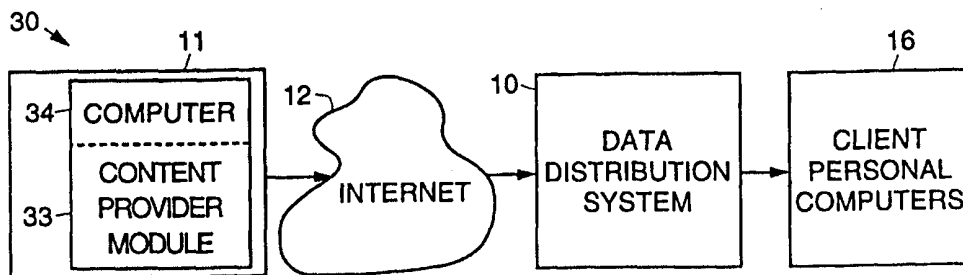




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<p>(21) International Application Number: PCT/US00/02316 (22) International Filing Date: 28 January 2000 (28.01.00) (30) Priority Data: 09/249,891 16 February 1999 (16.02.99) US (71) Applicant: CYBERSTAR, L.P. [US/US]; 3825 Fabian Way, Palo Alto, CA 94303 (US). (72) Inventors: BARKER, Keith, R.; 2707 Hallmark Drive, Belmont, CA 94002 (US). RAFTER, Mark, T.; 23750 Oak Flat Road, Los Gatos, CA 95033 (US). (74) Agent: GREEN, Clarence, A.; Perman &amp; Green, LLP, 425 Post Road, Fairfield, CT 06430 (US).</p>		<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, 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, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>

(54) Title: CONTENT TAGGING IN A DATA DISTRIBUTION SYSTEM



(57) Abstract

Content tagging systems and methods for tagging content transmitted by a content provider (11) by way of a data distribution system (10) to one or more client personal computers (16). A content provider module (33) disposed on a computer (34) controlled by the content provider (11) generates content and content tagging instructions for distribution. The content and content tagging instructions are sent to the data distribution system (10) for transmission to the client personal computers (16). Upon receipt, the client personal computers (16) perform the content tagging instructions and process the content in accordance with the instructions. Typical content tagging instructions include delivery schedule and priority instructions along with display and storage instructions.

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## CONTENT TAGGING IN A DATA DISTRIBUTION SYSTEM

### BACKGROUND

The present invention relates generally to data distribution systems, and more particularly, to content tagging systems and methods that control certain aspects of content delivered from content providers to client personal computers by way of a data distribution system.

The assignee of the present invention has developed a data distribution system, and in particular, a satellite-based data distribution system, that is used to distribute data supplied by content providers to personal computers of clients. In order to allow content providers to more easily supply data for distribution by the data distribution system, an important aspect of the system was developed that addresses this need.

It would be an improvement to have content tagging systems and methods that control certain aspects of content delivered from content providers to client personal computers by way of a data distribution system.

### SUMMARY OF THE INVENTION

The present invention provides for a content tagging systems and methods that may be used with a data distribution system to distribute content (data) to client personal computers. One or more content providers communicate by way of the data distribution system, such as by way of a satellite communications link, for example, to deliver the content to the client personal computers. The content tagging system and method generates content tagging instructions that are transmitted along with the content

and which are performed by the client personal computers upon receipt of the transmitted content.

A content provider module is disposed on a computer controlled by each content provider. The content provider module sends content to the data distribution system for transmission to one or more client personal computers. The content provider module generates content tagging instructions that are performed by the client personal computers upon receipt of the transmitted content. Content tagging instructions include delivery schedule and priority instructions performed by the client personal computers, or display and storage instructions, for example.

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### BRIEF DESCRIPTION OF THE DRAWINGS

The various features and advantages of the present invention may be more readily understood with reference to the following detailed description taken in conjunction with the accompanying drawings, wherein like reference numerals designate like structural elements, and in which:

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Fig. 1 illustrates an exemplary data distribution system for distributing data to personal computers and in which the present invention may be employed;

Fig. 2 illustrates an exemplary content tagging system in accordance with the principles of the present invention; and

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Fig. 3 illustrates an exemplary content tagging method in accordance with the principles of the present invention.

### DETAILED DESCRIPTION

Referring to the drawing figures, Fig. 1 illustrates an exemplary data distribution system 10, illustrated as a satellite broadcast data distribution system 10, in which content provider management systems (Fig. 2) and methods (Fig. 3) in accordance with the principles of the present invention may be employed. The exemplary system 10 is designed to distribute data (content) derived from one or more content providers 11 by way of a satellite 14 to client personal computers 16. The system 10 uses Internet protocol (IP) addressing and a media access control (MAC) layer to distribute the data to the personal computers 16.

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The system 10 comprises a network operations center 13 that includes a data broadcast subsystem (DBS) 21, a subscriber management subsystem (SMS) 22, a network management subsystem (NMS) 23, and a content management subsystem (CMS) 24. One or more content providers 11 communicate by way of a direct connection 12a or the Internet 12, for example, to the network operations center 13.

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The network operations center 13 communicates by way of the satellite 14 to the client personal computers 16.

The client personal computers 16 interface to the satellite 14 using satellite receiver PC cards (not shown) disposed in the client personal computers 16. Alternatively, the client personal computers 16 are connected to a local area network 17 and interface to the satellite 14 using a PC card disposed in a server computer 15 coupled to the local area network. The client personal computers 16 are also coupled by way of a modem 18 to the network operations center 13. The modem 18 provides a low-rate return path that is used to transmit requests from the client personal computers 16 to the network operations center 13 in order to download data derived from the content providers 11.

Each of the client personal computers 16 includes software that interfaces to the network operations center 13 and the content providers 11. The software is used to browse the Internet 12, send requests for data, control data download sessions, schedule delivery of data, and download streaming audio, video and data to the client personal computers 16 in real time, for example.

The system 10 and the software cooperate to establish a virtual private multicast network between the content providers 11 and the client personal computers 16. The system 10 and the software cooperate to provide managed electronic data delivery to multiple client personal computers 16. The system 10 and the software cooperate to provide both video and data download services with high efficiency.

Fig. 2 illustrates an exemplary content tagging system 30 in accordance with the principles of the present invention. The content tagging system 30 is designed for use with the data distribution system 10 and generates content tagging instructions that are transmitted along with the content and which are performed by the client personal computers 16 upon receipt of the transmitted content

A content provider module 33 is disposed on a computer 34 controlled by each content provider 11. The content provider module 33 sends content to the data distribution system 10 for transmission to one or more client personal computers 16. The content provider module 33 also generates content tagging instructions comprising instructions that are performed by the client personal computers 16 upon receipt of the transmitted content. The content tagging instructions may include delivery schedule and priority instructions that are performed by the client personal computers 16. The instructions may also comprise display and storage instructions that are performed by client personal computers 16.

Content tagging is implemented using XML/HTML or other metadata tagging of the content. A content submission utility is provided that allows content providers 11

to submit pre-formatted content to the network operations center 13. The pre-formatting is done by the content submission utility and provides predefined content data or tags for handling the content in client applications. The content submission utility operates within a standard web browser on the client or content provider site and  
5 delivers the content via the Internet 12 or other dedicated connection as defined for a particular client from the content providers 11 to the client personal computers 16.

Content tagging is implemented in a content/application layer of software employed when using the data distribution system. The content/application layer provides XML/HTML or other metadata tagging of the data. A content submission  
10 utility is provided in the data distribution system that allows content providers and clients to submit pre-formatted content to the network operations center. The pre-formatting is done by the content submission utility and provides predefined content tags for handling the data in client applications. The content submission utility operates within a standard web browser at the client or content provider site and delivers the  
15 content via the Internet or other dedicated connections as defined for a particular client.

Fig. 3 illustrates an exemplary content tagging method 40 in accordance with the principles of the present invention. The content tagging method 40 comprises the following steps. Content tagging instructions are generated 41 on a computer controlled by a content provider 11, which instructions are to be performed by one or  
20 more client personal computers 16 upon receipt of the transmitted content. The content and content tagging instructions are transmitted 42 by way of a data distribution system 10 from the content provider 11 to the one or more client personal computers 16. The content tagging instructions are then performed 43 on the one or more client personal computers 16 upon receipt of the transmitted content and instructions.

25 Thus, improved content tagging systems and methods that control certain aspects of content delivered from content providers to client personal computers by way of a data distribution system have been disclosed. It is to be understood that the described embodiments are merely illustrative of some of the many specific embodiments that represent applications of the principles of the present invention. Clearly,  
30 numerous and other arrangements can be readily devised by those skilled in the art without departing from the scope of the invention.

## CLAIMS

What is claimed is:

1. A content tagging system comprising:
  - a content provider module disposed on a computer 34 controlled by a content provider that provides content and generates content tagging instructions that are to be performed by one or more client personal computers upon receipt of the content, and
  - 5 that sends content for transmission to the one or more client personal computers;
  - a data distribution system for transmitting the content and content tagging instructions from the content provider to the one or more client personal computers; and
  - the client personal computers receiving the content and performing the content tagging instructions upon receipt of the transmitted content.
2. The system recited in Claim 2 wherein the content tagging instructions include delivery schedule and priority instructions that are performed by computer of the data distribution system.
3. The system recited in Claim 2 wherein the instructions comprise display and storage instructions that are performed by client personal computers.
4. A method for tagging content distributed by a data distribution system to client personal computers, comprising the steps of:
  - generating content tagging instructions on a computer controlled by a content provider, which instructions are to be performed by one or more client personal
  - 5 computers 16 upon receipt of the transmitted content;
  - transmitting the content and content tagging instructions by way of the data distribution system to the one or more client personal computers; and
  - performing the content tagging instructions on the one or more client personal computers upon receipt of the transmitted content.
5. The method recited in Claim 4 wherein the content tagging instructions include delivery schedule and priority instructions that are performed by computer of the data distribution system.
6. The method recited in Claim 4 wherein the instructions comprise display and storage instructions that are performed by client personal computers.

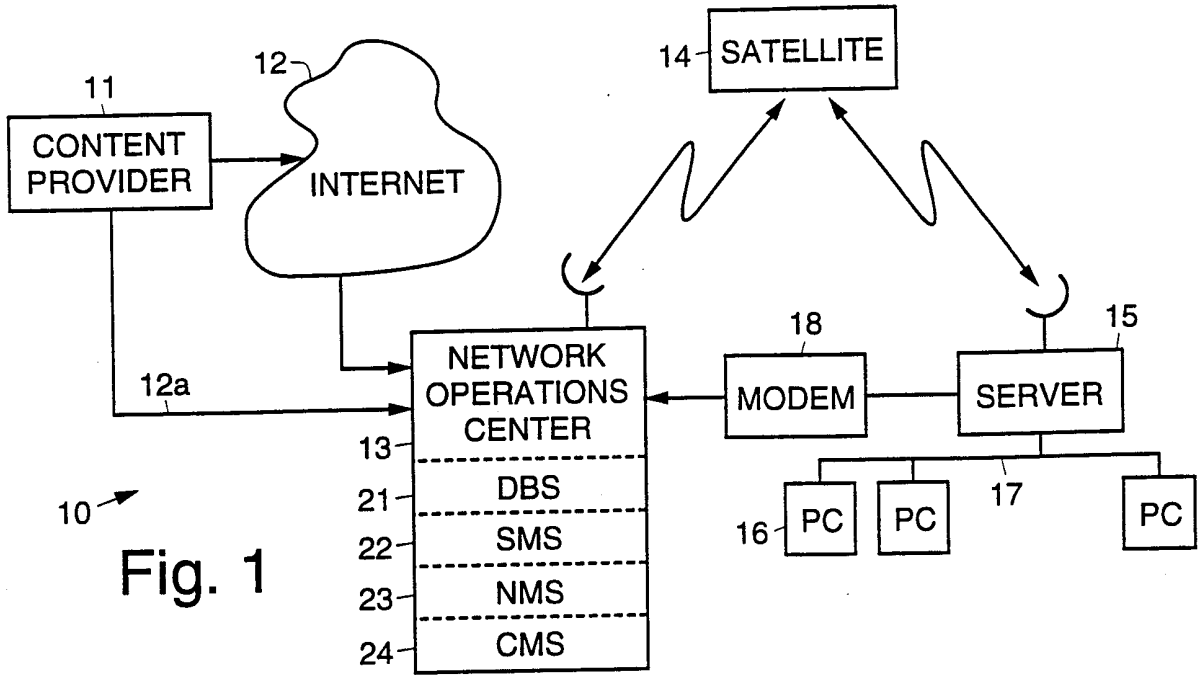


Fig. 2

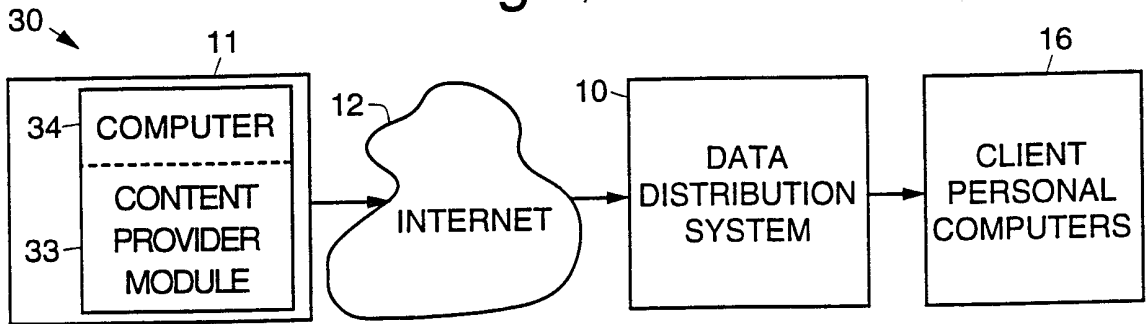
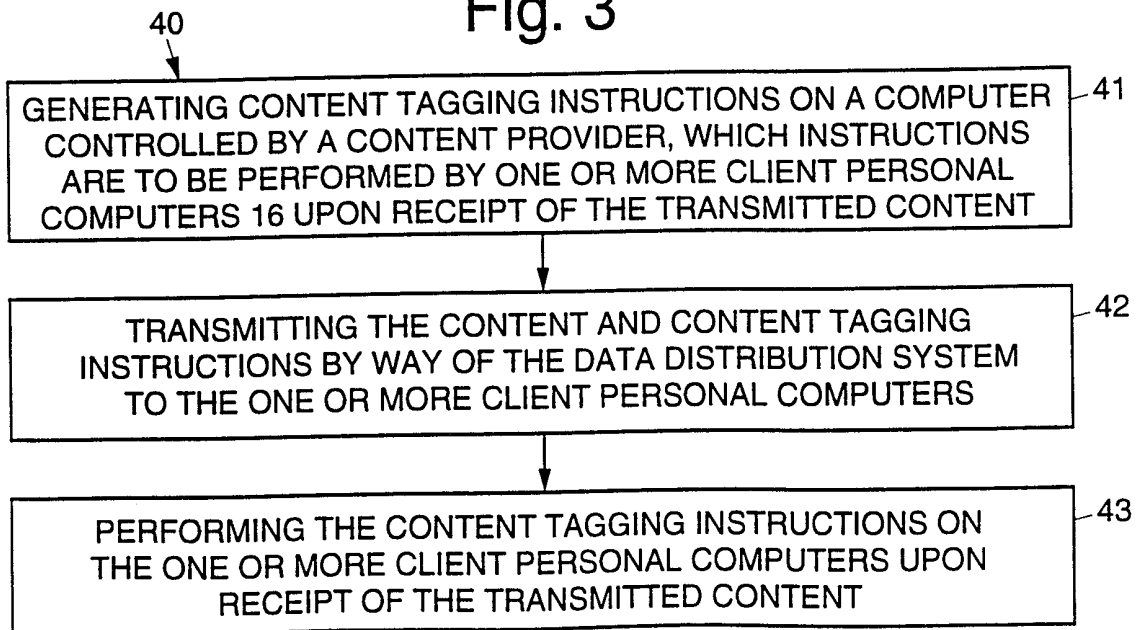


Fig. 3





# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/02316

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(6) : G06F 15/16 US CL : 709/200 According to International Patent Classification (IPC) or to both national classification and IPC													
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 709/200, 202, 217, 218, 219  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet													
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; padding: 5px;">Category*</th> <th style="width: 70%; padding: 5px;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%; padding: 5px;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">US 4,932,026 A (DEV et al.) 05 June 1990, (05.06.1990), abstract</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1-6</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">US 5,701,484 A (ARTSY) 23 December 1997 (23.12.1997), abstract</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1-6</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">Khare et al. "XML: A Door to Automated Web Applications", IEEE Internet Computing, v:3 1, Jan-Feb 1999, pages:55-59.</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1-6</td> </tr> </tbody> </table>		Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 4,932,026 A (DEV et al.) 05 June 1990, (05.06.1990), abstract	1-6	Y	US 5,701,484 A (ARTSY) 23 December 1997 (23.12.1997), abstract	1-6	Y	Khare et al. "XML: A Door to Automated Web Applications", IEEE Internet Computing, v:3 1, Jan-Feb 1999, pages:55-59.	1-6
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