(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 July 2001 (12.07.2001)

PCT

(10) International Publication Number
WO 01/50296 A2

(51) International Patent Classification[7]: G06F 17/00

(21) International Application Number: PCT/IB00/01915

(22) International Filing Date:
20 December 2000 (20.12.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/475,035 30 December 1999 (30.12.1999) US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *Without international search report and to be republished upon receipt of that report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 01/50296 A2

(54) Title: SELECTIVE MEDIA STREAM ADVERTISING TECHNIQUE

(57) Abstract: A selective media stream advertising technique receives a media stream consisting of at least one of a video data stream, an audio data stream and a text data stream. If the media stream is tagged, the tag is recognized and relevant content data extracted therefrom. On the other hand, if the media stream has not been tagged, at least one of either a voice recognition or a pattern recognition or a word recognition is performed to extract the relevant content data. The extracted relevant content data is compared with stored advertising content to determine if there is a match. Upon their being a match between the extracted relevant content data and the stored advertising content, a relevant advertising page corresponding to the stored advertising content is generated and added to the media stream prior to forwarding the media stream to a client.

SELECTIVE MEDIA STREAM ADVERTISING TECHNIQUE

TECHNICAL FIELD

The present invention relates to the field of telecommunications and more particularly, the present invention relates to a technique for selectively providing media stream advertising concurrently with and related to the media stream.

In advertising, it is considered very desirable to target advertisements to the appropriate potential customer base rather than to unselectively broadcast advertisements to the general public. It has been known that, for example, advertisements for computers should generally not appear in fashion magazines and conversely, fashion advertisements should not appear in computer magazines. Similarly, advertisers generally target their advertisements to television programs having the appropriate demographics for the product to be advertised.

With the widespread use of the Internet, advertisers have begun to utilize the Internet for advertising products and services in the same fashion that such products and services are presently advertised on television.

While many of the advertisement banners on a particular website are specifically geared to the subject matter of that website, more often than not, the advertisement banners on a general use website are untargeted and therefore inefficient and not particularly cost effective.

U.S. Patent No. 5,937,392 to Alberts, entitled "Banner Advertising Display System and Method With Frequency of Advertisement Control," has attempted to alleviate the untargeted advertising problem by specifically targeting advertisements to users seeking certain types of information. For example, a user searching for information on a yellow

pages system or on a search engine for "photography" receives a targeted advertisement for a camera manufacturer. Similarly, the advertisements can be targeted to users from a particular geographic location, etc.

U.S. Patent No. 5,948,061, to Merriman et al, entitled "Method of Delivery, Targeting, and Measuring Advertising Over Networks," discloses an arrangement for the targeting of the delivery of advertisements over the Internet based on the tracking of data with regard to individual users.

U.S. Patent No. 5,974,451, to Simmons, entitled "System and Method for Distributing Bulletins to External Computers Accessing Wide Area Computer Networks," targets advertising on the Internet based on a specific request for information from a user.

U.S. Patent No. 5,933,811, to Angles et al, entitled "System and Method for Delivering Customized Advertisements Within Interactive Communication Systems," delivers customized advertisements to users on the Internet based on consumer profiles of the users.

Lastly, U.S. Patent No. 5,999,912, to Wodarz et al., discloses a dynamic advertising scheduling, display and tracking arrangement for the Internet. In the disclosed arrangement, advertisements are added to a requested web page in accordance with advertisement tag characteristics which include user based characteristics such as age, gender, language, etc., advertisement tag selection based on the time of day or number of times that the advertisement has been selected during a specific time period, etc.

In addition, recent improvements in technology have allowed the widespread proliferation of higher speed Internet access, such as 56K modems, DSL (digital subscriber line) connections, cable TV Internet connections, etc.

The use of these high speed Internet connections have allowed for audio and/or video streaming, that is, media streaming, the transmission of audio and video signals over the

Internet so as to produce picture and sound comparable to that of a standard television receiver.

Accordingly, advertisers have been looking for ways to somehow provide Internet advertising which is related to the content of the audio or video stream so as to efficiently reach a target group.

SUMMARY OF THE INVENTION

The present invention adds advertisements to outgoing media streams, that is, audio and video streams, on the Internet, for example, and allows for the updating of these advertisements so as to be related to the content of the audio and video streams, thereby targeting the desired target group.

A content scanner searches the video or audio stream, looking for different kinds of company logos and figures from the video and uses voice recognition or other types of technology based content parsers to glean words from the streaming audio. Word recognition may also be performed if there is a text stream in the media stream.

When the audio and video streams and text streams have been scanned and interpreted, the present invention integrates suitably related advertisements to the audio and video streams and forwards them to the user who is receiving the audio and video streams.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and a better understanding of the present invention will become more apparent from the following detailed description of example embodiments in the claims when read in connection with the accompanying drawings, all being part of the disclosure of this invention. While the foregoing and following written and illustrated disclosure focuses on disclosing example embodiments of the invention, it should be clearly understood that the

same is by way of illustration and example only and the invention is not limited thereto. The spirit and scope of the present invention are limited only by the terms of the appended claims.

Fig. 1 illustrates an example of an Internet advertising system in accordance with the present invention.

Fig. 2 is a flowchart of an example of the operation of an embodiment of the present invention.

Fig. 3 illustrates an example of the content parsing server 130 of Fig. 1.

BEST MODE FOR CARRYING OUT THE INVENTION

Fig. 1 illustrates an example of an Internet advertising system in accordance with the present invention.

A TV broadcast 140 or a video broadcast 150 are inputted into the content parsing server with a tuner 130. It is, of course, understood that if the video broadcast 150 is already in the form of a video data stream and an audio data stream, rather than being a radio frequency signal, the content parsing server with tuner 130 does not in fact need a tuner.

As will be discussed in detail later, the content parsing server 130 scans the content of the video and audio data streams inputted thereto and based on the scanned content, adds advertising to the content prior to forwarding the video and audio data streams to the web server 120.

The web server 120 properly formats the video and audio data streams and forwards them to a client's computer 100.

It is understood that the web server may be connected to the client computer 100 via the Internet or via a LAN (local area network) or WAN (wide area network) or intranet network, etc.

As illustrated in Fig. 3, the content parsing server 130 includes the tuner 310 which, as noted above, may or may not be necessary depending upon the source of the audio and video data streams.

The output of the tuner 310 or the audio and video data streams 330 and 340 and optionally a text data stream 320 are inputted to a contents scanner 350.

The contents scanner 350 may use voice recognition to determine the content of the audio data stream or may use video analysis engines for recognizing specific video images or may use other data recognition techniques, e.g., word recognition, for scanning the text data stream 320, if available.

In addition, the audio and video data streams may optionally be tagged or marked with some type of markup language or can contain some other meta data to reveal the content of the stream.

The actual choice the configuration of the contents scanner 350 would of course depend upon the content and format of the video and audio and text data streams. In view of the fact that video and audio data stream contents scanners are commercially available products (for example, the products of Excalibur Technologies, Mediasite and Virage), a detailed description of the configuration of the contents scanner 350 has been omitted for the sake of brevity.

The advertising page generator 360 includes a list of advertising pages stored therein along with a corresponding list of contents related to each advertising page. It does not actually generate the advertising page but rather provides the advertising page or information already stored therein.

That is, if the advertising page generator 360 includes an advertising page for an automobile manufacturer, any content detected by the contents scanner 350 which includes automobiles would cause the advertising page generator 360 to add the automobile

advertising page to the video and audio data streams. Similarly if the contents scanner 350 detects content with regard to flowers, the advertising page generator 360 might add an advertising page for either a garden implement manufacturer or a nationwide floral delivery service. Any content detected by the contents scanner which includes NOKIA text or voice would cause the advertising page generator 360 to add the NOKIA advertising page to the video and audio data streams. Then the NOKIA advertising page may contain information of the recently published new terminals, e.g., 7110 etc. The advertising page can be added to the video stream or it can stop video stream transmission in order to view the advertisement.

An advertising page 370 is generated based on the content data. The right banner picture is queried from a database and retrieved from a file system. Instead of using a single database, one can also use XML (extensible markup language) and XSL (extensible style language), for example, which each separate content and layout from each other.

The web server 120 receives an automatically generated HTML (hyper text markup language) file from the advertising page generator 360 (which may be implemented with Java Servlets or ASP (active server page) or other service side technology with is sent over HTTP to the client computer 100. Some type of push technology, e.g., RMI (java remote method invocation), receiver applet, live connection and java script, must be used so that the client gets the right advertising banner right after the key content of the video and audio data stream has been detected.

Fig. 2 is a flowchart of an example of the operation of an embodiment of the present invention.

After the system is started in Step 200, the content parsing server receives a media stream, which may consist of a video stream and an audio stream, in Step 210.

In Step 220, a determination is made as to whether or not the media stream (consisting of the video stream and audio stream) has been tagged, e.g., with some kind of markup language or some other meta data that reveals the content of the media stream.

If the media stream has been tagged, the technique proceeds to Step 230 in which the tag is recognized and the relevant content data extracted from the tag.

Alternatively, if the media stream has not been tagged, in Step 240, voice and/or pattern recognition on the media stream is effected to extract relative content data. As noted above, at present there are several commercially available software programs which perform such voice and/or pattern recognition of a media stream.

In Step 250, the extracted relevant content data is compared with stored advertising content to determine if there is a match. That is, is there a suitable advertising banner to be added with the currently transmitted media stream to provide targeted advertising to the client computer presently receiving the media stream.

If not, the flow returns to Step 210 to continue receiving the media stream.

However, if there is a match determined in Step 250, the flow proceeds to Step 260 in which the relevant advertising page or banner corresponding to the extracted content data is generated.

In Step 270, the generated advertising page or banner is forwarded to the web server to be combined with the current media stream to thereby provide the targeted advertising to the client computer.

The flow then returns to Step 210 to continue to receive the media stream and perform the above noted functions continuously.

In this way, the client viewing streaming audio and video on his or her computer also receives relevant advertising directly related to the subject matter of the streaming audio and video.

Alternatively, in accordance with the present invention, a video stream can be received and if the video stream is determined to contain predetermined advertisement information, then the receiving of the video stream is stopped and the advertisement corresponding to the predetermined advertisement information is transmitted to the client where it is displayed on the display of the client. After a predetermined period of time, the advertisement is no longer transmitted to the client and shown on the client's display but rather, the client then receives the video stream and displays it on the display of the client as before.

While there has been illustrated and described what are considered to be examples of embodiments of the present invention, it will be understood by those skilled in the art that various changes and modifications may be made, and equivalents may be substituted for elements thereof without departing from the true scope of the present invention. Furthermore, many modifications may be made to adapt a particular situation to the teachings of the present invention without departing from the central scope of the present invention. Therefore, it is intended that the present invention not be limited to the particular embodiments disclosed rather that the present invention includes all embodiments falling within the scope of the appended claims.

IN THE CLAIMS:

1. A selective media stream advertising method comprising the steps of:

receiving a media stream comprising at least one of a video data stream or an audio data stream or a text data stream;

determining if the media stream is tagged and if so, recognizing the tag and extracting relevant content data;

if it has been determined that the media stream has not been tagged, extracting relevant content data from the media stream;

determining if the extracted relevant content data matches stored advertising content and if not, returning to the step of receiving the media stream; and

if it has been determined that the extracted relevant content data matches stored advertising content, generating advertising information corresponding to the stored advertising content in order to forward it to a client.

2. The method of claim 1, wherein the media stream comprises a media stream on the Internet.

3. The method of claim 2, wherein the media stream comprises a media stream requested by the client from an Internet server and the server forwards the requested media stream and generated advertising page to the client via the Internet.

4. The method of claim 1, wherein said steps are performed by software.

5. The method of claim 2, wherein said steps are performed by software.

6. The method of claim 3, wherein said steps are performed by software.

7. The method of claim 1, wherein the client comprises a mobile telecommunication terminal.

8. The method of claim 2, wherein the client comprises a mobile telecommunication terminal.

9. The method of claim 3, wherein the client comprises a mobile telecommunication terminal.

10. The method of claim 4, wherein the client comprises a mobile telecommunication terminal.

11. The method of claim 5, wherein the client comprises a mobile telecommunication terminal.

12. The method of claim 11, wherein the client comprises a mobile telecommunication terminal.

13. A selective media stream advertising apparatus comprising:

a receiver for receiving a media stream comprising at least one of a video data stream or an audio data stream or a text data stream;

a first determining means for determining if the media stream is tagged and if so, recognizing the tag and extracting relevant content data;

a means for extracting relevant content data from the media stream if it has been determined by said first determining means that the media stream has not been tagged;

a second determining means for determining if the extracted relevant content data matches stored advertising content; and

a means for generating advertising information corresponding to the stored advertising content in order to forward it to a client if it has been determined by said second determining means that the extracted relevant content data matches stored advertising content.

14. The apparatus of claim 13, wherein the media stream comprises a media stream on the Internet.

15. The apparatus of claim 14, wherein the media stream comprises a media stream requested by the client from an Internet server and the server forwards the requested media stream and generated advertising page to the client via the Internet.

16. The apparatus of claim 13, wherein the client comprises a mobile telecommunication terminal.

17. The apparatus of claim 14, wherein the client comprises a mobile telecommunication terminal.

18. The apparatus of claim 15, wherein the client comprises a mobile telecommunication terminal.

19. A computer program embodied in a tangible medium for selective media stream advertising, the program comprising the method steps of:

receiving a media stream comprising at least one of a video data stream or an audio data stream or a text data stream;

determining if the media stream is tagged and if so, recognizing the tag and extracting relevant content data;

if it has been determined that the media stream has not been tagged, extracting relevant content data from the media stream;

determining if the extracted relevant content data matches stored advertising content and if not, returning to the step of receiving the media stream; and

if it has been determined that the extracted relevant content data matches stored advertising content, generating advertising information corresponding to the stored advertising content and in order to forward it to a client.

20. The program of claim 19, wherein the media stream comprises a media stream on the Internet.

21. The program of claim 20, wherein the media stream comprises a media stream requested by the client from an Internet server and the server forwards the requested media stream and generated advertising page to the client via the Internet.

22. The program of claim 19, wherein the client comprises a mobile telecommunication terminal.

23. The program of claim 20, wherein the client comprises a mobile telecommunication terminal.

24. The program of claim 21, wherein the client comprises a mobile telecommunication terminal.

25. The method of claim 1, wherein extracting relevant content data from the media stream comprises performing at least one of voice recognition or pattern recognition or word recognition on the media stream.

26. The program of claim 19, wherein extracting relevant content data from the media stream comprises performing at least one of voice recognition or pattern recognition or word recognition on the media stream.

27. The apparatus of claim 13, wherein the means for extracting relevant content data from the media stream comprises a means for performing at least one of voice recognition or pattern recognition or word recognition on the media stream.

28. The method of claim 1, further comprising adding the generated advertising information to the media stream.

29. The program of claim 19, further comprising adding the generated advertising information to the media stream.

30. The apparatus of claim 13, further comprising a means for adding the generated advertising information to the media stream.

31. The method of claim 1, further comprising forwarding the media stream and additional advertising information to the client.

32. The method of claim 31, wherein the media stream and additional advertising information are forwarded separately to the client.

33. The method of claim 31, wherein the media stream and additional advertising information are forwarded substantially simultaneously to the client.

34. The method of claim 31, wherein the media stream and additional advertising information are displayed on different portion of a display of the client.

35. The program of claim 19, further comprising forwarding the media stream and additional advertising information to the client.

36. The program of claim 35, wherein the media stream and additional advertising information are forwarded separately to the client.

37. The program of claim 35, wherein the media stream and additional advertising information are forwarded substantially simultaneously to the client.

38. The method of claim 35, wherein the media stream and additional advertising information are displayed on different portions of a display of the client.

39. The apparatus of claim 13, further comprising a means for forwarding the media stream and additional advertising information to the client.

40. The apparatus of claim 39, wherein the media stream and additional advertising information are forwarded separately to the client.

41. The apparatus of claim 39, wherein the media stream and additional advertising information are forwarded substantially simultaneously to the client.

42. The apparatus of claim 39, further comprising a display of the client for displaying the media stream and additional advertising information on different portions thereof.

FIG. 1

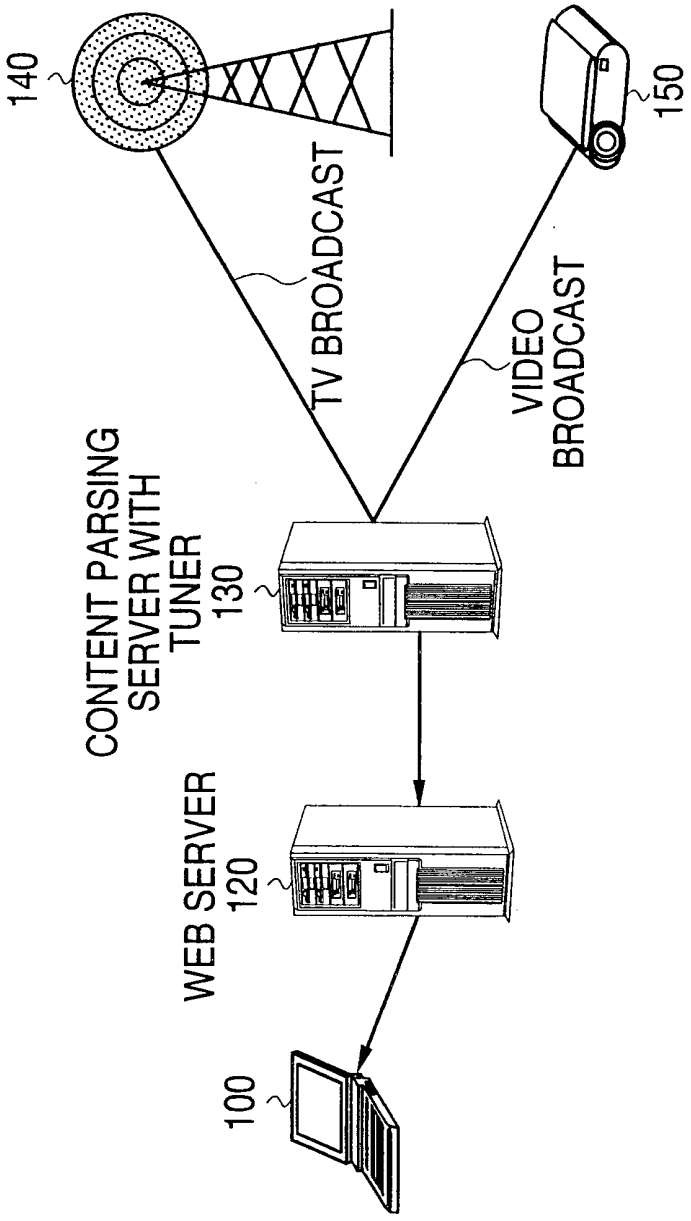

140
150
TV BROADCAST
VIDEO BROADCAST
CONTENT PARSING SERVER WITH TUNER
130
WEB SERVER
120
100

FIG. 2

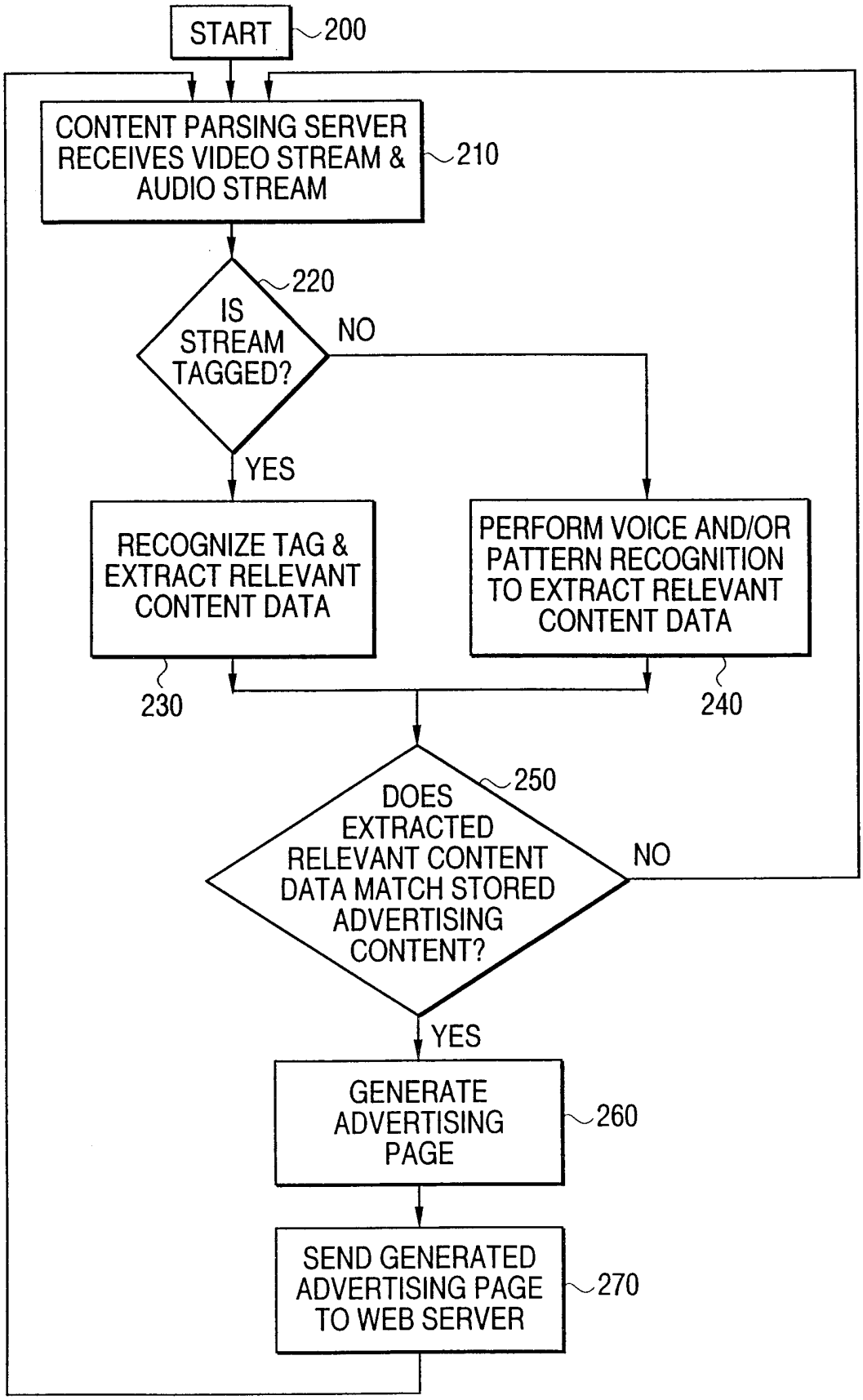
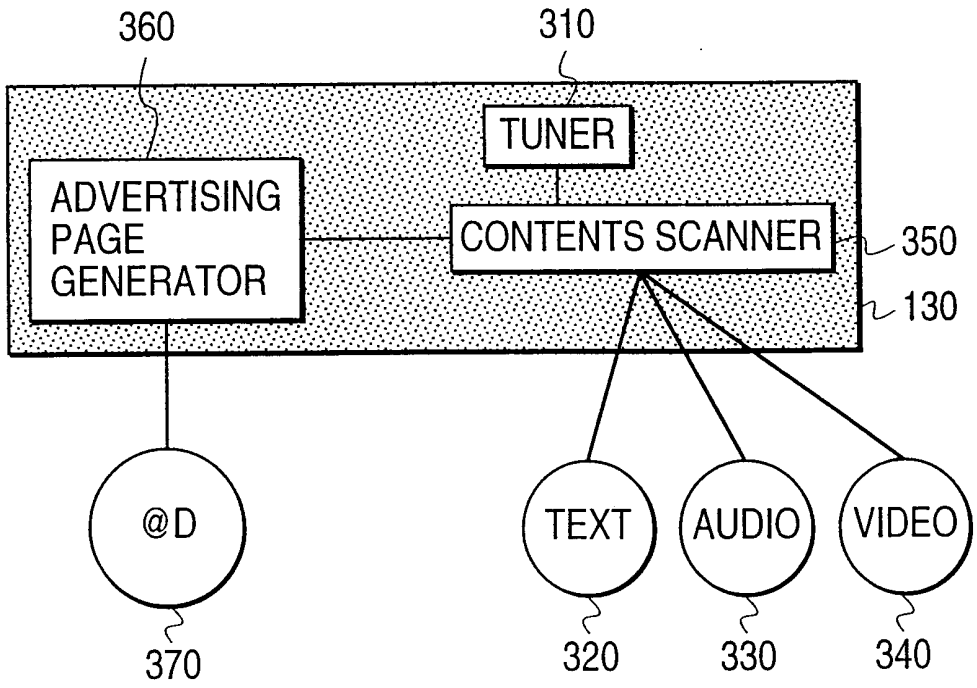

START
200
CONTENT PARSING SERVER RECEIVES VIDEO STREAM & AUDIO STREAM
210
IS STREAM TAGGED?
220
NO
YES
RECOGNIZE TAG & EXTRACT RELEVANT CONTENT DATA
230
PERFORM VOICE AND/OR PATTERN RECOGNITION TO EXTRACT RELEVANT CONTENT DATA
240
DOES EXTRACTED RELEVANT CONTENT DATA MATCH STORED ADVERTISING CONTENT?
250
NO
YES
GENERATE ADVERTISING PAGE
260
SEND GENERATED ADVERTISING PAGE TO WEB SERVER
270

FIG. 3


360
310
TUNER
ADVERTISING PAGE GENERATOR
CONTENTS SCANNER
350
130
@D
TEXT
AUDIO
VIDEO
370
320
330
340