror the radio industry. Those aspects comprise the advance promotion and registration of CRĀV players, the assignment of CRĀV ID numbers, research, and the substantial prizing and prize fulfillment aspects. Those practiced in the art will recognize the similarities between the radio broadcast and television broadcast industries, as well as the similarities in the methods, analysis, and sales techniques utilized by Promoters to determine the sales price and costs of CRĀV ads.

Print Media: Books/Magazines/Newspapers

Books, magazines, and newspapers are distributed to subscribers through vending or printed work sales outlets. Additionally, on-line versions of those printed materials may be distributed via the Internet. Over-air broadcast mass media (such as television and radio) have costs affiliated with time. In other words, radio and television costs of content are measured in units of time, and ad units are sold as units of time. On the other hand, print mass media content costs are affiliated with space, such as ad size on printed pages. The more printed pages, the higher the cost of a printed work.

Ad revenues garnered by print media are utilized to offset the costs of paper, printing costs, distribution, development of written and photographic content and its production, and staff and marketing overhead. Ads of different sizes can be embedded between content segments or sections of the print media. Consumers tend to avoid print ads by ignoring the ad, reading around the ad, turning the page, or discontinuing reading the written work.

Within and between printed content segments, CRĀV ads of different sizes can be printed or distributed. The ads can comprise an alert mark or logo to entice immersion. Additionally, specific printed instructions can be provided within the ad to entice immersion. Internet distribution of magazines (e-magazines or e-zines) or newspapers also can comprise audio or visual alerts. An alert logo can be provided on a printed ad to invite immersion in the content of that individual ad. Alternatively, an alert logo can be provided on multiple ads to invite immersion in the content for a section of ads or for one of the ads in the section. The multiple ads can comprise the printed version of an ad pod.

After the consumers review the print media ads, they can register and/or provide a query response through the various response devices 111. In exemplary embodiments, the Immersion verification query can be printed on the ad, hidden elsewhere within the printed publication, or provided only during the query interaction/response process through the response devices 111. Providing the query during the interaction/response process can enhance immersion by requiring memorization of the ad to assist in expeditious answering of the query.

As discussed above, Promoters may desire to provide multiple queries to make cheating more difficult. Promoters can attempt to allow a consumer to interact with an ad only once, further increasing the likelihood of serious desire to play properly and increasing the likelihood and effectiveness of immersion. To prevent subsequent reviewing of the ad, Promoters can limit the amount of time allowed for interaction, or can allow interaction and immersion verification within a limited, announced timeframe. Accordingly, the consumers can rely on memory to correctly and timely answer the query. In addition to immersion verification queries, other queries can be included. For example, other queries can comprise sponsor-designed questions, polling questions, demographic questions, etc.

Most aspects of the television industry's use of CRĀV ads discussed above mirror the mass media print industry. For example, similarities include advance promotion and registration of CRĀV players, the assignment of CRĀV ID numbers, research, and the substantial prizing and prize fulfillment aspects. Those practiced in the art will recognize the similarities between the radio and television broadcast industries, when compared to the print industry, as well as the methods, analysis, and sales techniques utilized by Promoters to determine the sales price and costs for CRĀV ads.

Outdoor Media

Outdoor media can comprise billboards, fixed signs on or inside buildings, and mobile signs on taxis, buses, plane banners, or blimps. Outdoor mass media advertising can rely on capturing the attention of passing consumers for short time periods. To create outdoor media, Promoters utilize printed materials such as billboard "wraps" or printed card inserts for taxis, paint applied directly to boards or buildings, and electronic billboards. Electronic billboards can display advertising messages and entertainment content, such as news headlines, sports headlines, etc. However, most outdoor media comprise advertising messages and do not comprise substantial amounts of traditional content.

Ad revenues generated by outdoor media Promoters are utilized to offset the costs of development of written and photographic content and its production, paper, printing costs, paint, distribution, installation, material costs, overhead, rental fees, or other fees charged by billboard property owners, taxi cab, or advertising facility owners. Consumers tend to avoid outdoor media ads by ignoring them, or by looking away.

A CRĀV version of an outdoor mass media ad can comprise a recognized visual "alert" mark or logo on an outdoor media ad to entice immersion. Alternatively, the outdoor media ad can comprise an audible tone to entice immersion. The audible tone can be provided over radio waves or can emanate from the outdoor media item itself. The outdoor media CRĀV ad also can provide log-in instructions, allowing interaction through the various response devices 111 for consumers to register and/or to provide query responses. The Immersion verification query can be printed on the outdoor media ad. Alternatively, the Immersion verification query can be provided during the query interaction/response process through the response devices 111.

As discussed above, Promoters may desire to provide multiple queries to make cheating more difficult. Promoters can attempt to allow a consumer to interact with an ad only once, further increasing the likelihood of serious desire to properly play and increasing the likelihood and effectiveness of immersion. To prevent subsequent reviewing of the ad, Promoters can limit the amount of time allowed for interaction, or can allow interaction and immersion verification within a limited announced timeframe. Accordingly, the consumer can rely on memory to correctly and timely answer the query. In addition to immersion verification queries, other queries can be included. For example, other queries can comprise sponsor-designed questions, polling questions, demographic questions, etc.

Aspects of the television industry's use of CRĀV ads discussed above mirror the outdoor media industry. For example, those aspects comprise the advance promotion and registration of CRĀV players (a billboard Promoter could advise passerby's of "WATCH THIS SPACE FOR FUTURE CRĀV ADS"), the assignment of CRĀV ID numbers for registered players, research aspects of registration and query responses, and the substantial prizing and prize fulfillment aspects. Those practiced in the art will recognize the similarities between the radio and television broadcast industries, when compared to the outdoor media, as well as the methods, analysis, and sales techniques utilized by Promoters to determine the sales price and costs for CRĀV outdoor ads.

Direct Mail

Direct mail relies on capturing the attention of consumers while opening their mail. Many Direct Mail Promoters utilize printed materials (envelopes, printed advertising fliers, brochures, coupons, etc.) and incur substantial costs in distributing their advertising. Most direct mail media, like outdoor media, do not comprise substantial amounts of traditional content and are typically dominated by advertising messages. However, in some respects, direct mail Promoters face many of the cost structures of the print media industries because costs are determined by space rather than broadcast time.

Direct mail Promoters can mail one advertising insert, or multiple ad inserts, to a mass mailing list, taking advantage of economies of scale such as bulk mail rates. In the event of multiple mailed pieces within one envelope (the direct mail version of an ad

"pod"), costs of distribution are shared by multiple Advertisers, lowering the costs per insert. Ad revenues garnered by direct mail media Promoters are utilized to offset the costs of paper, printing costs, distribution and postage, handling, overhead, and development of written and photographic content and its production. Consumers tend to avoid direct mail media ads by discarding them while sorting incoming mail, often before even opening the envelopes.

A CRĀV version of a direct mail ad can comprise a recognized visual alert mark or logo on the envelope or on the insert itself. An alert logo can be added to a single printed insert to invite immersion in that individual CRĀV ad. Alternatively, an alert can apply and invite immersion for all inserts in the event of multiple inserts (a direct mail ad pod.) The CRĀV envelope or CRĀV ad can provide printed log-in instructions, allowing interaction facilitated through the various response devices 111. Accordingly, consumers can register and/or provide query responses through the response devices 111. The Immersion verification query also can be printed on the envelope or insert. Alternatively, the query can be provided during the query response/interaction process.

As discussed above, Promoters may desire to provide multiple queries to make cheating more difficult. Promoters can attempt to allow a consumer to interact with an ad only once, further increasing the likelihood of serious desire to play properly and increasing the likelihood and effectiveness of immersion. To prevent subsequent reviewing of the ad, Promoters can limit the amount of time allowed for interaction, or can allow interaction and immersion verification within a limited announced timeframe. Accordingly, the consumer can rely on memory to correctly and timely answer the query. In addition to immersion verification queries, other queries can be included. For example, other queries can comprise sponsor-designed questions, polling questions, demographic questions, etc.

Aspects of the television industry's use of CRĀV ads discussed above mirror the direct mail media industry. Those aspects comprise the advance promotion and registration of CRĀV players (initial mailings can advise recipients of future mailings bearing the CRĀV logo or pre-registration), the assignment of CRĀV ID numbers for registered players, research aspects of registration and query responses, and the substantial prizing and prize fulfillment aspects. Those practiced in the art will recognize the similarities between the radio and television broadcast industries, when compared to the

direct mail media industry, as well as the methods, analysis, and sales techniques utilized by Promoters to determine the sales price and costs for direct mail CRĀV ads.

Internet

Mass distribution of CRĀV ads over the Internet can take multiple forms, each of which can share aspects of other mass media types. In addition, the Internet can save Promoters certain costs affiliated with less modern forms of mass media. For example, Internet Promoters can create "broadcast e-mail ads." In such ads, a Promoter can mass broadcast e-mails to a list of e-mail addresses, simulating a direct mail campaign without bearing the costs of materials and postage.

Internet Promoters also can "stream" video versions of televised or radio content and embedded ads, or merely the ads themselves, to consumers. In "requested streamed Internet ads," the Promoters can stream the content to consumers upon request. Alternatively, in "simulcast broadcast ads," the Promoters can stream simulcast versions of televised or radio content and embedded ads, which are mass broadcast over a web site. In the example of streaming audio or video feeds, Promoters bear bandwidth costs, which must be considered when calculating the cost to the Advertiser for sending streaming ads, or streaming CRĀV ads, to consumers.

Some distributors of printed materials offer "Internet mirrored display ads." For example, newspaper distributors can offer on-line versions of their printed works on a website. Internet consumers of the printed work can review content and ads in the newspaper on the website. Those Internet mirrored display ads are similar to the printed media ads discussed above.

Internet Promoters also use "mass media banner ads" as a means of Internet advertising. A Promoter can create a CRĀV mass media banner ad by consistently posting the ad on a mass media website in a non-targeted fashion without linking the Advertiser directly to the consumer. The CRĀV banner ad can comprise an alert and can provide substantial rewards to some of the consumers who register and verify immersion in the ad's content. Those CRĀV ads are different from the types of targeted Internet ads displayed only to consumers that meet specified criteria.

Consumers tend to avoid Internet ads by closing browser windows containing ads, or avoiding web sites that comprise ads altogether. However, Internet CRĀV ads can

overcome the consumers' tendencies by drawing the consumers' attention to the ads. Each of the Internet ads discussed above can comprise a CRĀV ad by implementing the alert and Immersion Verification processes for the ad itself. Multiple CRĀV ads within a requested stream, simulcast broadcast, mirrored display, or mass media banner broadcast can comprise a "pod" of ads, whereby an Immersion verification query can be posed about one or more of the ads in the pod. The CRĀV ads can comprise alert logos or tones, or specific alert wording to entice immersion.

After the ads are broadcast by stream, display, or banner with video and/or audio vignettes, consumers can be provided with log-in instructions, typically suggesting log-in for immersion verification via the Internet, but also available through the other response devices 111. Accordingly, consumers can register and/or provide query responses to immersion verification queries using the response devices 111. Queries also can be broadcast following the vignette or before or after the CRĀV ad. Alternatively, the Queries can be provided during the query-response/interaction process utilizing the response devices 111 over networks provided by Service Providers 112.

As discussed above, Promoters may desire to provide multiple queries to make cheating more difficult. Promoters can attempt to allow a consumer to interact with an ad only once, further increasing the likelihood of serious desire to play properly and increasing the likelihood and effectiveness of immersion. To prevent subsequent reviewing of the ad, Promoters can limit the amount of time allowed for interaction, or can allow interaction and immersion verification within a limited, announced timeframe. Accordingly, the consumer can rely on memory to correctly and timely answer the query. In addition to immersion verification queries, other queries can be included. For example, other queries can comprise sponsor-designed questions, polling questions, demographic questions, etc.

Aspects of the television industry's use of CRĀV ads discussed above mirror CRĀV ads over the Internet. Those aspects comprise the advance promotion and registration of CRĀV players, the assignment of CRĀV ID numbers, research, and the substantial prizing and prize fulfillment aspects. Those practiced in the art will recognize the similarities between the Internet and television broadcast industries, as well as the methods, analysis, and sales techniques utilized by Promoters to determine the sales price and costs for CRĀV ads.

Private Networks

Private networks can exist across all mass media industries. For example, private networks comprise a mailing list (distribution of materials over the U.S. Postal Service delivery network), magazine subscription list, e-mail address distribution list, taped music distributed to subscribers (like Muzak), a connected network of broadcast content linked to interactive devices within bars and restaurants (such as NTN), consumers connected through a cable system to Video on Demand servers, and owners on a Personal Video Recorder network.

For mass media broadcasting of CRĀV ads over a private network, the private network requires the ability to cost effectively distribute (i.e., broadcast) ads across the entire network. That broadcasting differs from targeted media, which include distributing interactive ads to a segment of consumers connected to the private network based on targeted profiles, such as demographics.

In general, ads distributed over a private network are subject to the same consumer avoidance techniques indicative of the industry (i.e., print ads can be avoided by turning the page). Similarly, the implementation of CRĀV ads across a private network will enhance immersion, just as it would across the public network version of the same CRĀV ads.

Convergence

To enhance the effectiveness of CRĀV ads, the CRĀV ads can be broadcast across a convergence of multiple media forms ("cross-media" broadcasting). For example, a Promoter can distribute CRĀV ads comprising the same message about a new automobile across the radio, television, Internet, and print mediums. The ads can be presented simultaneously or at different times on the multiple media forms. While the ads can have different appearances based upon restrictions of each media, the immersion verification query can be the same across all media.

Figure 21 illustrates a CRĀV ad broadcast over a convergence 2100 of mass media formats according to an exemplary embodiment of the present invention. As shown, a Promoter can broadcast to consumers 110 a CRĀV ad or ad pod over two or more of the broadcast networks 105. The CRĀV ad or ad pod can be broadcast simultaneously or

independently over the multiple broadcast networks 105. The consumers 110 can react to the CRĀV ad or ad pod by responding to an immersion verification query about a selected content portion of a CRĀV ad or pod. The consumers 110 can respond to the query through one or more of the response devices 111. The query can be provided over one or more of the multiple broadcast networks 105. Alternatively, the query can be provided over the response devices 111. The response devices 111 communicate the consumers' query responses to the data storage center 195 through the respective Service Provides 112. A reward can be granted to a consumer that responds correctly to the query.

In an exemplary embodiment, a Promoter or Advertiser can bundle CRĀV ads across all media, and the interaction process also can be triggered by each media individually or through instructions provided in one of the media (for example, television). In an exemplary embodiment, one media can provide "clues" to assist CRĀV players in correctly answering CRĀV ads in another media. For example, a local newspaper might publish an ad with a CRĀV logo. The ad can explain that a televised CRĀV ad sponsored by the same Advertiser will be broadcast within a CRĀV ad pod during a certain timeframe that evening, over a specified television network. In an exemplary embodiment, immersion verification can be available only after the televised CRĀV ad airs. The query can be broadcast on air, provided in the original ad, or provided during the response/interaction process. Accordingly, the CRĀV logo on the print ad can provide the future televised CRĀV ad viewer with a clue as to which ad in the indicated CRĀV pod is the ad for which the immersion query applies. This convergence methodology can be implemented over the radio, or in unison with radio, print, television, well-timed direct mail, private networks, or other broadcast media. Additionally, such a "detached" CRĀV ad can be distributed in various parts over various mass media formats.

Another exemplary form of convergence is the utilization of the bandwidth provided over a high definition signal. This bandwidth can be divided into multiple signals, which can include data, Internet, radio, and televised content. Multiple-channel use of this bandwidth can provide delivery of normal or high definition televised or radio CRĀV ads, while also providing Internet content that might include Immersion Verification Queries. Similarly, the Internet signal might include CRĀV ads (stream, display, or banner with video and/or audio vignettes). As indicated above, those Internet CRĀV ads can utilize the same Immersion Verification Queries as other cross-media

CRĀV ads in the marketplace. Additionally, the multiple media formats can provide clues to viewers of televised CRĀV ads as to which ad or ads in a scheduled televised pod will be subject to immersion verification.

Another exemplary form of convergence comprises "back channel" technology, which provides a data feed from television set top boxes or private video recorders ("PVRs"). The set top boxes and PVRs receive broadcast content signal over a satellite or cable network and display the signal on a monitor. The monitor can comprise a TV. Consumers can access the back channel of the set top boxes or PVRs to send data from the set top boxes or PVRs to a third party. This back channel signal can be delivered by a second signal source. The second signal source can comprise broadband or dial-up Internet access, telephone, cable, or satellite. The back channel signal also can provide two-way communication. Accordingly, immersion verification, registration, and response/interaction can be performed utilizing the back channel capabilities of the set top boxes or PVRs.

For set top boxes and PVRs, CRĀV ads (or elements of CRĀV ads) can be delivered to the consumer via a convergence of mass media formats. For example, the alert and vignette can be delivered via television broadcast, while the immersion verification query and interaction elements can be delivered via Internet.

In an exemplary embodiment, while watching a CRĀV ad, the consumer can press a button on the set top box, PVR, or the remote control, which opens a second CRĀV ad. The second CRĀV ad can comprise a display ad or even full motion video and can provide some or all of the elements of the on-air CRĀV ad. That exemplary embodiment can expose the consumer to a second branded CRĀV advertisement.

Those skilled in the art will recognize that the present invention applies to any mass media broadcast network and that new types of delivery technologies can serve as new mass media platforms for the delivery of content and ads, including CRĀV ads. Those future media will form part of the CRĀV ad delivery and interaction system and will be able to participate in the cross-media convergence methodologies discussed above.

Interactive Remote Query-Response Device

Figure 22 is a block diagram depicting a system 2200 for remotely interacting with broadcast content according to an exemplary embodiment of the present invention. As

shown in Figure 22, the broadcast network 105 broadcasts content 2203 to a broadcast receiver 2205. In an exemplary embodiment, the broadcast network 105 comprises a broadcast television network 120, and the broadcast receiver 2205 comprises a television of a recipient (consumer 110). In an alternative exemplary embodiment, the broadcast network 105 comprises a cable network 135, and the broadcast receiver 2205 comprises either a television receiving the cable input directly or a cable tuner set-top box that receives the cable input and presents the broadcast content 2203 on a television. In another alternative exemplary embodiment, the broadcast network 105 comprises a satellite network 140, and the broadcast receiver 2205 comprises a satellite receiver that receives the broadcast content 2203 and presents the broadcast content 2203 on a television. In other exemplary embodiments, the broadcast network 105 can comprise a broadcast radio network, and the broadcast receiver 2205 can comprise a radio receiver; or the broadcast network 105 can comprise a server communicating streaming audio or video, and the broadcast receiver 2205 can comprise a personal computer connected to the server via a distributed computer network, such as the Internet. Other broadcast networks and receivers are within the scope of the present invention.

A server computer 2230 communicates a query to a client computer 2220 via a distributed computer network. The query comprises a question about a selected portion of the broadcast content 2203. As shown in Figure 22, the network can comprise the Internet 2225. In exemplary embodiments, the client computer 2220 can comprise a personal computer, a laptop computer, or a personal digital assistant (PDA). In other exemplary embodiments, the client computer 2220 can comprise a cable or satellite set-top box, a video cassette recorder, or a personal video recorder (PVR). In those embodiments, the client computer 2220 also can comprise the broadcast receiver 2205.

The client computer 2220 communicates the query to a client transmitter/receiver 2215. The client transmitter/receiver 2215 transmits an interactive communication signal 2217 to an interactive remote control 2210, which comprises the interactive remote query-response device. The interactive communication signal 2217 can comprise the query received from the server computer 2230. Additionally, the interactive communication signal 2217 can comprise a synchronization signal 2204 (discussed below) or other information.

In an exemplary embodiment, the client transmitter/receiver 2215 can be an integral component of the client computer 2220. In an alternative exemplary embodiment, the client transmitter/receiver 2215 can comprise a separate component coupled to the client computer 2220. The client transmitter/receiver 2215 can comprise a single component performing both transmitting and receiving functions. Alternatively, the client transmitter/receiver 2215 can comprise separate components that perform the respective transmitting and receiving functions. For example, for a PC-based implementation, the client computer 2220 can be coupled to the client transmitter/receiver 2215 via the client computer's 2220 USB, serial, or other ports, via a card installed in a card slot, or via an Ethernet coupled to the client computer 2220. Throughout this specification, reference to a "client transmitter/receiver" 2215 refers to any of those exemplary embodiments discussed above.

The interactive remote control 2210 receives the interactive communication signal 2217 and presents the query to a recipient operating the interactive remote control 2210. The interactive remote control 2210 will be described with reference to Figures 22 and 23. Figure 23 is block diagram depicting the interactive remote control 2210 according to an exemplary embodiment of the present invention.

Using the interactive remote control 2210, a recipient of the broadcast content 2203 can tune the broadcast receiver 2205 to the station channel upon which the broadcast content 2203 will be presented. In an exemplary embodiment, the recipient can input the station channel to a processor 2304 of the remote control 2210 via an input device, such as a channel control keypad 2310. The processor 2304 generates a channel control signal 2212 comprising instructions to tune the broadcast receiver 2205 to the station channel. Then, a channel control transmitter 2312 transmits the channel control signal 2212 to the broadcast receiver 2205, thereby tuning the broadcast receiver 2205 to the station channel.

The channel control keypad 2310 can allow the interactive remote control 2210 to perform remote control functions for a television or other multi-media devices. The multi-media devices can comprise cable boxes, digital satellite set-top boxes, PVR controls, and audio receiver and amplifier controls. The interactive remote control 2210 can comprise a "Universal Remote," with numerous device control codes stored within a memory (not shown) during the manufacturing process. Additionally, the interactive remote control

2210 can learn the remote control functions, utilizing conventional technology used in "learning remotes." The interactive remote control 2210 also can download remote control codes from the Internet for storage in the memory, thereby allowing the recipients to easily update the codes as new hardware is added to the home.

An interactive transmitter/receiver 2302 receives the interactive communication signal 2217 transmitted from the client transmitter/receiver 2215 and communicates the interactive communication signal 2217 to the processor 2304. The processor 2304 parses the query from the interactive communication signal 2217 and presents the query on a display 2306. In exemplary embodiments, the display 2306 comprises an LED or LCD display, with or without backlighting. Alternatively, the display 2306 can comprise a full color visual active matrix display of the design and specifications of those utilized with PDAs and laptop computers. The size and power requirements of the display affect the power requirements, battery specifications, and expected battery life of the interactive remote control 2210.

The client transmitter/receiver 2215 can interact with multiple interactive remote controls 2210 within a single location by referencing a unique media access control ("MAC") address for the respective interactive remote control 2210. In that exemplary embodiment, the client computer 2220 can recognize the MAC address to determine which interactive remote control 2210, and indirectly which recipient, is interacting. Additionally, the client transmitter/receiver 2215 can transmit generic interactive communication signals 2212 that can be received by any interactive remote control 2210 within range.

Transmissions between the client transmitter/receiver 2215 and the interactive transmitter/receiver 2302 can comprise signals using the same or different format as that used by the channel control transmitter 2312. For example, radio frequency (RF), infrared (IR), ultra wide band (UWB), or other methods can be used to transmit the interactive communication signal 2217 and the channel control signal 2212.

The recipient operating the interactive remote control 2210 can respond to the query directly through the interactive remote control 2210. The recipient can input a response to the processor 2304 via an input device, such as an interactive response keypad 2308. In an exemplary embodiment, the interactive response keypad 2308 comprises a complete alpha/numeric keyboard-type keypad. In an alternative exemplary embodiment,

the interactive response keypad 2308 comprises multiple choice response buttons. In that embodiment, the recipient can input a response to a multiple choice question by selecting the corresponding multiple choice button. Thus, the interactive response keypad 2308 can comprise simple keys for multiple choice responses and can be extended to include a full "QWERTY" keyboard with numerals, symbols, and fully functional arrow keys and special function keys customized for the interactive response process. In another exemplary embodiment, the interactive response keypad 2308 can comprise "soft buttons" corresponding to adjacent information presented on the display 2306. Those soft buttons can provide one-touch entry by the recipient of pre-programmed or on-screen interactive responses (such as multiple choice letters or selections), or to store pre programmed macros relative to the interaction (i.e., identification numbers that allow multiple users to log into and utilize the interactive remote control 2210). In other exemplary embodiments, the input device for inputting the response to the query can comprise a touch screen, a pressure sensitive screen operated by a stylus, a joystick, or other suitable device for inputting the query response into the interactive remote control 2210.

In an exemplary embodiment, the interactive response keypad 2308 and the channel control keypad 2310 can comprise separate components of the interactive remote control 2210. In an alternative exemplary embodiment, the interactive response keypad 2308 and the channel control keypad 2310 can comprise a single component of the interactive remote control 2210. In that case, the interactive remote control 2210 can comprise a selector button (not shown) to switch between an interactive response function and a channel control function.

The interactive transmitter/receiver 2302 transmits the response input by the recipient to the client transmitter/receiver 2215 via an interactive communication signal 2217. In an exemplary embodiment, the interactive transmitter/receiver 2302 comprises a single component performing both transmitting and receiving functions. In an alternative exemplary embodiment, the interactive transmitter/receiver 2302 comprises separate components that perform the respective transmitting and receiving functions. Throughout this specification, reference to an "interactive transmitter/receiver" 2302 refers to either of those exemplary embodiments.

The client transmitter/receiver 2215 communicates the recipient's response received from the interactive transmitter/receiver 2302 to the client computer 2220. The

client computer 2220 communicates the recipient's response to the server computer 2230 via the Internet 2225. The server computer 2230 communicates the recipient's response to the data storage center 195.

The data storage center 195 determines whether the recipient's response comprises a correct reply to the query. Then, the data storage center 195 awards a prize to a recipient that submits a response comprising a correct reply to the query. Each response comprising a correct reply to the query can indicate that the recipient providing the response was exposed to at least the selected portion of the broadcast content 2203 addressed in the query. In an alternative exemplary embodiment, the server computer 2230 can comprise the data storage center 195 and can perform the functions of the data storage center 195.

Presentation of the query on the interactive remote control 2210 can be synchronized with presentation of the broadcast content 2203 on the broadcast receiver 2205. The broadcast network 105 can communicate a synchronization signal 2204 to the server computer 2230. The synchronization signal 2204 can comprise information indicating the broadcasting time at which the broadcast network 105 will broadcast the broadcast content 2203. The synchronization signal 2204 also can comprise the station channel upon which the broadcast content 2203 will be presented.

In an exemplary embodiment, the server computer 2230 can communicate the query to the client computer 2220 based on the broadcasting time in the synchronization signal 2204. Accordingly, the server computer 2230 can control the time at which the interactive remote control 2210 presents the query by controlling the time at which the server computer 2230 communicates the query to the client computer 2220.

In an alternative exemplary embodiment, the server computer 2230 can communicate the synchronization signal to the client computer 2220 via the Internet 2225. Then, the client computer 2220 can transmit the query to the interactive remote control 2210 via the client transmitter/receiver 2215 based on the broadcast time in the synchronization signal 2204. For example, the client computer 2220 can communicate the query at the broadcast time indicated in the synchronization signal 2204. In that case, the interactive remote control 2210 will display the query in synchronization with presentation of the broadcast content 2203 on the broadcast receiver 2205. Alternatively, the broadcasting time information in the synchronization signal 2204 can include a delay to allow presentation of the query on the interactive remote control 2210 at a desired time

after presentation of the broadcast content 2203 on the broadcast receiver 2205. Accordingly, the client computer 2220 can control the time at which the interactive remote control 2210 presents the query by controlling the time at which the client transmitter/receiver 2215 transmits the query to the interactive remote control 2210, based on the information in the synchronization signal 2204.

In another alternative exemplary embodiment, the client computer 2220 can transmit the synchronization signal 2204 to the interactive remote control 2210 via the client transmitter/receiver 2215. In that case, the processor 2304 can present the query on the display 2306 based on the broadcasting time information in the synchronization signal 2204. Accordingly, the processor 2304 can control the time at which the interactive remote control 2210 presents the query by controlling the time at which the query is presented on the display 2306.

In an exemplary embodiment, the server computer 2230 (or the web site presented by the server computer 2230) also can notify the recipient via the display 2306 of the interactive remote control 2210 of desirable content available on other television channels. The desirable content can comprise CRĀV ads being presented on different networks at different times. Alternatively, the desirable content can comprise any pre-selected content, such as breaking news, selected sports teams, selected entertainers, selected TV shows, or other content for which the recipient requested notification of its broadcast. Accordingly, the recipient can change channels to the view the desirable content, in response to the notification received from the server computer 2230. As discussed with reference to Figure 28, the interactive remote control 2210 can automatically tune the broadcast receiver 2205 to the station channel on which the desirable content will be presented, in response to the notification received from the server computer 2230. Thus, the recipient can pre-select content for which the recipient desires notification of its broadcast. When the server computer 2230 detects broadcasting or subsequent broadcasting of the pre-selected content, the server computer 2230 can generate and communicate a synchronization signal 2204 comprising an identification of the content, the broadcast time, and the broadcast station channel. The display 2306 presents the information from the synchronization signal. Then, the recipient can tune the broadcast receiver 2205 to the desired station channel to view the pre-selected content. Alternatively, the interactive remote control 2210 can automatically tune the broadcast

receiver 2205 to the desired station channel for presentation of the pre-selected content. The recipient can configure the interactive remote control for either manual or automatic operation.

The client transmitter/receiver 2215 can interact with multiple interactive remote controls 2210 within a single location by referencing a unique MAC address of the respective interactive remote control 2210. In that exemplary embodiment, the client computer 2220 can recognize the MAC address to determine which interactive remote control 2210, and indirectly which recipient, is interacting.

A MAC address comprises a hardware address that uniquely identifies each node on a network. When a recipient registers with CRĀV, the recipient provides his demographics (age, sex, address, salary, education, etc.) to obtain a registration number. Then, the user associates the MAC address of his interactive remote control 2210 with his registration number. Multiple recipients can use the same interactive remote control 2210 based on their individual registration numbers and the MAC address. For example, a family of four can each have different registration numbers. Each time one of the family members logs into the server computer 2230 via the interactive remote control 2210, the server computer 2230 can identify the particular individual based on the registration number. Accordingly, the server computer 2230 can communicate queries about the broadcast content 2203 based on the demographics of the family member that is currently using the interactive remote control 2210.

In an alternative exemplary embodiment, the server computer 2210 can communicate generic queries that are not based on the demographics of the individual recipients. Accordingly, non-registered (and registered) recipients can receive the queries and respond. Additionally, the broadcast content 2203 can comprise the query, and the recipient can respond to that query via the interactive remote control 2210.

The exemplary embodiment illustrated in Figure 22 depicts a single recipient interacting with the broadcast content 2203 using the interactive remote control 2210. However, multiple recipients can simultaneously receive and interact with the broadcast content 2203 presented on multiple broadcast receivers 2205 by connecting multiple client computers 2220 to the server computer 2230 and by coupling multiple interactive remote controls 2210 to the multiple client computers 2220.

The exemplary embodiment illustrated in Figure 22 depicts a "two-part" interactive television process, where the broadcast network 105, utilizing existing broadcast technology and infrastructure, broadcasts the interactive content (and queries) to the recipients (consumers 110), and the recipients respond via the Internet-connected information gathering system. The recipients, utilizing the interactive remote control 2210 connected to the Internet, send query responses to the web site on the sever computer 2230 and receive/interact with any other queries sent to the recipient via the Internet 2225. The Internet web site on the server computer 2230 can collect, process, or data harvest the responses, or can send that information to the data storage center 195 (as in the CRĀV interactive ad process). Additionally, a third party "synchronization service" can synchronize the posting of queries and follow-up queries to the broadcast content 2203, ensuring that timely and accurate information is sent and collected through the interactive remote control 2210. In some instances, the synchronization service can be automated by the Promoter, television network, cable network, satellite network, or server computer, or the broadcaster can provide those services on their own, manually or in an automated manner.

For an exemplary embodiment, the interactive remote control 2210 provides interactive television services as its primary function. The interactive remote control 2210 optionally allows the recipient to remotely control a television or home theater system to control the power, volume levels and channels being viewed on the broadcast receiver 2205. The interactive remote control 2210 can utilize two integrated communication transmitters – one to interact with the client computer 2220 (i.e., utilizing RF), and one to transmit channel control signals 2212 (i.e., utilizing IR). The same or different keys or buttons on the interactive remote control 2210 can be utilized to enter interaction input (query responses) as well as television controls. Such an interactive remote control 2210, serving only to provide interactive television services along with television remote control functions, can be constructed and sold at prices that will attract mass consumer purchases.

In an exemplary embodiment, the client computer 2220 can comprise a cable set-top box or satellite receiver, which performs the separate, dual functions of the client computer 2220 and the broadcast receiver 2205. The cable set-top box or satellite receiver can comprise a back channel that communicates information over a telephone or Internet connection to the server computer 2230. That back channel is different from the channel

or medium used to broadcast the content from the broadcast network 105 to the broadcast receiver 2205 component of the cable set-top box or satellite receiver.

Other components (not shown) of the interactive remote control 2210 comprise an internal rechargeable (or replaceable) battery system sufficient for untethered operation from a hard-wired power source. The interactive remote control 2210 also can comprise charging contact points for connecting to a charging cradle, or an alternate DC power plug, to allow periodic charging of the device. Alternatively, the interactive remote control 2210 can comprise a removable battery compartment, which can utilize disposable or rechargeable batteries. The interactive remote control 2210 can comprise sufficient memory and processing power to conduct calculations, interactive events, and remote control functions. The interactive remote control 2210 can allow for future expansion through one or more card slots (for the addition of PMCIA cards or flash memory cards, etc.), as well as the ability to add new keyboard skins to allow special interactive applications that may be introduced in the future.

Figure 24 is a flowchart depicting a method 2400 for remotely interacting with broadcast content 2203 according to an exemplary embodiment of the present invention. The method 2400 will be described with reference to Figures 22, 23, and 24. In step 2405, the broadcast network 105 broadcasts content 2203 to multiple recipients. In step 2410, the interactive remote control 2210 tunes the broadcast receiver 2205 to the desired station channel for receiving the broadcast content 2203. Step 2410 will be discussed in more detail with reference to Figure 25. Additionally, an alternative exemplary method for tuning the receiver to the desired channel will be described with reference to Figure 28.

In step 2415 the broadcast receiver 2205 receives and presents the broadcast content 2203. In step 2420, the query is presented on the interactive remote control 2210. Step 2420 will be discussed in more detail with reference to Figure 26. Alternatively, the query can be presented on the broadcast receiver 2205 as part of the broadcast content 2203.

In step 2425, the recipient communicates a response to the query via the interactive remote control 2210. Step 2425 will be discussed in more detail below with reference to Figure 27. In step 2430, the data storage center 195 determines whether the recipient's response comprises a correct reply to the query. Then, in step 2435, the data storage center 195 awards a prize to a recipient that submitted a response comprising a correct

reply to the query. Each response comprising a correct reply to the query indicates that the respective responding recipient was exposed to the selected portion of the content about which the query asked a question.

The method 2400 can proceed in an online manner whereby a dynamic, real time exchange of information occurs between the user and the data storage center 195 with the interactive remote control 2210 functioning as the user interface. A user's entry into the interactive remote control 2210 can transmit to the data storage center 195 for processing and essentially immediate composition of a return message. The return message can transmit to the interactive remote control 2210 for display within one second or within ten seconds from the time of the user's entry, for example.

Figure 25 is a flowchart depicting a method 2410 for tuning the broadcast receiver 2205 to the desired station channel according to an exemplary embodiment of the present invention, as referred to in step 2410 of Figure 4. The method 2410 will be described with reference to Figures 22, 23, and 25. In step 2505, the recipient inputs the desired station channel into the interactive remote control 2210 via the channel control keypad 2310.

In step 2507, the processor 2304 generates a channel control signal 2212 comprising instructions to tune the broadcast receiver 2205 to the station channel input by the recipient via the channel control keypad 2310. Then, in step 2510, the channel control transmitter 2312 transmits the channel control signal 2212 to the broadcast receiver 2205. In step 2515, the broadcast receiver 2205 receives the channel control signal 2212 and tunes to the desired station channel based on the instructions in the channel control signal 2212. The method then proceeds to step 2415 (Figure 24).

Figure 26 is a flowchart illustrating a method 2420 for presenting the query on the interactive remote control 2210 according to an exemplary embodiment of the present invention, as referred to in step 2420 of Figure 4. The method 2420 will be described with reference to Figures 22, 23, and 26. In step 2605, the broadcast network 105 communicates the synchronization signal 2204 for presentation of the query about a selected portion of the broadcast content 2203. In an alternative exemplary embodiment, the server computer 2230 can generate and communicate the synchronization signal 2204. The synchronization signal 2204 can comprise information indicating a broadcasting time at which the broadcast content 2203 will be presented on the broadcast receiver 2205, as

well as the station channel upon which the broadcast receiver 2205 will present the broadcast content 2203. The synchronization signal also can comprise the query about a selected portion of the broadcast content 2203. Alternatively, the server computer 2230 can add the query to the synchronization signal 2204.

In step 2610, the server computer 2230 communicates the synchronization signal 2204 to the client computer 2220 via the Internet 2225. In step 2615, the client computer 2220 transmits the synchronization signal 2204 through the client transmitter/receiver 2215 to the interactive remote control 2210 via an interactive communication signal 2217.

In step 2620, the interactive remote control 2210 receives the interactive communication signal 2217 comprising the synchronization signal 2204 via the interactive transmitter/receiver 2302. Then, in step 2625, the processor 2304 parses the query from the interactive communication signal 2217 and displays the query on the display 2306 based on the broadcasting time in the synchronization signal 2204.

In an exemplary embodiment, the interactive remote control 2210 displays the query based on the broadcasting time as a result of actions from the server computer 2230. In that case, the server computer 2230 communicates the query to the client computer 2220 based on the broadcasting time information in the synchronization signal 2204. Accordingly the query is communicated to the interactive remote control 2210 at the appropriate broadcasting time for synchronization with presentation of the broadcast content 2203 on the broadcast receiver 2205.

In an alternative exemplary embodiment, the interactive remote control 2210 displays the query based on the broadcasting time as a result of actions from the client computer 2220. In that case, the client computer 2220 transmits the query to the interactive remote control 2210 based on the broadcast time information in the synchronization signal 2204. Accordingly, the client computer 2220 transmits the query to the interactive remote control 2210 at the appropriate time for synchronization with presentation of the broadcast content 2203 on the broadcast receiver 2205.

In another alternative exemplary embodiment, the interactive remote control 2210 displays the query based on the broadcasting time as a result of actions from the processor 2304 of the interactive remote control 2210. In that case, the interactive remote control 2210 receives the synchronization signal 2204 and the query via the interactive communication signal 2217. Then, the processor 2304 determines the appropriate time to

present the query on the display 2306 based on the broadcast time information from the synchronization signal 2204. Accordingly, the processor 2304 presents the query on the display 2306 at the appropriate time for synchronization with presentation of the broadcast content 2203 on the broadcast receiver 2205.

Presenting the query "in synchronization with" presentation of the broadcast content 2203 comprises presenting the query based on the broadcasting time of the broadcast content 2203. In that regard, the query can be presented simultaneously with presentation of the broadcast content 2203, at a predetermined time prior to presentation of the broadcast content 2203, or at a predetermined time after presentation of the broadcast content 2203.

Referring back to step 2625 in Figure 26, the method proceeds from step 2625 to step 2425 (Figure 24).

Figure 27 is a flowchart depicting a method 2425 for communicating a response to the query via the interactive remote control 2210 according to an exemplary embodiment of the present invention, as referred to in step 2425 of Figure 4. The method 2425 will be described with reference to Figures 22, 23, and 27. In step 2705, the recipient inputs a response into the processor 2304 of the interactive remote control 2210 via the interactive response keypad 2308. Then, in step 2710, the interactive transmitter/receiver 2302 of the interactive remote control 2210 transmits the recipient's response from the interactive remote control 2210 to the client transmitter/receiver 2215 of the client computer 2220. In step 2715, the client computer 2220 communicates the recipient's response to the server computer 2230 via the Internet 2225. In step 2720, the server computer 2230 communicates the recipient's response to the data storage center 195. The method then proceeds to step 2430 (Figure 4).

An on-line, real-time connection to the Internet program that allows the recipient to utilize an interactive remote control 2210 is an optimal utilization of the process and device. However, the client computer 2220 also can download its interactive content on a time-delayed basis, and utilizing time-stamped sensitive, encrypted software, can simulate real-time distribution of interactive information to the interactive remote control 2210. That software can be designed so that the recipient cannot access the interactive data unless it is unencrypted on a time-sensitive basis, synchronizing the distribution of the interactive content (queries) with the related interactive broadcast content 2203. The

client computer 2220 can store the responses, optionally attaching accurate time stamped information (which also may be encrypted to prevent tampering by the recipient or others), to verify timely responses. Thereafter, the client computer 2220 can forward the responses to the server computer 2230 (information gathering system 112) when a periodic connection to the Internet 2225 is established. In one exemplary embodiment, the broadcast content 2203 can provide the recipient with a password that, when entered on the interactive remote control 2210 or client computer 2220, unlocks or unencrypts the information stored in the interactive remote control 2210 or client computer 2220. Accordingly, a real-time Internet connection is not required during interaction, which also creates less demand on the Internet, as well as telephone land lines used by dial-up Internet service recipients.

While interactive television broadcast of CRĀV ads is one application for the use of this system and process, as well as for the use of the interactive remote control 2210, those skilled in the art will recognize that any type of broadcast content, such as radio broadcasting, could benefit from the use of this method of providing interactive content, and the interactive remote control 2210 can be used to interact with sound-only, broadcast content as well.

Figure 28 is a flowchart depicting a method 2800 for remotely controlling presentation of broadcast content according to an exemplary embodiment of the present invention. The method 2800 will be described with reference to Figures 22, 23, and 28. In step 2805, a synchronization signal 2204 is generated. The synchronization signal 2204 indicates a subsequent (or current) broadcast time of the broadcast content 2203 and the corresponding station channel for presentation of the broadcast content 2203. As shown in Figure 22, the broadcast network 105 can generate the synchronization signal 2204. In an alternative exemplary embodiment, the data storage center 195 or the server computer 2230 can generate the synchronization signal 2204.

In step 2810, the server computer 2230 communicates the synchronization signal to the client computer 2220 via the Internet 2225 based on the broadcasting time in the synchronization signal. In step 2815, the client computer 2220 transmits the synchronization signal 2204 to the interactive remote control 2210 via the client transmitter/receiver 2215. Then, in step 2820, the interactive remote control 2210 automatically tunes the broadcast receiver 2205 to the station channel in which the

receiver will present the broadcast content 2203. Step 2820 will be discussed in more detail below with reference to Figure 29.

In step 2825, the broadcast network 105 broadcasts the content 2203 to multiple recipients (consumers 110). In step 2830, the broadcast receiver 2205 receives and presents the broadcast content 2203 on the station channel. As illustrated in Figure 28, the method 2800 can automatically tune the broadcast receiver 2205 to the desired station channel at the appropriate time for receiving the broadcast content 2203.

As discussed above, the server computer 2230 communicates the synchronization signal at the appropriate time based on the broadcasting time in the synchronization signal. In an alternative exemplary embodiment, the client computer 2220 can transmit the synchronization signal at the appropriate time based on the broadcasting time in the synchronization signal. In another alternative exemplary embodiment, the processor 2304 can generate the channel control signal 2212 at the appropriate time based on the broadcasting time in the synchronization signal.

Figure 29 is a flowchart depicting a method 2820 for tuning the broadcast receiver 2205 to the station channel on which the receiver will present the broadcast content 2203 according to an exemplary embodiment of the present invention, as referred to in step 2820 of Figure 28. The method 2820 will be described with reference to Figures 22, 23, and 29. In step 2905, the interactive transmitter/receiver 2302 of the interactive remote control 2210 receives the synchronization signal 2204 from the client transmitter/receiver 2215. In step 2910, the processor 2304 generates a channel control signal 2212 comprising instructions to tune the broadcast receiver 2205 to the station channel provided in the synchronization signal 2204.

Then, in step 2915, the channel control transmitter 2312 transmits the channel control signal 2212 to the broadcast receiver 2205. In step 2920, the broadcast receiver 2205 receives the channel control signal 2212 and tunes the receiver to the station channel, as instructed in the channel control signal 2212. The method then proceeds to step 2825 (Figure 29).

Figure 30 is a block diagram depicting an interactive remote control 3000 according to an alternative exemplary embodiment of the present invention. As shown, the interactive remote control 3000 comprises the components illustrated in Figure 23 for the interactive remote control 2210. Additionally, the interactive remote control 3000

comprises a microphone 3002 and a speaker 3004 to allow two-way voice communication. The microphone 3002 receives voice from the recipient and communicates the recipient voice to the interactive transmitter/receiver 2302. The interactive transmitter/receiver 2302 transmits the recipient voice to the client transmitter/receiver 2215 for input into the client computer 2220. Additionally, the speaker 3004 can communicate sender voice received via the interactive transmitter/receiver 2303 from the client transmitter/receiver 2215 of the client computer 2220. Accordingly, the interactive remote control 2210 can provide two-way voice communications, thereby comprising a voice over Internet protocol ("VOIP") telephone.

In an exemplary embodiment (not shown), the microphone 3002 and speaker 3004 can be provided by a headset, or separate earpiece and microphone, that plugs into the processor 2304.

In an exemplary embodiment, the recipient voice can be transmitted between the interactive remote control 2210 and the client transmitter/receiver 2215 in analog form for input into the client computer 2220. Then, the client computer 2220 can process the analog recipient voice using conventional VOIP software to communicate the recipient voice as a VOIP telephone call. Additionally, the client computer 2220 can receive VOIP sender voice via the Internet 2225 and can convert the sender voice to analog form. Then, the client computer 2220 can communicate the analog sender voice via the client transmitter/receiver 2215 to the interactive remote control 2210.

In an alternative exemplary embodiment, the interactive remote control 3000 can comprise an analog-to-digital converter (not shown). The analog-to-digital converter can convert the analog recipient voice to a digital signal before transmitting the digital recipient voice signal to the client transmitter/receiver 2215. Additionally, the interactive remote control 3000 can receive digital sender voice signals and can convert the digital sender voice signals to analog signals for communication via the speaker 3004. The interactive remote control 3000 also can comprise software that performs the VOIP conversion process. In that case, the interactive remote control 3000 can convert the digital recipient voice to a VOIP signal and can transmit that VOIP signal to the client transmitter/receiver 2215. Additionally, the interactive remote control 3000 can receive VOIP sender voice signals from the client transmitter/receiver 2215, convert those VOIP

sender voice signals to analog signals, and communicate the analog signals via the speaker 3004.

To further enhance the desirability of the interactive remote control 2210, certain on-board functionality and hardware can be added to increase the number of tasks the device can accomplish. For example, utilizing the display and multifunction keypad and enabling the device to perform simple or complicated calculations using onboard memory and processors, can allow performance of mathematical calculations prompted by a televised, educational program or game show, which response can subsequently be transmitted from the control 2210 through the wireless connection to the computer, and subsequently to the hosting web site. The control 2210 can be linked or registered to an individual or logged-in user, such that the mathematical response can be matched with the user, who can be a student or contestant.

Additionally, or alternatively, the control 2210 can be manufactured and equipped with a card scanner (not shown), which can enable the user to "swipe" an ID or credit card through the scanner, allowing the user to either "log-in" to the control 2210, or to conduct an Internet-connected transaction. The ID card can enable multiple individuals to quickly log-in and log-out of a single control 2210, in the event of a time-sensitive CRĀV ad, such that more than one person can answer the requisite queries, logout, and then a new user can swipe an ID card, log-in, respond, and logout. In the event a user wishes to purchase something seen on a CRĀV ad, or program, or when prompted by an on-screen prompt or invitation to purchase, the use of an actual credit card, as opposed to simply typing the credit card number, provides a more secure and convenient transaction for both users and vendors.

Furthermore, the indirect Internet connection to the control 2210 can allow users to communicate over the Internet with others connected to the Internet, and with other similar device owners. Simple typed messages sent from the control 2210, using the keyboard, or multi-purpose keys that enable both device controls and communication, can enable chatting between others connected to the hosting website, or simply to the Internet. Typed information can be sent from one control 2210, through the Internet, and to the intended recipient(s), and can be viewed on the display 2306.

As discussed with reference to Figure 30, should the control 2210 be equipped with an earpiece and microphone (which can be discretely incorporated into the control

2210), the control 2210 also can utilize new or emerging VOIP technology, which will send voice packets or streams received from one control 2210, to the client computer 2220 connected to the Internet, over the Internet, to computers also connected to the Internet, and ultimately to other users using Internet-enabled devices that allow them to accept, hear, and communicate with voice or data that is transmitted and intended for their receipt. Conventional software and hardware can enable users of the voice-enabled control 2210 to connect with traditional telephones. However, a more secure and less error-prone environment exists for VOIP between devices connected through a dedicated network, enabled for VOIP. In such an environment, such as two individuals using two controls 2210, connected through an Internet-based network designed to allow those controls 2210 (and users) to communicate, clear voice communications can be enabled, with limited or no packet loss, and at little or no cost to the users.

Indeed, with current voice recognition software, two users on opposite sides of the globe can find each other and communicate over the Internet, simply by one owner (User 1) enabling the control 2210 to communicate by "switching" to phone mode by saying "Phone" into the microphone, by then saying "Find Joe Smith" into the microphone, such that the individual named Joe Smith (who had been identified at an earlier time by User 1, such that only the specific Joe Smith can be connected) can be alerted on his control 2210 (via audible tone or ring, information displayed on the display 2306, vibration, or some combination of those or other alert methods), and Joe Smith can then talk to User 1. Long-distance charges do not apply in such a scenario, further enticing recipients to purchase controls 2210 enabled to interact with CRĀV ads and queries.

In exemplary embodiments, the interactive remote control 2210 can be enabled to control multiple audio and video devices, receive and respond to CRĀV ads or other content, "chat" or "Instant Message" with other Internet and control 2210 users, perform and optionally transmit via the Internet calculations made from the control 2210, purchase items over the Internet by swiping a credit card, and send and receive VOIP communications to other control 2210 users, Internet-connected users, or traditional land-based or wireless telephone users. The same series of connections (and hosting website) that enables interaction with CRĀV ads also can enable all other Internet-based functions conducted by the control 2210.

The interactive response keypad 2308 can be "switched" or enabled, if necessary, to allow secondary functions, such as alphanumeric "typed" functions (which can be illustrated on the display, and then "transmitted" to another user, to allow chat or instant messaging functions) or calculator functions (the process or results of which also can be transmitted to another user, or to a hosted web site that collects those calculated responses, such as an educational or gaming website). The control 2210 can be designed in a compact form factor that most closely resembles a remote control or telephone, allowing one-handed control.

In another exemplary embodiment, the interactive remote control can omit the channel control transmitter. In that case, the interactive remote control can comprise a query-response device that can display a query about a selected portion of broadcast content and can allow a recipient to input and transmit a response to the query.

Figure 31 illustrates the form factor of an interactive remote control 3100 according to an exemplary embodiment of the present invention. The interactive remote control 3100 will be described with reference to Figures 22, 23, and 31. As illustrated, the exemplary interactive remote control 3100 can comprise a compact form factor of a conventional audio/visual remote control or telephone handset. That compact form factor can allow one-handed control by a user.

The interactive remote control 3100 comprises a primary keypad 3102 that allows a user to perform traditional remote control functions to remotely control audio-visual components. A secondary keypad area 3104 allows the user to perform ancillary remote control functions to remotely control other component functions. For example, the secondary keypad area 3104 can allow the user to control video cassette recorders, digital video disk players, personal video recorders (PVRs), or other components. Additionally, the secondary keypad area 3104 can allow the user to perform CRĀV response functions. The CRĀV response functions can comprise selecting multiple choice answers and transmitting those answers to the client computer 2220.

The interactive remote control 3100 also comprises a display 3106. The display 3106 can comprise an LED or LCD display screen, a passive or active matrix type color display, or any other suitable display. The display can present queries received by the interactive remote control 3100, responses input by the user, or other text messages.

The interactive remote control 3100 can comprise a channel control transmitter 2312 (not shown) to transmit channel control signals 2212 (or other audio-visual control signals) and an interactive transmitter/receiver 2302 (not shown) to transmit and receive interactive communication signals 2217.

In an exemplary embodiment, the push buttons in the primary keypad area 3102 can be "switched" or enabled to allow secondary functions. The secondary functions can comprise alphanumeric "typed" functions, calculator functions, or other functions. The alphanumeric typed functions can input text to the display 3106, which then can be transmitted to the remote computer 2220. The transmitted text can comprise a query response, instant messages, or other messages. The calculator functions can allow interaction with educational or gaming content that require the user to calculate responses to queries. In another exemplary embodiment, the secondary functions can comprise telephone dialing.

For telephone functions, the interactive remote control 3100 comprises an earpiece/speaker 3108 and microphone 3110. The speaker 3108 and microphone 3110 can be discreetly located on the front or rear of the device to allow two-way voice communications.

The interactive remote control 3100 also can comprise a card swipe and reader device (not shown) on one side to read magnetic strip information from a card to obtain login information or to conduct consumer transactions.

The exemplary interactive remote control 3100 illustrates a consolidated device enabled to control multiple audio and video devices, receive and respond to CRĀV ads or other content, "chat" with other Internet and interactive remote control 3100 users, perform and transmit calculations, purchase items over the Internet by swiping a credit card, and send and receive VOIP communications to and from other interactive remote control 3100 users, Internet-connected users, or traditional land-based or wireless telephone users.

As illustrated in Figure 31, the interactive remote control 3100 can comprise the balance, weight, design, and dimensions of a conventional multi-function ("universal") remote control for controlling audio/visual components, thereby allowing one-handed use by the operator. The appearance of the interactive remote control 3100 can comprise the appearance of a conventional remote control. Accordingly, consumers can recognize the

interactive remote control 3100 as a multi-function remote control that can replace conventional remote controls for various audio/visual components, plus the additional advantage of enabling remote interaction with advertising or other broadcast content.

Consumers desire such one-handed control of their remote control device. Consumers desire a single remote control that performs multiple functions, rather than multiple remote controls that each perform a single function. The exemplary interactive remote control 3100 can provide such one-handed, multi-function control, plus the ability to interact with broadcast content. For marketing purposes, the appearance of a conventional remote control can cause consumers to recognize that the interactive remote control comprises a multi-function remote control. Upon further inspection, consumers can recognize the additional features of interaction with broadcast content and remote telephone functionality. Furthermore, if one family member is hesitant about purchasing a remote control to interact with broadcast advertisements or other content, the multi-function remote control appearance and functionality can persuade that family member to purchase the interactive remote control 3100, because the interactive remote control 3100 can replace multiple remotes owned by the family and can provide the additional interactive functionality.

Figure 32 is a flow chart depicting a method 3200 for real-time capturing of audience share information for broadcast content 2203 according to an exemplary embodiment of the present invention. The method 3200 will be described with reference to Figures 22, 23, and 32. As illustrated in Figure 32, the method 3200 can comprise steps described previously with reference to the method 2400 of Figure 24.

Referring to Figure 32, in step 2405, the broadcast network 105 broadcasts content 2203 to multiple recipients. In step 3210, the broadcast network 105 broadcasts a content identification signal with the broadcast content 2203. In an exemplary embodiment, the broadcast network 105 can embed the content identification signal in the broadcast content 2203. In alternative exemplary embodiments, the broadcast network can receive content already comprising the content identification signal and can subsequently broadcast the received content. The content identification signal can comprise information to identify the broadcast network, a channel specific to the broadcast network upon which the content is broadcast, or the specific advertising or other content being broadcast. Thus, the content identification signal can comprise one or more content information signals.

In an exemplary embodiment, the content identification signal can comprise an inaudible, high frequency signal comprising information that identifies information about the broadcast content. For example, the information can comprise the broadcast network, channel, date, time, type of content, sponsor, or other content information. Any suitable signal for conveying the content information can be used.

In step 3215, the method 3200 determines whether a particular recipient received the broadcast content 2203. Step 3215 will be discussed in more detail below with reference to Figure 33.

After determining that particular recipients received the broadcast content 2203, the method 3200 follows the method 2400 to verify exposure (immersion) of the particular recipients to the broadcast content 2203. Accordingly, the method 3200 performs steps 2420-2435, discussed previously with reference to Figure 24.

Figure 33 is a flow chart depicting a method 3215 for determining whether a particular recipient received broadcast content 2203 according to an exemplary embodiment of the present invention, as referred to in step 3215 of Figure 32. The method 3215 will be described with reference to Figures 22, 23, and 33.

In step 3305, the interactive remote control 3000 listens for the broadcast content identification signal. In an exemplary embodiment, the interactive remote control 3000 can listen for the content identification signal by monitoring sounds collected via the microphone 3002. In that embodiment, the processor 2304 can interpret sounds collected via the microphone 3002 to determine if the sounds comprise a content identification signal.

In step 3310, the interactive remote control 3000 determines whether it has detected a content identification signal. If the broadcast receiver 2205 is not turned on or is not tuned to the proper channel, then the broadcast receiver 2205 will not present the broadcast content 2203 or the content identification signal. In that case, the interactive remote control 3000 does not detect the content identification signal via its microphone 3002. Accordingly, the method branches to step 3315. In step 3315, the processor 2304 determines that the broadcast content is not being presented at its location.

If the broadcast receiver 2205 is turned on and tuned to the proper channel, then the broadcast receiver 2205 will present the broadcast content 2203 and the content identification signal. In that case. the interactive remote control 3000 can detect the

content identification signal via its microphone 3002. Accordingly, the method 3215 branches from step 3310 to step 3320. In step 3320, the processor 2304 determines that the broadcast content is being presented at its location based upon receipt of the content identification signal.

In step 3325, the processor 2304 records receipt of the broadcast content identification signal. In an exemplary embodiment, the processor 2304 can record the date and time of receipt, as well as the identifying information for the broadcast content. In step 3327, the processor 2304 communicates the recorded receipt of the content identification signal to the data storage center 195 by transmitting the recorded receipt to the client transmitter/receiver 2215 via the interactive transmitter/receiver 2302. Accordingly, the data storage center 195 can determine the number of broadcast receivers 2205 that are presenting the broadcast content 2203.

If desired, the method 3215 can confirm that a recipient actually is being exposed to the broadcast content. For example, if the recipient is not in the room with the broadcast receiver, then the recipient is not being exposed to the broadcast content 2203 being presented by the broadcast receiver 2205, even though the interactive remote control 3000 located in the room is receiving the content identification signal. Accordingly, in step 3330, the server computer 2230 can communicate a confirmation query to the client computer 2220 for transmission to the interactive remote control 3000 via the client transmitter/receiver 2215. Receipt at the data storage center 195 of the content identification signal can trigger sending the confirmation query to the interactive remote control 3000 on a dynamic basis with little or no perceptible delay.

The interactive remote control 3000 can receive the transmitted confirmation query and can present the confirmation query on the display 2306. In an exemplary embodiment, the confirmation query can comprise, "Are you watching?" In other exemplary embodiments, the interactive remote control can vibrate or emit a sound to gain the recipient's attention to the confirmation query.

In one exemplary embodiment of the present invention, the steps of the method 3215 can execute in an essentially real time, online, or dynamic manner. The steps 3305, 3310, 3315, 3320, 3325, 3327, and 3330 can occur within a timeframe that maintains viewer engagement and immersion. The timeframe can be less than fifteen seconds, for

example. In one exemplary embodiment of the present invention, less than two seconds elapses between the step 3305 and the step 3330.

In step 3335, the method 3215 determines whether a response to the query has been received. If the recipient is not present to receive the broadcast content 2203, then the server computer 2230 will not receive a response to the confirmation query. Accordingly, the method branches to step 3340 in which the server computer 2230 confirms that the recipient did not receive the broadcast content because the server computer 2230 did not receive a response to the confirmation query. Then, in step 3345, the server computer records that the recipient did not actually receive the broadcast content, even though the interactive remote control 3000 did detect the content identification signal. In step 3350, the server computer 2230 communicates the record of non-receipt to the data storage center 195 for audience share calculation.

If the recipient is present to receive the broadcast content 2203, then the recipient responds to the confirmation query by entering a response in the interactive remote control 3000 and by transmitting the response from the interactive remote control 3000 to the client transmitter/receiver 2215 for subsequent communication to the server computer 2230. In that case, the method 3215 branches from step 3335 to step 3355 in which the server computer 2230 verifies exposure of the recipient to the broadcast content based on receipt of the response to the confirmation query.

In an exemplary embodiment, the confirmation query can comprise additional queries communicated with, or separately from, the original confirmation query. For example, the additional confirmation query can ask the recipient to enter his demographic information or to enter demographic information for other recipients receiving the broadcast content with him. Accordingly, follow-up queries can be tailored to the demographics of particular recipients not previously registered in data storage center 195.

In step 3360, the server computer 2230 records that the recipient received the broadcast content. Then, in step 3365, the server computer 2230 communicates the recorded receipt to the data storage center 195 for audience share calculation. The method then proceeds to step 2420 (Figure 32).

As discussed above, the method 3200 can record viewer habits of individual viewers via the interactive remote control. Additionally, if recipients log into the server computer using the interactive remote control, then the server computer can determine the

demographics of individual viewers that receive the broadcast content. The method 3200 can provide real-time monitoring of viewer habits by detecting presentation of the broadcast content and forwarding that information to the data storage center for audience share calculation.

If a query regarding a specific portion of the broadcast content comprises a simple answer, such as a multiple choice answer, then a person may get the answer correct by guessing. However, the method 3200 can confirm that the recipient actually is viewing the content. Accordingly, if the recipient did not respond in step 3335 to indicate that he is receiving the content, then the method 3200 can prevent that recipient from receiving the query presented in step 2420. Accordingly, the method 3200 can confirm the immersion verification process.

In an exemplary embodiment, individual recipients can configure their respective interactive remote controls to allow capturing the audience share information or to disable that feature. In another exemplary embodiment, capturing the audience share information can be configured for full-time operation.

In an exemplary embodiment, the interactive remote control used with the method 3200 comprises each component illustrated in Figure 30. In other exemplary embodiments, the interactive remote control can comprise more or less components than those illustrated in Figure 30. For example, in one exemplary embodiment, the interactive remote control can comprise a query-response device that receives queries and transmits input responses to the queries, and also transmits a record of receiving the content identification signal. In another exemplary embodiment, the interactive remote control can comprise a device that transmits a record of receiving the content identification signal. Accordingly, the method 3200 can be implemented with different interactive remote controls that perform different levels of functionality.

Example of Interactive Remote Control

Exemplary embodiments of the present invention enable the following exemplary scenarios:

Mr. and Mrs. Jones, and their daughter Pam, own 3 interactive remote control devices. Their home has an always-on broadband connection to an ISP that is CRĀV enabled, and the interactive remote control devices are linked to the Internet

through a client transmitter/receiver attached to a personal client computer in the study of their home.

Mr. & Mrs. Jones are watching a pre-recorded program on the family room television. The program is stored on the hard drive of a PVR device. The hard drive has stored every televised program that has aired in the last 14 days, and Mr. Jones has selected the program because he and Mrs. Jones enjoy the show. During recorded commercial breaks, either Mr. or Mrs. Jones skip over the content in thirty second increments from their individual interactive remote control devices. Mr. Jones' interactive remote control device is blue, and Mrs. Jones' is red. The Jones have an agreement that they will skip all commercials after viewing the first two seconds. If one party wants to watch the commercial, that party will hit the "rewind thirty second" button, signifying their interest in the ad. This rarely occurs.

The Jones have enabled a feature that allows the CRĀV website to notify them when a live CRĀV ad (pre-selected content) with prizes in excess of $25,000 is about to air on any cable channel. At 8:42 PM, the blue and red interactive remote control devices vibrate, and immediately after, both devices transmit a signal to the television that overrides the PVR, and places the digital cable set-top box to channel 434. Within 3 seconds, a CRĀV alert is broadcast and appears on-screen, announcing that ten fourteen day vacations for two to New Zealand will be awarded to registered CRĀV players who correctly answer the CRĀV query that follows one of the following four ads.

The Jones watch all four ads carefully. Then, on the broadcast channel and on the interactive remote control displays, a query ad appears. The broadcast query is about the soft drink ads that aired; the query on Mr. Jones' display is about the automobile ad that aired; and the query on Mrs. Jones' display is also the soft drink ad query. Ten seconds later, three multiple choice answers appear on the television screen, as well as on both interactive remote control displays. The selections are different on Mr. Jones' display, than on the broadcast channel and on Mrs. Jones's display. Mrs. Jones feels that before answering, she wishes to view the soft drink commercial again, so she "rewinds" the programming, which is stored on the PVR device, and watches the soft drink ad a second time. Mr. Jones selects choice "B" by pressing the "B" button on his interactive remote control, and then presses the "CRĀV" button, which transmits his selection to the CRĀV website, while also resetting his device to allow traditional remote control functions. Mrs.

Jones watches the soft drink commercial again, locates the information that matches one of the multiple choice answers, and presses "C" on her interactive remote control, followed by the "CRĀV" button, which transmits her selection to the CRĀV website.

The CRĀV website recognizes both the selections, and also receives with the selections unique identifier information that allows the data storage center to match each response with the query and the user identification information.

Following the responses by the Jones's, the PVR pre-recorded programming returns to the screen. However, Mrs. Jones' interactive remote control display shows a second query, which asks if she would like to receive two free cases of the new soft drink advertised on the commercial. She would only have to pay $2 for shipping and handling. She elects to accept the offer, so she presses the "YES" button, and then swipes her credit card on the card reader. The display asks for a PIN number, which she enters. Finally, the display explains that her order was received, that $2 was charged to her account under the charge name "Free Case Promo," and that she will receive the cases and a $3 off coupon good on her next purchase of that soft drink within 10 business days.

Meanwhile, upstairs, Pam is doing her homework, which is broadcast on channel 885. She is studying various subjects. History questions are posed on screen, and multiple choice answers are displayed on her interactive remote control display. She selects and transmits her answers. The home personal computer recognizes the signal being sent from her interactive remote control device (which is camouflage colored), and transmits her choices through the CRĀV-enabled website, to a database that collects her choices and grades her responses. Pam is periodically asked mathematical questions, and her interactive remote control is enabled to perform calculations. She transmits the results of her calculations. When she gets an answer correct, her display notifies her as such. When she gets an answer wrong, the device beeps and invites her to try again. After two wrong attempts, the display will display the correct answer and also teaches the correct method of calculating the correct answer. The correct answer and explanation are transmitted from the hosting web site, through the CRĀV ISP provider, to Pam's interactive remote control device.

After she finishes her homework, Pam says "Phone" into the microphone, and then says "Find Susan." The interactive remote control transmits the commands to the ISP, which recognizes the voice commands, opens up network connections to allow VOIP

functionality, and then matches Pam's "Find Susan" command with a user registered by Pam, "Susan Rogers," who owns an interactive remote control as well. The system recognizes that Susan Rogers is connected to the network as well. Susan's interactive remote control sounds a ring tone. Susan picks up her interactive remote control device and sees on the display that Pam Jones is trying to reach her. Susan says "Hello" into the microphone. The device recognizes that the "Hello" command in Susan's voice is to enable voice communications, and the two parties are connected and conduct a five minute VOIP conversation.

Lastly, several miles away, Grandma Jones is at her home, using her interactive remote control device (which her son purchased over the Internet, using his interactive remote control device and card scanner). Suddenly, Grandma feels a sharp pain in her chest. She immediately presses a special "Emergency" sequence of buttons on her interactive remote control. This sequence of buttons alerts her personal computer to send an emergency message to the CRĀV-enabled web site, which alerts an individual who is monitoring the web site to contact EMS providers in the area of Grandma Jones. Three minutes later, armed with Grandma Jones's medical history, EMS arrives at her home, and they begin administering medical attention. As she is placed on the stretcher and taken to the hospital, she clutches her interactive remote control to her chest.

Simultaneous to the EMS alert, Mr. Jones is also notified on his interactive remote control that his mother has activated her interactive remote control emergency functions. Moments later, his display reveals that she was taken to the local emergency room. Mr. Jones speaks into his interactive remote control device "Intercom," and then says, "Pam, come here." Upstairs, Pam's interactive remote control device's speaker sounds out "Pam, come here." Pam rushes downstairs, to hear that Grandma is being rushed to the hospital. The entire family runs to the car and arrives at the emergency room fifteen minutes later.

An hour later, the Jones' are ushered to a private room where Grandma is resting comfortably, interactive remote control still held close to her body. Grandma recognizes her son and family, and with a tear in her eye thanks her son for the thoughtful gift of an interactive remote control, which saved her life.

Meanwhile, at home in his absence, Mr. Jones' interactive remote control device sounds a special tone. Then, his display flashes a message that will remain on the screen until he arrives home several hours later. The Jones' are going to New Zealand.

Interactive Remote Control with Identification Capabilities

Figure 34 is a functional block diagram illustrating a system 3400 for coupling a location to two networks according to an exemplary embodiment of the present invention. As illustrated in Figure 34, the system 3400 comprises residences 3411, 3412, 341N coupled to two networks 105, 2225. In exemplary embodiments, the residences 3411, 3412, 341N can comprise a person's residence, a hotel, a restaurant, a bar, or other suitable location. Users at the residences 3411, 3412, 341N interact with a respective broadcast receiver 2205 coupled to the broadcast network 105 and with a data station 3450 coupled to the data network 2225. The data network 2225 is illustrated as the Internet 2225. A broadcast network 105, such as a cable television network, broadcasts content choices to each residence 3411, 3412, 341N in the system 3400. The residences 3411, 3412, 341N can be coupled to the broadcast network 105 through a hardwire connection, a wireless connection, or other suitable means. A hardwire connection can comprise coaxial cable, a fiber optic link, other suitable connection. A wireless connection can comprise satellite or other suitable connection. In one exemplary embodiment of the present invention, the broadcast network 105 includes multiple television stations broadcasting television programming over the airwaves, wherein each station employs a separate antenna for distributing content specific to that station. In other words, in one embodiment of the present invention, the residences 3411, 3412, 341N can receive television or radio programming from local stations via antenna-based broadcasts.

In addition to receiving broad content in an electronic format via the broadcast receivers 2205, each residence 3411, 3412, 341N can receive printed broadcast content such as newspapers, magazines, books, mailers, leaflets, and product packaging. Printed materials can arrive at a residence 3411, 3412, 341N through the mail or via product distribution outlets such as stores, for example. In one exemplary embodiment of the present invention, the broadcast network 105 illustrated in Figure 34 distributes printed material. For example, the broadcast network 105 can comprise a postal service or other mail service, and the broadcast receivers 2205 can be mail boxes.

The residences 3411, 3412, 341N can be geographically dispersed or concentrated in a locale, such as a town, neighborhood, or community. In one exemplary embodiment of the present invention, the residences 3411, 3412, 341N are geographically dispersed but

share a common demographic characteristic, such as a socioeconomic standard. The present invention is not limited to a specific number of residences 3411, 3412, 341N, but rather can include an arbitrary number of residences 3411, 3412, 341N. The system 3400 can include a single residence, several residences, several hundred residences, or many thousand residences 3411, 3412, 341N.

The broadcast network 105 presents content choices to each broadcast receiver 2205 in each residence 3411, 3412, 341N. Each user 3421, 3422, 342N in each residence 3411, 3412, 341N can tune the respective broadcast receiver 2205 using an interactive remote control 3410 to receive a content selection from the content choices that are available via the broadcast network 105. While tuning typically involves adjusting a broadcast receiver 2205 so that it is receptive to a specific frequency range of signals, those skilled in the art appreciate that tuning a broadcast receiver 2205 can involve other techniques for causing the reception and/or presentation of a specific content choice. For example, in one exemplary embodiment of the present invention, the broadcast network 105 distributes content choices on a time-slice basis, sometimes referred to as time division multiplexing. In this case, tuning the broadcast receiver 2205 can involve setting the broadcast receiver 2205 so that it receives the time slices that carry a specific content choice, such as a television program.

Each user 3421, 3422, 342N has an interactive remote control 3410 that communicates channel selection commands to a respective broadcast receiver 2205. The communicated channel selection tunes the corresponding broadcast receiver 2205 to a channel associated with a segment of content, such as entertainment or advertising content. The interactive remote control can also have a capability to interact with printed materials such as product packaging and written advertisements.

Each interactive remote control 3410 links to the Internet 2225 via the data station 3450, which is typically on the residential premises but may be offsite or remote from a residence 3411, 3412, 341N. In other words, each interactive remote control 3410 is linked with two communication networks 105, 2225, one that broadcasts content for presentation on a broadcast receiver 2205 and one that communicates data and that can provide interactive services such as survey participation, audience characterization, viewership analysis, product ordering, CRĀV activities, and other forms of user interaction with broadcasts and/or the communication system 3400.

Although Figure 34 illustrates the data communication network 2225 as the Internet 2225, this network 2225 also can be another wide area network ("WAN"), which may or may not include the Internet 2225. Exemplary WANs in accordance with various embodiments of the present invention include cellular telephone networks, wire-line telephone networks, satellite networks, distributed computing networks, private networks, bidirectional data networks, regional networks, and metropolitan area networks.

In addition to linking each interactive remote control 3410 to the Internet 2225, each data station 3450 provides a level of data processing that can reduce the communication burden on the link between the interactive remote control 3410 and one or more remote sites 2230 on the Internet 2225 that are involved in data processing. In other words, the data station 3450 can perform data processing functions as required to minimize the bandwidth requirements of the various communication links and devices in the system 3400.

As described above in reference to Figure 22, a server computer 2230 and a data storage center 195 includes a function that synchronizes the system 3400 to correlate the transmission of data over the Internet 2225 to and from the interactive remote control 3410 with the distribution of content over the broadcast network 105.

Figure 35 is a functional block diagram illustrating a system 3500 for interacting with the broadcast receiver 2205 and the data network 2225 according to an exemplary embodiment of the present invention. As shown in Figure 35, the system 3500 comprises a user 3421 located in a residence 3411. In exemplary embodiments, the residence 3411 can comprise a residence, hotel, restaurant, bar, or other suitable location. In one exemplary embodiment of the present invention, the residence 3411 can be one of the residences 3411, 3412, 341N of the system 3400 of Figure 34. The user 3421 operates the interactive remote control 3410 to interact with the broadcast receiver 2205 coupled to the broadcast network 105 and with data network 2225 via the data station 3450.

The user's interactions 3530 with the interactive remote control 3410 include inputs of channel selections 3535 and data 3540. In an exemplary embodiment, the channel selections 3535 can comprise channel tuning input. In another exemplary embodiment, the data 3450 can comprise personal, financial, or other sensitive data. The user 3421 can input a channel selection 3535 into the interactive remote control 3410 via a keypad entry, spoken command, or other entry technique known in the art. The user can

input data 3540 into the interactive remote control 3410 in a similar manner, via keypad, voice command, or other data entry technique known in the art. The keys or buttons on a keypad can have associated switches, either mechanical switches or solid-state electronic switches without moving parts, such as a semiconductor transistor, wherein pressing a key causes the switch to change states. In an exemplary embodiment, the interactive remote control 3410 can comprise a single input device to accept channel selections and data entries from the user. In an alternative exemplary embodiment, the interactive remote control 3410 can comprise multiple input devices dedicated to either channel selection of data entry.

Channel selection input 3535 flows to a channel control module 3545 that transmits the channel control signal 2212 over an air medium 3525 to the broadcast receiver 2205. The broadcast receiver 2205 responds to the received channel control signal 2212 by tuning to a channel corresponding to the channel control signal 2212 to receive the content 2203 broadcast from the broadcast network 105 and to present the broadcast content 2203 to the user 3421 as content 3510 for viewing, listening, recording, or other purpose.

Channel control module 3545 also forwards the user's channel selection input 3535 to a channel identifier module 3550. The channel identifier module 3550 determines the content segment 2203 that corresponds to the user's channel selection 3535. In other words, the user 3421 enters a channel selection 3535 into the interactive remote control 3410, and the channel identifier module 3550 identifies the content 3510 presented on the selected channel of the broadcast receiver 2205. The broadcast content 2203 received by the broadcast receiver 2205 results in the content 3510 presented by the broadcast receiver 2205 to the user 3421.

In an exemplary embodiment, the channel identifier module 3550 correlates the channel selection 2212 to content 3510 based on correlation data received on the interactive remote control 3410 from the Internet 2225 via the data interface 3560. One or more synchronization signals 2204 between the broadcast network 105 and the Internet-based server computer 2230 map broadcast programming to the channel choices available to the residence 3411. Based on a broadcast schedule, the user's channel selection 3535, and a time associated with this selection 3535, the channel identifier module 3550 identifies the content 3510 presented by the broadcast receiver 2205. In exemplary

embodiments, the broadcast schedule can be a table, lookup table, matrix, or a list of time slots, channels, and programming schedule. In another exemplary embodiment, the broadcast schedule also can be a dynamic correlation between channels and advertising and programming content carried on those channels. In other words, the channel identifier module 3550 can use the synchronization signal 2204 as a schedule, effectively defining a current time on a broadcast schedule, without requiring advance or other knowledge of other schedule times.

For example, the user 3421 can input the channel selection 3435 corresponding to "Channel 13" into the interactive remote control 3410 because the user 3421 knows that Channel 13 is currently broadcasting the local news. The channel control module 3545 encodes the channel selection 3535 into the channel control signal 2212 and wirelessly communicates the channel control signal 2212 to the broadcast receiver 2205. In response, the broadcast receiver 2205 tunes to Channel 13 and presents the local news program and the accompanying commercials associated with that program as the content 3510. Channel control module 3545 also communicates the user's "Channel 13" entry to the channel identifier module 3550. Using a schedule or other correlation information, the channel identifier module 3550 correlates the user's Channel 13 channel selection 3535 to the specific local news program that is being broadcast and/or the commercials associated with that program.

In one exemplary embodiment of the present invention, the channel identifier module 3550 uses a lookup table to perform the correlation between the user's 3421 channel selection 3535 and the content 3510 that is presented on the selected channel of the broadcast receiver 2205. The channel identifier module 3550 can downloaded the lookup table from the Internet 2225 via the data station 3450 and the data interface 3560. In alternative exemplary embodiments, the data station 3450, the server computer 2230, or another device linked to the interactive remote control 3410 and coupled to the Internet 2225 can perform, in part or in full, the content identifying correlation.

The channel identifier module 3550 communicates the identification of the content 3510 that is presented on the broadcast receiver 2205 to the data interface 3560 of the interactive remote control 3410. The data interface 3560 communicates the identification of the content 3510 to the data station 3450 via the data signal 3520. The data station 3450 communicates the identification of the content 3510 via the Internet 2225 to the

server computer 2230. The server computer 2230 can track the user's viewing patterns, the viewing patterns of the residence 3411, and the viewership of one or more programs or commercials across a number of residences by recording the content 3510 presented to the user 3421. Programs and algorithms running at the server computer 2230 project the acquired viewing statistics of the monitored users 3421 to estimate the viewing patterns of a larger populous. The server computer 2230 also can perform audience estimation and audience characterization, such as demographic profiling, based on the identified programming content 3510.

While the interactive remote control 3410 provides unrestricted access to capabilities for tuning the broadcast receiver 2205, controlled access features can guard the interactive and/or data features of the interactive remote control 3410 from unauthorized use. To control access, the interactive remote control 3410 comprises a biometric sensor 3570 that identifies the user 3421, who may be either an authorized user 3421 or an unauthorized user 3421. Then, an access control module 3565 of the interactive remote control 3410 can grant an appropriate level of access to the user 3421.

In an exemplary embodiment, the biometric sensor 3570 performs a stimulus/response 3575 user recognition function. In that embodiment, the sensor 3570 provides a stimulus or stimuli 3575 to the user 3421 and receives a corresponding response 3575 from the user 3421. The term stimulus, as used herein, refers to an output that causes a response and can include a projection of light or an audible sound. For example, the biometric sensor 3570 can comprise an image recognition system (not shown) that acquires a digital picture of a user's retina or face and identifies the user 3421 as a known and authorized user or as an unknown and suspicious user based on the acquired digital picture. The sensor 3570 can compare the acquired digital picture to a stored digital picture of the user's 3421 retina or face to determine whether the acquired digital picture matches the stored digital picture. If yes, then the sensor 3570 determines that the user 3421 is an authorized user. If the acquired digital picture does not match the stored digital picture, then the sensor 3570 determines that the user 3421 is an unauthorized user. The sensor 3570 communicates the user's status to the access control module 3565. The access control module 3565 grants the appropriate level of access to the user 3665. The access control module 3565 can grant more access to an authorized user and can deny access to an unauthorized user.

In other exemplary embodiments, the biometric sensor 3570 can perform a user recognition function based on other biometric data. For example, the biometric sensor can comprise a device that recognizes a user 3421 based on voiceprint, fingerprint, or deoxyribonucleic acid ("DNA"). In those embodiments, the user 3421 inputs a biometric sample to the sensor 3570, and the sensor 3570 acquires or captures the sample. Then, the sensor 3570 compares the acquired sample with stored samples to identify the user 3421 as an authorized user 3421 or an unauthorized user 3421.

In another exemplary embodiment, the user identification function can be separated from the biometric sensor 3570. In that embodiment, the biometric sensor can capture the biometric sample from the user 3421 and can forward the biometric sample to another component of the system 3500 to identify the user. For example, the sensor 3570 can communicate the biometric sample to the access control module 3565, the data station 3450, the server computer 2230, the data storage center 195, or another component within the system 3500. Then, the component receiving the biometric sample can compare the capture sample to stored samples and can identify an authorized user based on a match between those samples. The component then communicates the user's 3421 authorized or unauthorized status to the access control module 3565.

If the biometric sensor 3570 or other component of the system 3500 determines that the user 3421 is authorized to conduct data communications with the interactive remote control 3410, the access control module 3565 enables such data communication activities. As shown in Figure 35, the access control module 3565 is symbolically illustrated as a switch that either allows data communication for an authorized user or denies data communication to an unauthorized user. In other exemplary embodiments, the access control module 3565 can provide varying levels of access based on the user's 3421 credentials. For example, authorized users can receive one of multiple levels of access. Additionally, unauthorized users can receive limited access or can be denied access completely. For example, based on a user's identity, the access control module 3565 may authorize data communications that involve low-risk data, such as playing an interactive game but restrict purchasing goods or conducting financial transactions. In other words, the access control module 3565 can provide multiple tiers of access control.

Although depicted in Figure 35 as located in the interactive remote control 3410, the access control module 3565 can be located, in whole or part, outside the interactive

remote control 3410. For example, in one embodiment of the present invention, the biometric sensor 3570 sends a user's identification information to the data station 3450 comprising the access control module 3565, which enables or disables the interactive remote control's 3410 interactive services or interactive data functionalities of the interactive system 3500 according to the user's access rights. Similarly, the server computer 2230, or the data storage center 195 can comprise the access control module 3565 and can control access based on the user's identification or lack thereof.

A barcode scanner 3580 integrated with the interactive remote control 3410 enables the user 3421 to scan advertisements, product packaging, and other printed materials that have barcodes. When a user scans an advertisement, data encoded in the advertisement's barcode transmits from the interactive remote control 3410 to the server computer 2230 via the data station 3450 and the Internet 2225. The server computer 2230 processes acquired barcode data and transmits CRĀV questions regarding scanned advertisements to the interactive remote control 3410. The interactive remote control's display 2306 presents CRĀV questions to the user 3421 to immerse the user 3421 in scanned advertisements.

The term "barcode," as used herein refers to a series of machine-readable marks of varying type, in which digits or characters of an alphabet are represented by a different pattern within the series. One type of barcode comprises a series of vertical bars of varying width, in which each of the digits zero through nine are represented by a different pattern of bar that can be read by a laser scanner.

The user 3421 can scan product packaging with the interactive remote control's barcode scanner 3580 following product consumption, thereby acquiring universal product code ("UPC") data for home inventory control. The universal remote control 3410 transmits UPCs of such scanned consumer products to the server computer 2230, which tracks residential product consumption. The server computer 2230 provides the user 3421 coupons, offers, and other promotions based on the user's pattern of scanned products. For example, when a user 3421 scans a consumed product, the server computer 2230 can generate a coupon for a competitive product. The server computer 2230 can also maintain a shopping list for the user 3421 based on products that the user scans. A grocer, store, or other product distributor can use the shopping list to replenish the residence's stock of consumer products.

Figure 36 is a functional block diagram illustrating an interactive remote control 3640 comprising the biometric sensor 3570 according to an exemplary embodiment of the present invention. The interactive remote control will be described with reference to Figures 22 and 34-36. In an exemplary embodiment, the interactive remote control 3640 also comprises a content identification module 3550 (not illustrated in Figure 36). In one exemplary embodiment of the present invention, the interactive remote control 3640 comprises a barcode scanner (not illustrated in Figure 36) for scanning household products and printed materials.

The biometric sensor 3570 and an access control processor 3630 are components of an access control module 3625 of the interactive remote control 3640. Based on input from the biometric sensor 3570, the access control processor 3630 communicates an access control signal 3633 to the access control module 3565. The access control module 3565 illustrated in Figure 36 can comprise an effector, actuator, switch, computer software application, or other suitable access control. The access control processor can grant or deny access based on a determination of whether the user 3421 is an authorized or unauthorized user. If granted authorization by the access control processor 3570 to conduct interactive data activities via the interactive remote control 3640, then the user 3421 can perform interactive functions by entering data inputs 3540 into the interactive response keypad 2308.

The access control 3565 controls the amount and type of interactive functions available to the user 3421 based on the authorization levels granted by the access control processor 3630. In exemplary embodiments, the interactive functions can comprise responding to a CRĀV question, ordering a product, participating in a survey, viewing adult-oriented content, playing a mature game, conducting a financial transaction, or performing other desired functions, depending on the level of authorization granted to the user 3421 based on his identity. The access control processor 3630 can grant or deny access to one or more of those functions.

If granted access, then the access control 3565 allows the user 3421 to input data to a processor 3650 via the interactive response keypad 2308. In exemplary embodiments, the processor 3650 comprises a microprocessor, microcontroller, hardwired logic, micro-computing device, or other suitable processor. Based on those user inputs, the processor 3650 communicates data signals to the interactive transmitter/receiver 2302 which

transmits data-encoded signals 3520 to the data station 3450 for subsequent transmission via the Internet 2225 to the server computer 2230.

The interactive transmitter/receiver 2302 also receives data 3520 from the server computer 2230 via the Internet 2225 and the data station 3450 and transmits corresponding data signals to the processor 3650. In exemplary embodiments, received data can comprise CRĀV questions, advertisements, game data, user identification files, programming schedules, financial data, survey questions, content, or other interactive data. The processor 3650 supplies display data to the display 2306 based on user input 3540 and information received from the interactive transmitter/receiver 2302.

The interactive remote control 3640 comprises the dedicated channel control keypad 2310 through which a user 3421 can tune the broadcast receiver 2205 to a specific channel. The processor 3650 receives channel control entries 3535 input by the user 3421 via the channel control keypad 2310 and encodes each channel selection 3535 in the signal 2212. Then, the channel control transmitter 2312 communicates the signal 2212 to the broadcast receiver 2205 via wireless transmission to tune the broadcast receiver 2205 to the desired channel. In exemplary embodiments, the interactive transmitter/receiver 2302 and the control transmitter 2312 can be characterized collectively as a functional unit 3680 or as separate elements.

Figure 37 is a functional block diagram illustrating an access control module 3625 of the interactive remote control 3640 according to an exemplary embodiment of the present invention. In one exemplary embodiment of the present invention, the access control module 3625 illustrated in Figure 37 is a component 3625 of the interactive remote control 3640 depicted in Figure 36.

The exemplary biometric sensor 3570 in the access control module 3625 comprises a digital camera 3705 with a light source 3710 and an imaging detector 3715. In exemplary embodiments, the light source 3710 can comprise a light bulb, a light emitting diode ("LED"), or other suitable illumination apparatus. In an exemplary embodiment, the imaging detector 3715 can comprise a charge coupled device ("CCD") coupled to a focusing lens (not shown) that gathers light emanating from a subject and projects an image of the subject onto the CCD.

In operation, the camera 3705 can probe a user 3421 by projecting light onto biological tissue of the user 3421 and collecting light emanating from the user's tissue.

The tissue can be connected to the user 3421 at the time of image acquisition or alternatively separated. For example, an image of a user's fingerprint can be taken after the user 3421 transfers the fingerprint from his or her finger to a plate via an ink transfer process. Similarly, a DNA analysis can proceed by swabbing the mouth of a user 3421 and placing the swab in a reading chamber (not shown) of the biometric sensor 3570.

In one exemplary embodiment, the camera 3705 can capture an image of the user's face to identify the user 3421 and determine the user's authorization level. In another exemplary embodiment, the camera 3705 can capture an image of the user's retina or other portion of the user's eye for identification purposes. In yet another exemplary embodiment, the camera 3705 can capture an image of the user's fingerprint, or a portion thereof. In other exemplary embodiments, the camera 3705 can capture any other distinctive features of a user 3421 suitable to identify the user 3421.

The access control module 3625 also comprises the access control processor 3630. The access control processor comprises image acquisition and camera control circuitry 3720 that interfaces with the light source 3710 and the imaging detector 3715, triggers image acquisition, and buffers image data from the camera 3705. The image acquisition and camera control circuitry 3720 feed acquired images to a long-term memory 3735 or a dynamic memory 3725, depending on the operational mode of the interactive remote control 3640.

In a mode of recording an identifying biometric feature of an authorized user 3421, the camera 3705 captures a digital image of the biometric sample of the user 3421 and communicates the authorized digital image pattern 3740 to the long-term memory 3735 for long-term storage. In a mode of attempting to identify an unknown user 3421, the camera 3705 acquires an image of the unknown user and transfers the acquired digital image pattern 3730 to the dynamic memory 3725. In an exemplary embodiment, the long-term memory 3735 retains stored authorized images patterns 3740 when the interactive remote control 3410 is powered down or not in use. Powering down the interactive remote control 3410 or leaving it in an idle state for a prolonged period of time can remove dynamic images 3730 from the dynamic memory 3725.

The access control processor 3630 also comprises an image comparison module 3750, which determines whether the dynamic image 3730 from an unknown user 3421 matches a stored image pattern 3740 of an authorized user 3421. The image comparison

module 3750 makes that determination by comparing the dynamic image 3730 with the stored images 3740 to identify a match between the images 3730 and 2740. A match indicates an authorized user, and the lack of a match indicates an unauthorized user.

The access control module 3630 also comprises an onboard microprocessor 3755. The access control processor 3630 outputs an access control signal 3633 to the access control module 3565 based on the results of the image comparison module 3750. The access control module 3565 responds to the access control signal 3633 and either grants or denies access to the user 3421. In other words, the access control signal 3633 communicates a level of authorization granted to a user 3421 by the access control processor 3630.

Figure 38 is a functional block diagram illustrating the transmitter module 3680 of the interactive remote control 3640 according to an exemplary embodiment of the present invention. The transmitter module 3680 will be described with reference to Figures 34, 35, and 38. The transmitter module 3680 illustrated in Figure 38 comprises the interactive transmitter/receiver 2302 and the channel control transmitter 2312. However, those components can be spatially separated from one another. For example, those components can be disposed on different circuit boards within the interactive remote control 3410.

The interactive transmitter/receiver 2302 interfaces with an antenna 3870 which sends radio frequency ("RF") signals 3875 through the air 3525 to the data station 3450. In a receiving capacity, the antenna 3870 receives RF signals 3875 transmitted by the data station 3450. In an exemplary embodiment, the antenna 3870 comprises an omni-directional antenna such that positioning the interactive remote control 3640 in a specific orientation is not required for communication with the data station 3450. In other words, the antenna 3870 sends and receives signals in more than a single direction. Those skilled in the art appreciate that an omni-directional antenna can have certain orientations that are conducive to better reception than other orientations and that an omni-directional antenna can have a degree of directional sensitivity.

The RF signals 3875 can transmit data 3520 between the interactive remote control 3640 and the data station 3450 without a line-of-sight configuration. In other words, the RF signals 3875 can propagate through or around most common residential objects positioned between the interactive remote control 3640 and the data station 3450. For example, for most residences 3411, using the interactive remote control 3640 in a living

room while the data station 3450 resides in a remote corner of the residence 3411 does not impede the transmission or reception of the RF signals 3875.

In an exemplary embodiment, the RF signals 3875 carry content identification information that identifies the content 3510 that is presented on the broadcast receiver 2205. In another exemplary embodiment, the RF signals 3875 carry user interaction data such as CRĀV questions and responses to CRĀV questions. In yet another exemplary embodiment, the RF signals 3875 carry data that an interactive remote control 3410 having a barcode scanner 3580, as illustrated in Figure 35 and discussed above, acquires by scanning printed material.

The channel control transmitter 2312 interfaces with an LED 3825, which outputs light 3850 in a directional format. The directional aspect of the emitted light 3850 typically requires pointing the interactive remote control 3640 towards the broadcast receiver 2205 to change a channel. In an exemplary embodiment, the light 3850 from the LED 3825 can comprise infrared light, which is invisible to ordinary human visual perception.

Figure 39 is a functional block diagram illustrating the data station 3450 of the interactive remote control 3410 according to an exemplary embodiment of the present invention. The data station 3450 will be described with reference to Figures 34, 35, 38, and 39. The data station 3450 couples the data interface 3560 to the Internet 2225, as depicted in Figure 35. Data 3520 flows between the interactive transmitter/receiver 2302 and the client wireless transmitter/receiver 2215 via the RF signals 3875 illustrated in Figure 38. In other words, the interactive data 3520 is encoded on the RF signals 3875 propagating between the antenna 3870 and the client wireless transmitter/receiver 2215. The client wireless transmitter/receiver 2215 also can comprise an antenna (not shown) for transmitting and receiving the date 3520.

The data station 3450 also comprises a client computer 2220, which can be a personal computer that residents of the residence 3411 use for various activities, such as household accounting and Internet surfing. Alternatively, the client computer 2220 can be dedicated to performing functions directly associated with interactive television or other interactive media.

The Internet connection 3925 couples the client computer 2220, and thus the data station 3450, to the Internet 2225 thereby enabling interactive data 3520 to flow between the server computer 2230 and the interactive remote control 3640.

Figure 40 is a functional block diagram illustrating an interactive remote control 4000 according to another exemplary embodiment of the present invention. The interactive remote control 4000 will be described with reference to Figures 23, 30 and 40. The interactive remote control 4000 comprises the speaker 3004 and the microphone 3002. The speaker 3004 and the microphone 3002 can function as components of a biometric sensor 4050 of the exemplary interactive remote control 4000. The speaker 3004 can output audio commands to the user 3421. For example, the audio commands can prompt or stimulate the user 3421 to undergo an authorization process and/or an identification procedure.

The microphone 3002 in the biometric sensor 4050 receives voice input from the user 3421. For example, the voice input can comprise the user's 3421 voice print (a voice sample). The interactive remote control 4000 also comprises a processor 4025 that communicates with the speaker 3004, the microphone 3002, the display 2306, the channel control keypad 2310, the interactive response keypad 2308, the channel control transmitter 2312, and the interactive transmitter/receiver 2302. The user 3421 enters channel selections 3535 into the channel control keypad 2310, which in turn provides the channel selection 3535 in electrical format to the processor 4025. Then, the processor 4025 instructs the channel control transmitter 2312 to tune the broadcast receiver 2205 to the selected channel. The interactive response pad 2308 accepts interactive user input 3540 and feeds the data 3540 to the processor 4025. The display 2306 displays interactive information receive via the interactive transmitter/receiver 2302. In exemplary embodiments, the interactive information can comprise CRĀV questions, gaming figures, survey questions, financial transactions, user prompt, and other interactive information. The interactive transmitter/receiver 2302 communicates the interactive data 3520 to and receives interactive data 3520 from the data station 3450.

Although not illustrated in Figure 40, in one exemplary embodiment of the present invention, the interactive remote control 4000 can comprise a barcode scanner for reading barcodes or other marks printed on or otherwise fixed to products, product packaging, printed publications, or other writings.

Figure 41 is a functional block diagram illustrating the processor 4025 of the interactive remote control 4000 according to an exemplary embodiment of the present invention. The processor 4025 will be described with reference to Figures 30, 34, 35, 40, and 41.

For biometric sensing, the processor 4025 receives audio input from the microphone 3002 and can output prompts, stimuli, or other information to a user 3421 via the speaker 3004. In an exemplary embodiment, the speaker 3004 can output a request for a user 3421 to speak a specific phrase so that the microphone 3002 can receive a sample voice print of the user 3421. During a set-up procedure, the microphone 3002 converts the user's voice pattern, or voice print, into a corresponding pattern of electrical signals. The long-term memory 3735 records the voice pattern 4135 in digital format. When a user 3421 attempts to use a protected feature of the interactive remote control 4000, the processor 4025 can identify the user 3421 to grant or deny access. In that regard, the microphone 3002 captures the user's 3421 voice pattern 4140. Then, the dynamic memory 3725 stores the user's captured voice pattern 4140.

A pattern recognition program 4125 compares the user's captured voice pattern 4140 with the stored voice patterns 4135 of one or more known and authorized users 3421 and, if warranted by the comparison, identifies the user 3421. If the captured voice pattern 4140 matches a stored voice pattern 4135, then the pattern recognition program 4125 identifies the authorized user 3421 based on data corresponding to the matching, stored voice pattern 4135. Then, a channel access control computer application program 4170 grants the appropriate level of access to the user 3421 based on the user's credentials. If the captured voice pattern 4140 does not match a stored voice pattern 4135, then the pattern recognition program 4125 identifies the user 3421 as an unauthorized user. Then, the channel access control program 4170 denies access to the unauthorized user 3421.

A microprocessor 4155 executes the pattern recognition computer 4125, along with an interactive access control computer application program 4175 and a channel access control computer application program 4170. The interactive access control program 4175 and the channel access control program 4170 respond to the user's interactions 3530, 3535, 3540, which can comprise channel selections 3535 and data input 3540, as well as other forms of user interaction.

The interactive access control program 4175 determines the data and interactive features of the interactive remote control 4000 and/or the interactive services that a user 3421 is authorized to access in accordance with a user's access rights. In other words, based on the user's identity as determined by the pattern recognition program 4125 and the authorization level associated with such identity, the interactive access control program 4175 grants the user 3421 a commensurate level of access to interactive services linked to features of the interactive remote control 4000. Authorized interactive data 4185 passes from the processor 4025 to the interactive transmitter/receiver 2302 for wireless transmission to the data station 3450.

The channel access control program 4170 determines the features, such as channel selections, that a user 3421 is authorized to access on a broadcast receiver 2205. The channel access control program 4170 may restrict the content that a user 3421, such as an identified child, is allowed to show on the broadcast receiver 2205. Authorized channel selections 4190 pass from the processor 4025 to the channel control transmitter 2312 for wireless transmission to the broadcast receiver 2205.

In one exemplary embodiment of the present invention, the processor 4025 also comprises a software program (not illustrated in Figure 41) that controls a barcode scanner 3580, as illustrated in Figure 35 and discussed above. Such a software program can process UPC data or other data scanned from printed materials.

Figure 42 is a flow chart illustrating a process 4200 for controlling access to features of an interactive remote control 3640 and/or an interactive service associated with a broadcast receiver 2205 according to an exemplary embodiment of the present invention. While this process 4200 can be applied to various hardware embodiments associated with the present invention, it and the related processes depicted in Figures 43 and 44 will be discussed below in reference to the interactive remote control 3640 and the access control module 3625 of Figures 36.

The first step in process 4200 is a process step 4205 for characterizing an authorized user by capturing and storing a biometric print from the authorized user. Step 4205 will be discussed in more detail below with reference to Figure 43. In step 4205, the interactive remote control 3600 captures and stores a biometric pattern from an authorized user 3421 associated with a level of authorized access.

In step 4210, an unknown user 3421, who may or may not be the user 3421 whose retina pattern was recorded in step 4205, picks up the interactive remote control 3640, turns on the power to the interactive remote control 3640 and/or the broadcast receiver 2205, and attempts to use a feature of the interactive remote control 3640.

In step 4215, the access control processor 3630 determines if the unknown user 3421 is attempting to control the broadcast receiver 2205, for example, to change a channel, or to access an interactive feature of the interactive remote control 3640, such as a data feature or an interactive service available via the Internet 2225.

If the user is attempting to control the broadcast receiver 2205, then the process 4200 branches to step 4220. In step 4220 the processor 3650 allows the unknown user 3421 access for routine interactions with the broadcast receiver 2205. The process 4200 repeats inquiry step 4215 each time the unknown user 3421 attempts to use a feature of the interactive remote control 3640.

If step 4215 determines that the unknown user is attempting to access data features, then the process 4200 branches to step 4225. Step 4225 is a process step for characterizing an unknown user by attempting to identify the unknown user based on a captured biometric sample from the unknown user. Step 4225 will be discussed in more detail below with reference to Figure 44.

In step 4230, the image comparison program 3750 compares the biometric sample captured in step 4225 to the stored biometric pattern captured in step 4205 to determine whether the biometric sample matches one of the stored biometric patterns. In an exemplary embodiment, the biometric sample can comprise the captured retina pattern 3730 of the unknown user 3421 and the biometric patterns can comprise retina patterns 3740 stored in the long-term memory 3735.

In step 4232, the image comparison program 3750 determines if a match exists between the newly captured biometric sample stored in the dynamic memory 3725 and a biometric sample stored in the long-term memory 3735. If yes, then the process 4200 branches to step 4237. In step 4237, the microprocessor 3650, via a software program 3750, identifies the unknown user 3421 as an authorized user 3421 and notifies the access control module 3565. Then, in step 4239, the access control module 3565 reads the level of authorized access associated with the identified user and grants that level of access to

the interactive services available via the interactive remote control 3640. The process 4200 ends following step 4239.

If inquiry step 4232 determines that the unknown user's biometric sample does not match a stored biometric pattern of an authorized user, then the process 4200 branches to step 4240. In step 4240, the access control module 3565 disables the interactive and data features of the interactive remote control 3640, thereby denying the unidentified user 3421 access to those features. In step 4245, the processor 3650 allows the unknown user 3421 to control the broadcast receiver 2205 via the channel control keypad 2310 of the interactive remote control 3640.

In step 4250, the processor 3650 displays a message on the display 2306 to inform the unknown user 3421 that access to interactive data features and associated interactive services are denied because his identity remains unknown since the attempted biometric match was unsuccessful. In step 4255, the processor 3650 displays a message on the display 2306 to offer the unknown user 3421 the option to repeat the user identification process.

In step 4260, the processor 3650 determines whether the unknown user 3421 has elected to repeat the identification process. If yes, then the process 4200 branches to step 4225 to repeat the characterization of an unknown user. If the unknown user 3421 does not opt in step 4260 to repeat the identification process, then the process 4200 ends.

Figure 43 is a flow chart illustrating the process 4205 for characterizing an authorized user 3421 of an interactive remote control 3640 according to an exemplary embodiment of the present invention, as referred to in step 4205 of Figure 42. The process 4205 will be described with reference to Figures 35, 36, 37, and 43. The exemplary process 4205 describes a method for characterizing an authorized user based on a retina image.

In step 4310, an authorized user 3421 positions the biometric sensor 3570 to his eye. In step 4315, a light source 3710 in the biometric sensor 3570 illuminates the authorized user's retina as a stimulus, causing a pattern of light to emanate, reflect, or scatter from the user's retina. In step 4320, the imaging detector 3715, which can comprise a CCD, captures the pattern of light from the user's retina and converts the pattern into a corresponding biometric pattern of electrical signals.

In step 4330, the image acquisition and camera control circuitry 3720 receives the biometric pattern from the camera 3705 and transfers the biometric pattern to long-term memory 3735.

In step 4340, the long-term memory 3740 stores the biometric pattern in digital format as the biometric pattern 3740 and associates the pattern 3740 with the identity of the authorized user 3421. In an exemplary embodiment, the identity of the authorized user also can be associated with demographic information or an authorized level of access to interactive services. The process 4205 then proceeds to step 4210 (Figure 42).

Figure 44 is a flow chart illustrating a process 4225 for characterizing an unknown user 3421 of an interactive remote control 3640 according to an exemplary embodiment of the present invention, as referred to in step 4225 of Figure 42. The process 4225 will be described with reference to Figures 35, 36, 37, and 43. The exemplary process 4225 describes a method for characterizing an unknown user based on a retina image.

In step 4410, the processor 3650 displays a message on the display 2306 to prompt the unknown user 3421 to verify his or her identity by undergoing biometric identification.

In step 4420, the unknown user 3421 positions the biometric sensor 3570 of the interactive remote control 3640 to his eye. In step 4425, the light source 3710 of the biometric sensor 3570 illuminates the retina of the unknown user 3421, thereby causing a pattern of light to emanate from the retina.

In step 4430, the biometric sensor's imaging detector 3715 captures the light pattern from the user's eye and converts it into a biometric sample of corresponding electrical signals. In step 4440, the image acquisition and camera control circuitry 3720 receives the biometric sample from the camera 3705 and transfers the biometric sample to the dynamic memory 3730 for short-term storage. The dynamic memory 3730 stores the biometric sample as a dynamic biometric sample 3730. The process 4225 then proceeds to step 4230 (Figure 4).

Figure 45 is a functional block diagram illustrating a system 4500 for identifying presented content based on remote control inputs according to an exemplary embodiment of the present invention. The system 4500 comprises an interactive remote control 4510 that tracks presentation of content by monitoring the user's 3421 channel selections 3535 input into the interactive remote control 4510.

The illustrated system 4500 comprises a broadcast network 105 that broadcasts content to broadcast receivers 2205 in multiple residences (or locations) 3411, one of which is illustrated in Figure 45. The residence 3411 comprises connectivity to a broadcast network 105 and to a distributed computing network 4560, such as the Internet 2225. The system 4500 also comprises a remote processing center 4505 coupled to the residence 3411 via the distributed computing network 4560. As an alternative to a distributed computing network 4560, the remote processing center 4505 can be linked to the residence 3411 via a telephony network or other wide area network.

The user 3421 enters a channel selection 3535 or channel tuning input into the interactive remote control 4510 by pressing one or more buttons, pressing a key on a keypad, engaging a switch, or speaking a command for microphone reception, for example. The user 3421 may enter the channel selection 3535 because the user 3421 wishes to surf through available channels without having a specific channel destination in mind. Alternatively, the user 3421 may enter the channel selection 3535 based on the knowledge that a particular program or other content is or will be presented on a particular channel. The user's knowledge of the correspondence between programming content and channel selection can come from a programming guide that the broadcast network 2205 airs on a dedicated channel, from a program schedule in a magazine or newspaper, or from a display (not shown in Figure 45) on the interactive remote control 4510, for example.

A channel control module 3545 in the interactive remote control 4510 receives the channel selection 3535 from the user 3421 and modulates a LED 3825 in a pattern that carries the channel selection command in a channel control signal 2212 via air 3525 to the broadcast receiver 2205. The broadcast receiver 2205 responds to the channel control signal 2212, tunes to the selected channel, and presents the content 3410 that the broadcast network 105 is broadcasting on the selected channel. The user 3421 views the content 3410, which can comprise entertainment content, educational content, and/or advertising content.

The channel control module 3545 also forwards the channel selection 3535 to a channel identifier module 3550. The channel identifier module 3550 correlates the user's channel selection 3535 to the content 3410 that the broadcast network 105 is broadcasting on the selected channel and that the broadcast receiver 2205 is presenting in response to the user's channel selection input 3535.

The channel identifier module 3550 transfers the identification of the content 3410 presented on the broadcast receiver 2205 to the data interface 3560 of the interactive remote control 4510. The data interface 3560 communicates the identification as data to the RF antenna 3870, which communicates the channel selection data 4540 via the air 3525 to the data station 3450. The data station 3450 transmits the user's viewing pattern over the distributed computing network 4560 to a remote processing center 4505 for analysis and compilation with the viewing patterns of other users at other residences (not shown in Figure 45).

In one exemplary embodiment, the channel identifier module 3550 tracks and statistically analyzes the user's ordinary pattern of changing channels of the broadcast receiver 2205 and discards any channel selection input 3535 that appears to be invalid based on the statistical analysis. For example, for a user 3421 that historically tunes the broadcast receiver 2205 approximately once per hour, the channel identifier module 3550 might discard data that indicates that this user 3421 has viewed several continuous days of programming without changing the channel. Several days of presenting programming on a single channel can be consistent with the user 3421 leaving a television powered on during an out-of-town vacation or other anomalous circumstance. Under such circumstances, the acquired usage data may be eliminated from further characterization of the user's viewing patterns. In other words, the channel identifier module 3550 can identify anomalous or bad data related to a user's content-viewing patterns or channel selections and can discard such data to avoid wrongly skewing the analysis at the remote processing center 4505.

In an exemplary embodiment, the interactive remote control 4510 communicates the user's raw channel selections 3535 to the data station 3450 in the channel selection data 4540. In other words, the interactive remote control 4510 can function as a repeater, sending optical channel control signals 2212 to the broadcast receiver 2205 and corresponding RF channel selection data signals 4540 to the data station 3450. In that case, the content identifier can forward the channel selection 3535 to the data interface 3560 without correlating the channel selection 3535 to the presented content 3410. Then, the data interface 3560 communicates the channel selection 3535 as the channel selection data 4540 to the data station 3450 via the RF antenna 3870.

Software executing on the data station 3450 can map the user's channel selections 3535 to the programming and advertising content 3410 presented via the broadcast receiver 2205. The remote processing center 4505 can communicate to the data station 3450 a table, map, or synchronization signal for the content 3410 broadcast by the broadcast network 105 to the broadcast receiver 2205 for presentation on the selected channel. Then, the data station 3450 can compare the channel selection 3535 to the received content information to determine the content 3410 presented by the broadcast receiver 2205 in the selected channel during the corresponding time period. After identifying the content 3410 presented on the selected channel, the data station 3450 can communicate that information to the remote processing center 4505 for statistical compilation and analysis.

In another exemplary embodiment, the data station 3450 can send the user's raw channel selections 3535 to the remote processing center 4505, where servers or other computers (not shown in Figure 45) can process those selections 3535 to characterize the viewing patterns of a user 3421 or a set of users 3421. The remote processing center 4505 can estimate and characterize the audience of a specific content, program, or advertisement broadcast over the broadcast network 105 in a manner similar to that of the data station 3450 discussed above.

In addition to identifying content broadcast to the residence 3411 via electronic transmission, the system 4500 can identify writings broadcast to the residence 3411 on physical media. In one exemplary embodiment of the present invention, the interactive remote control 4510 includes a barcode scanner (not shown in Figure 45) that can identify printed content by scanning a barcode or other machine-readable mark associated with the printed content. The system 4500 can track a user's pattern of printed material consumption based on data scanned from publications, books, product packing, newspapers, and other printed materials. The system can also estimate an audience of a writing based on scanned data that the interactive remote control 4510 forwards to the remote processing center 4505. Furthermore, the system 4500 can identify product consumption patterns of select users 3421 or a broader class of consumers based on UPC data that the interactive remote control 4510 acquires from the packaging of consumed products.

Figures 46A and 46B are flow charts illustrating a process 4600 for identifying content 3410 presented by a broadcast receiver 2205 by monitoring user 3421 channel selections 3535 input into the interactive remote control 4510 according to an exemplary embodiment of the present invention.

The process 4600 will be described below with reference to the system 4500 illustrated in Figure 45 using an example of broadcasting content to one or more residences 3411 via communication signals. The steps of the exemplary process 4600 can be adapted to identify printed content broadcast to such residences 3411 via physical media using an interactive remote control 3411 comprising a barcode scanner 3580 as illustrated in Figure 35 and discussed above. That is, an exemplary embodiment of the present invention can identify products and printed materials used at a residence 3411 and perform analysis on residential usage patterns of such items in a manner similar to the analyses illustrated in Figures 46A and 46B and discussed below.

Referring back to Figure 32, the method 3200 for real-time capture of audience information comprises the step 3215 in which the method 3200 determines whether a particular recipient received the broadcast content. In an exemplary embodiment, step 3215 can comprise the process 4600. In that case, step 3210 of the method 3200 is not required.

As shown in Figure 46A, in step 4605 of the process 4600, the broadcast network 2205 broadcasts multiple content selections, each on a broadcast channel, to multiple residences (or locations) 3411. In step 4615, the user 3421 at a specific one of the residences 3411 enters a channel selection 3535 via a keypad (not shown) or microphone (not shown) into the interactive remote control 4510.

In step 4620, the channel control module 3545 reads the user's channel selection input 3535 and pulses or modulates an LED 3825 in a sequence that the broadcast receiver 2205 interprets as a channel control command signal 2212. In step 4625, the LED 3825 communicates the channel control signal 2212 via the air 3525 to the broadcast receiver 2205.

In step 4630, the broadcast receiver 2205 receives the channel control signal 2212 and, in response, tunes to the selected channel corresponding to the channel control signal 2212 and presents the content 3410 broadcast on that channel. In step 4635, the user 3421 views, listens, or otherwise becomes exposed to the presented content 3410. In step 4640,

illustrated in Figure 46B, the channel control 3545 in the interactive remote control 4510 communicates the channel selection 3535 to the channel identifier module 3550.

Then, the channel identifier module 3550 correlates the user's channel selection entry 3535 with a specific local channel in step 4645. The channel identifier module 3550 provides local channel information to the data interface 3560. For example, the user 3421 might press the "one" key and the "nine" key on a keypad (not shown) of the interactive remote control 4510 to tune the broadcast receiver 2205 to receive the television programming that the broadcast network 105 is broadcasting over its "channel nineteen." In that example, the channel identifier module 3550 might determine that the cable television network's channel nineteen corresponds to the local CBS channel, which in addition to being carried by the broadcast network 105, is broadcast by the local CBS affiliate's antenna to the local region on a frequency known as "channel three."

In step 4650, the data interface 3565 encodes the identity of the local channel in an RF signal and drives an RF antenna (not shown in Figure 45) in the interactive remote control 4510 with the RF signal. In step 4655, the RF antenna communicates the channel selection data 4540 to the data station 3450 at the residence 3411. In step 4660, the data station 3450 receives the selection data 4540 and processes it to determine its validity and/or statistical significance based on the user's historical channel selection patterns.

If in inquiry step 4665 the data station 3450 determines that the channel selection data 3450 is not valid, then the process 4600 branches to step 4670. In step 4670, the data station 3450 stores the invalid data 3450 locally. Stored invalid data can be used as consideration for determining the validity of subsequent data transmission. In other words, the data station 3450 can determine the validity of channel selection data 4540 and eliminate invalid channel selection data from consideration in determining the viewing patterns of the user 3421. The eliminated data can be retained and used as a basis for determining the validity of future data transmissions. Process 4600 ends following step 4670.

If the data station 3450 determines at inquiry step 4665 that the channel selection data 4540 is valid, then the process 4600 branches to step 4675. In step 4675, the data station 3450 identifies the specific content 3410 presented via the broadcast receiver 2205 by correlating the channel selection data 4540 with the corresponding content 3410 presented on the selected channel. In an exemplary embodiment, the data station 3450

performs the correlation based on a programming and advertising schedule downloaded from the remote processing center 4505 via the network 4560.

In step 4680, the data station 3450 communicates the identification of the content 3410 presented by the broadcast receiver 2205 via the distributed computing network 4560 to the remote processing center 4505. In step 4685, the remote processing center 4505 tracks and/or characterizes the viewing habits or historical patterns of the user 3421 and/or the residence 3411. In step 4690, the remote processing center 4505 compiles the viewing patterns of the user 3421 and/or the residence 3411 with the viewing patterns of other users and residences that also are coupled to the broadcast network 105 and the remote processing center 4505.

In step 4695, the remote processing center 4505 determines the viewership of the content 3410 broadcast over the broadcast network 105 and characterizes the audience of the content 3410. The remote processing center 4505 can determine the size and demographics of the audience for the advertising commercials, games, programs, entertainment, and educational materials broadcast over the broadcast network 105.

In an exemplary embodiment, the remote processing center 4505 aggregates the viewing patterns of users on multiple broadcast networks (not shown), each linked to the remote processing center 4505 via the distributed computing network 4560 and/or another wide area network. In that regard, the remote processing center 4505 can determine the number of residences 3411 comprising broadcast receivers 2205 that presented the selected channel and corresponding content 3410. In another exemplary embodiment, the remote processing center 4505 can determine the demographics of specific users 3421 the input the channel selection 3535 corresponding to the presented content 3410. The remote processing center 4505 can make that determination based on stored demographic information associated with known users 3421. The interactive remote control 4510 can communicate user identification information to the center 4505 to identify the known users 3421. For example, a user 3421 can log into the center 4505 to identify subsequent communication from the corresponding interactive remote control 4510 as associated with the logged-in user 3421.

Using an estimate of viewership or usage of the content segments 3410 broadcast over the broadcast network 105, Advertisers, Promoters, content distributors, content producers, product suppliers and other entities involved in providing consumers with

content and products can adjust their operations and offerings to serve their profits and business interests and provide consumers with higher value.

Interaction with Writings

Figures 47 through 50B will now be discussed with reference to Figures 35 and 39. Figure 47 is a functional block diagram illustrating an interactive remote control 4700 with a barcode scanner 3580 according to an exemplary embodiment of the present invention. In an exemplary embodiment of the present invention, the system 3500 illustrated in Figure 35 and discussed above can comprise the interactive remote control 4700 illustrated in Figure 47. Specifically, interactive remote control 4700 of Figure 47 substitutes for interactive remote control 3410 of Figure 35.

The interactive remote control 4700 comprises a channel control transmitter 2312 for controlling an appliance, such as a television, radio, or VCR, that presents content to a user 3421. Such an appliance can present content by converting electrical signals or other communication signals into perceivable sound and/or light. The channel control keypad 2310 accepts command inputs for the appliance from the user 3421.

The barcode scanner 3580 scans printed materials such as magazines, documents, publications, catalogs, flyers, brochures, newspapers, products, product packaging, and other writings to acquire data associated with machine readable marks attached thereto. The barcode scanner 3580 can acquire UPC data as well as other data represented in barcode format. In one exemplary embodiment of the present invention, the interactive remote control 4700 comprises a scanner 3580 that is operative to recognize printed characters such as letters, numbers, and symbols.

The user 3421 can view a television program presented on a broadcast receiver 2205 while intermittently leafing through a magazine, for example. The user 3421 can tune the broadcast receiver 2205 with the interactive remote control 4700 and further use the interactive remote control 4700 to interact with printed content of the magazine. An appearance of a CRĀV Ad on the magazine can draw the user's attention from the content 3510 presented on the broadcast receiver 2205 to the CRĀV Ad. Recognizing the advertisement as being interactive based on a CRĀV logo or other distinguishing feature, the user 3421 can direct the interactive remote control 4700 to the magazine to initiate an immersion level of interaction with the magazine's advertising content.

The CRĀV Ad can include a machine readable identifier such as a barcode or another pattern of characters or marks that the barcode scanner 3580 reads to acquire data. The barcode scanner 3580 transfers such scanned data to the processor 4710. Software programs executing on the processor 4710 format the scanned data for wireless transmission to the data station 3450 via the interactive transmitter/receiver 2302.

The data station 3450 transmits the scanned data, which identifies the CRĀV Ad, over the Internet 2225 to the remote server computer 2230. The server computer 2230 processes scanned data and returns messages via the Internet 2225 and the data station 3450 for display on the interactive remote control's display 2306. Such exemplary messages can comprise CRĀV questions, promotional content, follow-on advertisements, gaming information, product usage suggestions, awards, discounts, survey questions, contest information, prize redemption codes, or detailed product specifications, for example.

The user 3421 can make entries via the interactive response keypad 2308 in respond to messages presented on the interactive remote control's display 2306. For example, the user 3421 can reply to CRĀV questions, request additional product details, enter a contest, request mailing of an award certificate or coupon, rate product performance, characterize satisfaction with a product, order a product, or redeem prizes using the interactive response keypad 2308. The interactive transmitter/receiver 2302 transmits such user entries to the server computer 2230 via the data station 3450 and the Internet 2225.

Using one handheld device, a user 3241 can not only control channel selections of a broadcast receiver 2205, but also interact with content printed on a physical medium and content 3510 transmitted electronically to a residence 3411 for display on the broadcast receiver. Specifically, the interactive remote control 4700 can interact with content broadcast via signals and content broadcast via physical distribution.

In one exemplary embodiment of the present invention, the interactive remote control 4700 comprises an RFID device (not shown) that can acquire data from items that have an associated RFID tag. The RFID device can be an RFID scanner or reader that supplies radiant energy to an RFID tag, coupled to a product, an advertisement, or to another physical item, and collects or receives energy that passively scatters back or otherwise emanates from the tag in response to the radiant energy. Alternatively, the

interactive remote control 4700 can comprise an RFID scanner that receives RF signals actively emanating from a RFID tag via a RF source or generator connected to the tag. Thus, an RFID device associated with the interactive remote control 4700 can scan passive RFID tags that lack an onboard power supply or active RFID tags that have an onboard power supply.

In one exemplary embodiment of the present invention, an RFID scanning device takes the position of the barcode scanner 3580 illustrated in Figure 47. That is, an RFID scanning device can provide a similar function to, or a similar information result as, the barcode scanner 3580 illustrated in the interactive remote control 4700 of Figure 47. Such an RFID scanning device can support the functions and processes illustrated in Figures 1-50B and discussed herein, for example.

In one exemplary embodiment of the present invention, the interactive remote control 4700 operates in a wireless operating environment. A cellular communication network can covey information between the interactive remote control 4700 and a remote processing site, for example. To support wireless communication over an extended distance, the interactive remote control 4700 can comprise a long-range transceiver linked to a satellite communication system, a communication relay, or a long distance telephony system, for example.

In one exemplary embodiment of the present invention, scanning a barcode with the barcode scanner 3580 modifies or updates one or more functions or features of the interactive remote control 4700. The barcode scanner 3580 can acquire dynamic update information, such as direct dynamic update data, from a barcode or other machine readable mark. The interactive remote control 4700 can have a memory (not shown on Figure 47) that stores acquired update data. Update data acquired from a barcode can include executable code or instructions.

The interactive remote control 4700 can acquire enhanced functionality or operability via scanning a mark that comprises update data, configuration data, revised software, or a patch program. For example, scanning a mark can upgrade the interactive remote control 4700 to provide compatibility with a new generation of CRĀV advertisements or a new broadcast receiver 2205. A CRĀV communication can comprise executable instructions or other data that modify the interactive remote control's operability. In association with scanning a CRĀV communication, a scanning device

associated with an interactive remote control 4700 can read such data for uploading into the interactive remote control 4700.

Figure 48 illustrates an interactive remote control scanning a paper 4815 and displaying a question 4820 regarding printed content of the paper 4810 according to an exemplary embodiment of the present invention. This figure illustrates an exemplary scenario for using the interactive remote control 4700 of Figure 47 to interact with printed material, in this case a newspaper 4810.

The channel control transmitter 2312 sends control signals 2212 to the television 4805 to adjust volume or change channels, for example, according to user input. The television 4805 can be a broadcast receiver 2205.

The newspaper 4810 comprises a barcode 4815 associated with an exemplary print advertisement 4825 that promotes the "Example1" brand of soup. "Example1" is a fictitious and exemplary brand name. When the user 3421 scans the newspaper's barcode 4815 with the interactive remote control's barcode scanner 3580, a CRĀV communication, transmitted from the server computer 2230, appears on the display 2306. The communication offers the user 3421 a can of Example1 chicken soup for correctly answering a CRĀV question 4820 regarding the content of the newspaper 4810. The CRĀV question 4820 directs the user 3421 to page C14, for example the food section, to find the question's correct answer. The question 4820 specifically asks, "Does the recipe on page C14 call for two cans of Example1 chicken soup or three cans of Example1 tomato soup?"

The question stimulates the user 3421 to turn to the referenced page and read the recipe to compose a correct response, thereby immersing the user 3421 in an advertisement or promotion for Example1 brand. If the user 3421 enters the correct response, which is "two cans of Example1 mushroom," the interactive remote control 4700 displays notification of winning a can of Example1 chicken soup. The server computer 2230 can initiate mail delivery of a coupon redeemable for the can of chicken soup, for example. Alternatively, the server computer 2230 can transmit a message to a grocery store frequented by the user 3421 notifying the store to provide the user 3421 with a free can of Example1 mushroom soup at the user's next shopping trip.

If the user 3421 enters an incorrect response to the CRĀV question 4820, the interactive remote control 3410 can display another question that continues to immerse the

user 3421 in advertisements for products carrying the Example1 brand. For example, a follow up question might ask, "Does the recipe on page C14 require cooking two cans of Example1 mushroom soup for ten minutes or for twenty minutes?" Continued interaction can extend the period of time that the user 3421 is immersed in advertising or promotion for Example1 products.

Figure 49 is a flow chart illustrating a process 4900 for interacting with printed content using an interactive remote control 4700 according to an exemplary embodiment of the present invention. In step 4905, a consumer, such as the user 3421 illustrated in Figure 35, reviews or reads a writing having an associated machine readable mark. The writing can be, for example, a document, publication, book, magazine, article, coupon, postcard, advertisement, mailing, product, product packaging, newspaper 4810, or other physical medium having printing thereon. The writing can also comprise text or graphics printed on a product, product packaging, a physical article, or a tag associated with a product, for example. The associated machine readable mark can be a barcode 4815, or other pattern of marks or characters that a scanner, such as a barcode scanner 3580, can recognize.

In step 4910, the consumer scans the writing, specifically the machine readable mark, with the barcode scanner 3580 of the interactive remote control 4700. A CRĀV logo or other indicator that the writing is interactive can prompt the consumer to scan the writing.

In step 4915, the interactive remote control 4700 reads the machine readable mark and identifies data encoded within the mark. That is, the interactive remote control's processor 4710 extracts data from a pattern of machine readable marks. For example, the processor can extract a UPC from a barcode 4815 on a product.

In step 4920, the interactive remote control 4700 sends a message comprising the identified data to a remote server computer 2230. This message transmits from the interactive transmitter/receiver 2302 of the interactive remote control 4700 to the data station 3450 via wireless transmission. The data station 3450 can comprise a client receiver 2215, a client transmitter 2215, and a client computer 2220. The data station 3450 sends the message to the server computer 2230 via the Internet. In another exemplary embodiment, the interactive remote control 4700 transmits the message directly to a remote processing center, comprising a server computer 2230, via wireless

transmission. Such a remote processing center can comprise a client receiver, a client transmitter, and a client computer.

In step 4925, the remote server computer 2230 sends a return message to the interactive remote control 4700 in response to receiving the data message that the interactive remote control 4700 transmitted in step 4920. The return message comprises a query regarding the writing, for example a CRĀV question about an advertisement. The remote server computer 2230 can generate the question based on a demographic profile of the user 3421.

As an alternative to a CRĀV question about an advertisement, the return message can comprise a question that is not directly related to an advertisement. For example, the message can comprise a trivia question or a question about a product physically coupled to a scanned barcode 4815. In one exemplary embodiment, submitting an answer to the question, either a correct answer or an incorrect answer, qualifies the consumer for entry into a lottery or other contest.

The remote server computer 2230 sends the return message via the Internet 2225 to the data station 3450, which in turn forwards the return message to the interactive remote control 4700.

In step 4927, the interactive remote control 4700 receives the return message and displays the query to the integral display 2306. For writings comprising multiple advertisements, the query can comprise a question directed to a selected portion of an advertisement.

In step 4930, the consumer contemplates the query and thinks about the content of the writing. Concentrating on the query and the content to compose an accurate answer immerses the consumer in the subject matter of the writing, for example to promote retention of advertising content. The consumer enters a query response into the interactive remote control 4700 using the interactive response keypad 2308.

In step 4935, the interactive remote control 4700 transmits the consumer's query response to the remote server computer 2230 via the data station 3450 and the Internet 2225. In step 4940, the remote server computer 2230 processes the query response to determine whether the consumer has answered correctly or incorrectly. That is, the submitted response can be deemed either accurate or inaccurate.

If the consumer has answered incorrectly, in step 4945 the process 4900 branches to steps 4950 and 4955. In step 4950, the remote server computer 2230 sends notification to the interactive remote control 4700 that the consumer has provided an incorrect response.

In step 4955, the interactive remote control 4700 displays a message informing the consumer that the submitted answer is incorrect. To continue immersing the consumer in advertising content, the interactive remote control 4700 can offer the consumer opportunities to continue answering questions until the consumer answers correctly and becomes eligible to win a prize, for example. Following step 4955, the process 4900 ends.

If the consumer has submitted a correct, rather than an incorrect, response, step 4945 branches the process 4900 to steps 4960, 4965, and 4970. In step 4960, the remote server computer 2230 sends a winning notification to the interactive remote control 4700. In step 4965, the interactive remote control 4700 notifies the consumer that the submitted answer is correct. This notification can also advise that a reward is forthcoming and provide redemption instructions.

In step 4970, the remote server computer 2230 initiates sending a prize certificate to the consumer as a reward for the correct answer. The prize certificate can be an electronic certificate transmitted to the interactive remote control 4700. The remote server computer 2230 can alternatively initiate mailing a physical prize certificate to the residence 3411 of the consumer. As another example, the remote server computer 2230 can send a notification to a business, such as a store that the consumer routinely visits, for prize redemption. The consumer's prize can be a monetary reward, an advertised product, or a premium, for example. As an alternative to a physical or monetary prize, the consumer's reward for submitting a correct answer can be entry into a drawing for a larger prize, such as an automobile, vacation, or significant cash purse. As yet another example, the consumer can receive a quantity of points that can be accumulated with other points towards receiving a moderate prize, for example a household appliance or a stock of a consumable product. Following step 4970, the process 4900 ends.

Figures 50A and 50B are a flow chart illustrating a process 5000 for scanning products with an interactive remote control 4700 according to an exemplary embodiment of the present invention. In step 5005, the remote server computer 2230 maintains a shopping list for a specific consumer, for example the user 3421 illustrated in Figure 35.

This remote server computer 2230 typically maintains similar shopping lists for consumers in multiple residences 3411. The remote server computer 2230 can be under contract with one or more business entities that sponsor the shopping list service. In return for receiving payment from a sponsor, the operator of the shopping list service, can attempt to stimulate sales of the sponsor's products. In the specific example of the process 5000, Example Distributor, which is a fictitious name, maintains and operates the remote server computer 2230 to promote products that it distributes.

In step 5010, a consumer, such as a member of a household, consumes a can of soup. In step 5015, the consumer scans the UPC barcode of the empty soup can using the interactive remote control's barcode scanner 3580. Scanning a product or a product package typically involves placing the interactive remote control 4700 adjacent the product and engaging the barcode scanner 3580 to direct a laser beam onto the barcode.

In step 5020, the interactive remote control 4700 scans the UPC barcode, extracts its UPC, and transmits the UPC to the remote server computer 2230. That is, the remote control's scanner receives signals emanating from identifying marks or indicia associated with the product and transmits corresponding data to a processing center. The transmission path to the remote server computer 2230 can comprise a wireless data link between the interactive remote control 4700 and the data station 3450 and an Internet link between the data station 3450 and the remote server computer 2230. The transmission path can comprise a client computer 2220, a client transmitter 2215, and a client receiver 2215.

In another exemplary embodiment of the present invention, the remote server computer 2230 receives notification that the consumer has consumed the can of soup from a radio frequency identification ("RFID") system (not shown) located at the residence 3411. Such an RFID system can comprise a RFID scanner coupled to a trashcan or similar disposal receptacle at the residence 3411. The RFID scanner can identify products consumed at the residence 3411 based on a pattern of radio frequency signals emanating from disposed product packaging. As an alternative to identifying consumed products, the RFID system can identify unconsumed products present at the residence 3411, for example products in storage. As discussed above, the interactive remote control 4700 can comprise an integrated RFID tag reader for acquiring data from household products.

In step 5025 of the process 5000, the remote server computer 2230 determines if the consumed soup is a product of the server's operator. In this example, the remote server computer 2230 determines if the soup is marketed under the brand name "Example2," which is a fictitious name, by Example Distributor.

If the consumed soup is Example2 soup of Example Distributor, then step 5030 branches the process 5000 to step 5035. In step 5035, the remote server computer 2230 adds a can of Example2 soup to the consumer's shopping list to replace the consumed can.

The remote server computer 2230 can take additional actions in conjunction with adding the can of Example2 soup to the shopping list in step 5035. For example, the consumer can receive a discount or a coupon for the purchase of a can of Example2 soup, or another product in which Example Distributor has a financial interest. The operator of the remote server computer 2230 can also receive payment from other product companies for product promotion. For example, the server operator might receive a financial benefit for promoting a particular brand of crackers that are complementary to Example2 soup.

The remote server computer 2230 can also process product consumption data acquired from multiple residences 3411 to estimate consumer product usage patterns. That is, a remote server computer 2230 can aggregate product consumption data from consumers at various households and conduct statistical analysis on such data to refine advertising programs.

As another example of process steps that can accompany step 5035, the remote server computer 2230 can engage the consumer in a CRĀV interaction. The interactive remote control 4700 can present CRĀV questions to the consumer related to a consumed product or another advertised product. Answering a CRĀV question or another question, either related or unrelated to the product, can provide the consumer with a tangible benefit. For example, the consumer can receive entry into a sweepstakes or contest for a prize drawing by answering the question, even if the consumer's answer is incorrect. The remote control 4700 can display the question following product scanning without delay that the consumer finds perceptible or annoying. That is, the remote control 4700 can operate in an online manner or in an essentially real time mode.

If the consumed soup is not Example2 soup of Example Distributor, then step 5030 branches the process 5000 to step 5040. In step 5040, the remote server computer 2230 sends a command message to the interactive remote control 4700, instructing the

interactive remote control 4700 to offer the consumer a coupon for a free can of Example2 soup. In response, the interactive remote control 4700 displays the offer on its integral display 2306.

Step 5045 branches the process 5000 according to the consumer's response to the free soup offer. If the consumer rejects the offer, in step 5050 the remote server computer 2230 adds to the shopping list a can of soup having whatever brand (not Example2 soup) that the consumer consumed.

Accepting or rejecting a product offer is an exemplary criterion for directing the flow of process 5000. The remote server computer 2230 can apply other criteria such as consumer demographics and answers to questions concerning product preferences. As a result of applying such criteria, the consumer can receive a benefit or the shopping list can include selected product entries, for example.

In connection with step 5050, the remote server computer 2230 can collect competitive market data from the consumer. For example, the interactive remote control 4700 can query the consumer to determine the consumer's reasons for preferring a competitive brand over Example2 soup.

If the consumer accepts rather than rejects the offer for a free can of Example2 soup, step 5045 branches the process 5000 to execute step 5055 rather than step 5050. In step 5055, the remote server computer 2230 generates a coupon for a can of Example2 soup and transmits notification of the coupon award to the consumer via the interactive remote control 4700, which in turn displays the award notification to the consumer.

In step 5060, the remote server computer 2230 adds a can of Example2 soup to the consumer's shopping list to replace the consumed can of soup (having a competitor's brand). The remote server registers the coupon grant on the consumer's shopping list in association with the Example2 soup entry. That is, the shopping list records not only the can of Example2 soup to be acquired, but also an indication that the consumer should receive the soup without making a monetary payment.

As an alternative to step 5060 as discussed above, the coupon can be an electronic coupon that the remote server computer 2230 transmits to the interactive remote control 4700, for storage in local memory. The consumer can transfer the electronic coupon to a preferred store for redemption via wireless transmission from the consumer's residence 3411 to the store. Alternatively, the consumer can physically transport the interactive

remote control 4700 to the store. While at the store's premises, the interactive remote control 4700 can load the shopping list from memory to the store's management information system or other computer system. As yet another exemplary alternative, the consumer can print out a paper version of the coupon via a personal computer or a printer associated with the interactive remote control 4700. To accommodate acquiring the soup in sales outlets that lack communication and computer infrastructure, the remote server computer 2230 can initiate sending a physical coupon to the consumer's residence 3411 via postal service.

Following executing any of steps 5035, 5060, and 5050 as discussed above, the process 5000 executes step 5062, illustrated in Figure 50B. In step 5062, the consumer consumes additional household products and scans the packages of the consumed products with the interactive remote control 4700. Such household products can be groceries, bleach, detergent, water softener, soft drinks, milk, eggs, bread, foodstuffs, household supplies, commodities, etc. The products can have a national brand or a store brand, or can be marketed as a generic or unbranded product.

In step 5065, the remote control sends the UPCs of these scanned products to the remote server computer 2230. In step 5067, the remote server computer 2230 receives UPCs and appends the consumer's shopping list with the scanned products, which correspond to the UPCs.

In step 5070, the consumer elects to take a shopping trip to a store affiliated with or in communication with the remote server computer 2230. In step 5075, the consumer makes an entry into the interactive remote control 4700 indicating that a shopping trip is forthcoming or underway. The consumer may specify, along with this entry, a particular store or chain of stores that the consumer has selected for the shopping excursion.

In step 5080, the interactive remote control 4700 transmits notification of the consumer's shopping trip to the remote server computer 2230. In step 5085, the remote server computer 2230 receives and acknowledges the shopping trip notification. The remote server computer 2230 transmits the consumer's shopping list, along with any discounts or awards that the consumer may have accumulated, to one or more shopping stores. Either a specific store that the consumer frequents or a network of stores affiliated with the shopping list service can receive the list.

In step 5090, the store gathers the consumer's products in a shopping cart or bin according to the shopping list in preparation for or contemporaneous with the consumer's shopping excursion. In step 5095, the consumer travels to the store to pickup the shopping order. The consumer may elect to add impulse or other product purchases to the pre-selected products. When the consumer has completed selecting products for purchase, the store scans the consumer's products at a checkout terminal and computes a total purchase price that takes into account any applicable coupons or discounts. The consumer pays the net purchase price and transports the purchased goods to the residence 3411 for consumption.

In another exemplary embodiment of the present invention, the consumer's shopping list can be filled without the consumer physically traveling to the store. The remote server computer 2230 can transmit the shopping list to a grocery store or another product source or distribution outlet that can deliver products to the consumer's residence 3411. That is, the consumer can order one or more products from the shopping list, or from another list populated by scanning items at the consumer's residence 3411, using the interactive remote control 4700. Following step 5095, the process 5000 ends.

Although specific embodiments of the present invention have been described above in detail, the description is merely for purposes of illustration. Various modifications of, and equivalent steps corresponding to, the disclosed aspects of the exemplary embodiments, in addition to those described above, also can be made by those skilled in the art without departing from the spirit and scope of the present invention defined in the following claims, the scope of which is to be accorded the broadest interpretation so as to encompass such modifications and equivalent structures.

CLAIMS

What is claimed is:

1. A query-response system for interacting with written content, comprising:

a client transmitter operative to transmit a query about a selected portion of the written content;

a query-response device, comprising:

a receiver that receives the query;

a display that presents the received query to a recipient of the written content;

a keypad operative by the recipient to input a response to the query into said query-response device; and

a transmitter that transmits the response; and

a client receiver that receives the transmitted response for subsequent processing of the response.

2. The query-response system according to Claim 1, wherein said query-response device further comprises a radio frequency identification scanner.

3. The query-response system according to Claim 2, wherein said radio frequency identification scanner is coupled to the transmitter and identifies a product, associated with the written content, that the recipient uses.

4. The query-response system according to Claim 1, wherein the query is based on demographics of the recipient.

5. The query-response system according to Claim 1, wherein the written content comprises an advertisement, and wherein the selected portion of the written content comprises a selected portion of the advertisement.

6. The query-response system according to Claim 1, wherein the written content comprises a plurality of advertisements, and wherein the selected portion of the written content comprises a selected portion of at least one of the advertisements.

7. The query-response system according to Claim 1, further comprising a client computer that communicates the query to the client transmitter and receives the response from the client receiver.

8. The query-response system according to Claim 1, wherein said query-response device further comprises a channel control transmitter operative to transmit a channel control signal to tune a broadcast receiver to a station channel.

9. The query-response system according to Claim 8, wherein a writing, having a machine readable mark, comprises the written content, and wherein the query-response device further comprises a scanner operative to scan the machine readable mark.

10. The query-response system according to Claim 9, wherein said client transmitter transmits the query in response to the scanner reading the mark.

11. The query-response system according to Claim 9, wherein the machine readable mark comprises a barcode.

12. The query-response system according to Claim 9, wherein a product package comprises the writing.

13. The query-response system according to Claim 9, wherein the writing comprises a product package.

14. The query-response system according to Claim 9, wherein the writing comprises one of a newspaper and a magazine.

15. The query-response system according to Claim 9, wherein one of a newspaper and a magazine comprises the writing.

16. The query-response system according to Claim 9, wherein the writing comprises an article broadcast via postal service.

17. The query-response system according to Claim 9, wherein the machine readable mark comprises a universal product code.

18. The query-response system according to Claim 11, wherein the query-response device further comprises a bar code scanner operable to read the barcode.

19. The query-response system according to Claim 18, wherein the query-response device is operable to communicate, via the transmitter, barcode related information to a remote processing site that composes the query based on the information.

20. The query-response system according to Claim 18, further comprising a processing site, coupled to the client transmitter and the client receiver, operable to process information associated with the barcode.

21. The query-response system according to Claim 20, wherein the processing site processes the information to identify a product used by the recipient and to select the query, wherein the query comprises a question about the identified product.

22. The query-response system according to Claim 20, wherein the processing site is further operable to generate the query in response to processing the information, wherein the query requests demographic information from the recipient.

23. The query response system according to Claim 20, wherein the processing site is further operable to prompt the query.

24. A method for interacting with advertising content, comprising the steps of:

providing a writing, comprising a plurality of advertisements, to a plurality of recipients;

communicating a query about a selected portion of at least one of the advertisements;

inputting a response to the query into a query-response device operated by a particular one of the recipients;

transmitting the response from the query-response device to a client computer; and

communicating the response from the client computer to a data collection center.

25. The method according to Claim 24, wherein said providing step comprises providing a physical medium comprising the writing to the plurality of recipients.

26. The method according to Claim 24, wherein said communicating the query step comprises the steps of:

transmitting the query from the client computer to the query-response device operated by the particular recipient; and

presenting the query on the query-response device operated by the particular recipient.

27. The method according to Claim 24, further comprising the steps of:

scanning the writing with the query-response device to acquire data associated with one of the advertisements;

transmitting the acquired data from the query-response device to the client computer;

transmitting the acquired data from the client computer to the data collection center; and

identifying one of the advertisements at the data collection center based on the acquired data.

28. The method according to Claim 27, further comprising the step of generating the query at the data collection center in response to the identifying step.

29. The method according to Claim 24, further comprising the steps of:

determining whether the response comprises a correct reply to the query; and

awarding a prize to the particular recipient if the response comprises a correct reply to the query.

30. The method according to Claim 24, further comprising the step of tuning, via the query-response device, a broadcast receiver to a station channel.

31. The method according to Claim 24, wherein the query is based on demographics of the particular recipient.

32. The method according to Claim 24, wherein the providing step comprises mailing paper comprising the writing to the plurality of recipients.

33. The method according to Claim 24, wherein providing the writing comprises broadcasting the writing.

34. The method according to Claim 24, further comprising the steps of:

determining if the response satisfies a criterion; and

communicating a second query to the query-response device if the response satisfies the criterion.

35. The method according to Claim 34, wherein the criterion comprises at least one of a correct answer to the query, an incorrect answer to the query, a demographic profile, and a product preference.

36. The method according to Claim 34, wherein the second query requests consumer information from the particular recipient.

37. The method according to Claim 34, wherein the second query is about a second selected portion of at least one advertisement in the plurality of advertisements.

38. The method according to Claim 34, further comprising the step of qualifying the particular recipient for a product discount if the particular recipient responds to the second query.

39. The method according to Claim 24, further comprising the steps of:

determining if the response is accurate; and

if the response is inaccurate, communicating additional queries about at least one of the advertisements until the particular one of the recipients submits an accurate response.

40. The method according to Claim 24, further comprising the steps of:

determining if the response is accurate; and

if the response is inaccurate, communicating additional queries about at least one of the advertisements until the particular one of the recipients stops responding.

41. The method according to Claim 24, further comprising the step of ordering a product viewed on a television monitor via the query-response device.

42. A remote control system for interacting with content, comprising:

a hand-held device comprising:

a first transmitter operative to transmit a channel control signal to tune an appliance for reception of a communication signal;

a scanner operative to acquire data from a writing;

a display operative to present a question regarding the writing to a user of said hand-held device;

an input device operable by the user to input a response to the question; and

a second transmitter operative to transmit the input response; and

a client receiver that receives the transmitted response.

43. The remote control system according to Claim 42, further comprising a computer, coupled to the client receiver, that identifies the writing as a specific advertisement based on the acquired data and selects the question according to the identified advertisement.

44. The remote control system according to Claim 42, further comprising a computer, coupled to the client receiver, that associates a product with the writing based on the acquired data and selects the question according to the associated product, wherein the question is about the associated product.

45. The remote control system according to Claim 44, wherein the question comprises an offer for a product discount.

46. The remote control system according to Claim 42, wherein the appliance comprises a television receiver, and wherein the scanner comprises a barcode scanner.

47. The remote control system according to Claim 42, wherein said input device comprises a response keypad.

48. The remote control system according to Claim 42, further comprising a server, coupled to the client receiver, operative to receive the transmitted response and to transmit a message related to the writing,

wherein the hand-held device further comprises a radio frequency receiver that receives the transmitted message for presentation on the display.

49. The remote control system according to Claim 48, wherein the server selects the message based on a demographic profile of the user.

50. The remote control system according to Claim 48, wherein the server comprises a remote server computer, operative to generate the message based on processing the response.

51. The remote control system according to Claim 50, wherein processing the response comprises determining if the response correctly answers the question, and wherein the message comprises a second question about the writing if the response incorrectly answers the question.

52. The remote control system according to Claim 50, wherein processing the response comprises determining if the response qualifies the user for entry into a contest, and wherein the message comprises notification of an award associated with the contest.

53. The remote control system according to Claim 50, wherein processing the response comprises determining a product preference of the user, and wherein the message comprises a product discount notification.

54. The remote control system according to Claim 42, wherein the writing comprises an advertisement, the acquired data is associated with the advertisement, and the question relates to a selected portion of the advertisement.

55. The remote control system according to Claim 42, wherein the communication signal conveys a first advertisement for presentation to the user via the appliance, the writing comprises a second advertisement presented on a physical medium to the user, and the question is about the second advertisement.

56. The remote control system according to Claim 55, wherein the hand-held device is further operative to present a second question to the user about the first advertisement.

57. The remote control system according to Claim 42, wherein the scanner acquires data from the writing by scanning one of a product and a product package.

58. The remote control system according to Claim 57, wherein the acquired data comprise a product identification.

59. The remote control system according to Claim 58, further comprising a remote computing center that receives the product identification from the scanner via the second transmitter and assembles a shopping list for the user based on the product identification.

60. The remote control system according to Claim 59, wherein the remote computing center determines if the product identification matches a selected product, offers the user a discount on the selected product if the product identification does not match the selected product, and adds the selected product to the shopping list if the user accepts the offered discount.

61. The remote control system according to Claim 59, wherein the remote computing center determines if the product identification matches a selected product, offers the user a discount on the selected product if the product identification matches the selected product, and adds the selected product to the shopping list if the user accepts the offered discount.

62. The remote control system according to Claim 59, wherein the remote computing center determines whether the product identification specifies a brand that the computing center promotes, and associates a discount with an entry on the shopping list if the product identification specifies the promoted brand.

63. The remote control system according to Claim 59, wherein the remote computing center is operable to associate a discount with an entry on the shopping list based on the response.

64. The remote control system according to Claim 63, wherein the hand-held device further comprises an integral printer and the computing center transmits a record of the discount to the hand-held device for printout by the printer as a coupon.

65. The remote control system according to Claim 59, wherein the remote computing center is operable to communicate the shopping list to a grocery store.

66. The remote control system according to Claim 59, wherein the remote computing center uses the shopping list as a vehicle to promote a selected product brand.

67. The remote control system according to Claim 59, wherein the remote computing center promotes a product brand by offering a product discount to the user if the user agrees to include the product brand on the shopping list.

68. The remote control system according to Claim 42, wherein the appliance receives the communication signal from at least one of a cable network, a satellite network, a radio network, and a television network.

69. A method for monitoring product usage, comprising the steps of:

receiving a signal emanating from a product used by a consumer;

identifying the product based on the received signal;

transmitting the product identity to a computer;

generating a list of products used by the consumer, an entry of the list corresponding to the product identity;

presenting to the consumer a question related to the product used by the consumer;

receiving a response from the consumer to the question;

applying a criterion to the response; and

if the response meets the criterion, associating a product brand with the entry.

70. The method according to Claim 69, wherein the product identity comprises a particular brand of the product used by the consumer, and wherein the step of associating the product brand with the entry comprises associating a substitute brand with the entry.

71. The method according to Claim 70, wherein the question comprises an offer for a discount applicable to the substitute brand of the product.

72. The method according to Claim 69, wherein the step of receiving the signal comprises receiving a radio frequency identification signal.

73. The method according to Claim 69, wherein the step of receiving the signal emanating from the product comprises scanning a mark, coupled to a package of the product, via a remote control.

74. The method according to Claim 73, wherein the mark comprises a barcode.

75. The method according to Claim 69, wherein the step of receiving the signal emanating from the product comprises receiving a scattered radio frequency signal.

76. The method according to Claim 69, wherein the step of receiving the signal emanating from the product comprises receiving a radio frequency signal generated at the product.

77. The method according to Claim 69, wherein the step of receiving the signal emanating from the product comprises receiving reflected laser light.

78. The method according to Claim 69, wherein the list of products comprises a shopping list.

79. The method according to Claim 78, further comprising the steps of:
transmitting the shopping list to a store affiliated with the computer; and
providing the consumer with goods according to the shopping list.

80. The method according to Claim 78, wherein the associating step comprises associating a discount to the entry on the shopping list if the response meets the criterion.

81. The method according to Claim 78, wherein the product identity comprises a specific brand of the product used by the consumer, and wherein the step of associating the product brand with the entry comprises associating a competitive brand with the entry.

82. The method according to Claim 69, wherein the computer comprises a remote server.

83. The method according to Claim 69, wherein the criterion comprises an acceptance of a product offer.

84. The method according to Claim 69, wherein the criterion comprises a consumer demographic.

85. The method according to Claim 69, wherein the criterion comprises a product preference.

FIG. 1

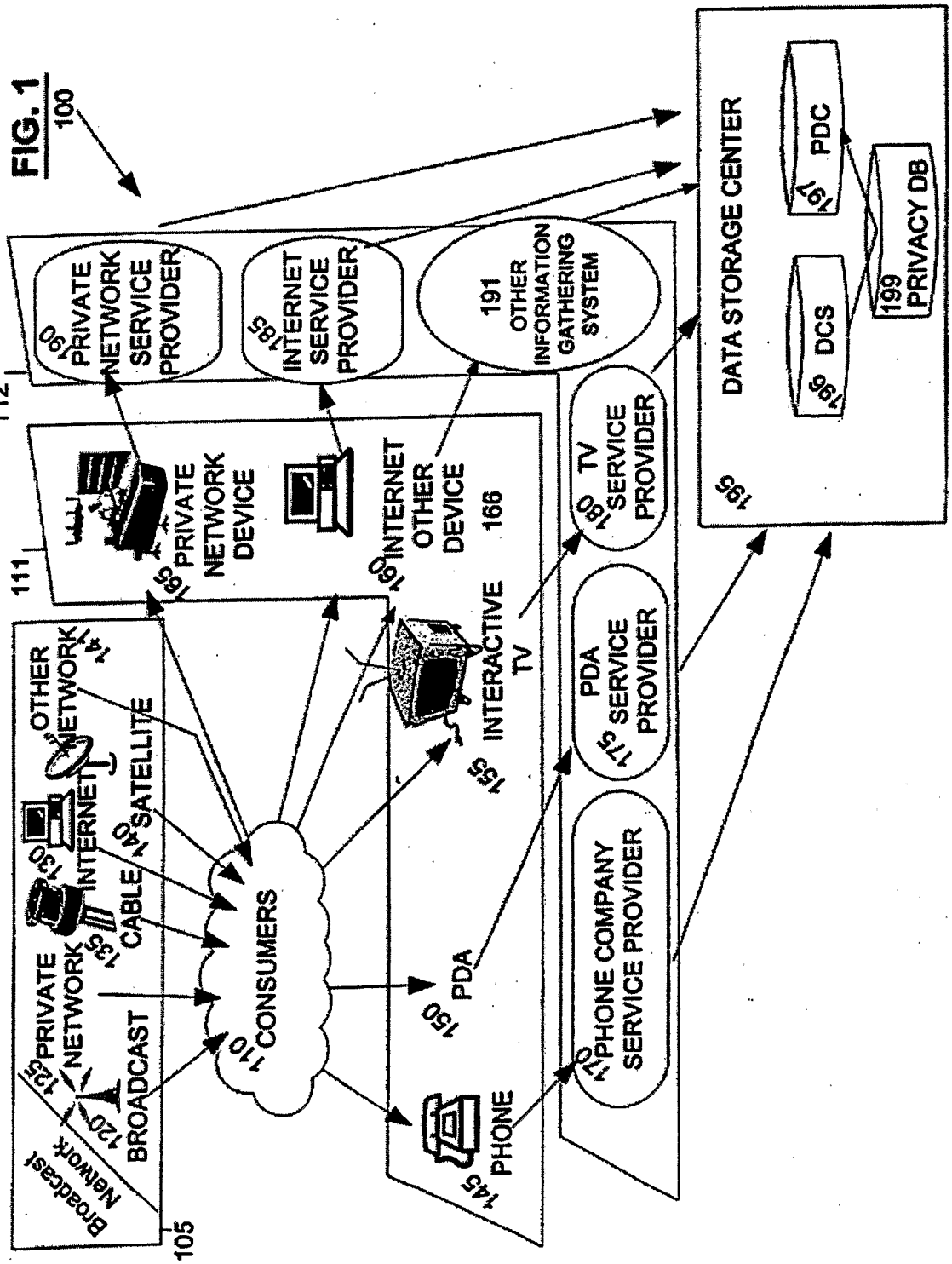

100
112
111
105
PRIVATE NETWORK SERVICE PROVIDER
190
INTERNET SERVICE PROVIDER
165
191 OTHER INFORMATION GATHERING SYSTEM
PRIVATE NETWORK DEVICE
163
INTERNET OTHER DEVICE
166
160
INTERACTIVE TV
155
TV SERVICE PROVIDER
180
PDA SERVICE PROVIDER
175
PHONE COMPANY SERVICE PROVIDER
170
DATA STORAGE CENTER
195
PDC
197
DCS
196
PRIVACY DB
199
OTHER NETWORK
141
SATELLITE
140
INTERNET
161
CABLE
135
PRIVATE NETWORK
125
BROADCAST
120
Broadcast Network
CONSUMERS
110
PDA
150
PHONE
145

FIG. 2

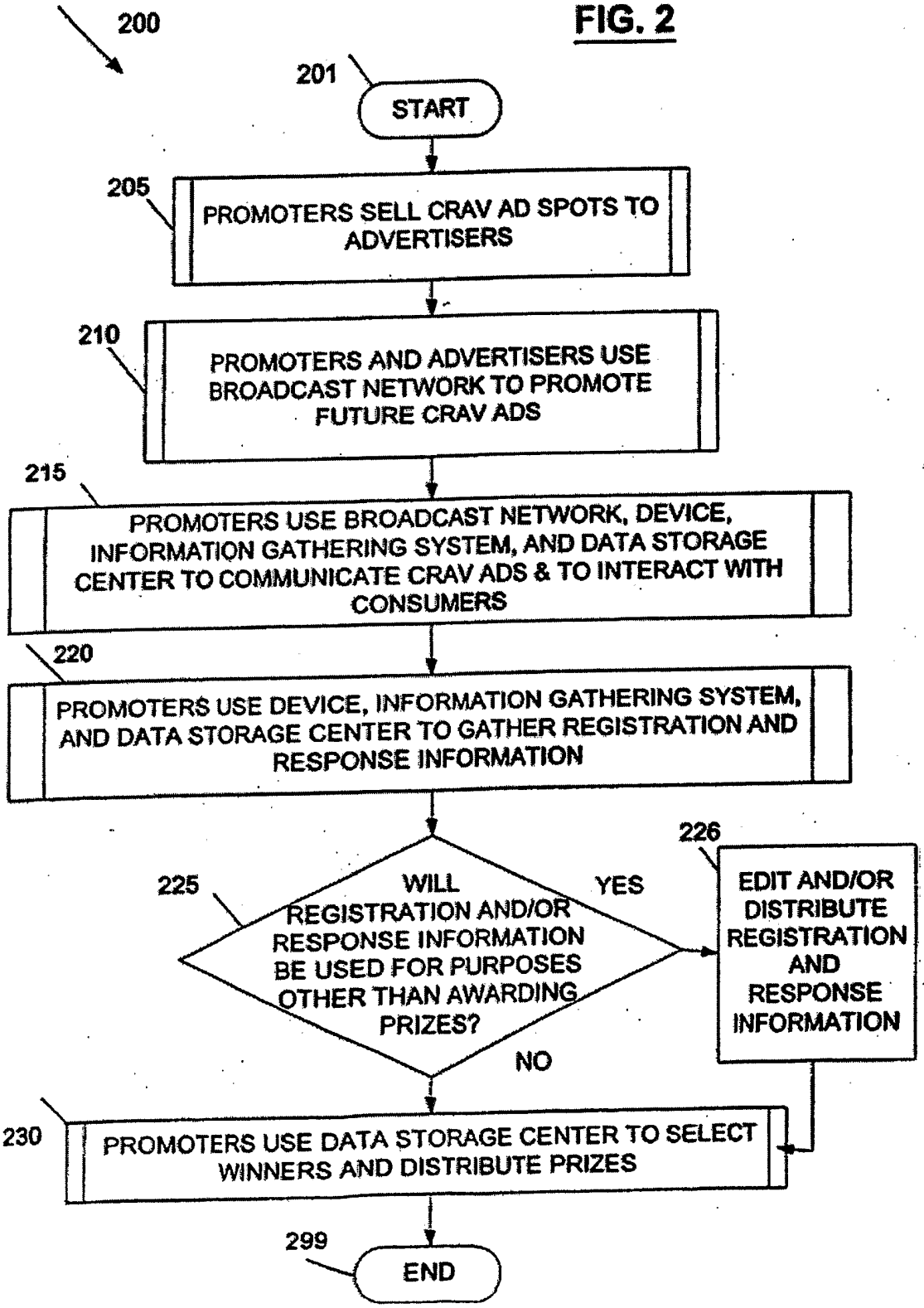

200
201
START
205
PROMOTERS SELL CRAV AD SPOTS TO ADVERTISERS
210
PROMOTERS AND ADVERTISERS USE BROADCAST NETWORK TO PROMOTE FUTURE CRAV ADS
215
PROMOTERS USE BROADCAST NETWORK, DEVICE, INFORMATION GATHERING SYSTEM, AND DATA STORAGE CENTER TO COMMUNICATE CRAV ADS & TO INTERACT WITH CONSUMERS
220
PROMOTERS USE DEVICE, INFORMATION GATHERING SYSTEM, AND DATA STORAGE CENTER TO GATHER REGISTRATION AND RESPONSE INFORMATION
225
WILL REGISTRATION AND/OR RESPONSE INFORMATION BE USED FOR PURPOSES OTHER THAN AWARDING PRIZES?
YES
NO
226
EDIT AND/OR DISTRIBUTE REGISTRATION AND RESPONSE INFORMATION
230
PROMOTERS USE DATA STORAGE CENTER TO SELECT WINNERS AND DISTRIBUTE PRIZES
299
END

FIG. 3

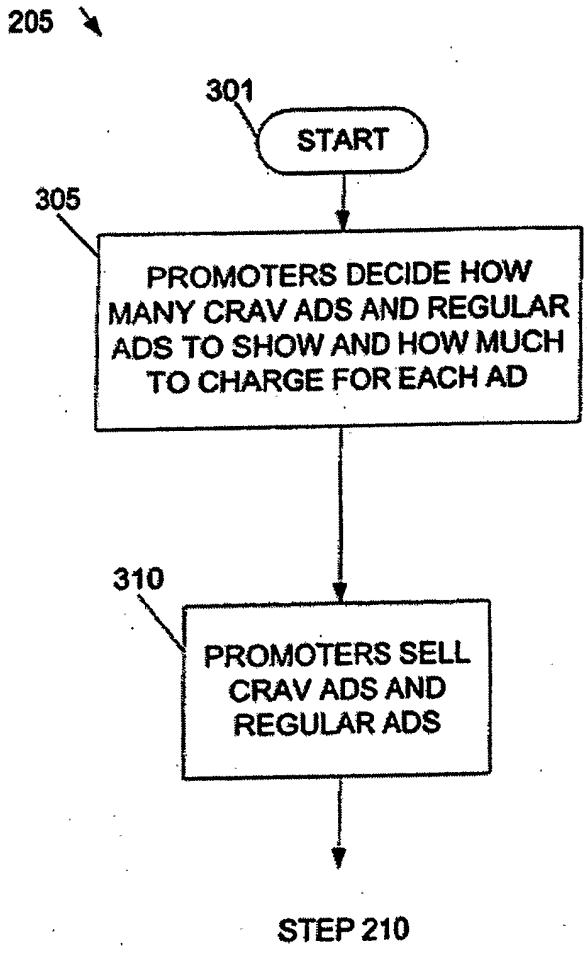

205
301
START
305
PROMOTERS DECIDE HOW MANY CRAV ADS AND REGULAR ADS TO SHOW AND HOW MUCH TO CHARGE FOR EACH AD
310
PROMOTERS SELL CRAV ADS AND REGULAR ADS
STEP 210

FIG. 4

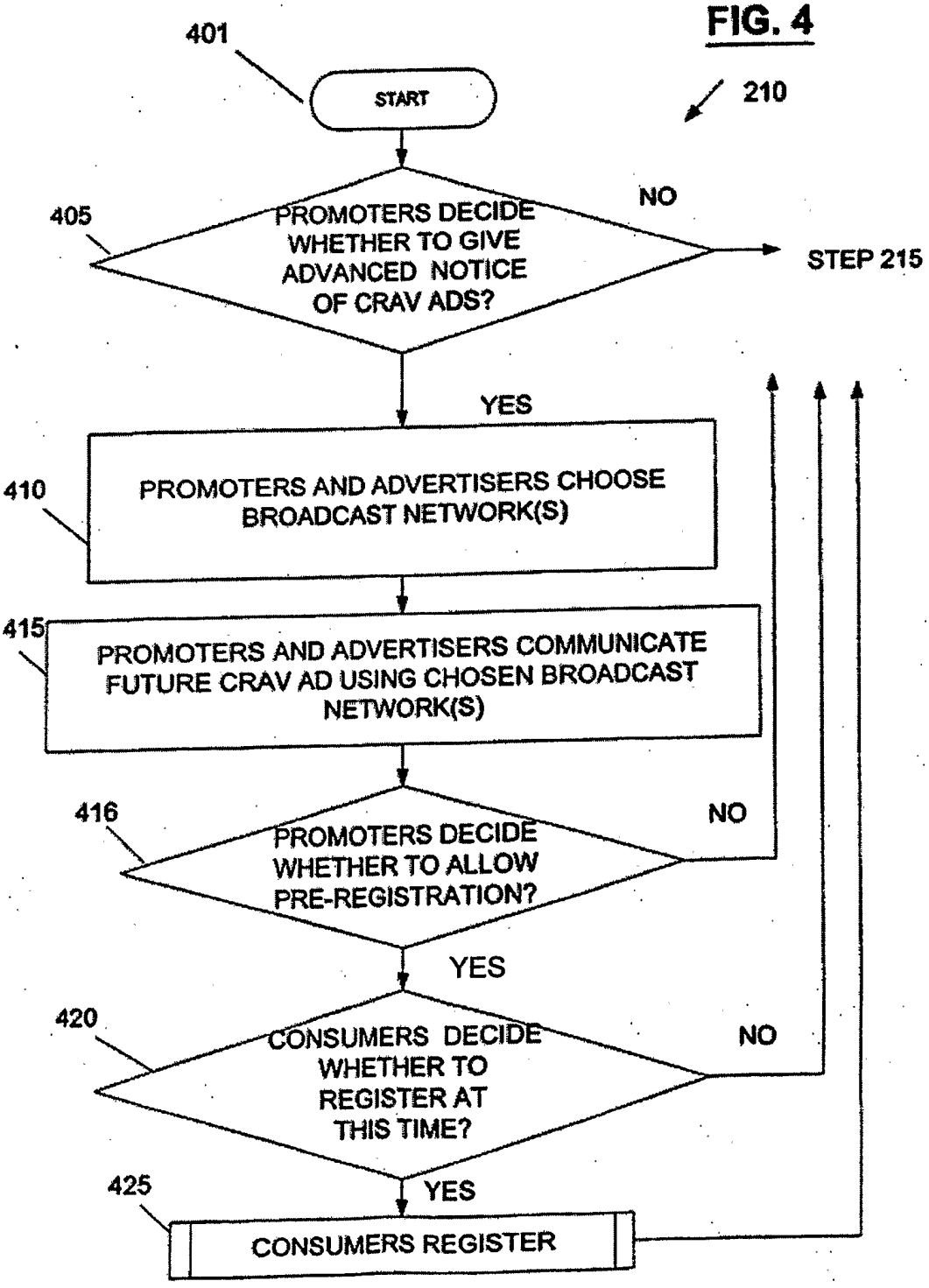
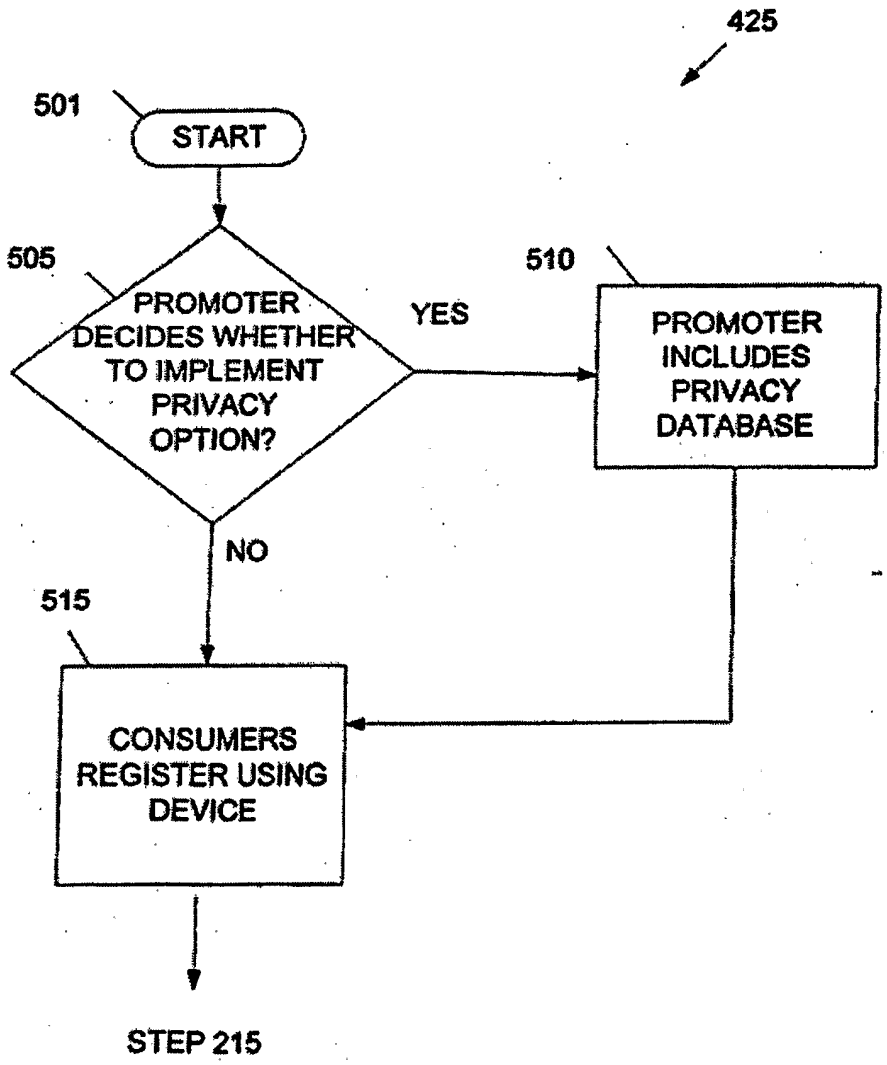

401
START
210
405
PROMOTERS DECIDE WHETHER TO GIVE ADVANCED NOTICE OF CRAV ADS?
NO
STEP 215
YES
410
PROMOTERS AND ADVERTISERS CHOOSE BROADCAST NETWORK(S)
415
PROMOTERS AND ADVERTISERS COMMUNICATE FUTURE CRAV AD USING CHOSEN BROADCAST NETWORK(S)
416
PROMOTERS DECIDE WHETHER TO ALLOW PRE-REGISTRATION?
NO
YES
420
CONSUMERS DECIDE WHETHER TO REGISTER AT THIS TIME?
NO
YES
425
CONSUMERS REGISTER

FIG. 5


425
501
START
505
PROMOTER DECIDES WHETHER TO IMPLEMENT PRIVACY OPTION?
YES
510
PROMOTER INCLUDES PRIVACY DATABASE
NO
515
CONSUMERS REGISTER USING DEVICE
STEP 215

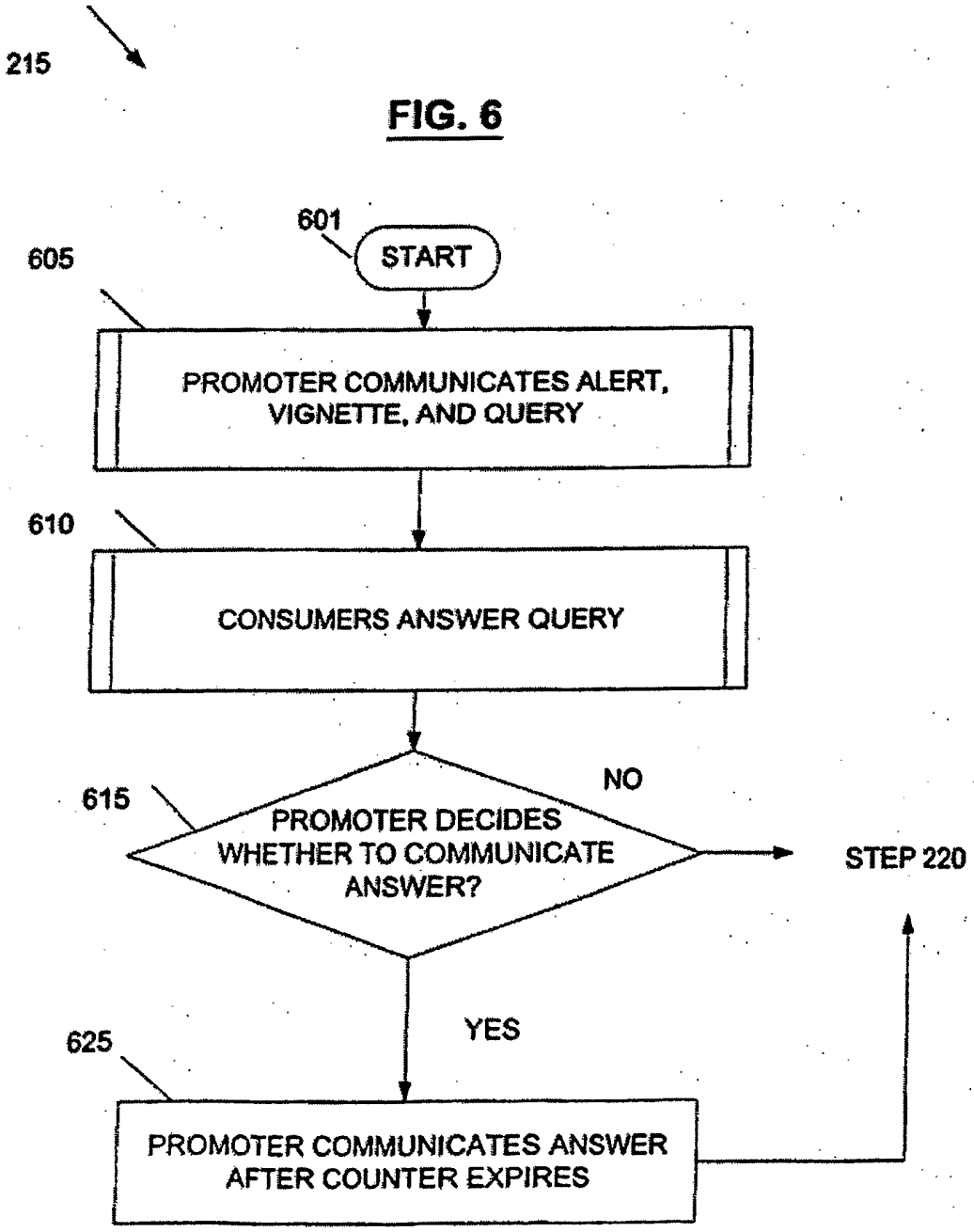
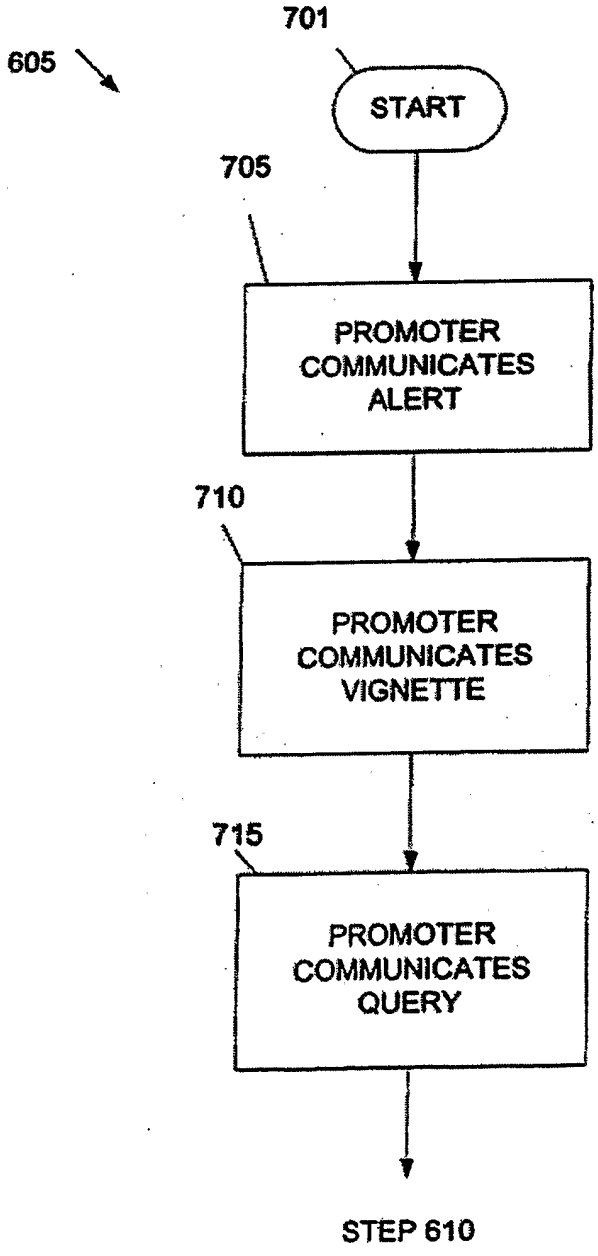

215
601
START
605
PROMOTER COMMUNICATES ALERT, VIGNETTE, AND QUERY
610
CONSUMERS ANSWER QUERY
615
PROMOTER DECIDES WHETHER TO COMMUNICATE ANSWER?
NO
STEP 220
YES
625
PROMOTER COMMUNICATES ANSWER AFTER COUNTER EXPIRES

FIG. 6

FIG. 7


605
701
START
705
PROMOTER COMMUNICATES ALERT
710
PROMOTER COMMUNICATES VIGNETTE
715
PROMOTER COMMUNICATES QUERY
STEP 610

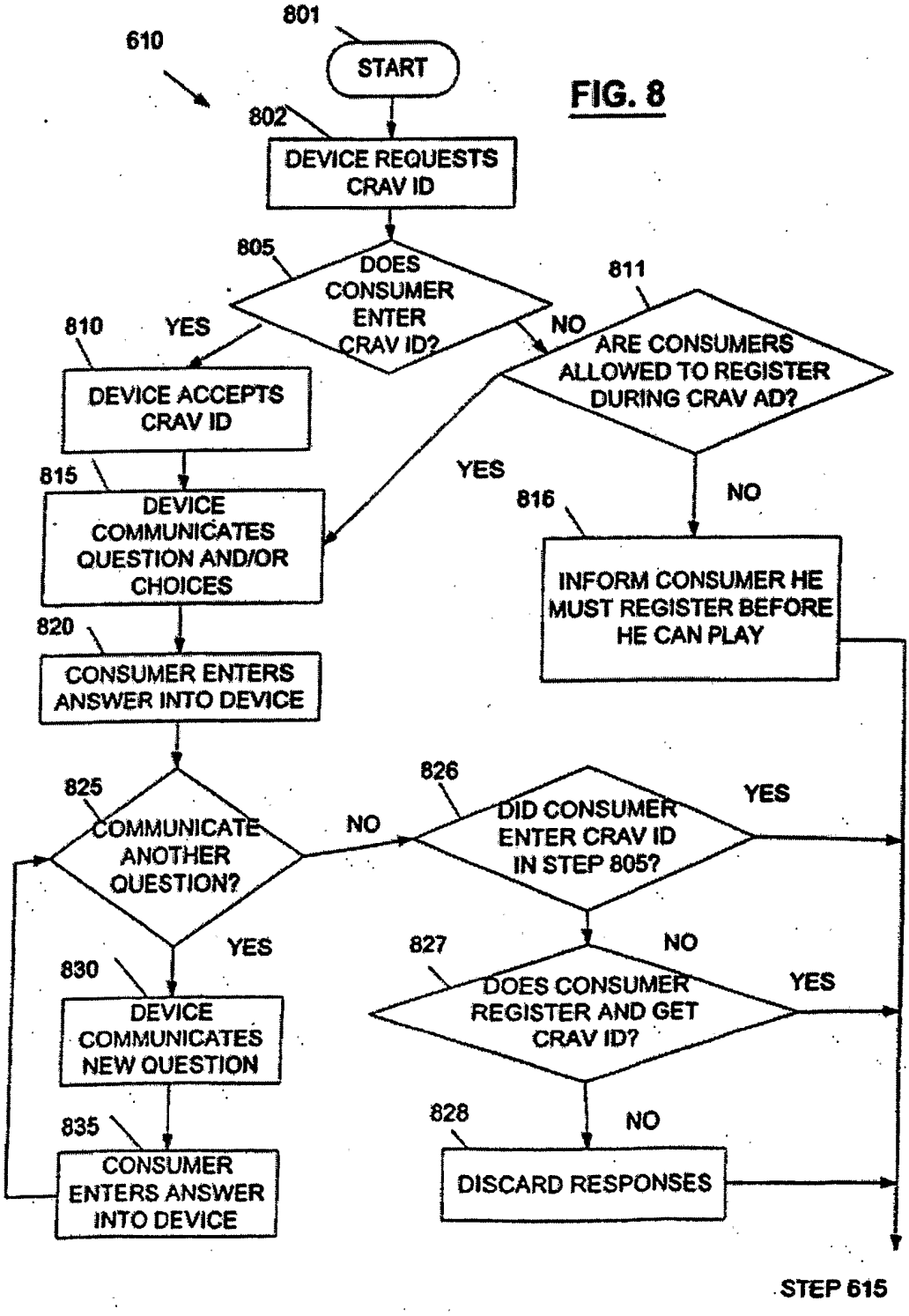

610
801
START
802
DEVICE REQUESTS CRAV ID
805
DOES CONSUMER ENTER CRAV ID?
YES
NO
810
DEVICE ACCEPTS CRAV ID
811
ARE CONSUMERS ALLOWED TO REGISTER DURING CRAV AD?
YES
NO
815
DEVICE COMMUNICATES QUESTION AND/OR CHOICES
816
INFORM CONSUMER HE MUST REGISTER BEFORE HE CAN PLAY
820
CONSUMER ENTERS ANSWER INTO DEVICE
825
COMMUNICATE ANOTHER QUESTION?
NO
826
DID CONSUMER ENTER CRAV ID IN STEP 805?
YES
YES
NO
827
DOES CONSUMER REGISTER AND GET CRAV ID?
YES
NO
830
DEVICE COMMUNICATES NEW QUESTION
835
CONSUMER ENTERS ANSWER INTO DEVICE
828
NO
DISCARD RESPONSES
STEP 615

FIG. 8

FIG. 9A

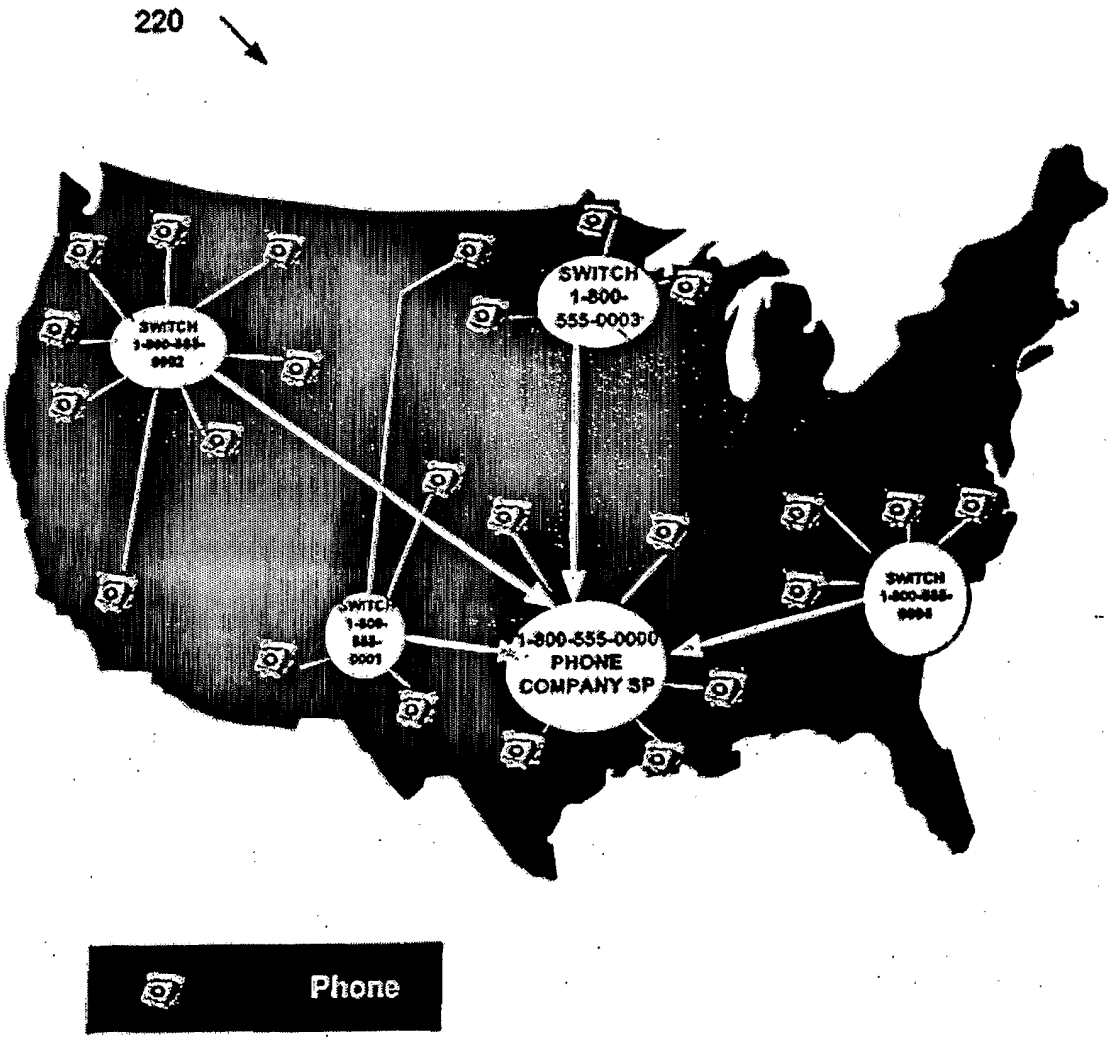

220
SWITCH 1-800-555-0003
1-800-555-0000 PHONE COMPANY SP
Phone

FIG. 9B

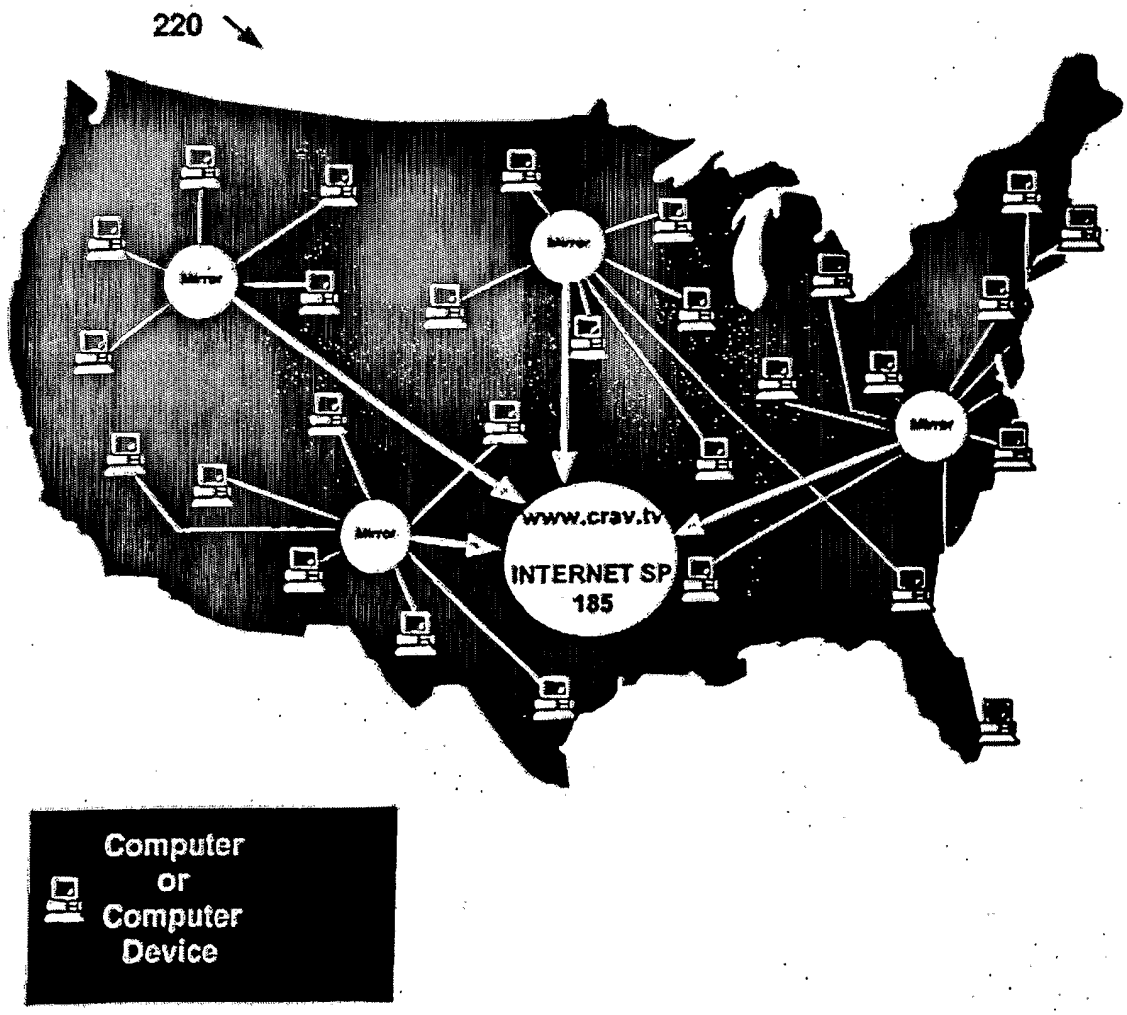

220
Mirror
Mirror
Mirror
Mirror
www.crav.tv
INTERNET SP
185
Computer
or
Computer
Device

FIG. 10

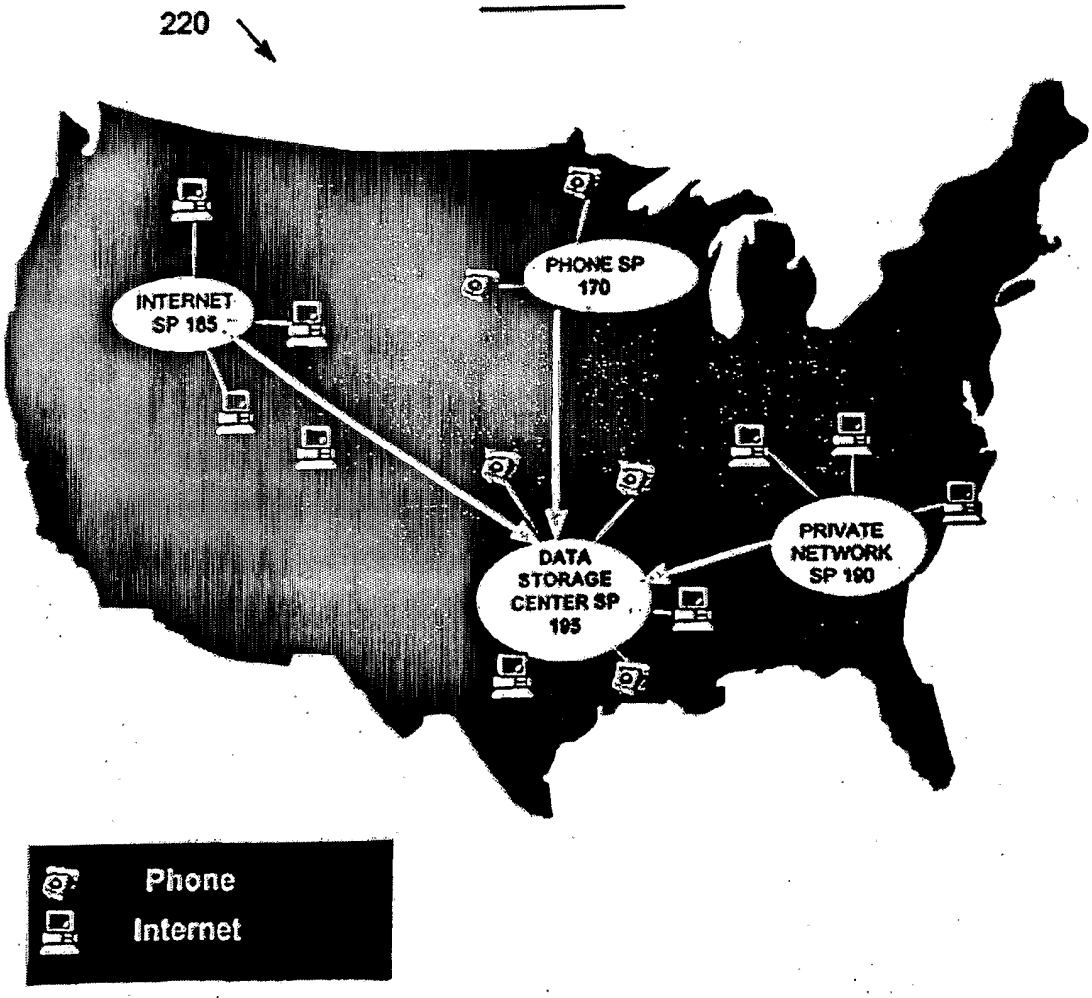

220
INTERNET SP 185
PHONE SP 170
DATA STORAGE CENTER SP 195
PRIVATE NETWORK SP 190
Phone
Internet

FIG. 11

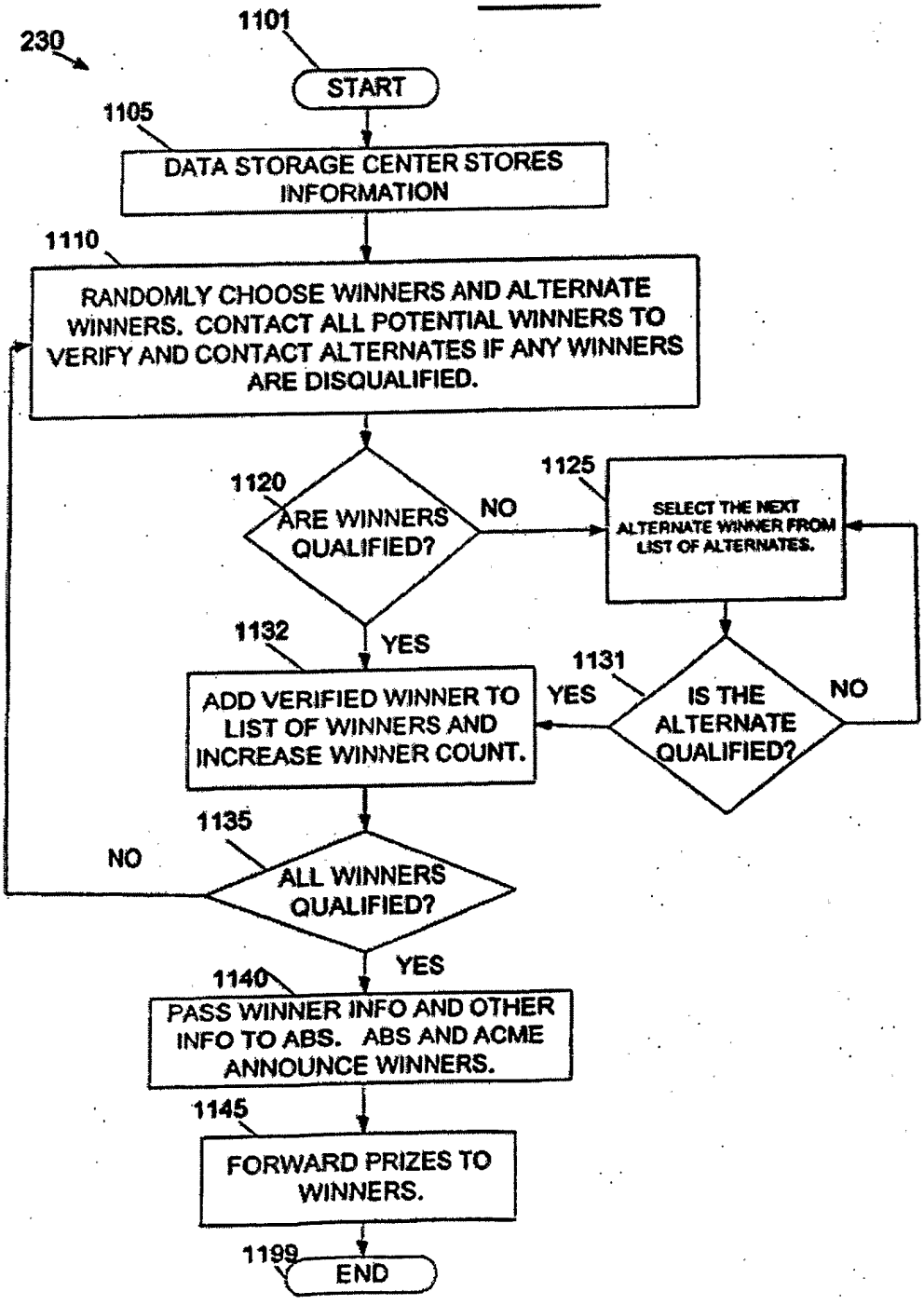

230
1101
START
1105
DATA STORAGE CENTER STORES INFORMATION
1110
RANDOMLY CHOOSE WINNERS AND ALTERNATE WINNERS. CONTACT ALL POTENTIAL WINNERS TO VERIFY AND CONTACT ALTERNATES IF ANY WINNERS ARE DISQUALIFIED.
1120
ARE WINNERS QUALIFIED?
NO
1125
SELECT THE NEXT ALTERNATE WINNER FROM LIST OF ALTERNATES.
YES
1132
ADD VERIFIED WINNER TO LIST OF WINNERS AND INCREASE WINNER COUNT.
1131
IS THE ALTERNATE QUALIFIED?
YES
NO
1135
ALL WINNERS QUALIFIED?
NO
YES
1140
PASS WINNER INFO AND OTHER INFO TO ABS. ABS AND ACME ANNOUNCE WINNERS.
1145
FORWARD PRIZES TO WINNERS.
1199
END

FIG. 12

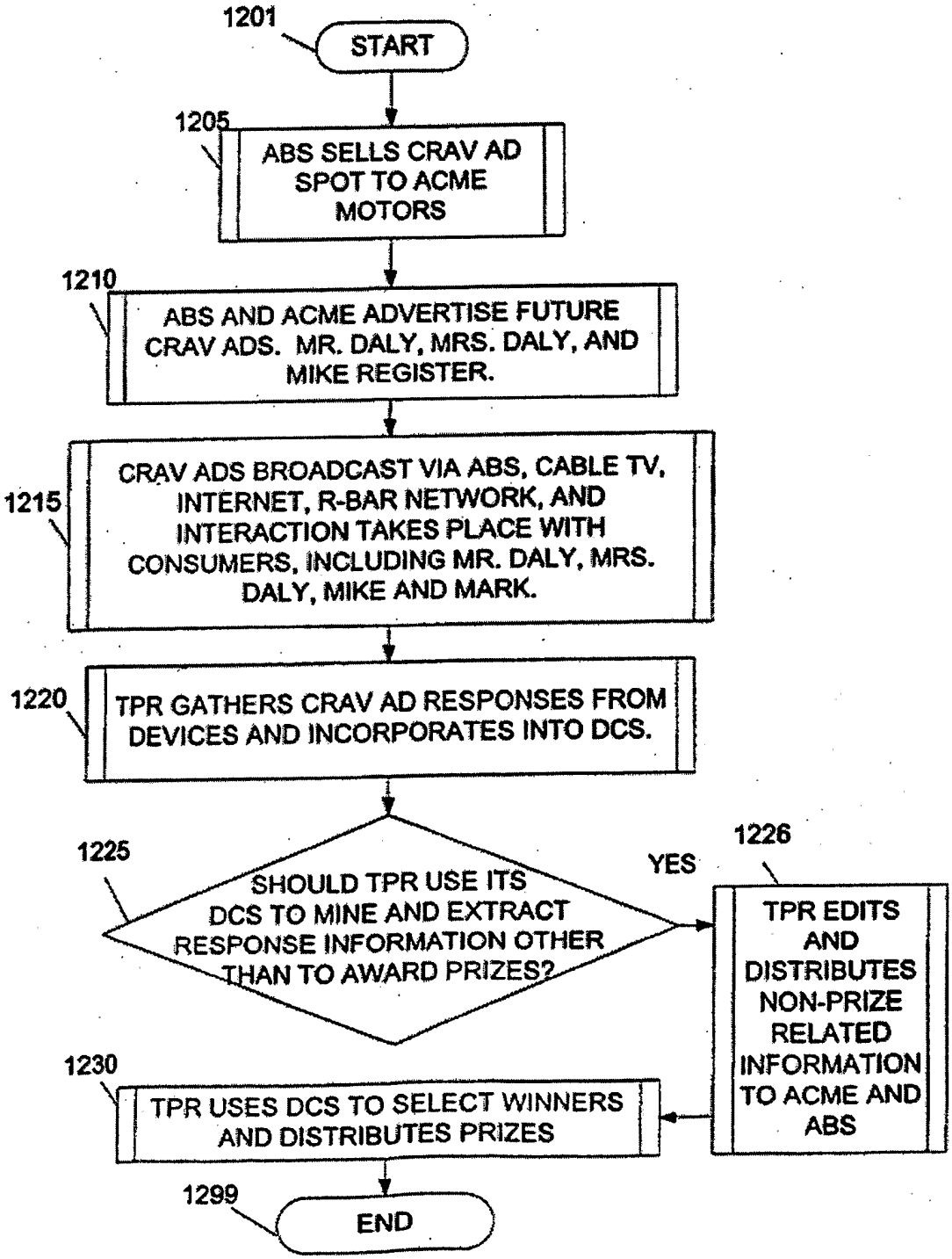

1201
START
1205
ABS SELLS CRAV AD SPOT TO ACME MOTORS
1210
ABS AND ACME ADVERTISE FUTURE CRAV ADS. MR. DALY, MRS. DALY, AND MIKE REGISTER.
1215
CRAV ADS BROADCAST VIA ABS, CABLE TV, INTERNET, R-BAR NETWORK, AND INTERACTION TAKES PLACE WITH CONSUMERS, INCLUDING MR. DALY, MRS. DALY, MIKE AND MARK.
1220
TPR GATHERS CRAV AD RESPONSES FROM DEVICES AND INCORPORATES INTO DCS.
1225
SHOULD TPR USE ITS DCS TO MINE AND EXTRACT RESPONSE INFORMATION OTHER THAN TO AWARD PRIZES?
YES
1226
TPR EDITS AND DISTRIBUTES NON-PRIZE RELATED INFORMATION TO ACME AND ABS
1230
TPR USES DCS TO SELECT WINNERS AND DISTRIBUTES PRIZES
1299
END

FIG. 13

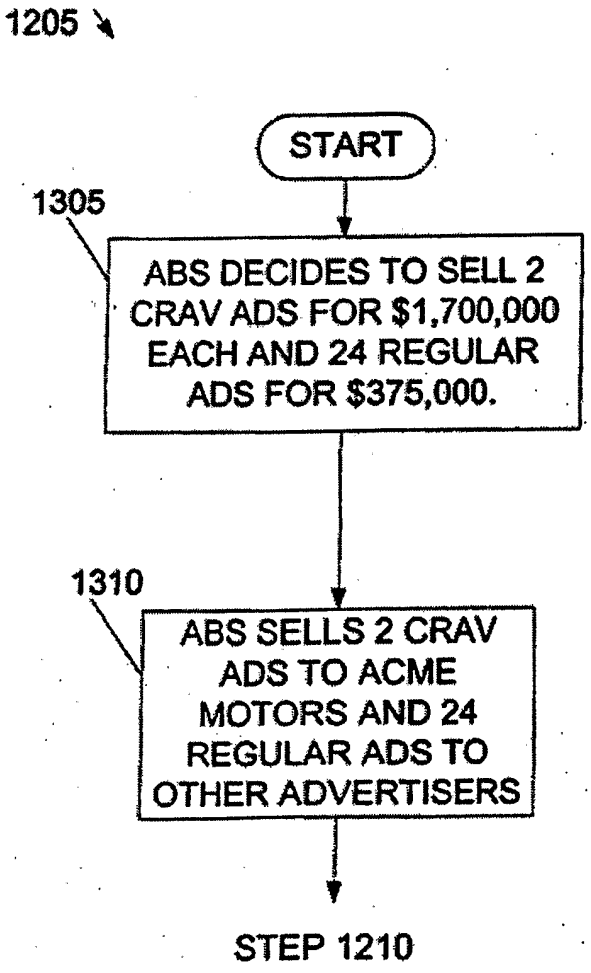

1205
START
1305
ABS DECIDES TO SELL 2 CRAV ADS FOR $1,700,000 EACH AND 24 REGULAR ADS FOR $375,000.
1310
ABS SELLS 2 CRAV ADS TO ACME MOTORS AND 24 REGULAR ADS TO OTHER ADVERTISERS
STEP 1210

FIG. 14

CRAV Immersive Ad Bundle Program Worksheet

SHOW:	Lawyers in Love
Time Slot:	8 pm EST/7 pm CST 8 pm MST/7pm PST
Length:	60 min.
Ad mins/show:	16
Avg. Audience:	7,000,000 viewers
Typical # Spots:	32 30 second spots/show
$ / SPOT:	$300,000
Cost/100- view:	$42.86 per 30 seconds
Revenues.show:	$9,600,000
Expenses/show:	$8,000,000
Avg. profit/show:	$1,600,000

SUBSTITUTION ANALYSIS:

CRAV Bundles:	2	$1,700,000 per spot
Time per bundle:	2 minutes =	$2,400,000 replacement and fees
Reward % of fee:	29.41%	$3,400,000 after Immersion Rewards
CRAV data cost::	15.00% of fees, or	$ 510,000 for all CRAV ads
CRAV promotion:	$400,000 additional promotion dollars	
Est. increase:	30% larger audience	
Est. new audience:	9,100,000	
Remaining ads:	24	
Ad fee increase:	25.00%	
New $ / ad:	$375,000	
New Cost / 1000:	$41.21 per: 30 seconds	
Ad Revenues:	$9,000,000	
CRAV Revenues:	$3,400,000	
Immers. Rewards:	-$1,000,000	
CRAV Promo:	-$400,000	
CRAV Data:	-$510,000	
Expenses/show:	-$8,000,000	
Est. profit/show:	$2,490,000	
Profit Increase:	$ 890,000 vs. non-CRAV ads	
Profit Increase:	55.63% vs. non-CRAV ads	

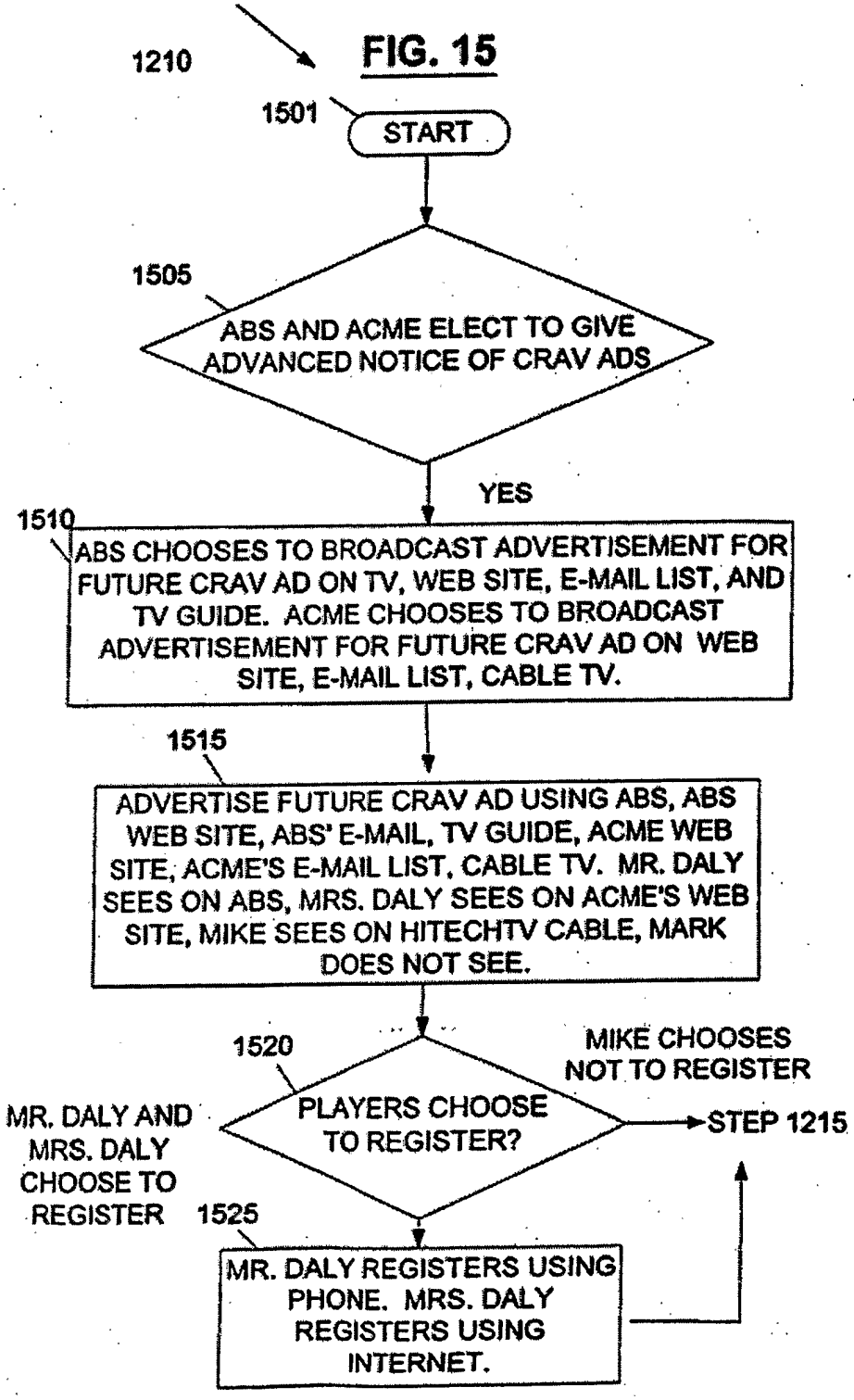

1210
FIG. 15
1501
START
1505
ABS AND ACME ELECT TO GIVE ADVANCED NOTICE OF CRAV ADS
YES
1510
ABS CHOOSES TO BROADCAST ADVERTISEMENT FOR FUTURE CRAV AD ON TV, WEB SITE, E-MAIL LIST, AND TV GUIDE. ACME CHOOSES TO BROADCAST ADVERTISEMENT FOR FUTURE CRAV AD ON WEB SITE, E-MAIL LIST, CABLE TV.
1515
ADVERTISE FUTURE CRAV AD USING ABS, ABS WEB SITE, ABS' E-MAIL, TV GUIDE, ACME WEB SITE, ACME'S E-MAIL LIST, CABLE TV. MR. DALY SEES ON ABS, MRS. DALY SEES ON ACME'S WEB SITE, MIKE SEES ON HITECHTV CABLE, MARK DOES NOT SEE.
1520
PLAYERS CHOOSE TO REGISTER?
MIKE CHOOSES NOT TO REGISTER
STEP 1215
MR. DALY AND MRS. DALY CHOOSE TO REGISTER
1525
MR. DALY REGISTERS USING PHONE. MRS. DALY REGISTERS USING INTERNET.

FIG. 16

IDENTIFICATION INFORMATION

NAME: Mark Daly
SS#: 238-33-5212
PHONE: 727-541-1100

PIN: 1234
Birthday: 07/05/62
E-mail: mdaly@worldwide.net
Address: 5623 Bayou Court, Largo, FL

Wins: 17-Aug-00 NBS2103

DEMOGRAPHIC INFORMATION

LEVEL I

Sex:	M	Race:	W	Ann. Earn:	75K
Zip Code:	33771	Weight:	185	Education:	14
# Child:	2	Height:	5' 10"	Political:	D
Marital:	D	Occupation:	Construction	Religious:	SB

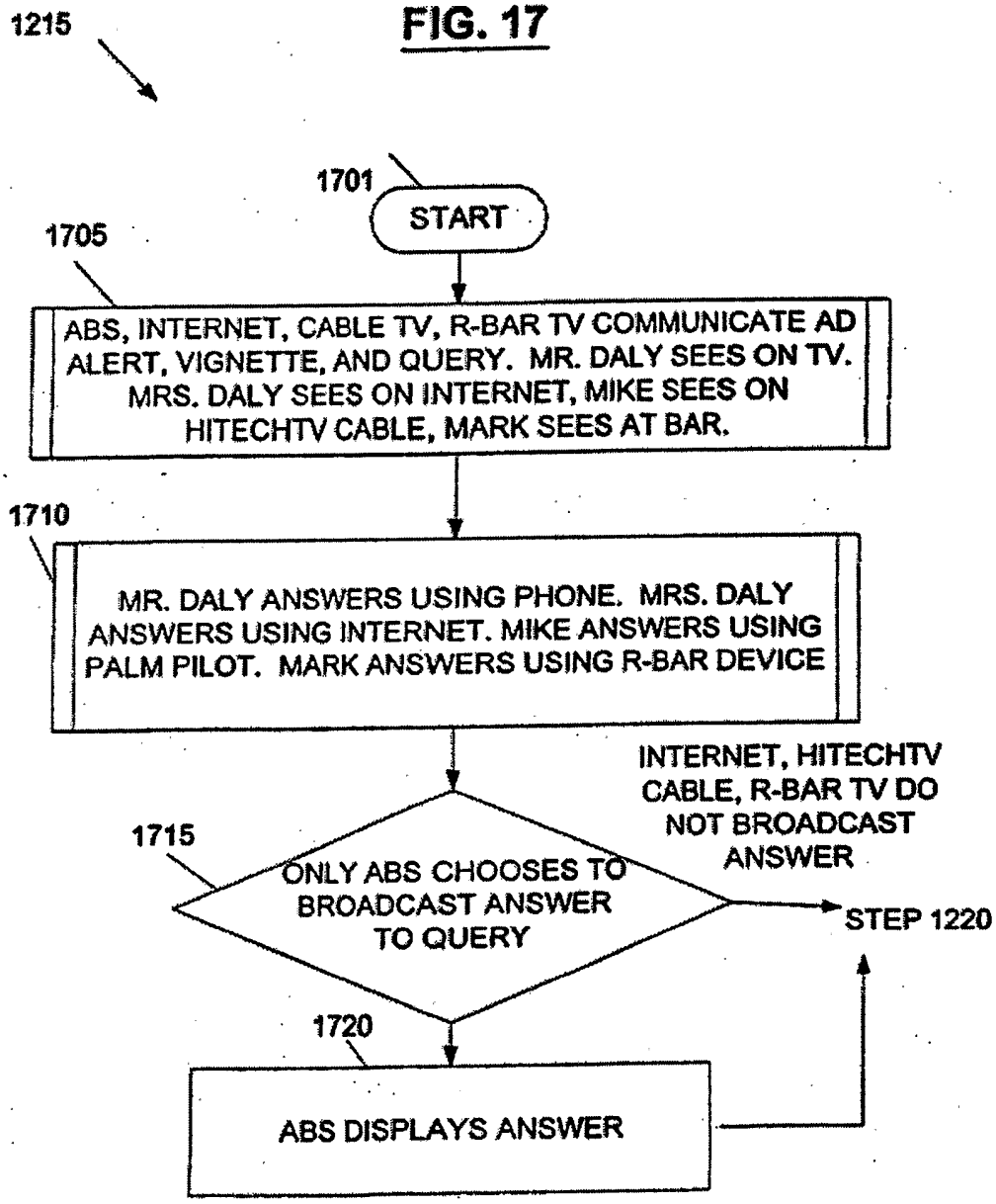
LEVEL II

Date add	Info		
21-Jul-00	ABS0833	Number of Computers:	2
		Number of vehicles:	1
17-Sep-00	ABS0734	Favorite network:	ABS

HISTORICAL RESPONSE INFORMATION

Date	Spot Code	Resp. A	Resp. B	Resp. C	Resp. D	Resp. E	Resp. F	Resp. G
21-Jul-00	ABS0712	1	4	2	2	3		
21-Jul-00	ABS0734	4	3	3	4	2	2	
21-Jul-00	ABS0812	1	3	5	3	1		
21-Jul-00	ABS0833	4	5	5	2	4	3	
28-Jul-00	NBS2103	5	2	1				
28-Jul-00	NBS2122	2	3	4				
04-Aug-00	MSN1820	4	3	3	2	4	4	1
11-Aug-00	ABS0712	1	3	2				
11-Aug-00	ABS0734	1	1	1	2	2		
11-Aug-00	ABS0812	3	2	4	2	2		
11-Aug-00	ABS0833	2	4	3	4	3	1	1
11-Aug-00	ABS0845	4	3	2	3	2		
18 Aug-00	NBS2103	2	4	3	2	3		
18-Aug-00	NBS2122	1		2				
17-Sep-00	ABS0712	1	4	1	3	2	1	
17-Sep-00	ABS0734	3	2	1	2			
17-Sep-00	ABS0812	2	1	1	1	3		
17-Sep-00	ABS0833	3	3	1		1		
23-Oct-00	MSN1820	3	3	1		1		

FIG. 17


1215
1701
START
1705
ABS, INTERNET, CABLE TV, R-BAR TV COMMUNICATE AD ALERT, VIGNETTE, AND QUERY. MR. DALY SEES ON TV. MRS. DALY SEES ON INTERNET, MIKE SEES ON HITECHTV CABLE, MARK SEES AT BAR.
1710
MR. DALY ANSWERS USING PHONE. MRS. DALY ANSWERS USING INTERNET. MIKE ANSWERS USING PALM PILOT. MARK ANSWERS USING R-BAR DEVICE
1715
ONLY ABS CHOOSES TO BROADCAST ANSWER TO QUERY
INTERNET, HITECHTV CABLE, R-BAR TV DO NOT BROADCAST ANSWER
STEP 1220
1720
ABS DISPLAYS ANSWER

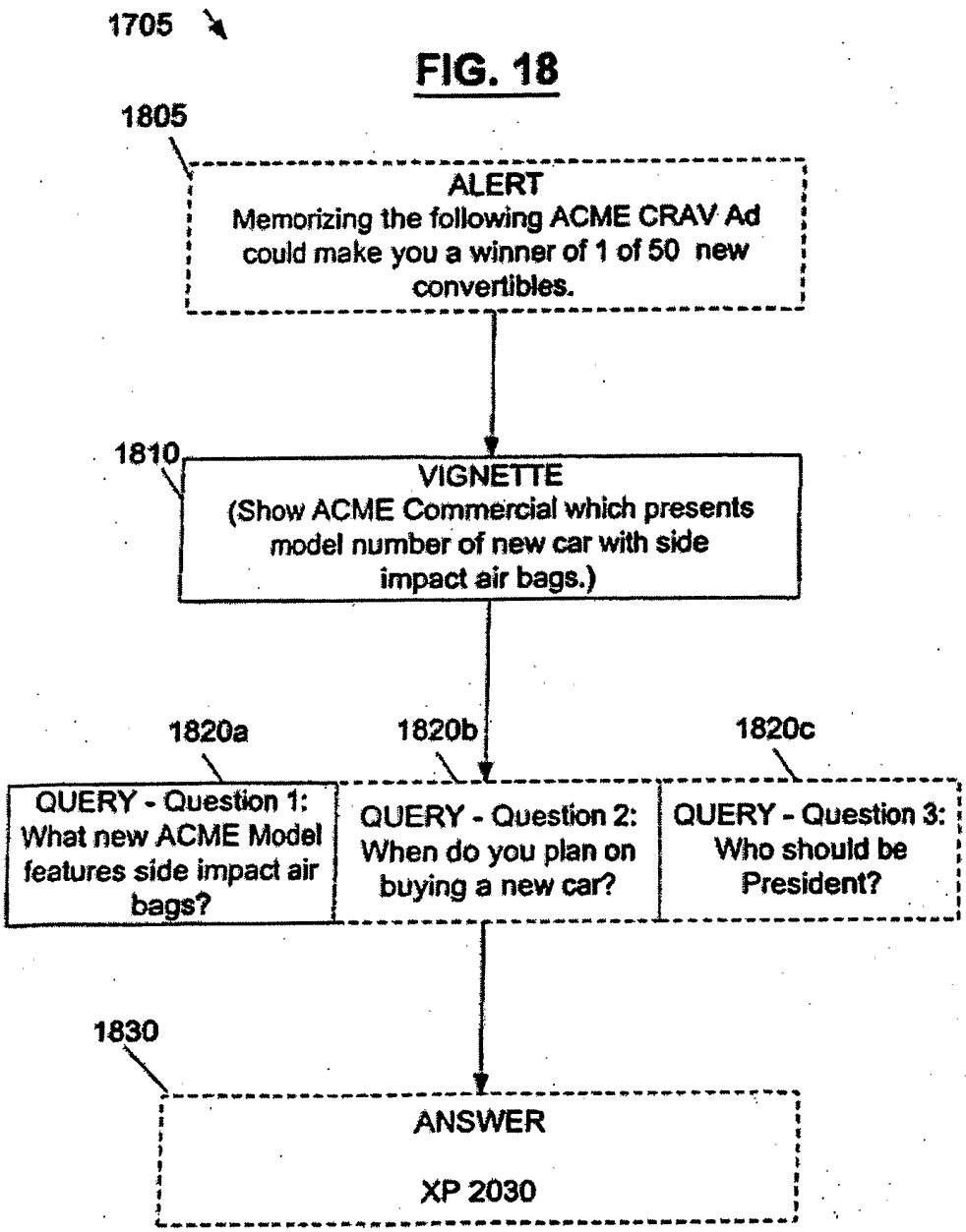

1705
1805
ALERT
Memorizing the following ACME CRAV Ad could make you a winner of 1 of 50 new convertibles.
1810
VIGNETTE
(Show ACME Commercial which presents model number of new car with side impact air bags.)
1820a
1820b
1820c
QUERY - Question 1: What new ACME Model features side impact air bags?
QUERY - Question 2: When do you plan on buying a new car?
QUERY - Question 3: Who should be President?
1830
ANSWER
XP 2030

FIG. 18

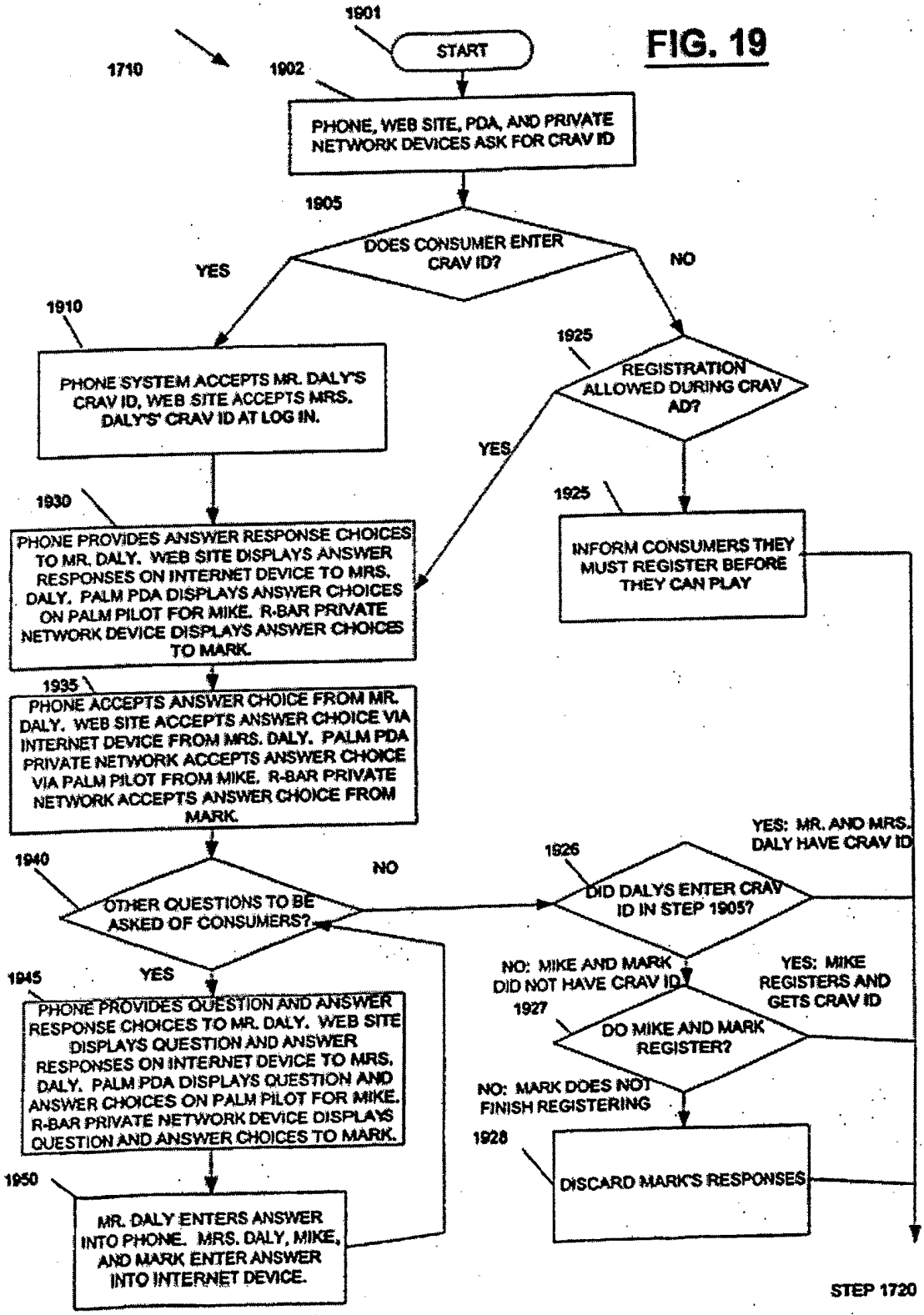
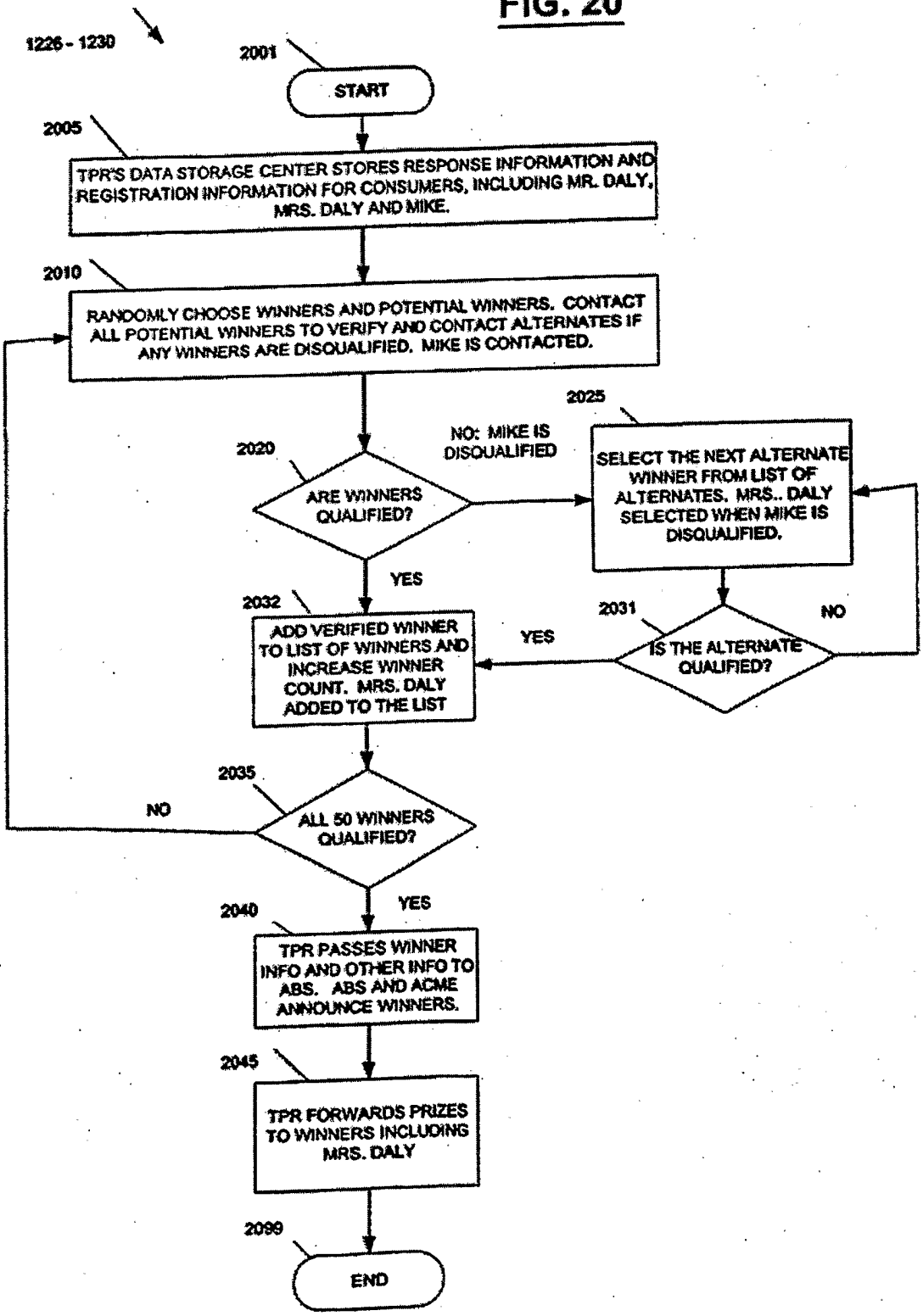

1710
1901
START
1902
PHONE, WEB SITE, PDA, AND PRIVATE NETWORK DEVICES ASK FOR CRAV ID
1905
DOES CONSUMER ENTER CRAV ID?
YES
NO
1910
PHONE SYSTEM ACCEPTS MR. DALY'S CRAV ID, WEB SITE ACCEPTS MRS. DALY'S' CRAV ID AT LOG IN.
1925
REGISTRATION ALLOWED DURING CRAV AD?
YES
1925
INFORM CONSUMERS THEY MUST REGISTER BEFORE THEY CAN PLAY
1930
PHONE PROVIDES ANSWER RESPONSE CHOICES TO MR. DALY. WEB SITE DISPLAYS ANSWER RESPONSES ON INTERNET DEVICE TO MRS. DALY. PALM PDA DISPLAYS ANSWER CHOICES ON PALM PILOT FOR MIKE. R-BAR PRIVATE NETWORK DEVICE DISPLAYS ANSWER CHOICES TO MARK.
1935
PHONE ACCEPTS ANSWER CHOICE FROM MR. DALY. WEB SITE ACCEPTS ANSWER CHOICE VIA INTERNET DEVICE FROM MRS. DALY. PALM PDA PRIVATE NETWORK ACCEPTS ANSWER CHOICE VIA PALM PILOT FROM MIKE. R-BAR PRIVATE NETWORK ACCEPTS ANSWER CHOICE FROM MARK.
1940
OTHER QUESTIONS TO BE ASKED OF CONSUMERS?
NO
1926
DID DALYS ENTER CRAV ID IN STEP 1905?
YES: MR. AND MRS. DALY HAVE CRAV ID
YES
1945
PHONE PROVIDES QUESTION AND ANSWER RESPONSE CHOICES TO MR. DALY. WEB SITE DISPLAYS QUESTION AND ANSWER RESPONSES ON INTERNET DEVICE TO MRS. DALY. PALM PDA DISPLAYS QUESTION AND ANSWER CHOICES ON PALM PILOT FOR MIKE. R-BAR PRIVATE NETWORK DEVICE DISPLAYS QUESTION AND ANSWER CHOICES TO MARK.
NO: MIKE AND MARK DID NOT HAVE CRAV ID
YES: MIKE REGISTERS AND GETS CRAV ID
1927
DO MIKE AND MARK REGISTER?
NO: MARK DOES NOT FINISH REGISTERING
1928
DISCARD MARK'S RESPONSES
1950
MR. DALY ENTERS ANSWER INTO PHONE. MRS. DALY, MIKE, AND MARK ENTER ANSWER INTO INTERNET DEVICE.
STEP 1720

FIG. 19

FIG. 20


1226 - 1230
2001
START
2005
TPR'S DATA STORAGE CENTER STORES RESPONSE INFORMATION AND REGISTRATION INFORMATION FOR CONSUMERS, INCLUDING MR. DALY, MRS. DALY AND MIKE.
2010
RANDOMLY CHOOSE WINNERS AND POTENTIAL WINNERS. CONTACT ALL POTENTIAL WINNERS TO VERIFY AND CONTACT ALTERNATES IF ANY WINNERS ARE DISQUALIFIED. MIKE IS CONTACTED.
2020
ARE WINNERS QUALIFIED?
NO: MIKE IS DISQUALIFIED
2025
SELECT THE NEXT ALTERNATE WINNER FROM LIST OF ALTERNATES. MRS.. DALY SELECTED WHEN MIKE IS DISQUALIFIED.
YES
2032
ADD VERIFIED WINNER TO LIST OF WINNERS AND INCREASE WINNER COUNT. MRS. DALY ADDED TO THE LIST
2031
IS THE ALTERNATE QUALIFIED?
YES
NO
2035
ALL 50 WINNERS QUALIFIED?
NO
YES
2040
TPR PASSES WINNER INFO AND OTHER INFO TO ABS. ABS AND ACME ANNOUNCE WINNERS.
2045
TPR FORWARDS PRIZES TO WINNERS INCLUDING MRS. DALY
2099
END

2100

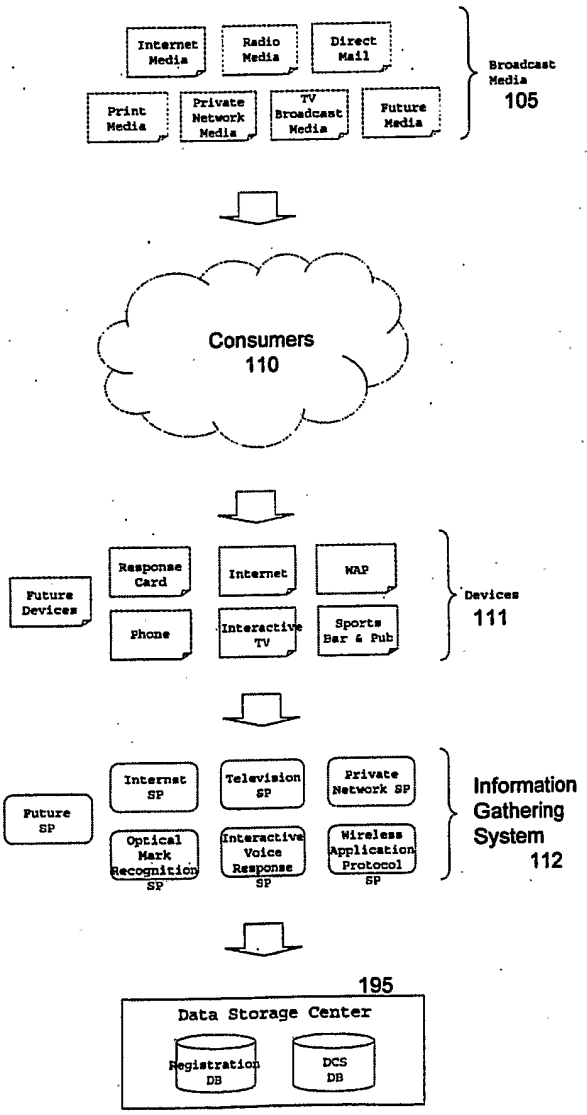

Internet Media
Radio Media
Direct Mail
Print Media
Private Network Media
TV Broadcast Media
Future Media
Broadcast Media
105
Consumers
110
Future Devices
Response Card
Internet
WAP
Phone
Interactive TV
Sports Bar & Pub
Devices
111
Future SP
Internet SP
Television SP
Private Network SP
Optical Mark Recognition SP
Interactive Voice Response SP
Wireless Application Protocol SP
Information Gathering System
112
195
Data Storage Center
Registration DB
DCS DB

Fig. 21

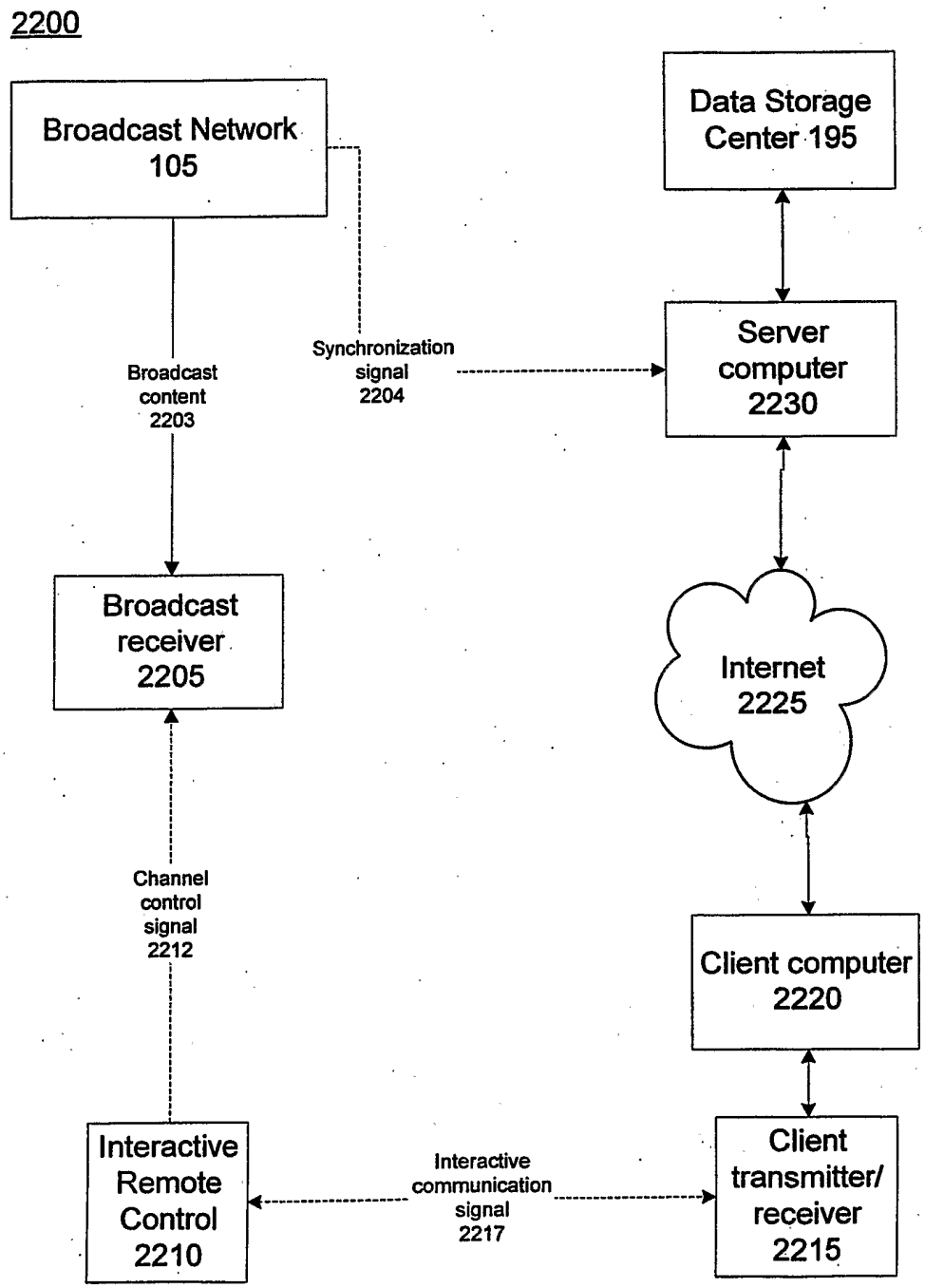

2200
Broadcast Network 105
Data Storage Center 195
Broadcast content 2203
Synchronization signal 2204
Server computer 2230
Broadcast receiver 2205
Internet 2225
Channel control signal 2212
Client computer 2220
Interactive Remote Control 2210
Interactive communication signal 2217
Client transmitter/ receiver 2215

Fig. 22

2210

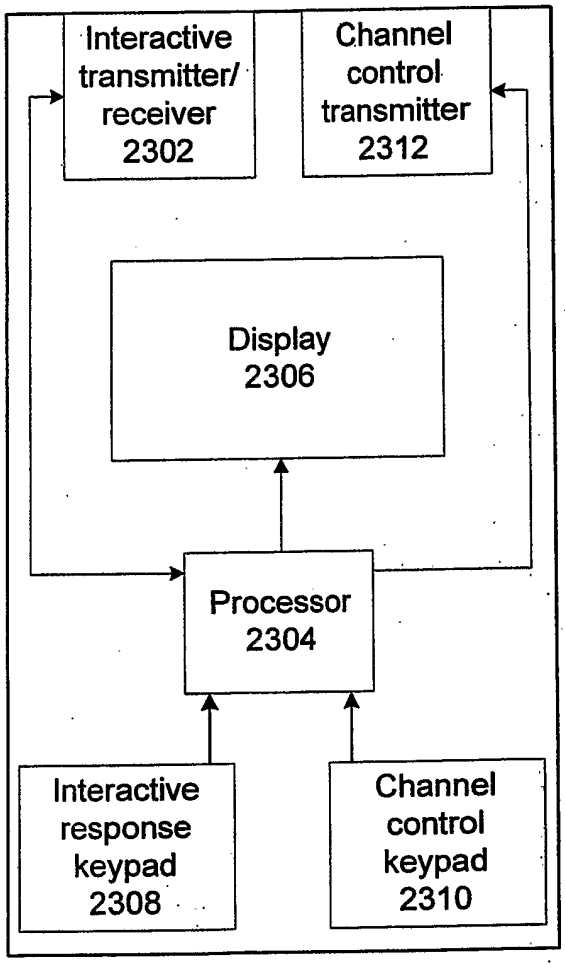

Interactive transmitter/ receiver 2302
Channel control transmitter 2312
Display 2306
Processor 2304
Interactive response keypad 2308
Channel control keypad 2310

Fig. 23

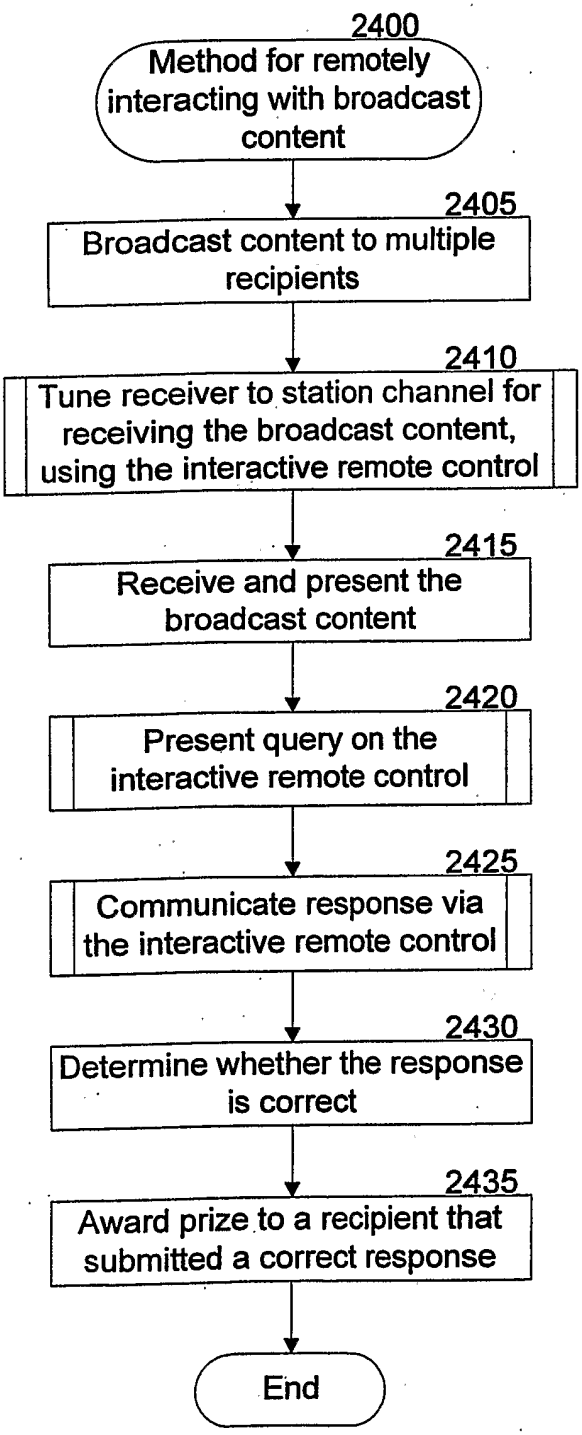

2400
Method for remotely interacting with broadcast content
2405
Broadcast content to multiple recipients
2410
Tune receiver to station channel for receiving the broadcast content, using the interactive remote control
2415
Receive and present the broadcast content
2420
Present query on the interactive remote control
2425
Communicate response via the interactive remote control
2430
Determine whether the response is correct
2435
Award prize to a recipient that submitted a correct response
End

Fig. 24

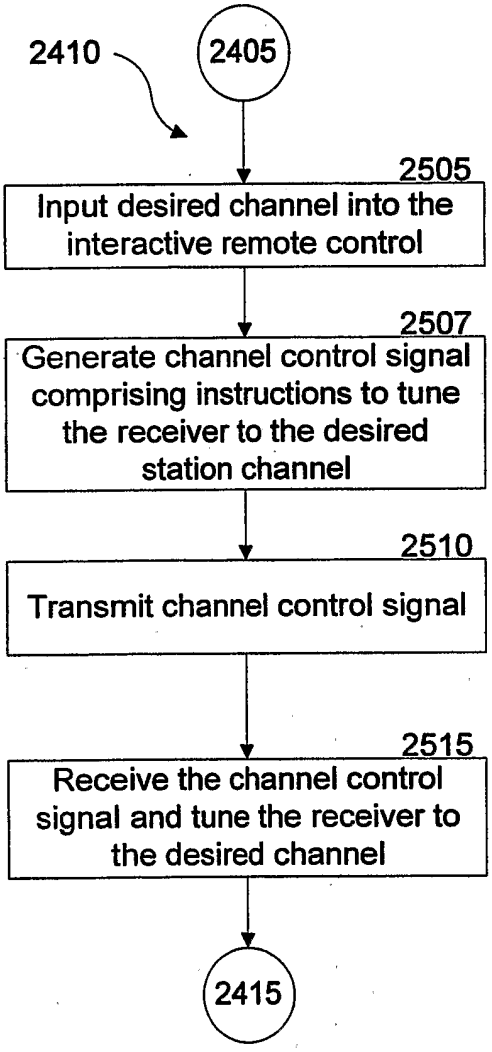

2410
2405
2505
Input desired channel into the interactive remote control
2507
Generate channel control signal comprising instructions to tune the receiver to the desired station channel
2510
Transmit channel control signal
2515
Receive the channel control signal and tune the receiver to the desired channel
2415

Fig. 25

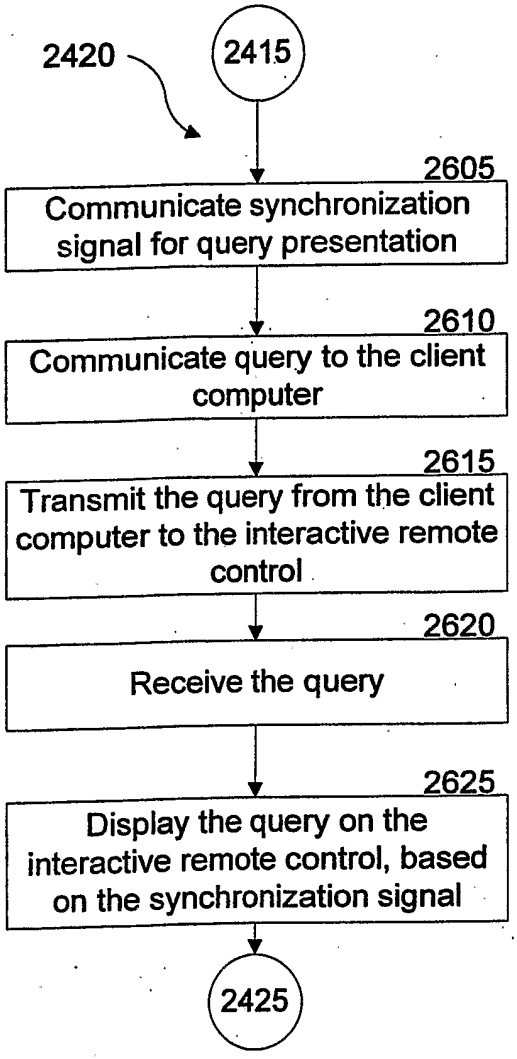

2420
2415
2605
Communicate synchronization signal for query presentation
2610
Communicate query to the client computer
2615
Transmit the query from the client computer to the interactive remote control
2620
Receive the query
2625
Display the query on the interactive remote control, based on the synchronization signal
2425

Fig. 26

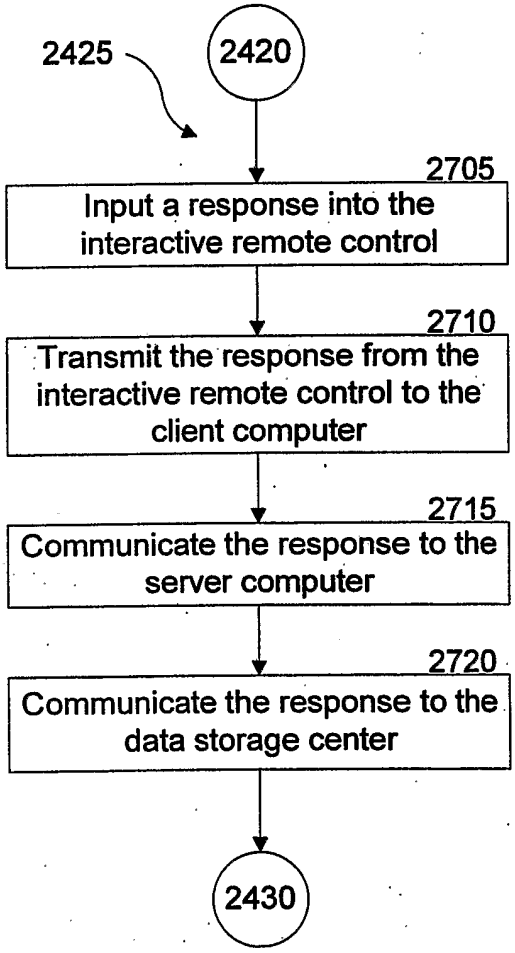

2425
2420
2705
Input a response into the interactive remote control
2710
Transmit the response from the interactive remote control to the client computer
2715
Communicate the response to the server computer
2720
Communicate the response to the data storage center
2430

Fig. 27

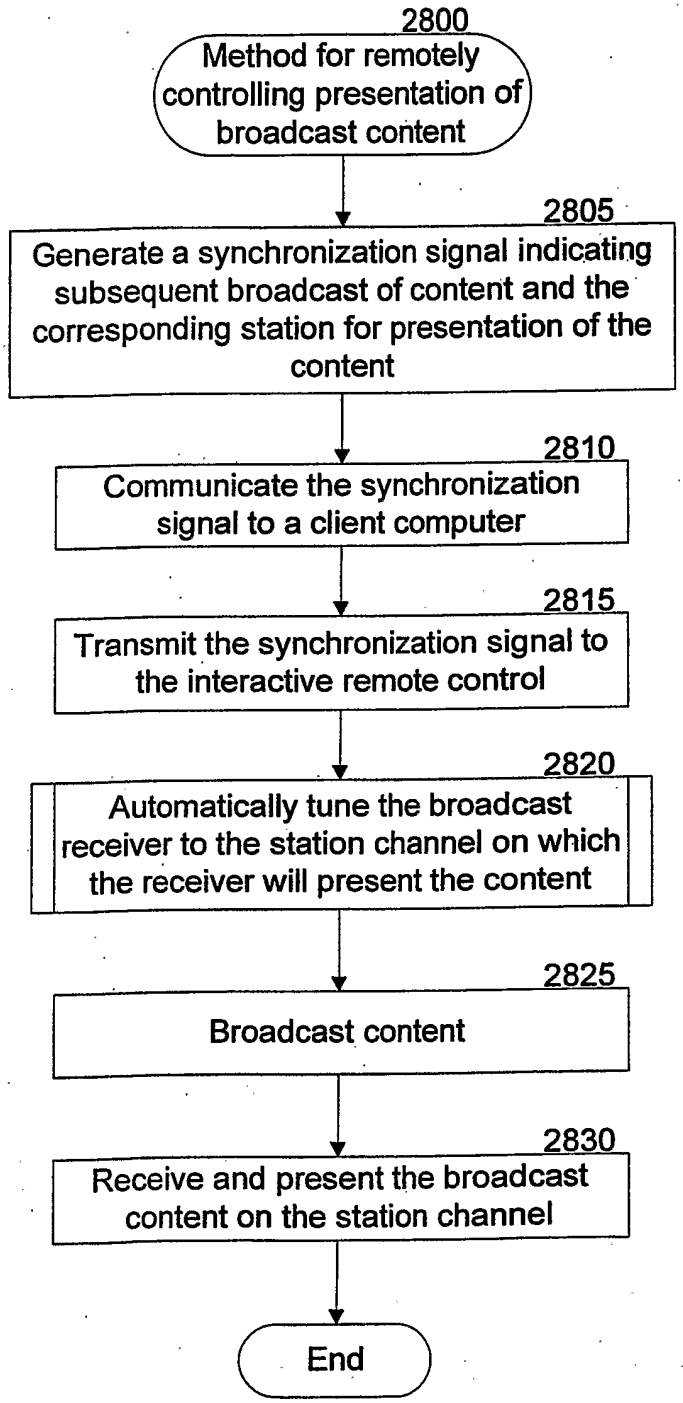

2800
Method for remotely controlling presentation of broadcast content
2805
Generate a synchronization signal indicating subsequent broadcast of content and the corresponding station for presentation of the content
2810
Communicate the synchronization signal to a client computer
2815
Transmit the synchronization signal to the interactive remote control
2820
Automatically tune the broadcast receiver to the station channel on which the receiver will present the content
2825
Broadcast content
2830
Receive and present the broadcast content on the station channel
End

Fig. 28

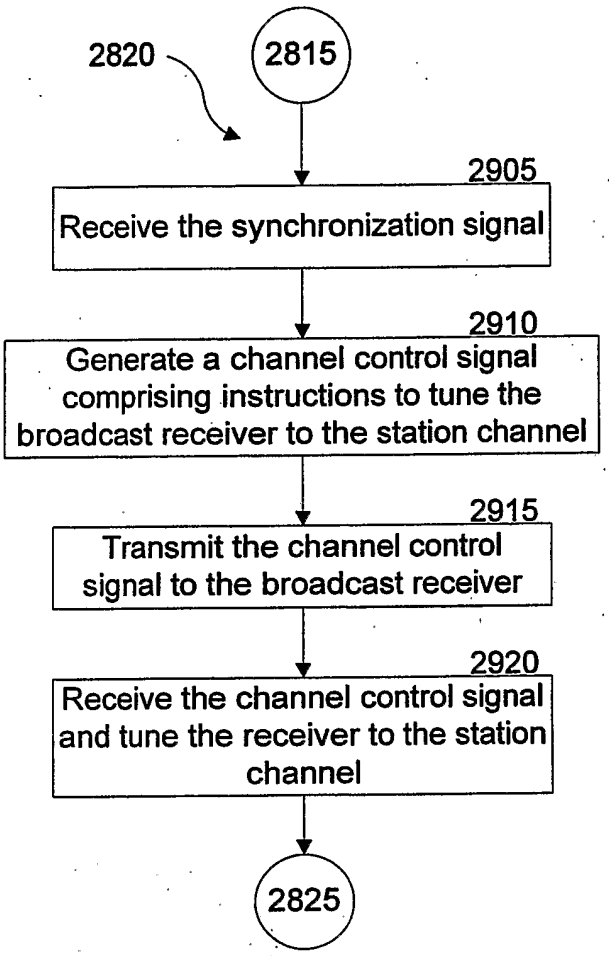

2820
2815
2905
Receive the synchronization signal
2910
Generate a channel control signal comprising instructions to tune the broadcast receiver to the station channel
2915
Transmit the channel control signal to the broadcast receiver
2920
Receive the channel control signal and tune the receiver to the station channel
2825

Fig. 29

3000

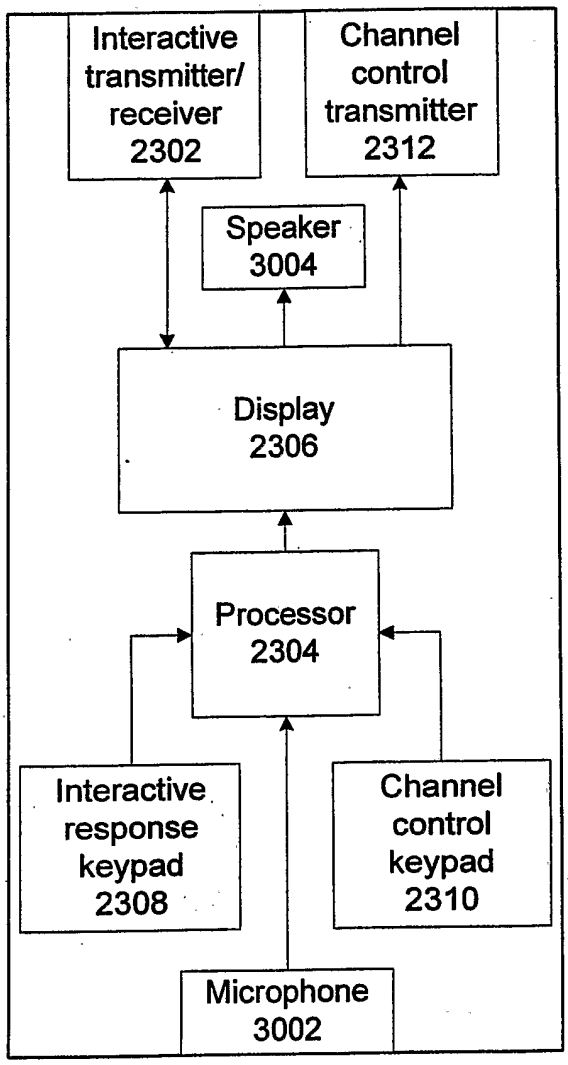

Interactive transmitter/ receiver 2302
Channel control transmitter 2312
Speaker 3004
Display 2306
Processor 2304
Interactive response keypad 2308
Channel control keypad 2310
Microphone 3002

Fig. 30

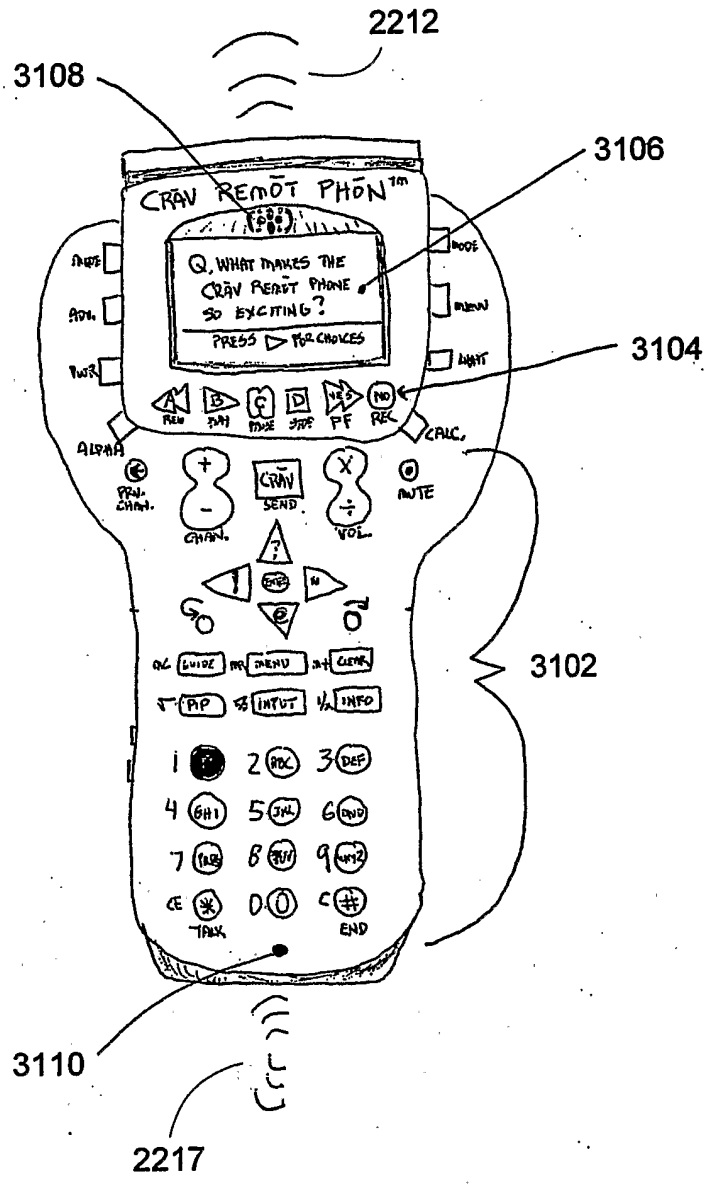

2212
3108
3106
3104
3102
3110
2217
CRĀV REMŌT PHŌN™
Q. WHAT MAKES THE CRĀV REMŌT PHONE SO EXCITING?
PRESS ▷ FOR CHOICES
ALPHA
CALC.
MUTE
CHAN.
SEND
VOL.
GUIDE
MENU
CLEAR
PIP
INPUT
INFO
TALK
END

Fig. 31

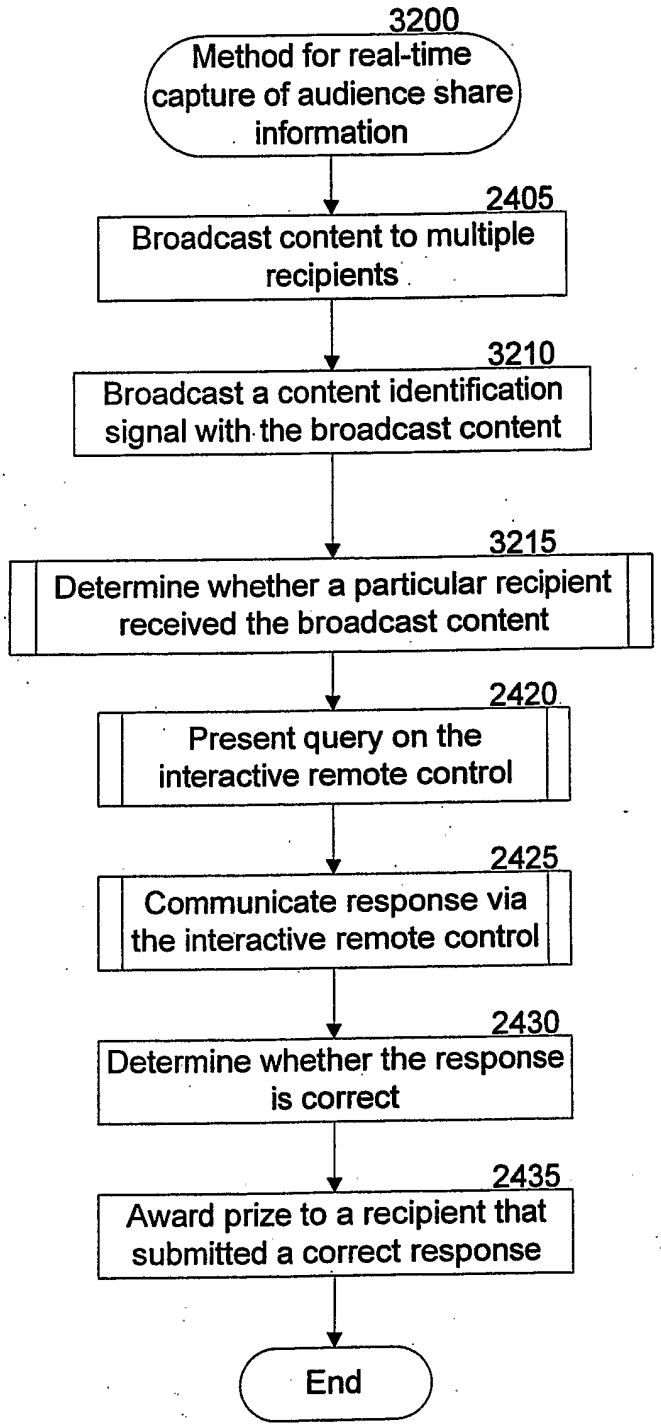

3200
Method for real-time capture of audience share information
2405
Broadcast content to multiple recipients
3210
Broadcast a content identification signal with the broadcast content
3215
Determine whether a particular recipient received the broadcast content
2420
Present query on the interactive remote control
2425
Communicate response via the interactive remote control
2430
Determine whether the response is correct
2435
Award prize to a recipient that submitted a correct response
End

Fig. 32

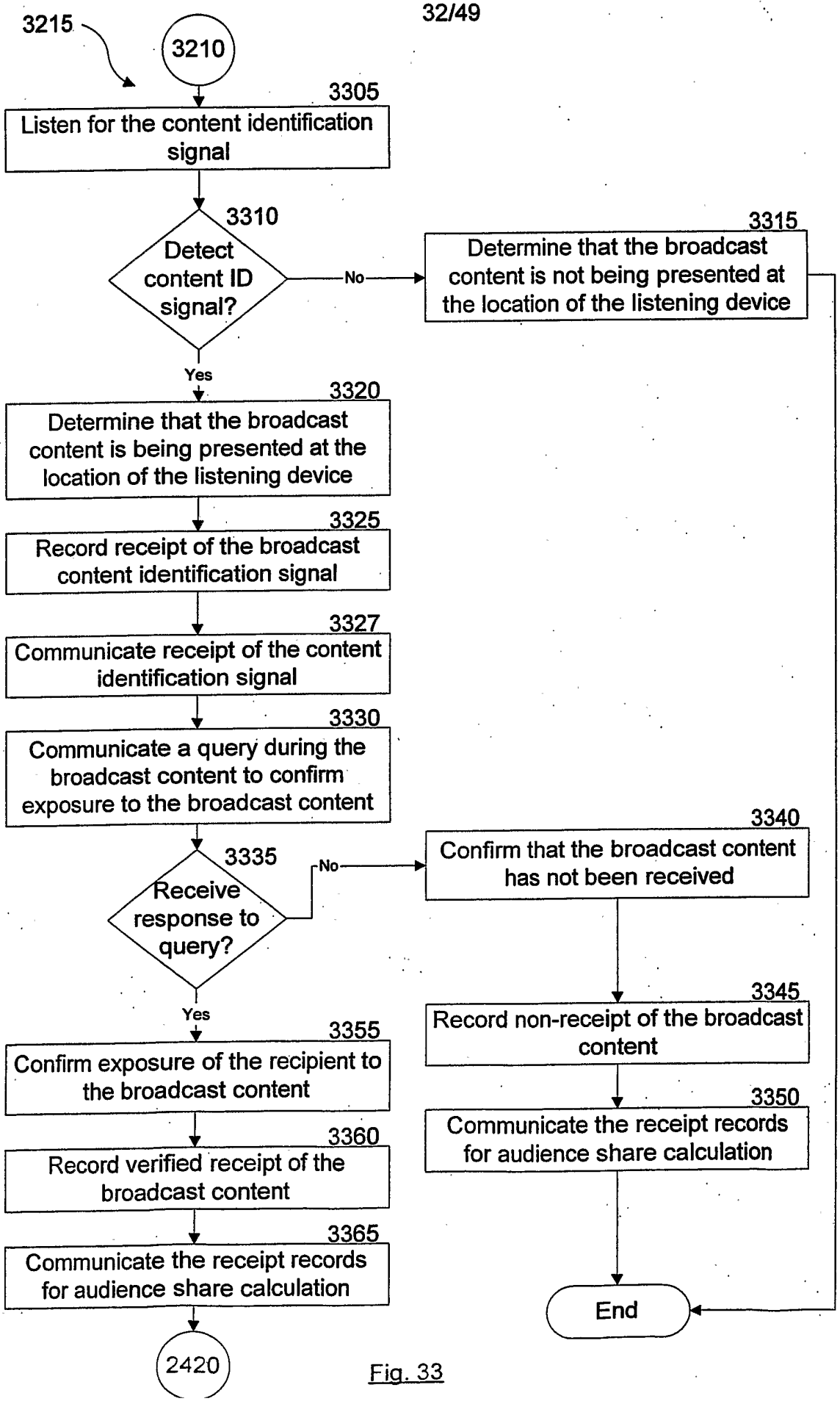

3215
3210
3305
Listen for the content identification signal
3310
Detect content ID signal?
No
3315
Determine that the broadcast content is not being presented at the location of the listening device
Yes
3320
Determine that the broadcast content is being presented at the location of the listening device
3325
Record receipt of the broadcast content identification signal
3327
Communicate receipt of the content identification signal
3330
Communicate a query during the broadcast content to confirm exposure to the broadcast content
3335
Receive response to query?
No
3340
Confirm that the broadcast content has not been received
Yes
3345
Record non-receipt of the broadcast content
3350
Communicate the receipt records for audience share calculation
3355
Confirm exposure of the recipient to the broadcast content
3360
Record verified receipt of the broadcast content
3365
Communicate the receipt records for audience share calculation
End
2420

Fig. 33

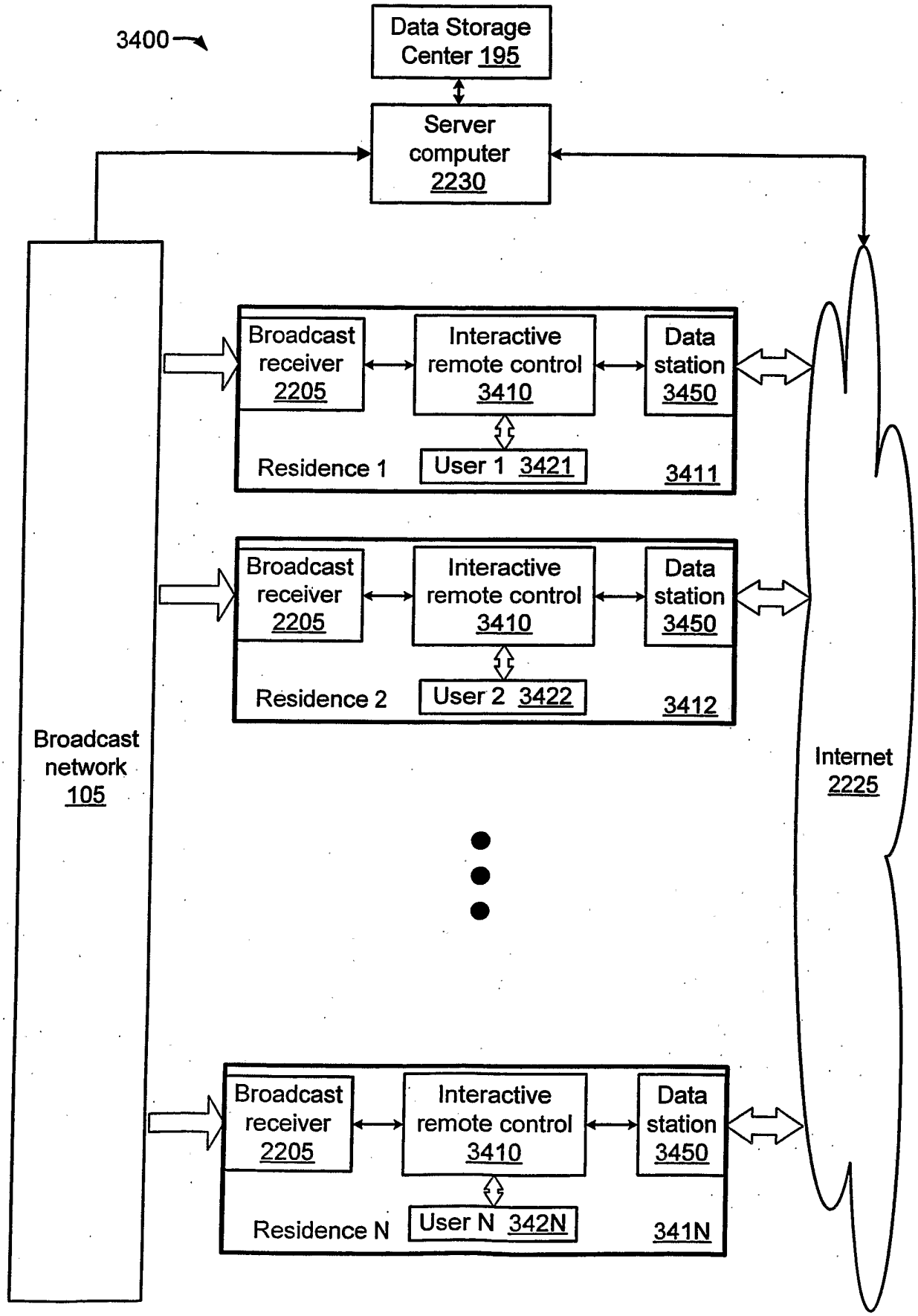

3400
Data Storage Center 195
Server computer 2230
Broadcast network 105
Broadcast receiver 2205
Interactive remote control 3410
Data station 3450
Residence 1
User 1 3421
3411
Broadcast receiver 2205
Interactive remote control 3410
Data station 3450
Residence 2
User 2 3422
3412
Internet 2225
Broadcast receiver 2205
Interactive remote control 3410
Data station 3450
Residence N
User N 342N
341N

Fig. 34

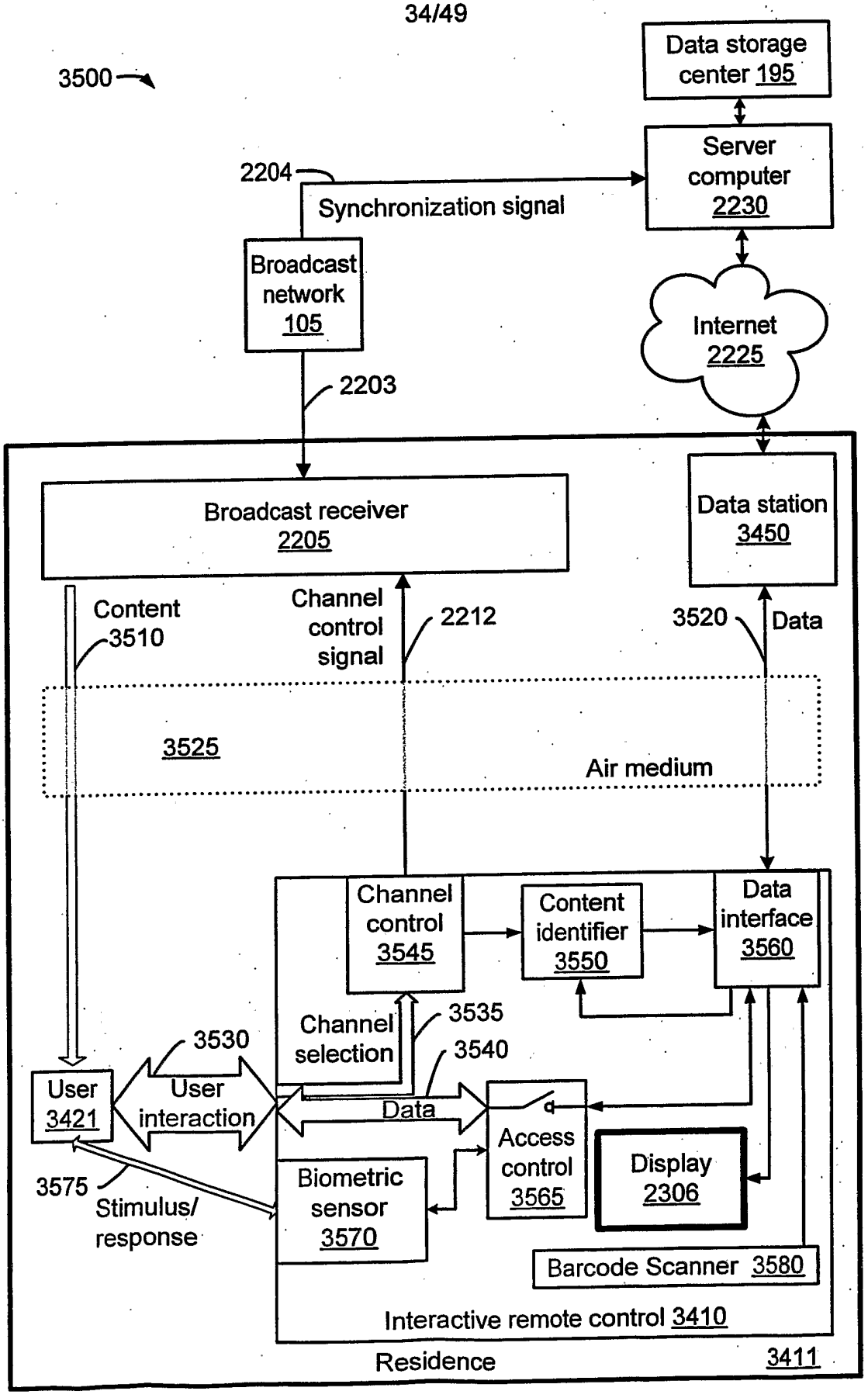

3500
Data storage center 195
Server computer 2230
2204
Synchronization signal
Broadcast network 105
Internet 2225
2203
Broadcast receiver 2205
Data station 3450
Content 3510
Channel control signal
2212
3520
Data
3525
Air medium
Channel control 3545
Content identifier 3550
Data interface 3560
Channel selection
3535
3530
3540
User 3421
User interaction
Data
Access control 3565
Display 2306
3575
Stimulus/ response
Biometric sensor 3570
Barcode Scanner 3580
Interactive remote control 3410
Residence
3411

Fig. 35

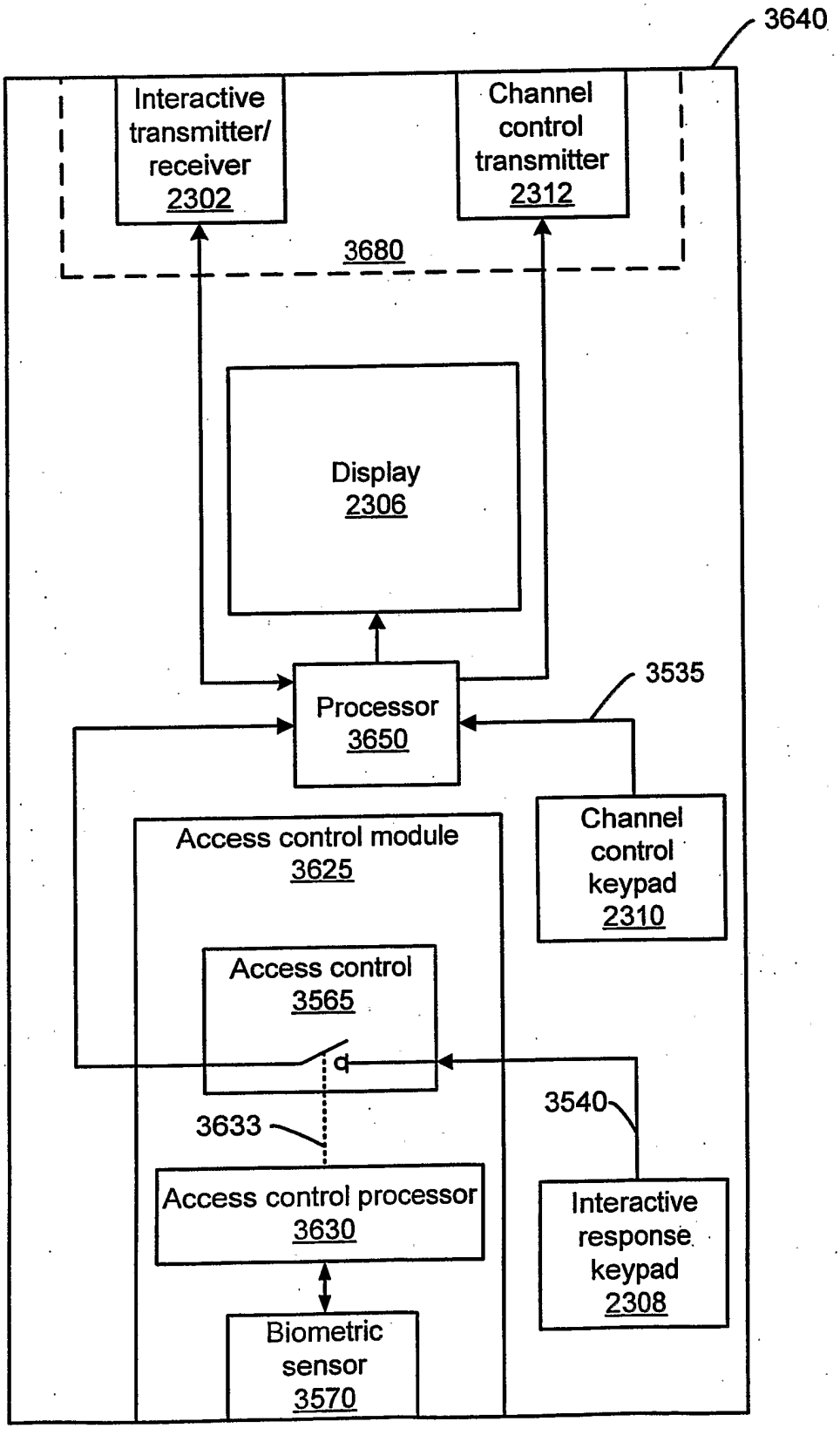

3640
Interactive transmitter/ receiver 2302
Channel control transmitter 2312
3680
Display 2306
Processor 3650
3535
Channel control keypad 2310
Access control module 3625
Access control 3565
3633
3540
Access control processor 3630
Interactive response keypad 2308
Biometric sensor 3570

Fig. 36

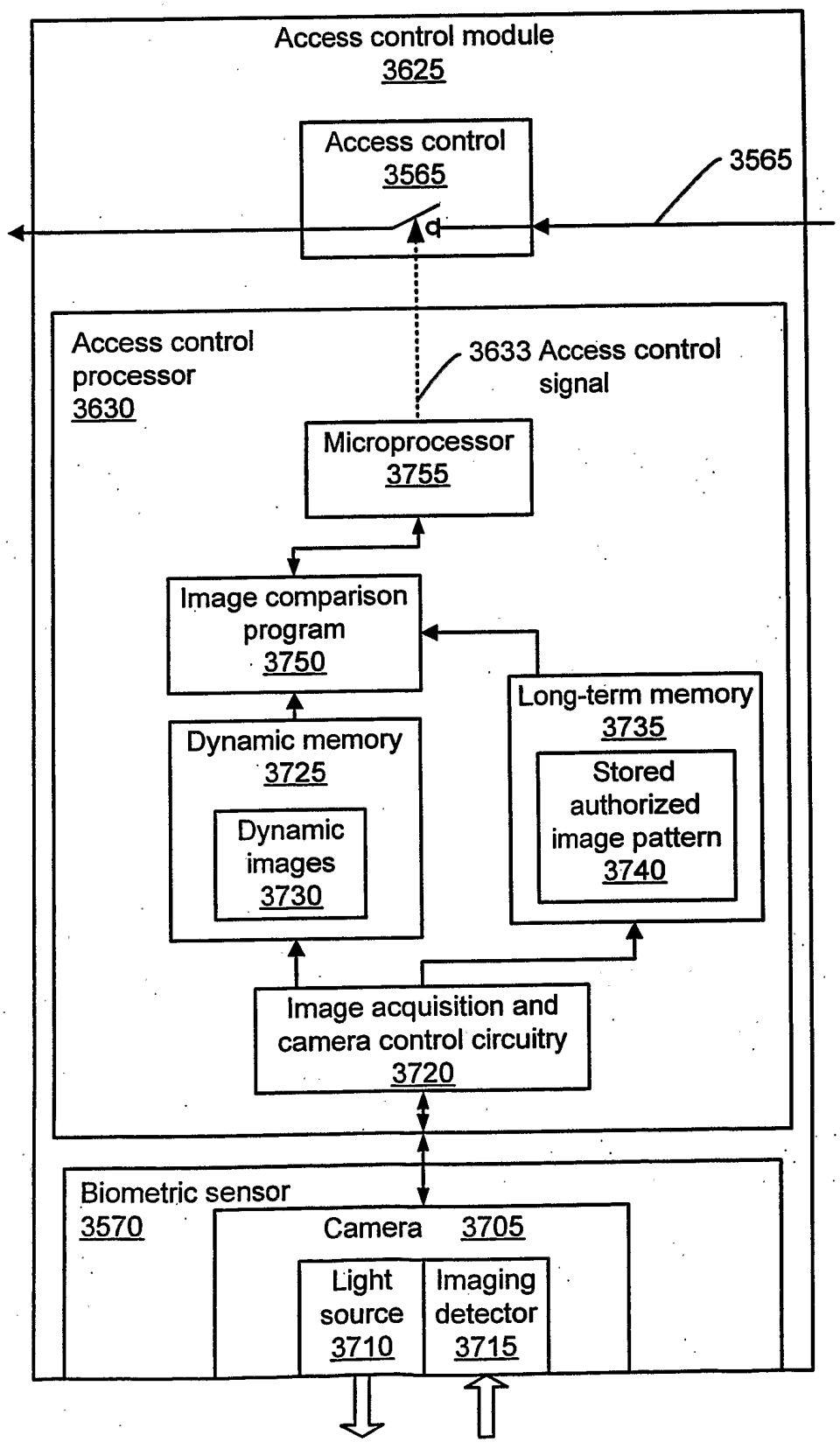

Access control module
3625
Access control
3565
3565
Access control
processor
3630
3633 Access control
signal
Microprocessor
3755
Image comparison
program
3750
Long-term memory
3735
Dynamic memory
3725
Stored
authorized
image pattern
3740
Dynamic
images
3730
Image acquisition and
camera control circuitry
3720
Biometric sensor
3570
Camera 3705
Light
source
3710
Imaging
detector
3715

Fig. 37

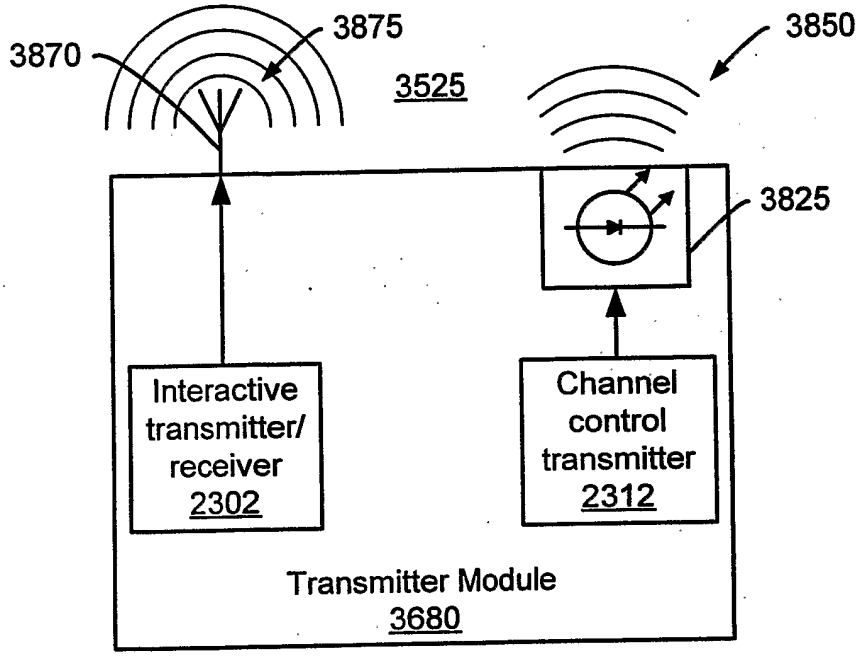

3870
3875
3525
3850
3825
Interactive transmitter/ receiver 2302
Channel control transmitter 2312
Transmitter Module 3680

Fig. 38

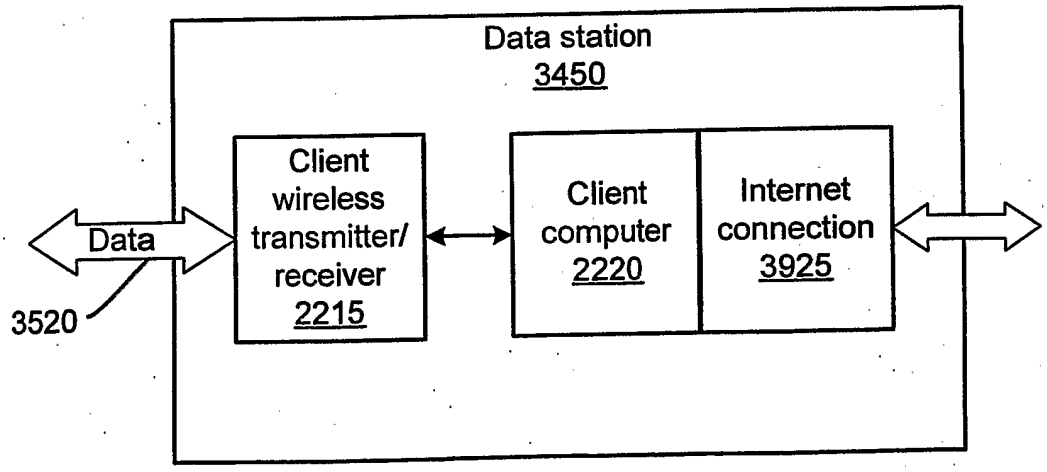

Data station 3450
Client wireless transmitter/ receiver 2215
Client computer 2220
Internet connection 3925
Data
3520

Fig. 39

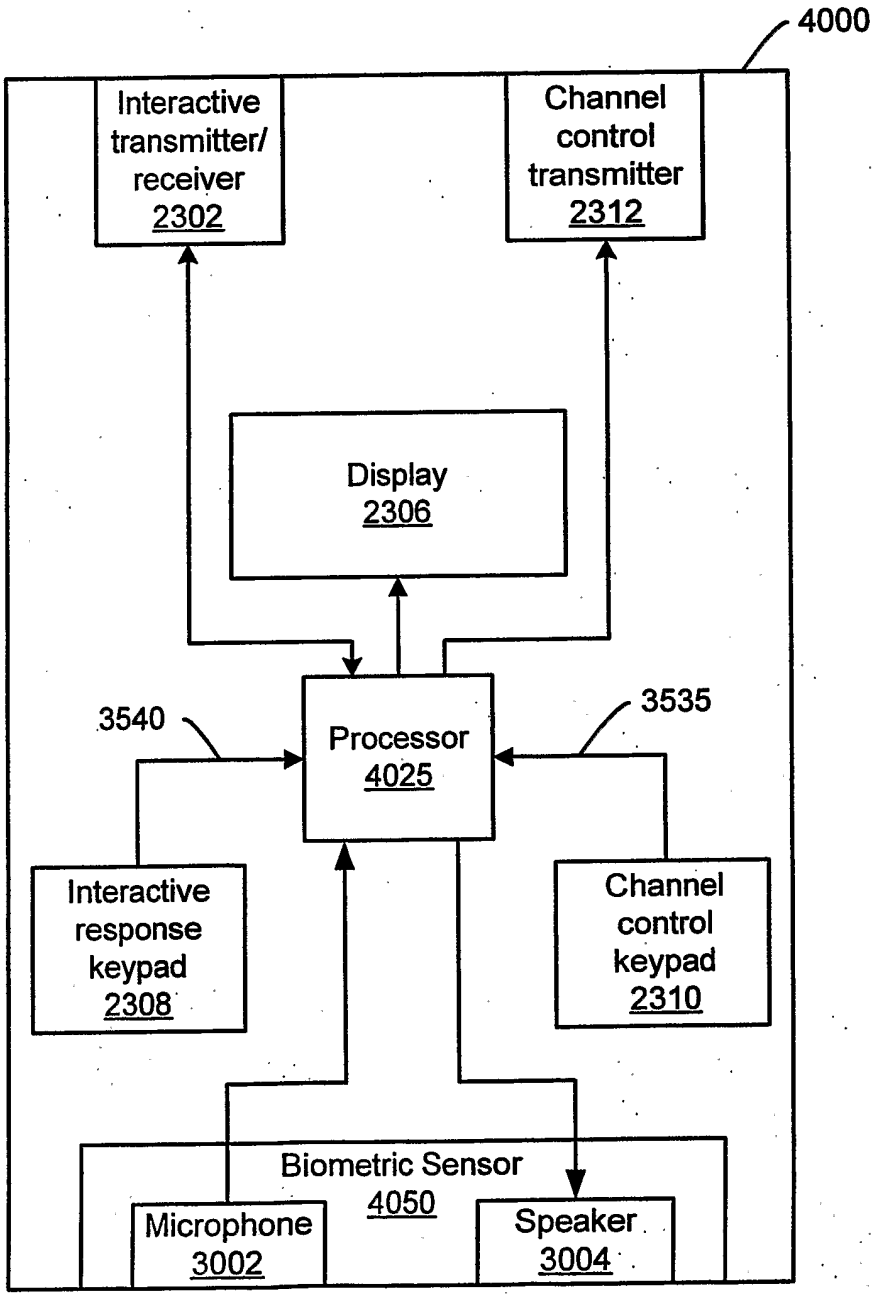

4000
Interactive transmitter/ receiver 2302
Channel control transmitter 2312
Display 2306
3540
Processor 4025
3535
Interactive response keypad 2308
Channel control keypad 2310
Biometric Sensor 4050
Microphone 3002
Speaker 3004

Fig. 40

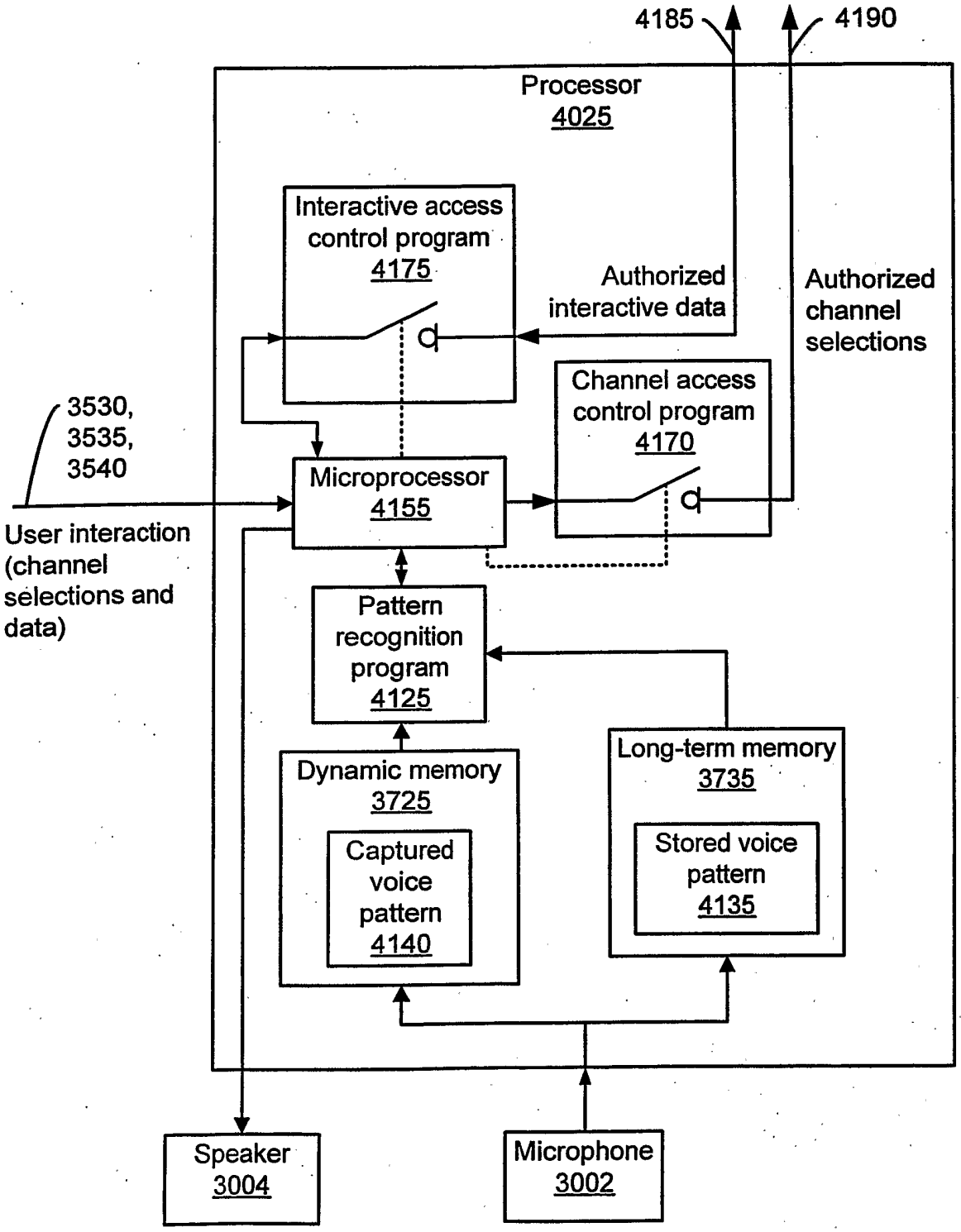

4185
4190
Processor
4025
Interactive access control program
4175
Authorized interactive data
Authorized channel selections
Channel access control program
4170
3530, 3535, 3540
Microprocessor
4155
User interaction (channel selections and data)
Pattern recognition program
4125
Dynamic memory
3725
Captured voice pattern
4140
Long-term memory
3735
Stored voice pattern
4135
Speaker
3004
Microphone
3002

Fig. 41

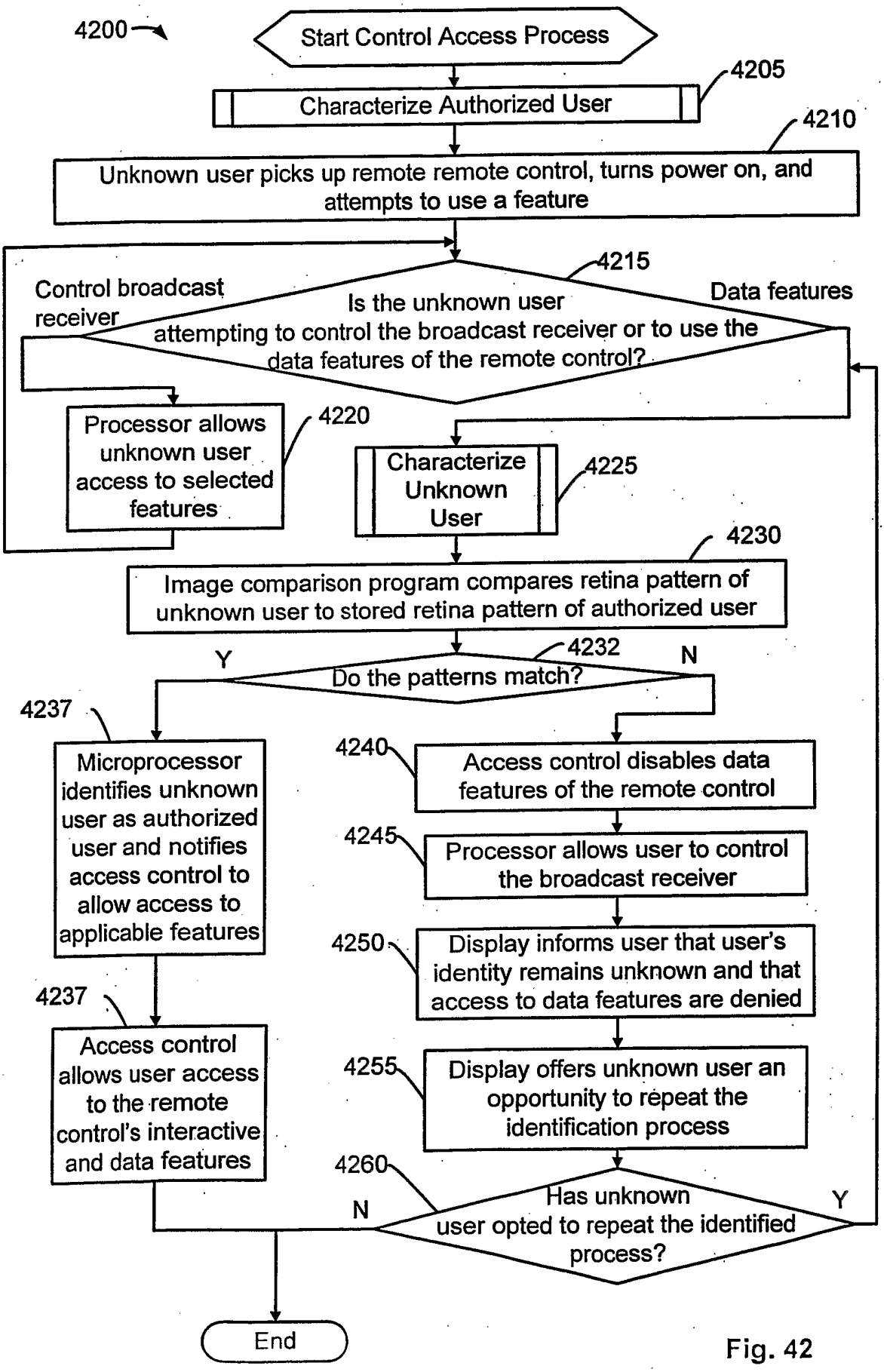

4200
Start Control Access Process
4205
Characterize Authorized User
4210
Unknown user picks up remote remote control, turns power on, and attempts to use a feature
4215
Control broadcast receiver
Is the unknown user attempting to control the broadcast receiver or to use the data features of the remote control?
Data features
4220
Processor allows unknown user access to selected features
4225
Characterize Unknown User
4230
Image comparison program compares retina pattern of unknown user to stored retina pattern of authorized user
4232
Do the patterns match?
Y
N
4237
Microprocessor identifies unknown user as authorized user and notifies access control to allow access to applicable features
4237
Access control allows user access to the remote control's interactive and data features
4240
Access control disables data features of the remote control
4245
Processor allows user to control the broadcast receiver
4250
Display informs user that user's identity remains unknown and that access to data features are denied
4255
Display offers unknown user an opportunity to repeat the identification process
4260
Has unknown user opted to repeat the identified process?
N
Y
End

Fig. 42

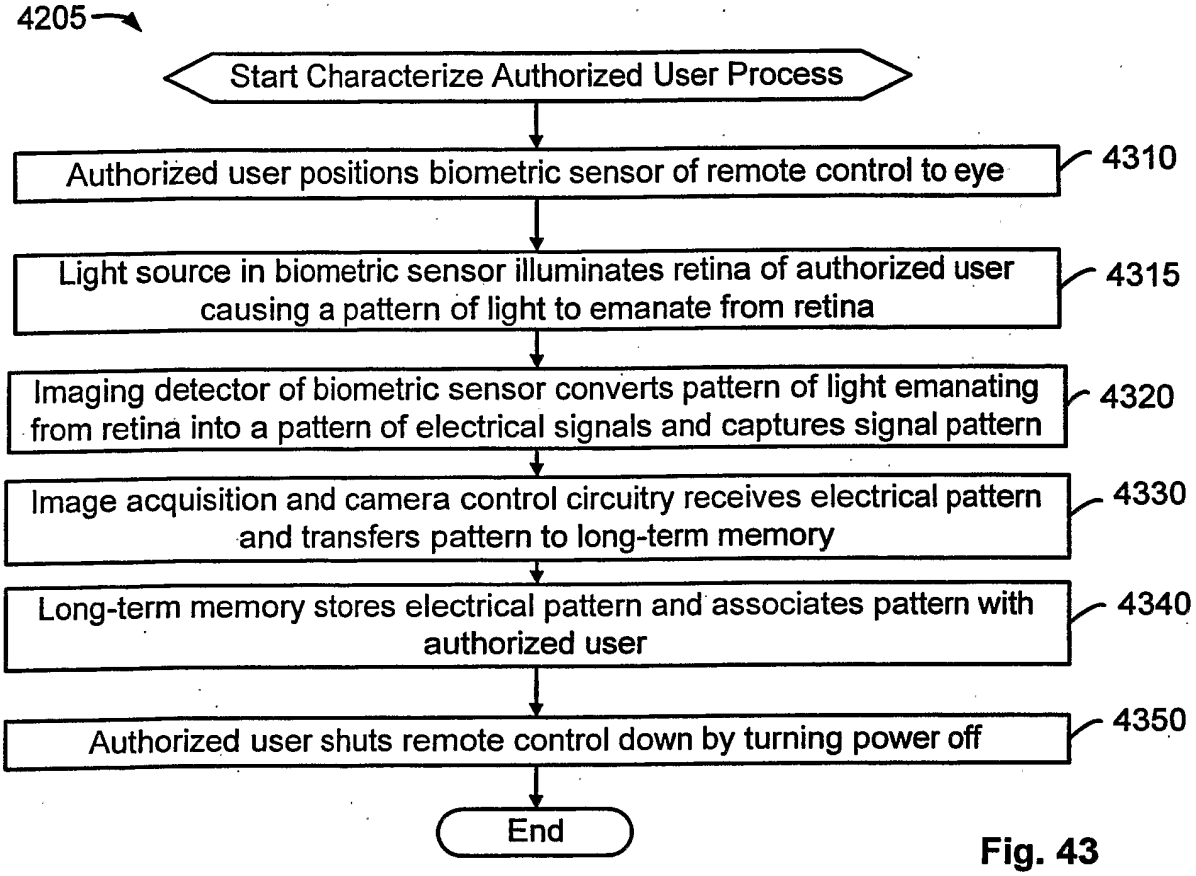

4205
Start Characterize Authorized User Process
Authorized user positions biometric sensor of remote control to eye
4310
Light source in biometric sensor illuminates retina of authorized user causing a pattern of light to emanate from retina
4315
Imaging detector of biometric sensor converts pattern of light emanating from retina into a pattern of electrical signals and captures signal pattern
4320
Image acquisition and camera control circuitry receives electrical pattern and transfers pattern to long-term memory
4330
Long-term memory stores electrical pattern and associates pattern with authorized user
4340
Authorized user shuts remote control down by turning power off
4350
End

Fig. 43

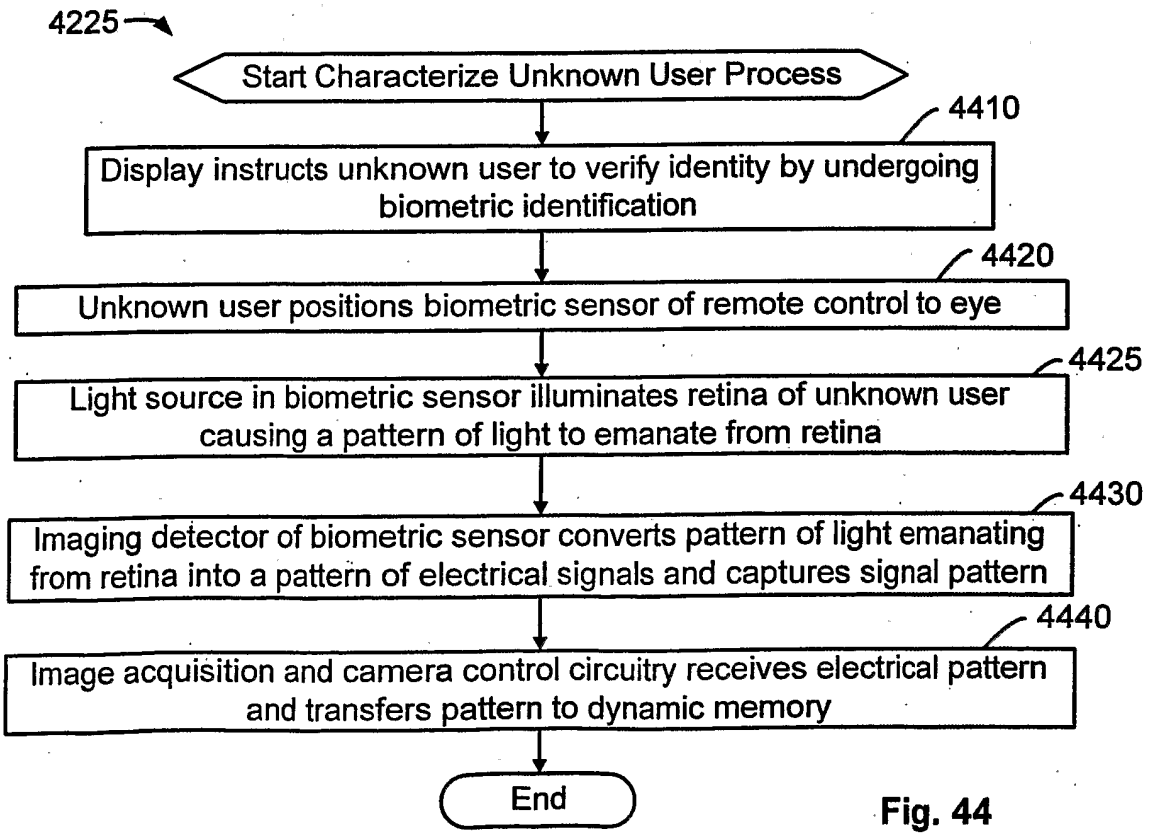

4225
Start Characterize Unknown User Process
4410
Display instructs unknown user to verify identity by undergoing biometric identification
4420
Unknown user positions biometric sensor of remote control to eye
4425
Light source in biometric sensor illuminates retina of unknown user causing a pattern of light to emanate from retina
4430
Imaging detector of biometric sensor converts pattern of light emanating from retina into a pattern of electrical signals and captures signal pattern
4440
Image acquisition and camera control circuitry receives electrical pattern and transfers pattern to dynamic memory
End

Fig. 44

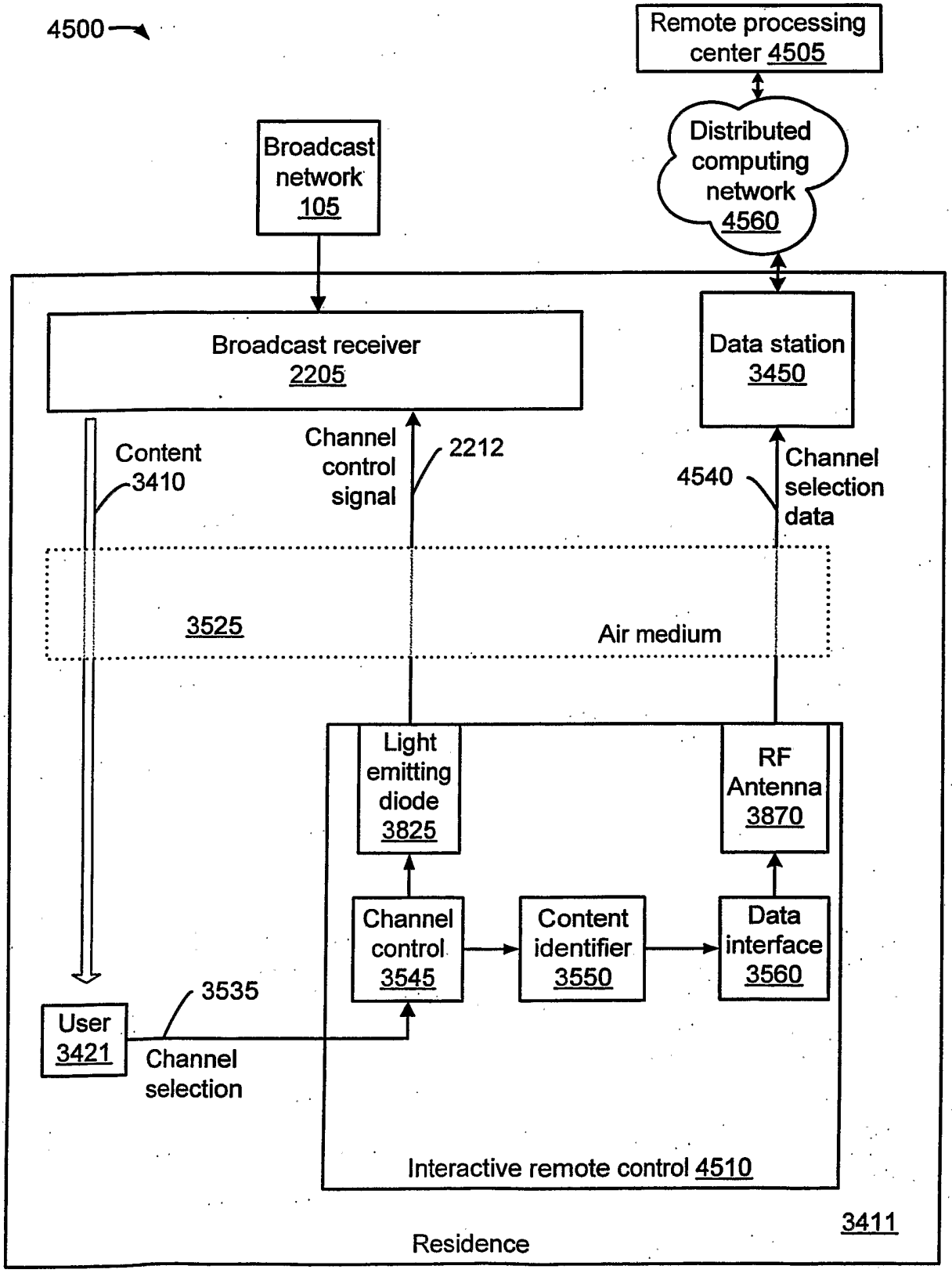

4500
Remote processing center 4505
Distributed computing network 4560
Broadcast network 105
Broadcast receiver 2205
Data station 3450
Content 3410
Channel control signal
2212
4540
Channel selection data
3525
Air medium
Light emitting diode 3825
RF Antenna 3870
Channel control 3545
Content identifier 3550
Data interface 3560
User 3421
3535
Channel selection
Interactive remote control 4510
3411
Residence

Fig. 45

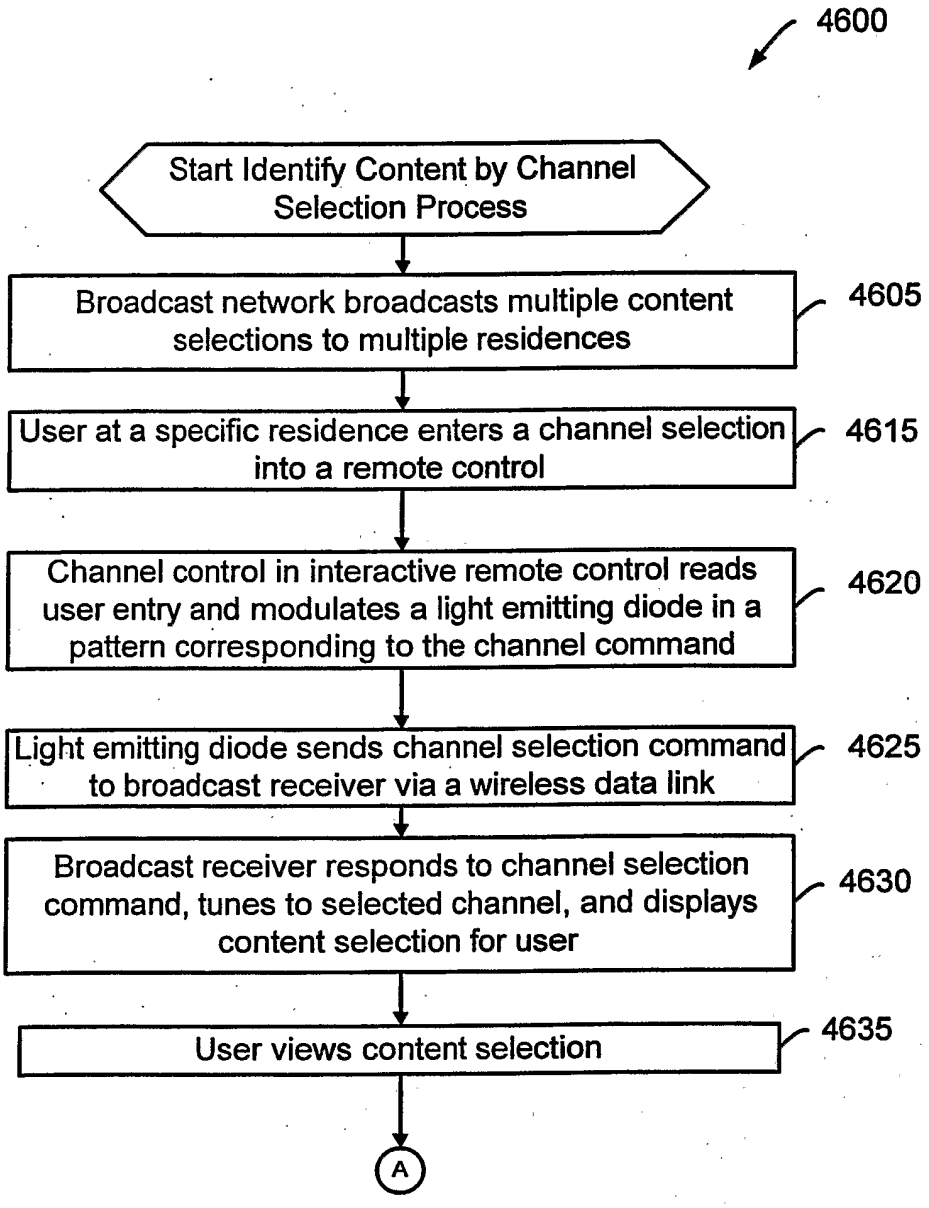

4600
Start Identify Content by Channel Selection Process
Broadcast network broadcasts multiple content selections to multiple residences
4605
User at a specific residence enters a channel selection into a remote control
4615
Channel control in interactive remote control reads user entry and modulates a light emitting diode in a pattern corresponding to the channel command
4620
Light emitting diode sends channel selection command to broadcast receiver via a wireless data link
4625
Broadcast receiver responds to channel selection command, tunes to selected channel, and displays content selection for user
4630
User views content selection
4635
A

Fig. 46A

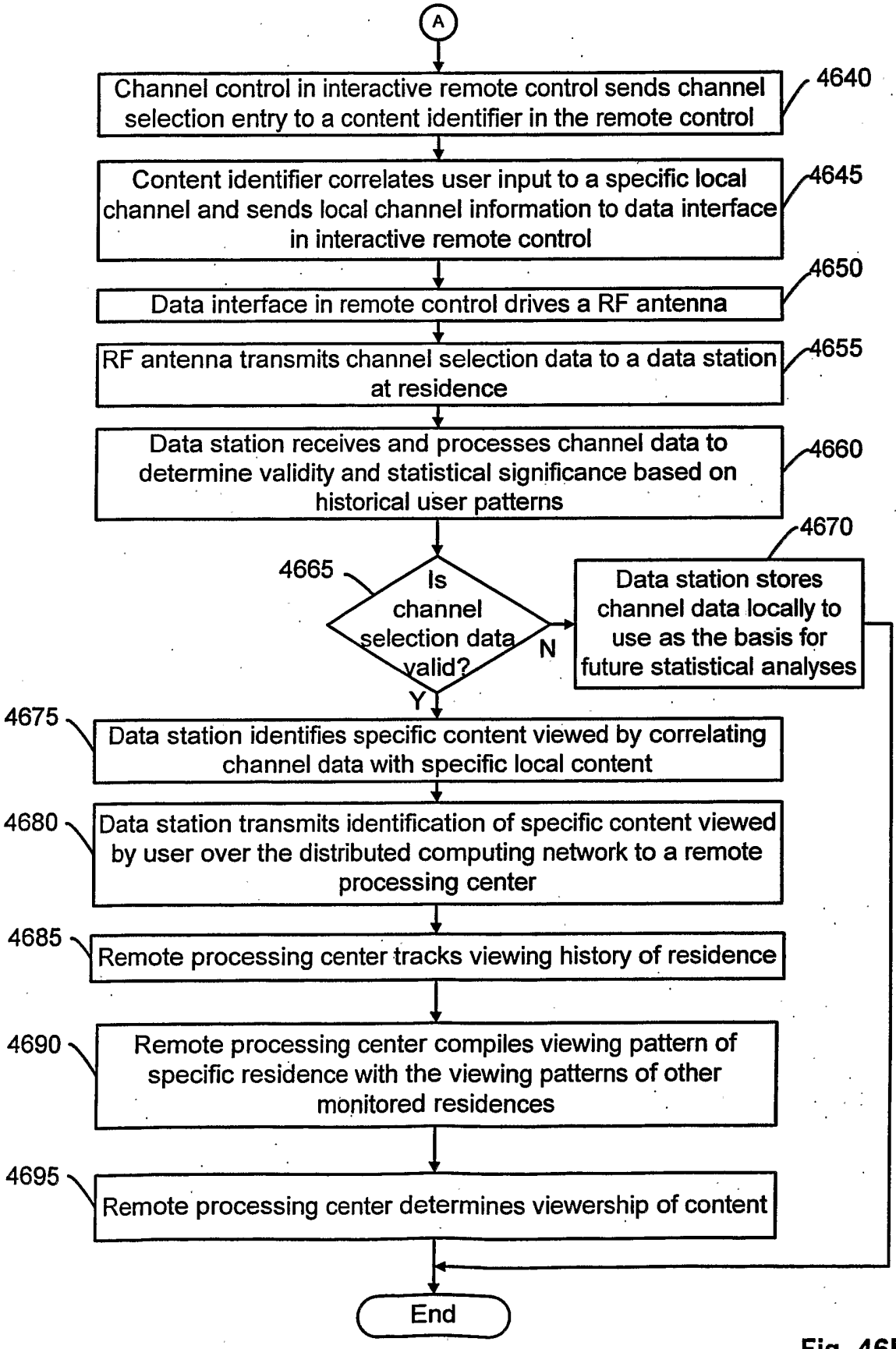

A
Channel control in interactive remote control sends channel selection entry to a content identifier in the remote control
4640
Content identifier correlates user input to a specific local channel and sends local channel information to data interface in interactive remote control
4645
Data interface in remote control drives a RF antenna
4650
RF antenna transmits channel selection data to a data station at residence
4655
Data station receives and processes channel data to determine validity and statistical significance based on historical user patterns
4660
4665
Is channel selection data valid?
N
Y
4670
Data station stores channel data locally to use as the basis for future statistical analyses
4675
Data station identifies specific content viewed by correlating channel data with specific local content
4680
Data station transmits identification of specific content viewed by user over the distributed computing network to a remote processing center
4685
Remote processing center tracks viewing history of residence
4690
Remote processing center compiles viewing pattern of specific residence with the viewing patterns of other monitored residences
4695
Remote processing center determines viewership of content
End

Fig. 46B

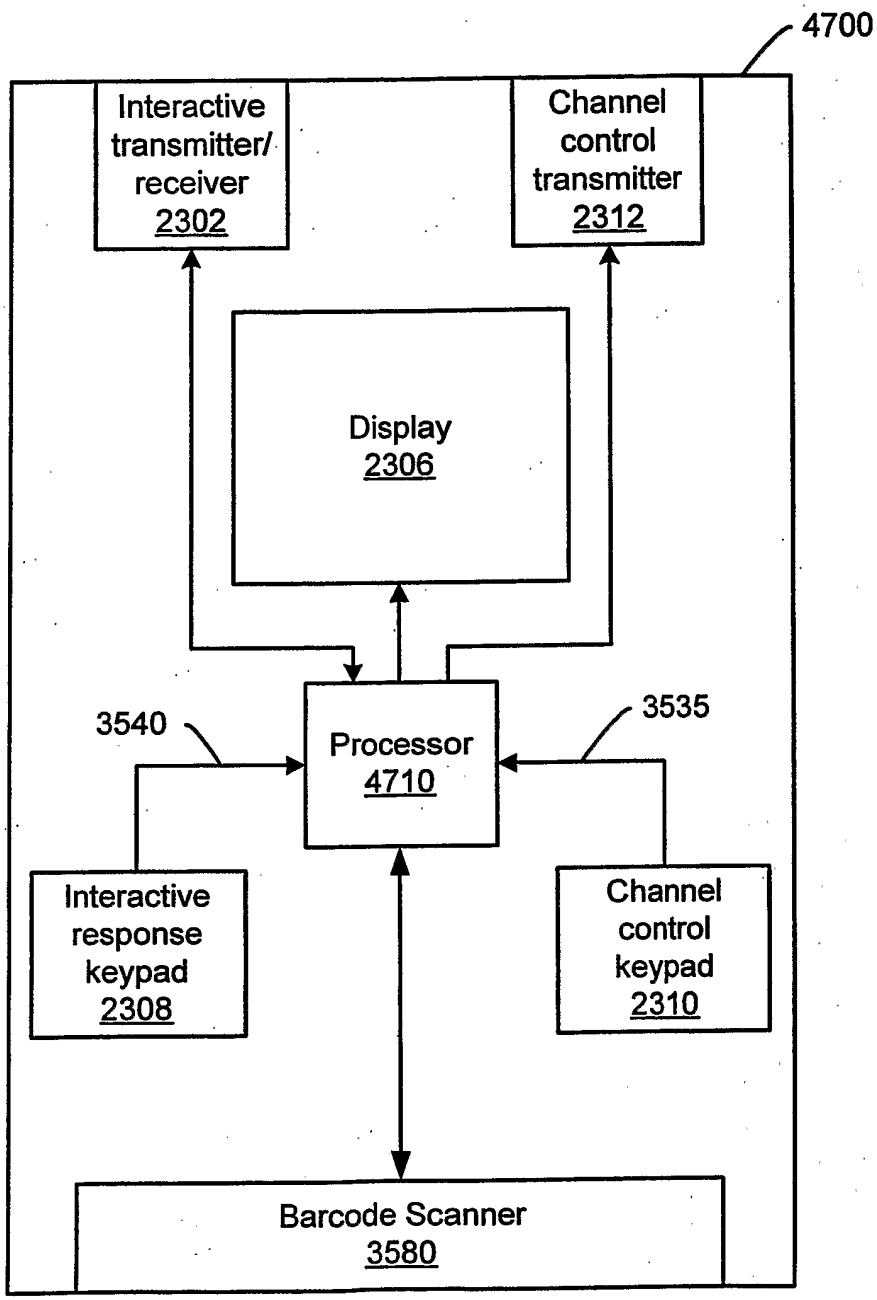

4700
Interactive transmitter/ receiver 2302
Channel control transmitter 2312
Display 2306
3540
Processor 4710
3535
Interactive response keypad 2308
Channel control keypad 2310
Barcode Scanner 3580

Fig. 47

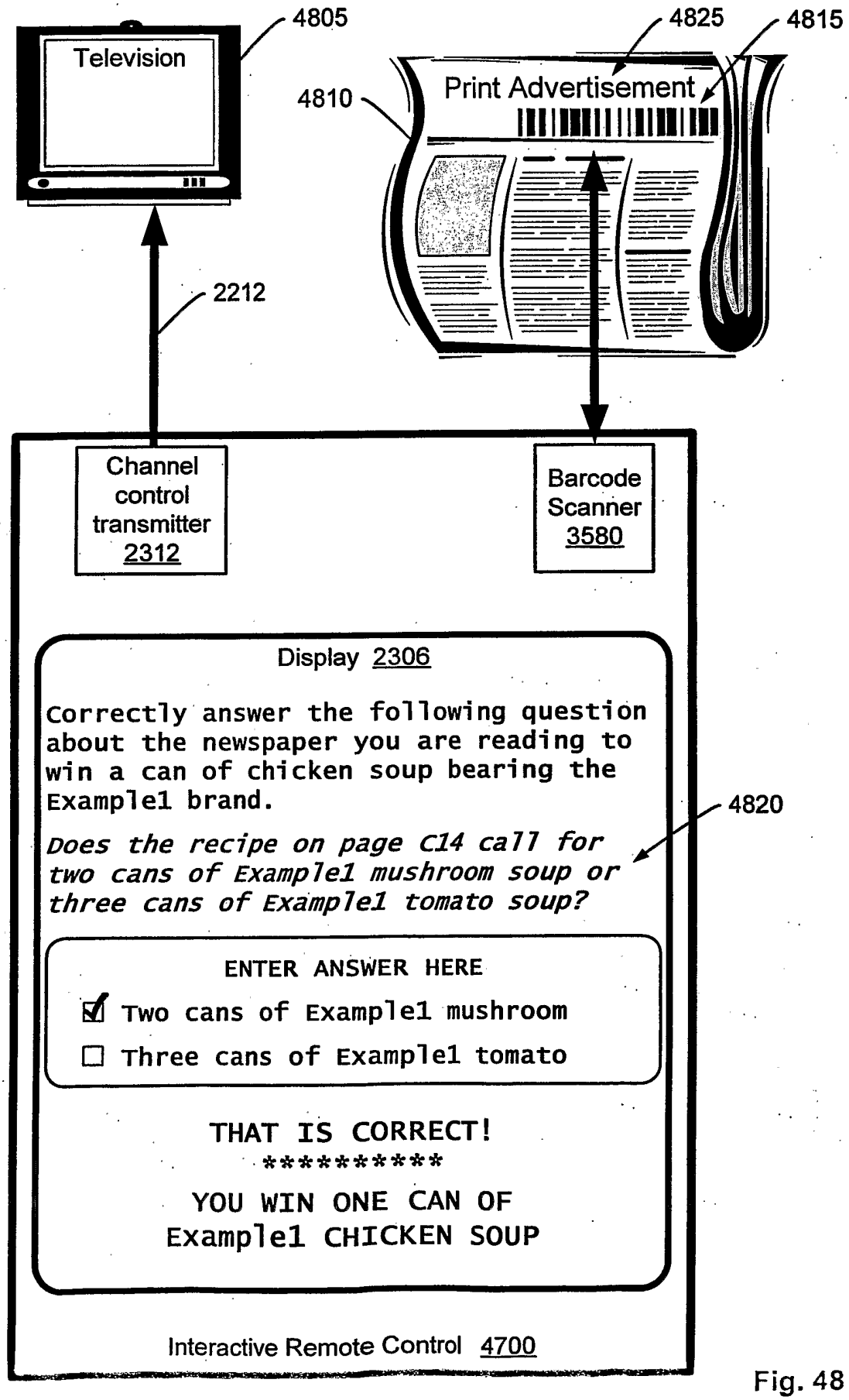

4805
Television
4825
4815
4810
Print Advertisement
2212
Channel control transmitter 2312
Barcode Scanner 3580
Display 2306
Correctly answer the following question about the newspaper you are reading to win a can of chicken soup bearing the Example1 brand.
4820
Does the recipe on page C14 call for two cans of Example1 mushroom soup or three cans of Example1 tomato soup?
ENTER ANSWER HERE
☑ Two cans of Example1 mushroom
☐ Three cans of Example1 tomato
THAT IS CORRECT!
****
YOU WIN ONE CAN OF
Example1 CHICKEN SOUP
Interactive Remote Control 4700

Fig. 48

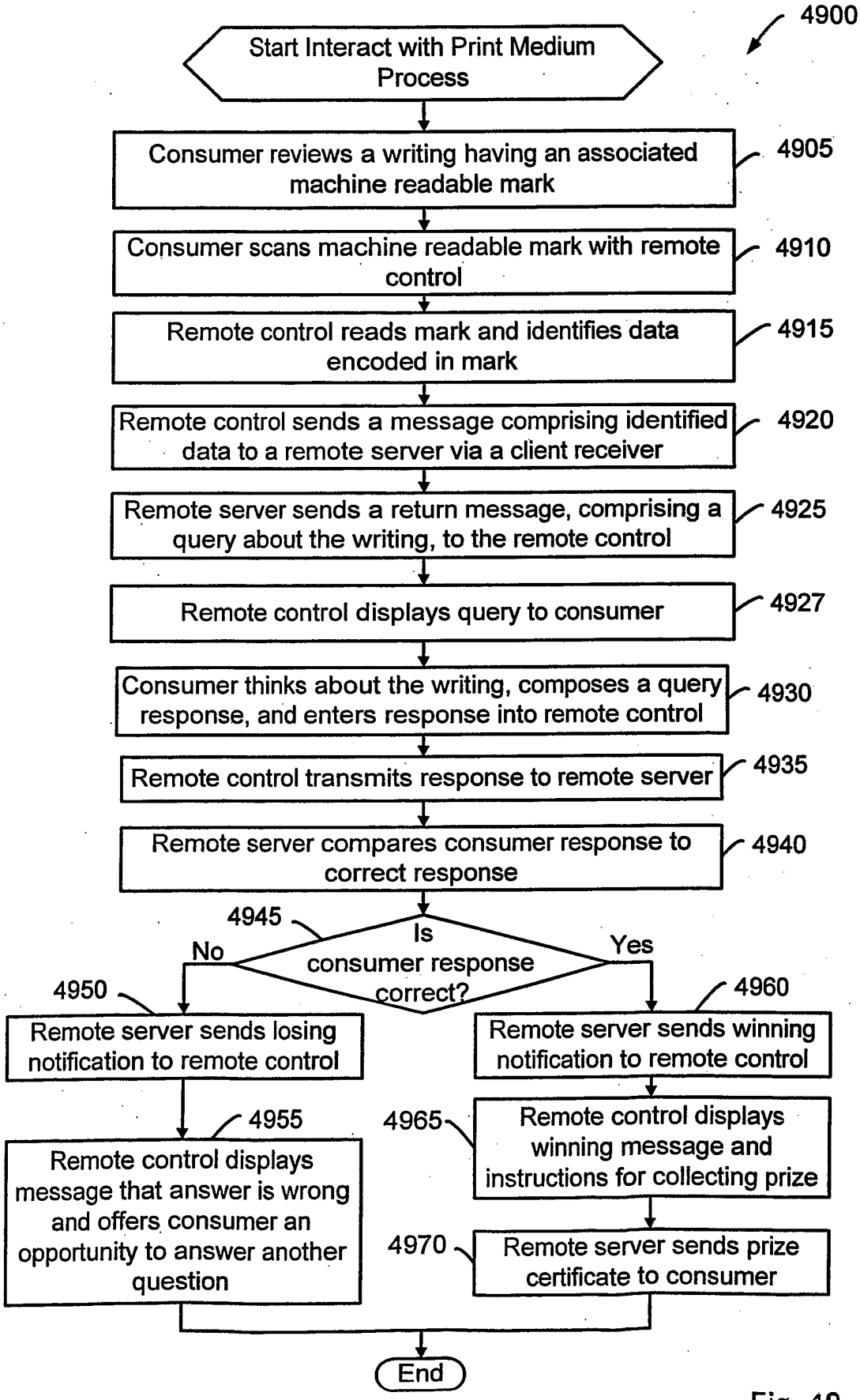

4900
Start Interact with Print Medium Process
Consumer reviews a writing having an associated machine readable mark
4905
Consumer scans machine readable mark with remote control
4910
Remote control reads mark and identifies data encoded in mark
4915
Remote control sends a message comprising identified data to a remote server via a client receiver
4920
Remote server sends a return message, comprising a query about the writing, to the remote control
4925
Remote control displays query to consumer
4927
Consumer thinks about the writing, composes a query response, and enters response into remote control
4930
Remote control transmits response to remote server
4935
Remote server compares consumer response to correct response
4940
4945
Is consumer response correct?
No
Yes
4950
Remote server sends losing notification to remote control
4955
Remote control displays message that answer is wrong and offers consumer an opportunity to answer another question
4960
Remote server sends winning notification to remote control
4965
Remote control displays winning message and instructions for collecting prize
4970
Remote server sends prize certificate to consumer
End

Fig. 49

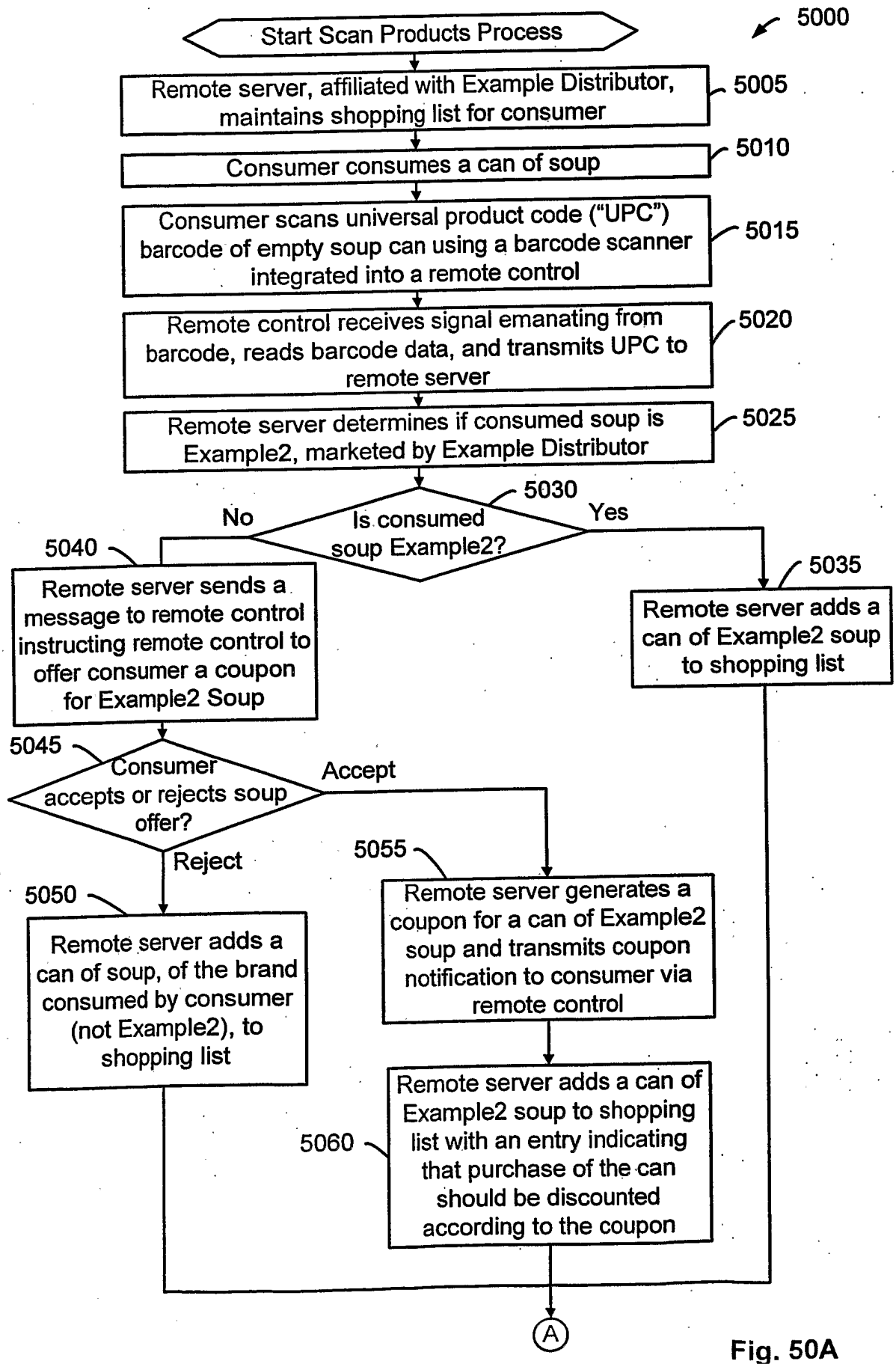

5000
Start Scan Products Process
Remote server, affiliated with Example Distributor, maintains shopping list for consumer
5005
Consumer consumes a can of soup
5010
Consumer scans universal product code ("UPC") barcode of empty soup can using a barcode scanner integrated into a remote control
5015
Remote control receives signal emanating from barcode, reads barcode data, and transmits UPC to remote server
5020
Remote server determines if consumed soup is Example2, marketed by Example Distributor
5025
5030
Is consumed soup Example2?
No
Yes
5040
Remote server sends a message to remote control instructing remote control to offer consumer a coupon for Example2 Soup
5035
Remote server adds a can of Example2 soup to shopping list
5045
Consumer accepts or rejects soup offer?
Accept
Reject
5055
Remote server generates a coupon for a can of Example2 soup and transmits coupon notification to consumer via remote control
5050
Remote server adds a can of soup, of the brand consumed by consumer (not Example2), to shopping list
5060
Remote server adds a can of Example2 soup to shopping list with an entry indicating that purchase of the can should be discounted according to the coupon
A

Fig. 50A

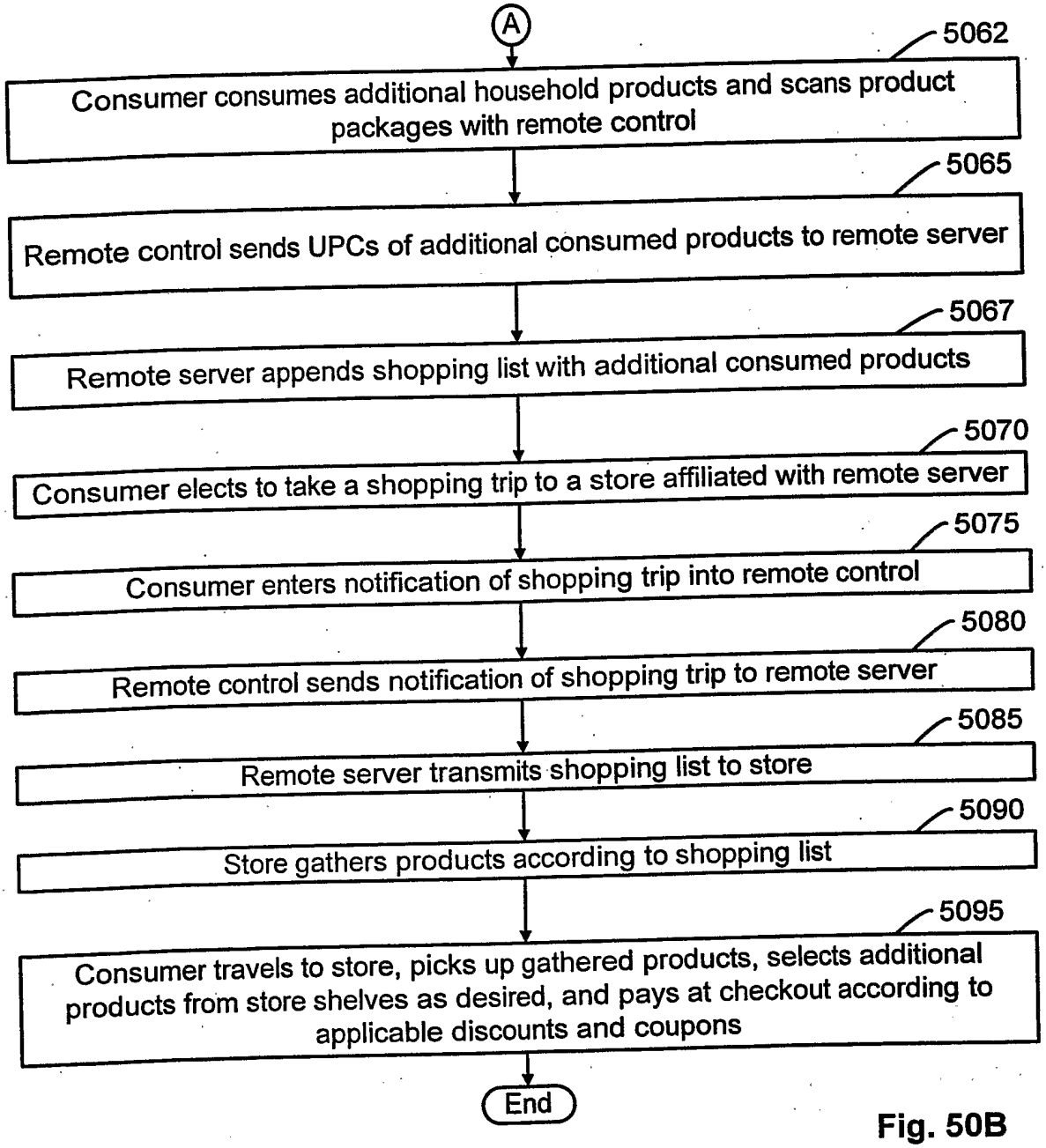

A
5062
Consumer consumes additional household products and scans product packages with remote control
5065
Remote control sends UPCs of additional consumed products to remote server
5067
Remote server appends shopping list with additional consumed products
5070
Consumer elects to take a shopping trip to a store affiliated with remote server
5075
Consumer enters notification of shopping trip into remote control
5080
Remote control sends notification of shopping trip to remote server
5085
Remote server transmits shopping list to store
5090
Store gathers products according to shopping list
5095
Consumer travels to store, picks up gathered products, selects additional products from store shelves as desired, and pays at checkout according to applicable discounts and coupons
End

Fig. 50B