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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	519-136-USP2
First Inventor	Ian Maloney
Title	USER AUTHENTICATION IN A CONTENT D
Express Mail Label No.	Via EFS-Web

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. [✓] **Fee Transmittal Form** (e.g., PTO/SB/17)
2. [ ] **Applicant claims small entity status.** See 37 CFR 1.27.
3. [✓] **Specification** [*Total Pages* 64]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. [✓] **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* 22]
5. **Oath or Declaration** [*Total Sheets* 3]
   a. [✓] Newly executed (original or copy)
   b. [ ] A copy from a prior application (37 CFR 1.63(d))
   (for continuation/divisional with Box 18 completed)
   i. [ ] DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. [✓] **Application Data Sheet.** See 37 CFR 1.76
7. [ ] **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   [ ] Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   (if applicable, items a. – c. are required)
   a. [ ] Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. [ ] CD-ROM or CD-R (2 copies); or
      ii. [ ] Paper
   c. [ ] Statements verifying identity of above copies

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ACCOMPANYING APPLICATION PARTS

9. [ ] **Assignment Papers** (cover sheet & document(s))
   Name of Assignee_____
10. [ ] **37 CFR 3.73(b) Statement** *(when there is an assignee)* [ ] **Power of Attorney**
11. [ ] **English Translation Document** *(if applicable)*
12. [ ] **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    [ ] Copies of citations attached
13. [✓] **Preliminary Amendment**
14. [ ] **Return Receipt Postcard** (MPEP 503)
    (Should be specifically itemized)
15. [ ] **Certified Copy of Priority Document(s)**
    (if foreign priority is claimed)
16. [ ] **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. [ ] Other:_____

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

[ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No.: .....

Prior application information: *Examiner*_____ *Art Unit:*_____

19. CORRESPONDENCE ADDRESS

[✓] The address associated with Customer Number: 83579 ***OR*** [ ] Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature		Date	October 23, 2009
Name (Print/Type)	Allison Olenginski	Registration No. (Attorney/Agent)	55,509

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2009

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 1090.00

Complete if Known	
Application Number	
Filing Date	October 21, 2009
First Named Inventor	Ian Maloney
Examiner Name	
Art Unit	
Attorney Docket No.	519-136-USP2

METHOD OF PAYMENT (check all that apply)

☐ Check ☑ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 503199 Deposit Account Name: Hensley Kim & Holzer, LLC

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	330	165	540	270	220	110	1090
Design	220	110	100	50	140	70	
Plant	220	110	330	165	170	85	
Reissue	330	165	540	270	650	325	
Provisional	220	110	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	52	26
Each independent claim over 3 (including Reissues)	220	110
Multiple dependent claims	390	195

Total Claims	Extra Claims	Fee ($)	Fee Paid ($)
_____ - 20 or HP =	_____	x _____	= _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee ($)	Fee Paid ($)
_____ - 3 or HP =	_____	x _____	= _____

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Multiple Dependent Claims	
Fee ($)	Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

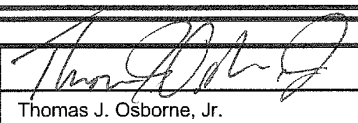
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee ($)	Fee Paid ($)
_____ - 100 =	_____	/ 50 = _____ (round **up** to a whole number)	x _____	= _____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): _____	

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 39,796	Telephone 720-377-0770
Name (Print/Type)	Thomas J. Osborne, Jr.		Date October 23, 2009

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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UNITED STATES PROVISIONAL PATENT APPLICATION
IN THE U.S. PATENT AND TRADEMARK OFFICE

USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

INVENTOR(S):

Ian Maloney

USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

RELATED APPLICATIONS

[001] This application claims the benefit of commonly owned U.S. Provisional Application No. 61/113941 (Attorney Docket No. 0136-US-P1), filed November 12, 2008, entitled "Content Delivery Management and Administration", which is incorporated by reference in its entirety for all purposes. This application is related to concurrently-filed and commonly owned U.S. Non-Provisional Application No. _____ (Attorney Docket No. 0136-US-U1), filed _____, entitled "Dynamic Processing of Streamed Content," which is incorporated by reference in its entirety for all purposes.

TECHNICAL FIELD

[002] Embodiments presently disclosed generally relate to network communications. More specifically, embodiments herein relate to distributing and serving various media and content resources across a content delivery network.

BACKGROUND OF THE INVENTION

[003] The Internet has enabled a proliferation of information to become available to end users across a myriad of different heterogeneous networks. Users of the Internet enjoy the ability to quickly access various types of multimedia (e.g., audio, video, games, etc.) for viewing and playback on their devices (e.g., PCs, laptops, mobile phones, etc.). Various streaming protocols and procedures are used to deliver multimedia in a real-time, or near-real time fashion, such that a user may interact with the media (e.g., watch a video) while the media is simultaneously being distributed over one or more networks.

[004] All media is not freely available however. Many content providers and publishers wish to protect and/or monetize their media assets when providing such content over the Internet. For example, various digital rights management policies (e.g., encryption/decryption) have been established to protect media assets of content providers and publishers. Automated e-commerce technologies have also been deployed so that content providers and publishers can conveniently monetize the various media content being distributed to end users.

SUMMARY OF THE INVENTION

[005] Embodiments generally disclosed herein include computer-implemented methods for delivery of video content across a network. Such methods comprise a content delivery manager capable of receiving a video stream from a content source for delivery to a client of a content publisher. According to an example configuration, the client subscribes to the content publisher to receive video content. The content delivery manager is capable of detecting a trigger signal within the video stream. For example, the trigger signal can indicate a temporal mark injected into the video stream by the content publisher.

[006] During general operation, the content delivery manager processes the trigger signal to determine whether to modify delivery of the video stream to the client. If necessary, the content delivery manager modifies delivery of the video stream in accordance with the processing of the trigger signal.

[007] According to another general embodiment, a computer-implemented method is provided for authorizing delivery of a video stream to an end user. As such, the video stream is associated with a content publisher. The

method comprises an authorization manager capable of receiving a request from the end user for delivery of the video stream to the end user across a network.

[008] In operation, the authorization manager queries a subscription database associated with the content publisher. In response to the query, the authorization manager processes a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream.

[009] According to one example embodiment, if it is determined (per the reply from the subscription database) that the end user is not authorized to receive delivery of the video stream from the content publisher, the authorization manager transmits a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database.

[010] In another example embodiment, if it is determined (per the reply from the subscription database) that the end user is authorized to receive delivery of the video stream from the content publisher, the authorization manager initiates delivery of the video stream to the end user based on the processing of the reply from the subscription database.

BRIEF DESCRIPTION OF DRAWINGS

[011] The foregoing and other objects, features and advantages of the invention will be apparent from the following description of particular embodiments of the invention, as illustrated in the accompanying drawings in which like reference characters refer to the same parts throughout the different views. The drawings are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention.

[012] FIG. 1 is a block diagram depicting an Internet broadcast system for streaming media constructed in accordance with an example embodiment.

[013] FIG. 2 is a block diagram depicting a media serving system constructed in accordance with an example embodiment.

[014] FIG. 3 is a block diagram depicting a data center constructed in accordance with an example embodiment.

[015] FIG. 4 illustrates a data flow in a Internet broadcast system for streaming media constructed in accordance with an example embodiment.

[016] FIGS. 5, 6 and 7 are block diagrams depicting acquisition, broadcasting and reception phases employed in a Internet broadcast system for streaming media constructed in accordance with an example embodiment.

[017] FIG. 8 is a block diagram depicting transport data management in a Internet broadcast system for streaming media constructed in accordance with an example embodiment.

[018] FIG. 9 is a block diagram of a network environment for providing content delivery management and administration in accordance with an example embodiment.

[019] FIG. 10 is a block diagram of a network environment for providing content delivery management and administration in accordance with an example embodiment.

[020] FIG. 11 is a flow chart that shows processing operations performed by a content delivery manager in accordance with an example embodiment.

[021] FIG. 12 is a block diagram of a computer system suitable for performing content delivery management and administration in accordance with an example embodiment.

[022] FIG. 13 is a flow chart that shows processing operations performed by a content delivery manager in accordance with an example embodiment

[023] FIG. 14 is a flow chart that shows processing operations performed by a content delivery manager in accordance with an example embodiment

[024] FIG. 15 is a flow chart that shows processing operations performed by a content delivery manager in accordance with an example embodiment

[025] FIG. 16 is a block diagram of a network environment for providing end user authentication and authorization in accordance with an example embodiment.

[026] FIG. 17 is a block diagram of a network environment for providing end user authentication and authorization in accordance with an example embodiment.

[027] FIG. 18 is a block diagram of a computer system suitable for performing end user authentication and authorization in accordance with an example embodiment.

[028] FIG. 19 is a flow chart that shows processing operations performed by an authorization manager in accordance with an example embodiment

[029] FIG. 20 is a flow chart that shows processing operations performed by an authorization manager in accordance with an example embodiment

[030] FIG. 21 is a flow chart that shows processing operations performed by an authorization manager in accordance with an example embodiment

[031] FIG. 22 is a flow chart that shows processing operations performed by an authorization manager in accordance with an example embodiment

[032] Throughout the drawing figures, like reference numerals will be understood to refer to like parts and components.

DETAILED DESCRIPTION

System Component Overview

[033] With reference to FIG. 1, a system 10 is provided which captures media (e.g., using a private network), and broadcasts the media (e.g., by satellite) to servers located at the edge of the Internet, that is, where users 20 connect to the Internet such as at a local Internet service provider or ISP. The system 10 bypasses the congestion and expense associated with the Internet backbone to deliver high-fidelity streams at low cost to servers located as close to end users 20 as possible.

[034] To maximize performance, scalability and availability, the system 10 deploys the servers in a tiered hierarchy distribution network indicated generally at 12 that can be built from different numbers and combinations of network building components comprising media serving systems 14, regional data centers 16 and master data centers 18. The system also comprises an acquisition network 22 that is preferably a dedicated network for obtaining media or content for distribution from different sources. The acquisition network 22 can operate as a network operations center (NOC) which manages the content to be distributed, as well as the resources for distributing it. For example, content is preferably dynamically distributed across the system network 12 in response to changing traffic patterns in accordance with the present invention. While only one master data center 18 is illustrated, it is to be understood that the system can employ multiple master data centers, or none at all and simply use regional data centers 16 and media serving systems 14, or only media serving systems 14.

[035] An illustrative acquisition network 22 comprises content sources 24 such as content received from audio and/or video equipment employed at a stadium for a live broadcast via satellite 26. The broadcast signal is provided to an encoding facility 28. Live or simulated live broadcasts can also be rendered

via stadium or studio cameras, for example, and transmitted via a terrestrial network such as a T1, T3 or ISDN or other type of a dedicated network 30 that employs asynchronous transfer mode (ATM or other technology. In addition to live analog or digital signals, the content can include analog tape recordings, and digitally stored information (e.g., media-on-demand or MOD), among other types of content. Further, in addition to a dedicated link 30 or a satellite link 26, the content harvested by the acquisition network 22 can be received via the Internet, other wireless communication links besides a satellite link, or even via shipment of storage media containing the content, among other methods. The encoding facility 28 converts raw content such as digital video into Internet-ready data in different formats such as the Microsoft Windows Media (MWM), RealNetworks G2, or Apple QuickTime (QT) formats. The system 10 also employs unique encoding methods to maximize fidelity of the audio and video signals that are delivered via multicast by the distribution network 12.

[036] With continued reference to FIG. 1, the encoding facility 28 provides encoded data to the hierarchical distribution network 12 via a broadcast backbone which is preferably a point-to-multipoint distribution network. While a satellite link indicated generally at 32 is used, the broadcast backbone employed by the system 10 of the present invention is preferably a hybrid fiber-satellite transmission system that also comprises a terrestrial network 33. The satellite link 32 is preferably dedicated and independent of a satellite link 26 employed for acquisition purposes. The tiered network building components 14, 16 and 18 are each equipped with satellite transceivers to allow the system 10 to simultaneously deliver live streams to all server tiers 14, 16 and 18 and rapidly update on-demand content stored at any tier. When a satellite link 32 is unavailable or impractical, however, the system 10 broadcasts live and on-demand content though fiber links provided in the hierarchical distribution network 12. Where the feed is pulled from in case of a failure is based on a set of routing rules that include priorities, weighting, and so on. In other words, the feed is pulled in a manner similar to the way routers currently operate, but at the actual stream level.

[037] The system 10 employs a director agent to monitor the status of all of the tiers of the distribution network 12 and redirect users 20 to the optimal server, depending on the requested content. The director agent can originate, for example, from the NOC/encoding facility 28. The system employs an Internet Protocol or IP address map to determine where a user 20 is located and then identifies which of the tiered servers 14, 16 and 18 can deliver the highest quality stream, depending on network performance, content location, central processing unit load for each network component, application status, among other factors. Cookies and data from other databases can also be employed to facilitate this system intelligence.

[038] Media serving systems 14 comprise hardware and software installed in ISP facilities at the edge of the Internet. The media serving systems preferably only serve users 20 in its subnetwork. Thus, the media serving systems 14 are configured to provide the best media transmission quality possible because the end users 20 are local. A media serving system 14 is similar to an ISP caching server, except that the content served from the media serving system is controlled by the content provider that input the content into the system 10. The media serving systems 14 each serve live streams delivered by the satellite link 32, and store popular content such as current and/or geographically-specific news clips. Each media serving system 14 manages its storage space and deletes content that is less frequently accessed by users 20 in its subnetwork. Content that is not stored at the media serving system 14 can be served from regional data centers.

[039] With reference to FIG. 2, a media serving system 14 comprises an input 40 from a satellite and/or terrestrial signal transceiver 43. The media serving system 14 can output content to users 20 in its subnetwork or control/feedback signals for transmission to the NOC or another hierarchical component in the system 10 via a wireline or wireless communication network. The media serving system 14 has a central processing unit 42 and a local storage device 44. A file transport module 136 and a transport receiver 144,

which are described below with reference to FIG. 7, are provided to facilitate reception of content from the broadcast backbone. The media serving system 14 also preferably comprises one or more of an HTTP/Proxy server 46, a Real server 48, a QT server 50 and a WMS server 52 to provide content to users 20 in a selected format. The media serving system can also support Windows and Real caching servers, allowing direct connections to a local box regardless of whether the content is available. The content in the network 12 is then located and cached locally for playback. This allows for split live feeds by a local media serving system 14 regardless of whether is being sent via a broadcast or feed mechanism. Thus, pull splits from a media serving system 14 are supported, as well as broadcast streams that are essentially push splits with forward caching.

[040] The regional data centers 16 are located at strategic points around the Internet backbone. With reference to FIG. 3, a regional data center 16 comprises a satellite and/or terrestrial signal transceiver, indicated at 61 and 63, to receive inputs and to output content to users 20 or control/feedback signals for transmission to the NOC or another hierarchical component in the system 10 via wireline or wireless communication network. A regional data center 16 preferably has more hardware than a media serving system 14 such as gigabit routers and load-balancing switches 66 and 68, along with high-capacity servers (e.g., plural media serving systems 14) and a storage device 62. The CPU 60 and host 64 are operable to facilitate storage and delivery of less frequently accessed on-demand content using the servers 14 and switches 66 and 68. The regional data centers 16 also deliver content if a standalone media serving system 14 is not available to a particular user 20. The director agent software preferably continuously monitors the status of the standalone media serving systems 14 and reroutes users 20 to the nearest regional data center 16 if the nearest media serving system 14 fails, reaches its fulfillment capacity or drops packets. Users 20 are typically assigned to the regional data center 14 that corresponds with the Internet backbone provider that serves their ISP, thereby maximizing performance of the second tier of the distribution network 12. The regional data centers 14 also serve any users 20 whose ISP does not have an edge server.

[041] The master data centers 18 are similar to regional data centers 16, except that they are preferably much larger hardware deployments and are preferably located in a few peered data centers and co-location facilities, which provide the master data centers with connections to thousands of ISPs. With reference to FIG. 3, master data centers 18 comprises multiterabyte storage systems (e.g., a larger number of media serving systems 14) to manage large libraries of content created, for example, by major media companies. The director agent automatically routes traffic to the closest master data center 18 if a media serving system 14 or regional data center 16 is unavailable. The master data centers 18 can therefore absorb massive surges in demand without impacting the basic operation and reliability of the network.

[042] Transmissions can occur out of the data centers 16 and 18. In the case of the satellite 32, however, transmissions can also be implemented by taking what is being received and routing a copy thereof directly to the uplink system without first passing through the media serving systems 14.

System Operation Overview

[043] With reference to FIG. 4, the Internet broadcast system 10 for streaming media generally comprises three phases, that is, acquisition 100, broadcasting 102 and receiving 104. In the acquisition phase 100, content is provided to the system 10 from different sources such as Internet content providers (ICPs) or event or studio content sources. As stated previously, content can be received from audio and/or video equipment employed at a stadium for a live broadcast. The content can be, for example, live analog signals, live digital signals, analog tape recordings, digitally stored information (e.g., media-on-demand or MOD), among other types of content. The content can be locally encoded or transcoded at the source using, for example, file transport protocol (FTP), MSBD, or real-time transport protocol/real-time streaming protocol (RTP/RTSP). The content is collected using one or more acquisition modules

106, which are described in more detail below in connection with FIG. 5. The acquisition modules 106 represent different feeds to the system 10 in the acquisition network 12 and can be co-located or distributed. Generally, acquisition modules 106 can perform remote transcoding or encoding of content using FTP, MSBD, or RTP/RTSP or other protocols prior to transmission to a broadcaster 110 for multicast to edge devices and subsequent rendering to users 20 located relatively near to one of the edge devices. The content is then converted into a broadcast packet in accordance with an aspect of the present invention. This process of packaging packets in a manner to facilitate multicasting, and to provide insight at reception sites as to what the packets are and what media they represent, constitutes a significant advantage of the system 10 over other content delivery systems.

[044] Content obtained via the acquisition phase 100 is preferably provided to one or more broadcasters 110 via a multicast cloud or network(s) 108. The content is unicast or preferably multicast from the different acquisition modules 106 to the broadcasters 110 via the cloud 108. As stated above, the cloud 108 is preferably a point-to-multipoint broadcast backbone. The cloud 108 can be implemented as one or more of a wireless network such as a satellite network or a terrestrial or wireline network such as optical fiber link. The cloud 108 can employ a dedicated ATM link or the Internet backbone, as well as a satellite link, to multicast streaming media. The broadcasters 110 are preferably in tier 120, that is, they are master data centers 18 that receive content from the acquisition modules 106 and, in turn, broadcast the content to other receivers in tiers 116, 118 and 120.

[045] During the broadcasting phase 102, broadcasters 110 operate as gatekeepers, as described below in connection with FIG. 6, to transmit content to a number of receivers in the tiers 116, 118 and 120 via paths in the multicast cloud 108. The broadcasters 110 support peering with other acquisition modules indicated generally at 112. The peering relationship between a broadcaster 110 and an acquisition module 112 is via a direct link and each device agrees to

forward the packets of the other device and to otherwise share content directly across this link, as opposed to a standard Internet backbone.

[046] During the reception phase 104, high-fidelity streams that have been transmitted via the broadcasters 110 across the multicast cloud 108 are received by servers 14, 16 and 18 located as close to end users as possible. The system 10 is therefore advantageous in that streams bypass congestion and expense associated with the Internet backbone. As stated previously, the servers are preferably deployed in a tiered hierarchy comprising media serving systems 14, regional data centers 16 and master data centers 18 that correspond to tiers 116, 118 and 120, respectively. The tiers 116, 118 and 120 provide serving functions (e.g., transcoding from RTP to MMS, RealNet, HTTP, WAP or other protocol), as well as delivery via a local area network (LAN), the Internet, a wireless network or other network to user devices 122 for rendering (e.g., PCs, workstations, set-top boxes such as for cable, WebTV, DTV, and so on, telephony devices, and the like). The tiers in the reception phase are described in further detail below in connection with FIG. 7.

Data Transport Management

[047] With reference to FIGS. 5, 6 and 7, hardware and/or software components associated with the acquisition 100, broadcasting 102 and reception phases 104 will now be described. These hardware and/or software components comprise various transport components for supporting MOD or live stream content distribution in one or more multicast-enabled networks in the system 10. The transport components can be, but are not limited to, a file transport module, a transport sender, a transport broadcaster, and a transport receiver. The content is preferably characterized as either live content and simulated/scheduled live content, or MOD (i.e., essentially any file). Streaming media such as live content or simulated/scheduled live content are managed and transported similarly, while MOD is handled differently.

[048] Acquisition for plural customers A through X is illustrated in FIG. 5. By way of an example, acquisition for customer A involves an encoder, as indicated at 134, which can employ Real, WMT, MPEG, QT, among other encoding schemes with content from a source 24. The encoder also encodes packets into a format to facilitate broadcasting in accordance with the present invention. A disk 130 stores content from different sources and provides MOD streams, for example, to a disk host 132. The disk host 132 can be proxying the content or hosting it. Live content, teleconferencing, stock and weather data generating systems, and the like, on the other hand, is also encoded. The disk host 132 unicasts the MOD streams to a file transport module 136, whereas the encoder 134 provides the live streams to a transport sender 138 via unicast or multicast. The encoder can employ either unicast or multicast if QT is used. Conversion from unicast to multicast is not always needed, but multicast-to-multicast conversion can be useful. The file transport module 136 transfers MOD content to a multicast-enabled network. The transport sender 138 pulls stream data from a media encoder 134 or an optional aggregator and sends stream announcements (e.g., using session announcement protocol and session description protocol (SAP/SDP)) and stream data to multicast Internet protocol (IP) addresses and ports received from a transport manager. The transport manager is described below with reference to FIG. 8. When a Real G2 server is used to push a stream, as opposed to a pulling scheme, an aggregator can be used to convert from a push scheme to a pull scheme. The components described in connection with FIG. 5 can be deployed at the encoding center 28 or in a distributed manner at, for example, content provider facilities.

[049] FIG. 6 illustrates an exemplary footprint for one of a plurality of broadcasts. As shown in FIG. 6, the broadcasting phase 102 is implemented using a transport broadcaster 140 and a transport bridge 142. These two modules are preferably implemented as one software program, but different functions, at a master data center 18 or network operations center. The transport broadcaster 140 performs transport path management, whereas the transport bridge 142 provides for peering. The broadcaster 140 and bridge 142 get data

from the multicast cloud (e.g., network 108) being guided by the transport manager and forward it to an appropriate transport path. One transport broadcaster 140, for example, can be used to represent one transport path such as satellite uplink or fiber between data centers or even a cross-continental link to a data center in Asia from a data center in North America. The broadcaster 140 and bridge 142 listen to stream announcements from transport senders 138 and enable and disable multicast traffic to another transport path, accordingly. They can also tunnel multicast traffic by using TCP to send stream information and data to another multicast-enabled network. Thus, broadcasters 110 transmit corresponding subsets of the acquisition phase streams that are sent via the multicast cloud 108. In other words, the broadcasters 110 operate as gatekeepers for their respective transport paths, that is, they pass any streams that need to be sent via their corresponding path and prevent passage of other streams. Transmission can also be accomplished using TCP to another receiver regardless whether the system that the receiver is in is multicast-enabled. Thus, multicast operation can be disabled and the broadcast is still routed and distributed, although not quite as effectively or inexpensively as multicast.

[050] FIG. 7 illustrates the reception phase 104 at one of a plurality of servers or data centers. As stated above, the data centers are preferably deployed in a tiered hierarchy 116, 118 and 120 comprising media serving systems 14, regional data centers 16 and master data centers 18, respectively. The tiers 116, 118 and 120 each comprise a transport receiver 144. Transport receivers can be grouped using, for example, the transport manager. Each transport receiver 144 receives those streams from the broadcasters 110 that are being sent to a group to which the receiver belongs. The transport receiver listens to stream announcements, receives stream data from plural transport senders 138 and feeds the stream data to media servers 146. The transport receiver 144 can also switch streams, as indicated at 154 (e.g., to replace a live stream with a local MOD feed for advertisement insertion purposes). The stream switch 154 can be a plug-in in the Media Server 14 or exist in the server itself to enable switching per end-user 20. The plug-in can interact with an advertisement

platform to inject advertisements into streams. The MOD streams are received via the file transport 136 and stored, as indicated via the disk host 148, database 150 and proxy cache/HTTP server 152. The servers 146 and 152 provide content streams to users 20.

[051] The transport components described in connection with FIGS. 5, 6 and 7 are advantageous in that they generalize data input schemes from encoders and optional aggregators to data senders, data packets within the system 10, and data feeding from data receivers to media servers, to support essentially any media format. The transport components preferably employ RTP as a packet format and XML-based remote procedure calls (XBM) to communicate between transport components.

[052] The transport manager will now be described with reference to FIG. 8 which illustrates an overview of transport data management. The transport manager is preferably a software module deployed at the encoding facility 28 or other facility designated as a NOC. As shown in FIG. 8, multiple data sources 14 (e.g., database content, programs and applications) provide content as input into the transport manager 170. Information regarding the content from these data sources is also provided to the transport manager such as identification of input source 14 and output destination (e.g., groups of receivers). Decisions as to where content streams are to be sent and which groups of servers are to receive the streams can be predefined and indicated to the transport manager 170 as a configuration file or XBM function call in real-time. This information can also be entered via a graphical user interface (GUI) 172 or command line utility. In any event, the information is stored in a local database 174. The database 174 also stores information for respective streams relating to defined maximum and minimum IP address and port ranges, bandwidth usage, groups or communities intended to receive the streams, network and stream names, as well as information for user authentication to protect against unauthorized use of streams or other distributed data.

[053] With continued reference to FIG. 8, a customer requests to stream content via the system 10 using, for example, the GUI 172. The request can include the customer's name and account information, the stream name to be published (i.e., distributed) and the IP address and port of the encoder or media server from which the stream can be pulled. Requests and responses are sent via the multicast network (e.g., cloud 108) using separate multicast addresses for each kind of transport component (e.g., a transport sender channel, a broadcaster channel, a transport manager channel and a transport receiver channel), or one multicast address and different ports. IP and port combinations can be used for TCP transmissions. An operator at the NOC 28 can approve the request if sufficient system resources are available such as bandwidth or media server capacity. Automatic approval can be provided by a scheduling system configured to provide immediate responses to attempted broadcasts. The transport manager 170 preferably pulls stream requests periodically. In response to an approved request, the transport manager 170 generates a transport command in response to the request (e.g., an XML-based remote procedure call (XBM) to the transport sender 138 corresponding to that customer which provides the assigned multicast IP address and port that the transport sender is allowed to use in the system 10.

[054] The transport sender 138 receives the XBM call and responds by announcing the stream that is going to be sent. All of the transport components listen to the announcement. Once the transport sender 138 commences sending the stream into the assigned multicast IP address and port, the corresponding transport broadcaster 140 filter the stream. The transport receiver 144 joins the multicast IP address and receives the data or stream if the stream is intended for a group to which the receiver 144 belongs. As stated above in connection with FIG. 4, the receiver converts the steam received via the cloud 108 and sends it to the media server available to the users 20. The data is then provided to the media server associated with the receiver. Receivers 144 and broadcasters 140 track announcements that they have honored using link lists.

[055] As stated above, the transport components described with reference to FIGS. 4-8 preferably use RPT as a data transport protocol. Accordingly, Windows Media, RealG2 and QT packets are wrapped into RTP packets. The acquisition network 22 preferably employs an RTP stack to facilitate processing any data packets, wrapping the data packets with RTP header and sending the data packets. RTSP connection information is generally all that is needed to commence streaming.

[056] RTP is used for transmitting real-time data such as audio and video, and particularly for time-sensitive data such as streaming media, whether transmission is unicast or multicast. RTP employs User Datagram Protocol (UDP), as opposed to Transmission Control Protocol (TCP) that is typically used for non-real-time data such as file transfer and e-mail. Unlike with TCP, software and hardware devices that create and carry UDP packets do not fragment and reassemble them before they have reached their intended destination, which is important in streaming applications. RTP adds header information that is separate from the payload (e.g., content to be distributed) that can be used by the receiver. The header information is merely interpreted as payload by routers that are not configured to use it.

[057] RTSP is an application-level protocol for control over the delivery of data with real-time properties and provides an extensible framework to enable controlled, on-demand delivery of real-time data including live feeds and stored clips. RTSP can control multiple data delivery sessions, provide means for choosing delivery channels such as UDP, multicast UDP and TCP, and provide means for choosing delivery mechanisms based on RTP. HTTP is not suitable for streaming media because it is more of a store-and-forward protocol that is more suitable for web pages and other content that is read repeatedly. Unlike HTTP, RTSP is highly dynamic and provides persistent interactivity between the user device (hereinafter referred to as a client) and server that is beneficial for time-based media. Further, HTTP does not allow for multiple sessions between a client and server, and travels over only a single port. RTP can encapsulate HTTP

data, and can be used to dynamically open multiple RTP sessions to deliver many different streams at the same time.

[058] The system 10 employs transmission control software deployed at the encoding facilities 28, which can operate as a network operations center (NOC), and at broadcasters 110 (e.g., master data centers 120) to determine which streams will be available to which nodes in the distribution system 12 and to enable the distribution system 12 to support one-to-one streaming or one-to-many streaming. The extensible language capabilities of RTSP augment the transmission control software at the edge of the distribution network 12. Since RTSP is a bi-directional protocol, its use enables encoders 134 and receivers 144 to talk to each other, allowing for routing, conditional access (e.g., authentication) and bandwidth control in the distribution network 12. Standard RTSP proxies can be provided between any network components to allow them to communicate with each other. The proxy can therefore manage the RTSP traffic without necessarily understanding the actual content.

[059] For every RTSP stream, there is an RTP stream. Further, RTP sessions support data packing with timestamps and sequence numbers. They can also be used for carrying stereo information, wide screen versions of requested media, different audio tracks, and so on. RTP packets are wrapped in a broadcast protocol. Applications in the receiving phase 104 can use this information to determine when to expect the next packet. Further, system operators can use this information to monitor network 12 and satellite 32 connections to determine the extent of latency, if any.

[060] Encoders and data encapsulators written with RTP as the payload standard are advantageous because off-the-shelf encoders (e.g., MPEG2 encoders) can be introduced without changing the system 10. Further, encoders that output RTP/RTSP can connect to RTP/RTSP transmission servers. In addition, the use of specific encoder and receiver combinations can be eliminated when all of the media players support RTP/RTSP.

[061] The authentication and selective network connection provided by the present invention allows networks to offer multi-tiered service (e.g., different users can access different types of streams), and control over user errors when requesting access (e.g., requesting incorrect bandwidth for their connection speed). Thus, service providers can distinguish users who have paid for value-added services and authenticate these users for higher quality digital audio and video services.

System Operation: Broadcast Triggers

[062] Methods and systems described with respect to FIGS. 9-15 provide a means for performing real-time processing and modification of content streams (e.g., audio streams, video streams, software downloads, etc.) for delivery across one or more networks to end users. As will be discussed in greater detail below, such methods and systems enable a flexible and adaptable approach for delivering video content from a content publisher to a heterogeneous set of end users across the Internet. Advantages of such methods and systems include, for example, on-the-fly targeted advertising to specific end users (or a group of end users), adherence to localized broadcasting rules and regulations, as well as other advantages that will become more apparent in the discussion below.

[063] More specifically, FIG. 9 is a block diagram of a network environment 900 including a content publisher 905 and associated content source 910, a trigger entry 915, satellite/terrestrial broadcast system 920, a streaming system 925 including an encoder 930 and content delivery manager 935, a data repository 940 and an advertisement server 945, content delivery network 950-1 including web server 955-1 and streaming server 960-1 in communication with end user (i.e., client) 965-1, and content delivery network 950-2 including web server 955-2 and streaming server 960-2 in communication with end user (i.e., client) 965-2.

[064] With reference to FIG. 9, It should be noted that content publisher 905 and content source 910 are shown as related logical entities and do not necessarily have to be located in the same physical location. For example, the content source 910 may acquire an input (e.g., video content via a camera at a sporting event) in a first location and, then, transmit the input to the content publisher 905 for processing at a second location. Of course, the content publisher 905 and content source 910 may also be one and the same (i.e., the same entity) sharing the same functional and logical characteristics while residing at the same physical location. The configuration shown in FIG. 9 is

shown for purposes of illustration only, and depicts only one example representation of the methods and systems for content distribution and delivery as described herein.

[065] In general, the content source 910 (and/or content publisher 905) acquires content (e.g., video capture of a live sporting event) for subsequent and, at times, real-time distribution to various end users associated with the content publisher 905. Note that content streams may be stored and cached for on-demand type contribution as well. As shown in FIG. 9, the acquired content can be distributed via traditional terrestrial antennae and satellite broadcasting means. For example, satellite/terrestrial broadcast system 920 disseminates video content acquired by the content source 910 to end users that are capable of receiving such traditional satellite and terrestrial antennae communications.

[066] In addition to the satellite/terrestrial broadcast system 920, the content source 910 (and/or content publisher 905) can also distribute a content stream 912 (e.g., audio media, video media, etc.) via streaming system 925 in furtherance of various embodiments that will be described in greater detail below. Accordingly, streaming system 925 has similar architectures and provides similar functionalities as the methods and systems previously described with respect to the example embodiments in FIGS. 4-8.

[067] A trigger generator 915 can inject additional information (i.e., a trigger signal) into the content stream 912 that is not initially captured by the content source 910. The trigger generator 915 can be an automated process (e.g., software, sensors, etc.), a human (as shown in FIG. 9), as well as other means suitable for entering additional information into a content stream. Typically, the trigger signal contains information related to a broadcaster's audio/video play-out system during a traditional television-like broadcast.

[068] For example, assume that a content publisher "Broadcaster A" intends to provide a live broadcast of a sporting event. Broadcaster A would acquire the audio/video directly from the sporting event via a content source such

as a camera system installed at the event. As it is commonly known, a live (or real-time) broadcast of a sporting event does not provide a continuous content stream from a single static acquisition source such as the camera system. In other words, a live broadcast typically includes commercials, cut-outs to other broadcast feeds, and the like. These other content feeds are managed by Broadcaster A's play-out system.

[069] In the context of embodiments described in this specification, the play-out system would indicate a switch or transfer to the alternate content feeds (e.g., commercials/advertisements, cut-outs, etc.) by way of a trigger signal injected into the content stream (i.e., as injected by the trigger generator 915). In this manner, the trigger signal provides real-time notification to downstream broadcast systems (e.g., content delivery manager 935) that the content stream is subject to switch to an alternate content feed (e.g., commercial or advertisement). The downstream broadcast systems have discretion to switch to an alternative content feed or continue transmitting the original content stream in accordance with the downstream broadcast systems' contractual relationship with the broadcaster (i.e., content publisher).

[070] Still referring to FIG. 9, the content source 910 (and/or content publisher 905) transmits the content stream 912 to the encoder 930 at stream ingest 927. Note that the trigger signal may be injected into the content stream 912 at the content source 910, at the content publisher 905, or at another third party entity responsible for providing trigger signals and play-out management of the content stream 912.

[071] According to one example embodiment, the encoder 930 provides real-time encoding of the content stream 912 and can include Real encoding, QT encoding, WM encoding, and the like (see FIG. 2). After being encoded at the encoder 930, the content stream 912 is transmitted within the streaming system 925 to content delivery manager 935. In one example configuration, the content stream 912 is propagated downstream through the streaming system 925 (and

possibly the content delivery network 950) using RTSP (Real Time Streaming Protocol). In such a configuration, the actual audio/video data contained in the content stream may be distributed downstream using RTP (Real-time Transport Protocol).

[072] During general operation, and as will be discussed in greater detail below with respect to FIG. 10, the content delivery manager 935 provides multiple functions related to content stream processing and subsequent content delivery to end users (e.g., real-time streaming, on-demand delivery, etc.). As is shown in FIG. 9, the content delivery manager 935 is in communication with data repository 940 (e.g., Electronic Programming Guide) and advertisement server 945. Depending on how the trigger signals in the content stream 912 are processed, the content delivery manager 935 may interact with (i.e., transcieve data with) both the data repository 940 and the advertisement server 945 prior to delivering the content stream 912 to end users. Such processing is discussed in more detail below with respect to FIG. 10.

[073] After processing the content stream 912, the content delivery manager 935 transmits the content stream 912 (or a modification thereof) to content delivery network 950-1 and content delivery network 950-2 (hereinafter collectively referred to as content delivery network 950) for subsequent delivery to end user 965-1 and end user 965-2 (hereinafter collectively referred to as end user 965), respectively.

[074] In the example embodiment of FIG. 9, content delivery network 950-1 comprises a web server 955-1 and streaming server 960-1. Likewise, content delivery network 950-2 comprises a web server 955-2 and streaming server 960-2. For brevity, web servers 955-1 and 955-2 will be collectively referred to as web server 955, while streaming servers 960-1 and 960-2 will be collectively referred to as streaming server 960. Generally, web server 955 provides front-end interaction with end user 965 by serving web pages, initiating registration / logon services, providing e-commerce and transactional payment

capabilities, and the like. As its name suggests, streaming server 960 typically provides back-end streaming services by delivering, for example, the content stream 912 as provided by content delivery manager 935. Note that the vertical ellipses in each content delivery network 950-1 and 950-2 indicate that there can be multiple web and/or streaming servers associated with each respective content delivery network.

[075] Although shown as different entities in the example configuration of FIG. 9, it should be noted that the functionality of web server 955 and streaming server 960 may be implemented in a single device or, alternatively, in multiple distributed devices within content delivery network 950 that have combined functionality of web server 955 and streaming server 960, according to embodiments herein.

[076] Other example embodiments can include betting triggers used for delivery of online gambling and betting events such as horse races, dog races, etc. For instance, in one embodiment the trigger generator 915 can inject a trigger signal into a content stream, where the content stream is that of, say, a dog race and the pre-race activities associated therewith. Assume that the trigger signal is injected into the content stream to indicate the start of the dog race. In one embodiment, the content delivery manager 935 could detect the trigger signal and cease any further betting activities associated with that particular race. For example, the content delivery manager 935 could instruct web server 955 to stop accepting further bets for the dog race that had just begun (i.e., cease e-commerce interaction with the end user). The trigger signal could further indicate that the race has completed and that the content delivery manager 935 should discontinue delivery of the content stream to end users authorized to view only that race.

[077] Referring now to FIG. 8, a block diagram depicts functionality of a content delivery manager in the context of a network environment 1000. As shown, network environment 1000 includes a content source 1005 and

associated content publisher 1010, content delivery manager 1040, content delivery network 1045 in communication with end user (i.e., client) 1050, advertisement server 1060, and Electronic Programming Guide (EPG) 1055. The content delivery manager 1015 further includes stream intake module 1020, trigger processing logic 1025, stream packaging module 1030, and stream delivery module 1040.

[078] In the example embodiment of FIG. 10, assume that content source 1005 acquires and subsequently distributes a content stream associated with a particular event or program (e.g., a football match) as provided by content publisher 1010. For instance, in the example embodiment of FIG. 10, the content stream contains content associated with a particular channel (i.e., Channel 2 "CH. 2") of multiple channels associated with content publisher 1010. Furthermore, Channel 2 in this example is associated with a program (i.e., Program 6 "P6") during a time period Time 2 "T2". The various related channels, programs, and time periods of content publisher 1010 are depicted in Electronic Programming Guide "EPG" 1055.

[079] It should also be noted that, in accordance with the example broadcast scenario described above with respect to FIG. 10, the EPG 1055 and end user 1050 are both associated with a particular geographic region "Region A" (e.g., Ireland, Chicago, a specific zip code, etc.). The EPG 1055 may also include programming information (e.g., channels, programs, etc.) for other geographic regions as well.

[080] The content source 1005 may interact with the content publisher 1010 for various reasons, such as for play-out management and control. For example, the content publisher 1010 may inject a trigger signal(s) into the content stream for subsequent processing at the content delivery manager 1015.

[081] Note that content publisher 1010 and content source 1005 have the same or similar configurations, relationships, and functionalities as the content

publisher 905 and content source 910 previously described with respect to FIG. 9.

[082] During general operation, the content delivery manager 1015 receives the content stream via stream intake module 1020. The stream intake module 1020 processes the content stream and then, according to one example embodiment, sends the content stream to stream delivery module 1040. During its processing, the stream intake module 1020 is also capable of detecting and/or extracting trigger signals embedded in the content stream. For example, in one embodiment the trigger signal contains additional information (e.g., metadata) related to the type of content and/or trigger event (e.g., advertisement, black out, etc.) associated with the trigger signal.

[083] Having detected and/or extracted a trigger signal within the content stream, the stream intake module 1020 provides information related to the detected trigger signal to trigger processing logic 1025. For example, as shown in the embodiment of FIG. 10, the stream intake module 1020 indicates to the trigger processing logic 1025 that a detected trigger signal is associated with Channel 2 at time period T2.

[084] In one example embodiment, and with the trigger signal information provided by the stream intake module 1020, the trigger processing logic 1025 interacts with EPG 1055 (e.g., across a network such as the Internet) to determine whether the content stream should be modified. As shown in the example embodiment of FIG. 10, for Channel 2 at time period T2, program P6 should be "blacked out" for Region A. When a given program is to be "blacked out" for a given region and time period, that program is not authorized to be broadcasted to users in the given region for the given time period (e.g., for contractual reasons associated with the content publisher 1010). For example, a national broadcaster or content publisher may have a particular sporting event blacked out for a given time and/or region if the same sporting event is to be broadcasted by a local broadcaster or station. Thus, returning to the example

scenario of FIG. 10, the EPG 1055 indicates to the content delivery manager 1015 via trigger processing logic 1025 that program P6 should be blacked out for time period T2 in Region A. The EPG 1055 can further indicate to the content delivery manager 1015 that program P6 on Channel 2 should also be blacked out during time period T3 in Region A.

[085] Note that trigger processing logic 1025 can use proximity data (e.g., an IP address) associated with the end user 1050 to determine which region to query within EPG 1055 (as depicted by arrow 1037).

[086] Assume that in another example embodiment the EPG 1055 indicates that program P6 does not need to be blacked out during time period T2 in Region A. In this example, the trigger processing logic 1025 can determine that the trigger signal detected in the content stream indicates a modification to the content stream, such as a commercial break. As such, the trigger processing logic 1025 would initiate a process to modify the content stream by inserting an advertisement or commercial into the content stream for delivery to end users. As will be described in more detail below, insertion of a commercial or advertisement may be targeted to end users in a particular geographic region (e.g., Region A).

[087] Having determined that the content stream should be blacked out and/or a commercial or advertisement should be inserted, the trigger processing logic 1025 passes this information along to stream packaging module 1030. Stream packaging module 1030 prepares and configures modifications to content streams in accordance with instructions from the trigger processing logic 1025.

[088] For example, if the trigger processing logic 1025 instructs the stream packaging module 1030 that the corresponding content stream currently being processed by the content delivery manager 1015 should be blacked out, the stream packaging module 1030 can instruct the stream delivery module 1040 to terminate delivery of the content stream to end users that are subject to the black out restrictions. Alternatively, the stream packaging module 1030 can

provide alternative content (e.g., commercials, advertisements, pre-configured black out programs or static messages, etc.) to stream to end users in lieu of the blacked out content stream.

[089] If the trigger processing logic 1025 indicates to the stream packaging module 1030 that the content stream should be modified by inserting a commercial or advertisement, the stream packaging module 1030 would perform various steps to determine which commercials or advertisement should be inserted into the content stream. For example, in one embodiment the stream packaging module 1030 inserts pre-configured commercials and/or advertisements into the content stream that have been provided by the content publisher or other entities potentially associated with monetizing content delivery to end users.

[090] In another example embodiment, the stream packaging module 1030 queries an advertisement server 1060 (e.g., across a network such as the Internet) to determine which commercials or advertisements should be inserted into the content stream. In this manner, the stream packaging module 1030 can provide information that is specific to the user (i.e., user data 1035) to the advertisement server 1060. Information specific to a user can include, for example, geographical data, prior viewing history such as which types/categories of content a user has previously requested for viewing, information personal to the user such as age, sex, and the like, as well as other attributes suitable for selecting commercials and/or advertisements for a targeted advertising campaign. Assume for the example embodiment of FIG. 10 that the user data 1035 contains proximity parameters (e.g., IP address) that indicate a geographic region in which the end user 1050 is located (i.e., Region A). With the user data 1035, the advertisement server 1060 provides the content delivery manager 1015 with a commercial and/or advertisement targeted to end user's 1055 geographic region (i.e., Region A). As such, the targeted commercial and/or advertisement would be inserted into the content stream at stream delivery module 1040 for delivery to end user 1055 via content delivery network 1045.

[091] FIG. 11 is a schematic diagram of a computer system 1100 upon which embodiments of the present invention may be carried out and implemented. For example, one or more computing devices 1100 may be used to manage and/or administer the streaming of content across one or more networks (e.g., the Internet, content delivery networks (CDNs), and the like).

[092] According to the present example, the computer system 1100 includes a bus 1101 (i.e., interconnect), at least one processor 1102, at least one communications port 1103, a main memory 1104, a removable storage media 1105, a read-only memory 1106, and a mass storage 1107. Processor(s) 1102 can be any known processor, such as, but not limited to, an Intel® Itanium® or Itanium 2® processor(s), AMD® Opteron® or Athlon MP® processor(s), or Motorola® lines of processors. Communications ports 1103 can be any of an RS-232 port for use with a modem based dial-up connection, a 10/100 Ethernet port, a Gigabit port using copper or fiber, or a USB port. Communications port(s) 1103 may be chosen depending on a network such as a Local Area Network (LAN), a Wide Area Network (WAN), or any network to which the computer system 1100 connects (e.g., content delivery network 950 and/or 1045). The computer system 1100 may be in communication with peripheral devices (e.g., display screen 130, input device 116) via Input/Output (I/O) port 1109.

[093] Main memory 1104 can be Random Access Memory (RAM), or any other dynamic storage device(s) commonly known in the art. Read-only memory 1106 can be any static storage device(s) such as Programmable Read-Only Memory (PROM) chips for storing static information such as instructions for processor 1102. Mass storage 1107 can be used to store information and instructions. For example, hard disks such as the Adaptec® family of Small Computer Serial Interface (SCSI) drives, an optical disc, an array of disks such as Redundant Array of Independent Disks (RAID), such as the Adaptec® family of RAID drives, or any other mass storage devices may be used.

[094] Bus 101 communicatively couples processor(s) 1102 with the other memory, storage and communications blocks. Bus 1101 can be a PCI / PCI-X, SCSI, or Universal Serial Bus (USB) based system bus (or other) depending on the storage devices used. Removable storage media 1105 can be any kind of external hard-drives, floppy drives, IOMEGA® Zip Drives, Compact Disc – Read Only Memory (CD-ROM), Compact Disc – Re-Writable (CD-RW), Digital Video Disk – Read Only Memory (DVD-ROM), etc.

[095] Embodiments herein may be provided as a computer program product, which may include a machine-readable medium having stored thereon instructions, which may be used to program a computer (or other electronic devices) to perform a process. The machine-readable medium may include, but is not limited to, floppy diskettes, optical discs, CD-ROMs, magneto-optical disks, ROMs, RAMs, erasable programmable read-only memories (EPROMs), electrically erasable programmable read-only memories (EEPROMs), magnetic or optical cards, flash memory, or other type of media/machine-readable medium suitable for storing electronic instructions. Moreover, embodiments herein may also be downloaded as a computer program product, wherein the program may be transferred from a remote computer to a requesting computer by way of data signals embodied in a carrier wave or other propagation medium via a communication link (e.g., modem or network connection).

[096] As shown, main memory 1104 is encoded with content delivery manager application 1150-1 that supports functionality as discussed above and as discussed further below. Content delivery manager application 1150-1 (and/or other resources as described herein) can be embodied as software code such as data and/or logic instructions (e.g., code stored in the memory or on another computer readable medium such as a disk) that supports processing functionality according to different embodiments described herein. During operation of one embodiment, processor(s) 1102 accesses main memory 1104 via the use of bus 1101 in order to launch, run, execute, interpret or otherwise perform the logic instructions of the content delivery manager application 1150-1.

Execution of content delivery manager application 1150-1 produces processing functionality in content delivery manager process 1150-2. In other words, the content delivery manager process 1150-2 represents one or more portions of the content delivery manager application 1150-1 performing within or upon the processor(s) 102 in the computer system 1100.

[097] It should be noted that, in addition to the content delivery manager process 1150-2 that carries out method operations as discussed herein, other embodiments herein include the content delivery manager application 1150-1 itself (i.e., the un-executed or non-performing logic instructions and/or data). The content delivery manager application 1150-1 may be stored on a computer readable medium (e.g., a repository) such as a floppy disk, hard disk or in an optical medium. According to other embodiments, the content delivery manager application 1150-1 can also be stored in a memory type system such as in firmware, read only memory (ROM), or, as in this example, as executable code within the main memory 1104 (e.g., within Random Access Memory or RAM). For example, content delivery manager application 1150-1 may also be stored in removable storage media 1105, read-only memory 1106, and/or mass storage device 1107.

[098] In addition to these embodiments, it should also be noted that other embodiments herein include the execution of the content delivery manager application 1150-1 in processor(s) 1102 as the content delivery manager process 1150-2. Thus, those skilled in the art will understand that the computer system 1100 can include other processes and/or software and hardware components, such as an operating system that controls allocation and use of hardware resources.

[099] It should be noted that the content delivery manager 935 in FIG. 9, the content delivery manager 1015 in FIG. 10, and the content delivery manager 1150 (i.e., content delivery manager application 1150-1 and content delivery manager process 1150-2) in FIG. 11 each have the same or similar functionality,

capabilities, and features as described with regard to their respective figures and embodiments.

[0100] As discussed herein, embodiments of the present invention include various steps or operations. A variety of these steps may be performed by hardware components or may be embodied in machine-executable instructions, which may be used to cause a general-purpose or special-purpose processor programmed with the instructions to perform the operations. Alternatively, the steps may be performed by a combination of hardware, software, and/or firmware.

[0101] FIGS. 12-15 include flowcharts according to embodiments herein. The rectangular elements are herein denoted as "steps" and represent computer software instructions or groups of instructions that carry out such functions. The flow diagrams do not necessarily depict the syntax of any particular programming language. Rather, the flow diagrams illustrate the functional information one of ordinary skill in the art could use to fabricate circuits or to generate computer software (or a hybrid of both circuits and software code) to carry out the features as described herein.

[0102] It should be noted that many routine program elements, such as initialization of loops and variables and the use of temporary variables are inherent in the flowcharts. It will be appreciated by those of ordinary skill in the art that unless otherwise indicated herein, the particular sequence of steps described is illustrative only and can be varied without departing from the spirit of the invention. Thus, unless otherwise stated the steps described below are unordered meaning that, when possible, the steps can be performed in any convenient or desirable order.

[0103] Now, more specifically, FIG. 12 is a flow chart 1200 of processing steps that shows processing operations performed by the content delivery manager 1150 (i.e., content delivery manager application 1150-1 and/or the run-

time implementation of content delivery manager process 1150-2) in accordance with one example embodiment.

[0104] In step 1205, the content delivery manager 1150 receives a video stream from a content source for delivery to an end user (e.g., client) of a content publisher. For example, the end user can subscribe to the content publisher to receive video content. In other words, the end user can log onto a content publisher's website (if the end user is a subscriber of the content publisher) to receive a live video stream from the content publisher as delivered by the content delivery manager 1150, according to one example embodiment.

[0105] In step 1210, the content delivery manager 1150 detects a trigger signal within the video stream. The trigger signal can be indicative of a temporal mark injected into the video stream by the content publisher (e.g., the trigger signal indicates that a commercial and/or advertisement should be inserted into the content stream). The trigger can also be injected into the video stream by an entity associated with content publisher. For example, in one embodiment the trigger signal is generated relative to the content source by a human associated with the content publisher.

[0106] In step 1215, the content delivery manager 1150 processes the trigger signal to determine whether to modify delivery of the video stream to the end user.

[0107] In step 1220, the content delivery manager 1150 modifies, if necessary, the delivery of the video stream in accordance with the processing of the trigger signal. For example, the content delivery manager 1150 can modify the video stream to include a commercial and/or advertisement.

[0108] FIG. 13 is a flow chart 1300 of processing steps that shows processing operations performed by the content delivery manager 1150 in accordance with one example embodiment.

[0109] In step 1305, the content delivery manager 1150 processes the trigger signal to determine whether to modify the video stream prior to being delivered to the end user(s).

[0110] In step 1310, the content delivery manager 1150 queries a data repository having information related to a content programming schedule associated with the content publisher. In an example embodiment, the data repository includes an Electronic Programming Guide (EPG) configured to provide a schedule that identifies when various content provided by the content publisher will be available for reception by authorized end users of the content publisher.

[0111] In step 1315, the content delivery manager 1150 receives a response from the data repository that includes synchronization information for modifying, if necessary, the delivery of the video stream to the end user. Additionally, the synchronization information can include geo-filtering information and/or advertisement information. For example, the geo-filtering information can include regions (e.g., related to IP addresses) to which the video content should not be delivered (or regions that are not authorized to receive delivery of the video stream). As its name suggests, the synchronization information can inform the content delivery manager 1150 when and how to modify the video stream, especially if the video stream is being delivered to the end user(s) in real-time.

[0112] In step 1320, the content delivery manager 1150 modifies delivery of the video stream (e.g., inserts a commercial, blacks out the video stream, etc.).

[0113] In step 1325, and in response to querying the data repository, the content delivery manager 1150 discontinues the delivery of the video content based on programming data received from the data repository (e.g., due to black out restrictions).

[0114] In step 1330, the content delivery manager 1150 continues to receive the video stream from the content source. In one embodiment, the continued receipt of the video stream enables the content delivery manager 1150 to detect a second trigger signal that would be capable of reinitiating delivery of the video stream to the end user (e.g., the trigger signal indicates that a commercial or black out time period has ended).

[0115] According to another example embodiment, the content delivery manager 1150 extracts synchronization information from the trigger signal. In this manner, the synchronization information indicates a type of event associated with the video stream and can specify temporal information relative to the detection of the trigger signal. The type of event can include, for example, an advertisement event, a program initiation event, a program termination event, etc. When the trigger signal includes supplemental information (e.g., trigger event type, time codes, etc.), the trigger processing logic of the content delivery manager 1150 can be disencumbered with the additional processing necessary to determine whether to modify delivery of the video stream as previously described and, as a result, may not necessarily have to communicate with external data sources such as the electronic programming guide (EPG).

[0116] FIG. 14 is a flow chart 1400 of processing steps that shows processing operations performed by the content delivery manager 1150 in accordance with one example embodiment.

[0117] In step 1405, the content delivery manager 1150 processes the trigger signal to determine whether to modify, if necessary, delivery of the video stream.

[0118] In step 1410, the content delivery manager 1150 applies proximity parameters (e.g., IP addresses) associated with the end user to the trigger signal in order to determine whether to modify the delivery of the video stream to the end user.

[0119] In step 1415, the content delivery manager 1150 modifies delivery of the video stream.

[0120] In step 1420, the content delivery manager 1150 discontinues delivery of the video stream to the end user based on the application of the proximity parameters to the trigger signal. For example, the proximity parameters can indicate that the end user is not authorized to receive the video stream due to: i) a time relative to the detection of the trigger signal, and/or ii) a geographic location associated with the end user as indicated by the proximity parameters.

[0121] In step 1425, the content delivery manager 1150 processes the IP address to determine a geographic region associated with the network from where the end user receives video content.

[0122] FIG. 15 is a flow chart 1500 of processing steps that shows processing operations performed by the content delivery manager 1150 in accordance with one example embodiment.

[0123] In step 1505, the content delivery manager 1150 determines that an advertisement should be injected into the video stream.

[0124] In step 1510, the content delivery manager 1150 queries an advertisement server.

[0125] In step 1515, the content delivery manager 1150 receives a response from the advertisement server that identifies a plurality of candidate advertisements for injection into the video stream.

[0126] In step 1520, the content delivery manager 1150 selects, from the plurality of candidate advertisements, a candidate advertisement for injection into the video stream based on proximity parameters associated with the end user. In this manner, the proximity parameters can specify a geographic location of the end user to where video content is transmitted.

[0127] In step 1525, the content delivery manager 1150 modifies delivery of the video stream.

[0128] In step 1530, the content delivery manager 1150 injects the selected candidate advertisement into the video stream for delivery to the end user. In one example embodiment, the selected candidate advertisement is targeted for the geographic location of the end user.

[0129] According to yet another example embodiment, the content delivery manager 1150 selects an advertisement to inject into the video stream based on information extracted from the trigger signal. For example, the selected advertisement can be targeted to a geographic location associated with the end user. In turn, the content delivery manager 1150 injects the selected advertisement into the video stream for delivery to the end user.

[0130] In accordance with another embodiment, the content delivery manager 1150 receives a video stream from a content source for delivery to a end user of a content publisher. The content source is associated with the content publisher in this particular example. Furthermore, the end user has been pre-authorized to receive video content from the content publisher.

[0131] During operation, the content delivery manager 1150 detects a trigger signal within the video stream. In this example embodiment, the trigger signal is indicative of a temporal mark injected into the video stream by a human associated with the content publisher. In response to detecting the trigger signal, the content delivery manager 1150 queries an Electronic Programming Guide (EPG) to determine whether to modify the delivery of the video stream to the end user. For purposes of example, the EPG can be configured to provide a schedule that identifies when various content provided by the content publisher will be available for reception by authorized end users of the content publisher.

[0132] Accordingly, the content delivery manager 1150 receives a response from the EPG that includes advertisement information and/or geo-

filtering information. If necessary, the content delivery manager 1150 modifies delivery of the video stream to the end user in accordance with the advertisement information and/or the geo-filtering information.

System Operation: User Authentication

[0133] Similar to the content delivery configuration previously described with respect to FIGS. 1-15, the example embodiment shown in FIG. 16 provides a method and system for content delivery across streaming system 925. FIG. 16 further depicts methods and systems for authenticating end users for delivery of video content by using pre-configured authentication information provided by a content publisher. The pre-configured authentication information can include subscription databases used by content publishers for authenticating users for non-Internet based delivery of video content (e.g., traditional broadcasts including satellite television, cable television, and the like).

[0134] For example, an authentication manager can "dip" into a subscriber's or content publisher's database to determine whether a given end user is authorized to receive certain content from the content publisher or broadcaster. This so-called "dipping" provides a seamless means for authenticating Internet end users to receive video content associated with a content publisher such that the content publisher does not have to create a new subscriber database for Internet end users or modify its already-established subscriber databases for traditional television end users (e.g., satellite and cable subscriber databases).

[0135] In particular, FIG. 16 is a block diagram of a network environment 1600 including a content publisher 1605 and associated content source 1610, satellite/terrestrial broadcast system 1617, streaming system 1625 including encoder 1630 and authorization manager 1635, subscription database 1640, and content delivery network 1650 (including web server 1655 and streaming server 1657) in communication with end user 1660.

[0136] Note that content publisher 1605 and content source 1610 have the same or similar configurations, relationships, and functionalities as the content publisher 905 and content source 910 previously described with respect to FIG. 9.

[0137] It should also be noted that satellite/terrestrial broadcast system 1617 has the same or similar configurations, functionalities, and features as satellite/terrestrial broadcast system 920 previously discussed with respect to FIG. 9. Satellite/terrestrial broadcast system 1617 may also provide cable television distribution means for delivering video content to end users.

[0138] During general operation, the content source 1610 (e.g., via content publisher 1605) distributes a content stream 1620 (e.g., audio stream, video stream, etc.) into streaming system 1625 at the stream ingest. The content stream 1620 may be contain live content, such as a sporting event, for real-time (or near real-time) distribution to end users across streaming system 1625 and content delivery network 1650. Note that video streams 160 may also be stored and cached for on-demand type distribution.

[0139] Similar to the encoder 930 described with respect to FIG. 9, encoder 1630 provides real-time encoding of the content stream 1620 and can include Real encoding, QT encoding, WM encoding, and the like (see FIG. 2). After being encoded at the encoder 1630, the video stream 1620 is transmitted within the streaming system 1625 to content delivery manager 1635. In one example configuration, the content stream 1620 is propagated downstream through the streaming system 1625 (and possibly the content delivery network 1650) using RTSP (Real Time Streaming Protocol). In such a configuration, the actual audio/video data contained in the content stream 1620 may be distributed downstream using RTP (Real-time Transport Protocol).

[0140] Referring still to the example embodiment of FIG. 16, the authorization manager receives the content stream 1620 for distribution to end user 1660. Prior to transmitting the content stream 1620 downstream to end

user 1660 (via content delivery network 1650), the authorization manager 1635 determines whether end user 1660 is authorized to receive the content stream 1620.

[0141] Note that the authorization manager 1635 supports functionality for both streaming and authentication/authorization services, as shown in the example embodiment of FIG. 16. However, the authorization manager 1635 does not necessarily have to provide streaming services and, as such, may only provide authentication/authorization services. For example, upon authenticating/authorization by authorization manager 1635, the encoder 1630 may bypass the authorization manager 1635 and transmit the content stream 1620 to content delivery network 1650 for delivery to end user 1660, as shown by the perforated arrow 1632. The content stream 1620 may also pass through another entity (e.g., content delivery manager 935, 1015, and/or 1150) suitable for managing and administering delivery of video content in streaming system 1625.

[0142] To authorize/authenticate end user 1660 for delivery of content stream 1620, the authorization manager 1635 first receives an authorization request 1665 from end user 1660. For example, in one embodiment the authorization manager 1635 receives the authorization request 1665 from end user 1660 via web server 1655 of content delivery network 1650. In another embodiment, the end user 1660 sends an authorization request 1667 (as shown by the perforated arrow) directly to authorization manager 1635.

[0143] Note that, similar to the example embodiment of FIG. 9, web server 1655 provides front-end interaction with end user 1660 by serving web pages, initiating registration / logon services, providing e-commerce and transactional payment capabilities, and the like. In particular, web server 1655 provides authorization/authentication services in its interaction with authorization manager 1635 in accordance with the example embodiment of FIG. 16.

[0144] As its name suggests, streaming server 1655 typically provides back-end streaming services by delivering, for example, the content stream 1620 as provided by either authorization manager 1635 and/or encoder 1630. Note that the vertical ellipses in content delivery network 1650 indicate that there can be multiple web and/or streaming servers associated with content delivery network 1650.

[0145] Having received the authorization request 1665 (or 1667) from end user 1660, the authorization manager 1635 communicates with ("dips" into) subscription database 1640 to determine whether end user 1660 is authorized to receive content stream 1620. As previously mentioned subscription database 1640 is associated with content publisher 1605 and provides subscription information related to various end users authorized to receive content from content publisher 1605. For example, subscription database 1640 may contain subscription information related to traditional satellite and/or cable television services provided by content publisher 1605. The authorization manager's 1635 interaction with subscription database 1640 is discussed in more detail below with respect to FIG. 17.

[0146] After verifying that the end user 1660 is authorized to receive the content stream 1620, the authorization manager 1635 initiates delivery of the content stream 1620 to end user 1660 via content delivery network 1650. The content stream 1620 can propagate downstream directly from encoder 1630 to content delivery network 1650, from encoder 1630 to authorization manager 1635 and then to content delivery network 1650, or from encoder 1630 to the content delivery network 1650 via another mechanism for managing delivery of content streams in streaming system 1625 (e.g., via content delivery manager 935, 1015, and/or 1150).

[0147] FIG. 17 is a block diagram of a network environment 1700 including a content publisher 1705 and associated content source 1710, authorization manager 1715, data repository 1720, subscription database 1725, and content

delivery network 1730 in communication with end user 1735. Authorization manager 1715 further includes data storage module 1740, verification module 1745, stream intake module 1750, and stream delivery module 1755.

[0148] Note that content publisher 1705 and content source 1710 have the same or similar configurations, relationships, and functionalities as the content publisher 905 and content source 910 previously described with respect to FIG. 9.

[0149] It should also be noted that the end user 1 1770 may communicate directly with the verification module 1730 of authorization manager 1715 or, alternatively, the end user 1 1770 may communicate with verification module 1730 via a web server (e.g., web server 1655) associated with content delivery network 1760.

[0150] During operation, the stream intake module 1720 of authorization manager 1715 receives a content stream (e.g., video stream) from content source 1710 and/or content publisher 1705. Upon receiving the content stream, the stream intake module 1720 checks with the verification module 1730 to determine whether end user 1 1770 is authorized to receive the content stream.

[0151] The stream intake module 1720 passes the content stream through to stream delivery module 1725 so that the content stream can be delivered (via content delivery network 1760) to end user 1 1770 upon authorization/authentication by verification module 1730. Note that the verification module 1730 may notify either the stream intake module 1720 and/or the stream delivery module 1725 of the authorization status of end user 1 1770. If, for example, the verification module 1730 notifies the stream intake module 1720 that end user 1 1770 is authorized to receive the content stream, the stream intake module 1720 passes the content stream to stream delivery module 1725 for unfettered content stream delivery to end user 1 1770 via content delivery network 1760.

[0152] In the example embodiment of FIG. 17, the authorization manager 1715 authorizes/authenticate end user 1 1770 (via verification module 1730) prior to receiving the content stream from content source 1710 (and/or content publisher 1705) so that the stream delivery module 1725 may deliver the content stream to end user 1 1770 with further authorization processing by verification module 1730. According to another example embodiment, the end user 1 1770 may be verified on-the-fly as the content stream is received by the authorization manager 1715 such that the content stream is received by the stream intake module 1720 prior to end user authorization.

[0153] It should be noted that, in the example embodiment of FIG. 17, the authorization manager 1715 is shown with a stream intake module 1720 and stream delivery module 1725. According to additional embodiments, the authorization manager 1715 does not include such streaming capabilities and would not process the actual content stream as provided by the content source 1710 and/or content publisher 1705. Instead, the authorization manager 1715 would provide authentication/authorization services and then, upon verification, the authorization manager 1715 would initiate delivery of the content stream to end user 1 1770 via another entity, such as content delivery manager 935, 1015, and/or 1150.

[0154] The verification module 1730 can initiate authorization of end user 1 1770 by either receiving a request for authorization 1772 from end user 1 1770, or by proactively soliciting a request for authorization 1774 (or soliciting information necessary to authorize end user 1 1770) if, for example, the content stream has already arrived at the authorization manager 1715.

[0155] According to an example embodiment, the verification module 1730 can first determine whether the end user 1 1770 is authorized to receive delivery of the content stream by querying local end user repository 1740 (via data storage module 1735). End user data repository 1740 is populated with subscription data for end users associated with authorization manager 1715. In

this manner, the end user data repository 1740 is progressively updated with subscription data each time the verification module 1730 receives information from subscription database 1750.

[0156] For purposes of example only, the end user data repository 1740 stores both session information and proximity parameters related to each end user associated with authorization manager 1715. Note that the end user data repository 1740 may store different parameters and/or information related to each end user in addition to, or in lieu of the parameters and information shown in the example embodiment of FIG. 17.

[0157] The session information indicates that, for each applicable end user (end user 1, end user 2, end user 5, ... end user *M*), the authorization manager 1715 initiated delivery of a content stream (CS_1, CS_2, CS_4, ... CS_Y) at a respective time (T_1, T_3, T_7, ... T_X). Delivery of a specific content stream at a respective time represents a "session."

[0158] Still referring to the end user data repository 1740, the proximity parameters column indicates an Internet Protocol "IP" address associated with each applicable end user (e.g., end user 1 = IP_1, end user 2 = IP_2, end user 5 = IP_5, ... end user M = IP_M). The proximity parameters may be used in furtherance of authenticating/authorizing an end user for purposes of geo-filtering / geo-blocking.

[0159] For example, assume that the end user data repository 1740 indicates that end user 1 1770 is already receiving content stream as part of an earlier-initiated session for that particular content stream. In one embodiment, the authorization manager 1715 can deny access to the end user 1 1770 since the end user had already requested delivery of that particular content stream as evidenced by the session information. By denying access in this manner, the authorization manager 1715 can prevent unscrupulous users (e.g., hackers, spoofers, etc.) from trying to gain unauthorized access to content streams.

[0160] Continuing with the same example, the authorization manager 1715 can alternatively grant the request by the end user 1 1770 to receive delivery of the content stream. In this manner, the authorization manager 1715 would terminate the earlier-initiated session and initiate a new session with end user 1 1770 for delivery of the content stream in accordance with the second request. By terminating the first session and initiating the second session, the authorization manager 1715 trusts that the second request is authentic (e.g., was actually sent by end user 1 1770) and that the first session with end user 1 1770 may have been prematurely disconnected or fallen victim to any number of network anomalies.

[0161] In response to receiving the request for authorization 1772, and now assuming that the end user data repository 1740 does not have information (an entry) related to end user 1 1770, the verification module 1730 queries subscription database 1750 to determine whether end user 1 1770 is authorized to receive delivery of the content stream. As shown, the subscription database contains a table of authorized subscribers (end user 1, end user 4, end user 9, ... end user *N*). Since end user 1 is listed as an authorized subscriber in subscription database 1750, the subscription database would indicate to verification module 1730 that end user 1 1770 is in fact authorized to receive delivery of the content stream.

[0162] Note that the subscription database 1750 associated with content publisher 1705 may only contain subscription information related to non-Internet services such as satellite television services, cable television services, and the like. As such, and in accordance with embodiments herein, the subscription database 1750 is capable of authorizing end user for web-based delivery of content such that the content publisher 1705 does not have to create (or modify existing) subscription database specific to Internet, or web-based services.

[0163] FIG. 18 is a schematic diagram of a computer system 1800 upon which embodiments of the present invention may be carried out and

implemented. For example, one or more computing devices 1800 may be used to manage and/or administer the streaming of content across one or more networks (e.g., the Internet, content delivery networks (CDNs), and the like).

[0164] According to the present example, the computer system 1800 includes a bus 1801 (i.e., interconnect), at least one processor 1802, at least one communications port 1803, a main memory 1804, a removable storage media 1805, a read-only memory 1806, and a mass storage 1807. Processor(s) 1802 can be any known processor, such as, but not limited to, an Intel® Itanium® or Itanium 2® processor(s), AMD® Opteron® or Athlon MP® processor(s), or Motorola® lines of processors. Communications ports 1803 can be any of an RS-232 port for use with a modem based dial-up connection, a 10/100 Ethernet port, a Gigabit port using copper or fiber, or a USB port. Communications port(s) 1803 may be chosen depending on a network such as a Local Area Network (LAN), a Wide Area Network (WAN), or any network to which the computer system 100 connects (e.g., content delivery network 950, 1045, 1650, and/or 1760). The computer system 1800 may be in communication with peripheral devices (e.g., display screen 1830, input device 1816) via Input/Output (I/O) port 1809.

[0165] Main memory 1804 can be Random Access Memory (RAM), or any other dynamic storage device(s) commonly known in the art. Read-only memory 1806 can be any static storage device(s) such as Programmable Read-Only Memory (PROM) chips for storing static information such as instructions for processor 1802. Mass storage 1807 can be used to store information and instructions. For example, hard disks such as the Adaptec® family of Small Computer Serial Interface (SCSI) drives, an optical disc, an array of disks such as Redundant Array of Independent Disks (RAID), such as the Adaptec® family of RAID drives, or any other mass storage devices may be used.

[0166] Bus 101 communicatively couples processor(s) 1802 with the other memory, storage and communications blocks. Bus 1801 can be a PCI / PCI-X, SCSI, or Universal Serial Bus (USB) based system bus (or other) depending on

the storage devices used. Removable storage media 1805 can be any kind of external hard-drives, floppy drives, IOMEGA® Zip Drives, Compact Disc – Read Only Memory (CD-ROM), Compact Disc – Re-Writable (CD-RW), Digital Video Disk – Read Only Memory (DVD-ROM), etc.

[0167] Embodiments herein may be provided as a computer program product, which may include a machine-readable medium having stored thereon instructions, which may be used to program a computer (or other electronic devices) to perform a process. The machine-readable medium may include, but is not limited to, floppy diskettes, optical discs, CD-ROMs, magneto-optical disks, ROMs, RAMs, erasable programmable read-only memories (EPROMs), electrically erasable programmable read-only memories (EEPROMs), magnetic or optical cards, flash memory, or other type of media/machine-readable medium suitable for storing electronic instructions. Moreover, embodiments herein may also be downloaded as a computer program product, wherein the program may be transferred from a remote computer to a requesting computer by way of data signals embodied in a carrier wave or other propagation medium via a communication link (e.g., modem or network connection).

[0168] As shown, main memory 1804 is encoded with authorization manager application 1850-1 that supports functionality as discussed above and as discussed further below. Authorization manager application 1850-1 (and/or other resources as described herein) can be embodied as software code such as data and/or logic instructions (e.g., code stored in the memory or on another computer readable medium such as a disk) that supports processing functionality according to different embodiments described herein. During operation of one embodiment, processor(s) 1802 accesses main memory 1804 via the use of bus 1801 in order to launch, run, execute, interpret or otherwise perform the logic instructions of the authorization manager application 1850-1. Execution of authorization manager application 1850-1 produces processing functionality in authorization manager process 1850-2. In other words, the authorization manager process 1850-2 represents one or more portions of the authorization

manager application 1850-1 performing within or upon the processor(s) 1802 in the computer system 1800.

[0169] It should be noted that, in addition to the authorization manager process 1850-2 that carries out method operations as discussed herein, other embodiments herein include the authorization manager application 1850-1 itself (i.e., the un-executed or non-performing logic instructions and/or data). The authorization manager application 1850-1 may be stored on a computer readable medium (e.g., a repository) such as a floppy disk, hard disk or in an optical medium. According to other embodiments, the authorization manager application 1850-1 can also be stored in a memory type system such as in firmware, read only memory (ROM), or, as in this example, as executable code within the main memory 1804 (e.g., within Random Access Memory or RAM). For example, authorization manager application 1850-1 may also be stored in removable storage media 1805, read-only memory 1806, and/or mass storage device 1807.

[0170] In addition to these embodiments, it should also be noted that other embodiments herein include the execution of the authorization manager application 1850-1 in processor(s) 1802 as the authorization manager process 1850-2. Thus, those skilled in the art will understand that the computer system 1800 can include other processes and/or software and hardware components, such as an operating system that controls allocation and use of hardware resources.

[0171] It should be noted that the authorization manager 1635 in FIG. 16, the authorization manager 1715 in FIG. 17, and the authorization manager 1850 (i.e., authorization manager application 1850-1 and authorization manager process 1850-2) in FIG. 18 each have the same or similar functionality, capabilities, and features as described with regard to their respective figures and embodiments.

[0172] As discussed herein, embodiments of the present invention include various steps or operations. A variety of these steps may be performed by hardware components or may be embodied in machine-executable instructions, which may be used to cause a general-purpose or special-purpose processor programmed with the instructions to perform the operations. Alternatively, the steps may be performed by a combination of hardware, software, and/or firmware.

[0173] FIGS. 19-22 include flowcharts according to embodiments herein. The rectangular elements are herein denoted as "steps" and represent computer software instructions or groups of instructions that carry out such functions. The flow diagrams do not necessarily depict the syntax of any particular programming language. Rather, the flow diagrams illustrate the functional information one of ordinary skill in the art could use to fabricate circuits or to generate computer software (or a hybrid of both circuits and software code) to carry out the features as described herein.

[0174] It should be noted that many routine program elements, such as initialization of loops and variables and the use of temporary variables are inherent in the flowcharts. It will be appreciated by those of ordinary skill in the art that unless otherwise indicated herein, the particular sequence of steps described is illustrative only and can be varied without departing from the spirit of the invention. Thus, unless otherwise stated the steps described below are unordered meaning that, when possible, the steps can be performed in any convenient or desirable order.

[0175] Now, more specifically, FIG. 19 is a flow chart 1900 of processing steps that shows processing operations performed by the authorization manager 1850 (i.e., authorization manager application 1850-1 and/or the run-time implementation of authorization manager process 1850-2) in accordance with one example embodiment.

[0176] In step 1905, the authorization manager 1850 receives a request from the end user for delivery of the video stream to the end user across a network. For example, the request received from the user may be in response to a solicitation or request for authorization information previously sent to the end user.

[0177] In step 1910, the authorization manager 1850 queries a subscription database associated with the content publisher. For example, the subscription database may include subscription information related to traditional satellite television services, cable television services, and the like.

[0178] In step 1915, the authorization manager 1850 processes a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream.

[0179] In step 1920, the authorization manager 1850 transmits a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database.

[0180] In step 1925, the authorization manager 1850 initiates delivery of the video stream to the end user based on the processing of the reply from the subscription database. The reply from the subscription database can indicate that the end user is authorized to receive delivery of the video stream. For instance, the end user may be authorized to receive delivery of the web-based video stream since the end user is already authorized to receive satellite and/or cable television services.

[0181] FIG. 20 is a flow chart 2000 of processing steps that shows processing operations performed by the authorization manager 1850 in accordance with one example embodiment.

[0182] In step 2005, the authorization manager 1850 receives a request from the end user.

[0183] In step 2010, the authorization manager 1850 receives metadata from the end user (e.g., token, cookie, etc.). For example, the end user may have received the token and/or cookie from a third party authorization service associated with the content publisher. In this manner, the authorization manager 1850 does not necessarily have to query a subscription database to determine whether the end user is authorized to receive delivery of the video stream.

[0184] In step 2015, the authorization manager 1850 processes the metadata (e.g., cookie and/or token) to identify a content publisher associated with the end user.

[0185] In step 2020, the authorization manager 1850 determines whether the content publisher associated with the video stream is the same as the content publisher associated with the end user. For example, if it is determined from the metadata (e.g., token and/or cookie) that the end user is already authorized to receive delivery of content from the content publisher associated with the video stream, then the authorization manager 1850 initiates delivery of the content stream to the end user.

[0186] FIG. 21 is a flow chart 2100 of processing steps that shows processing operations performed by the authorization manager 1850 in accordance with one example embodiment.

[0187] In step 2105, the authorization manager 1850 receives a request from the end user for delivery of the video stream to the end user across a network.

[0188] In step 2110, the authorization manager 1850 processes proximity parameters associated with the end user. For example, the proximity parameters can specify a geographic location of the end user to where video content is transmitted.

[0189] In step 2115, the authorization manager 1850 determines that the end user is not authorized to receive the video stream. Such a determination can

be based on the processing of the proximity parameters (e.g., as part of a geo-filtering and/or geo-blocking regime).

[0190] In step 2120, and given a relative time associated with the receipt of the request from the end user, the authorization manager 1850 determines whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

[0191] In step 2125, the authorization manager 1850 restricts delivery of the video stream to the end user.

[0192] In step 2130, the authorization manager 1850 restricts delivery of the video stream to the end user in accordance with black out rules associated with the content publisher. In this manner, the black out rules have associated time restrictions and geographic restrictions prescribed by the content publisher for the end user.

[0193] In step 2135, the authorization manager 1850 restricts delivery of the video stream to the end user in accordance with subscription parameters of the content publisher for a group of end users. For example, the subscription parameters can include a time restriction and/or a geographic restriction. Additionally, in this embodiment the end user is a member of the group of end users to which the subscription parameters apply.

[0194] In step 2140, the authorization manager 1850 terminates the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

[0195] FIG. 22 is a flow chart 2200 of processing steps that shows processing operations performed by the authorization manager 1850 in accordance with one example embodiment.

[0196] In step 2205, the authorization manager 1850 processes the reply from the subscription database to detect whether the end user is a subscriber of the content publisher.

[0197] In step 2210, the authorization manager 1850 stores an entry in a subscriber verification table to indicate that the end user is an authorized subscriber of the content publisher. For instance, in one embodiment, the authorization manager 1850 analyzes a token and/or a cookie associated with the second request received from the second end user.

[0198] According to another embodiment, the authorization manager 1850 detects that the end user is not a subscriber of the content publisher. In such a scenario, the authorization manager 1850 stories an entry in the subscriber verification table to indicate that the end user is not an authorized subscriber of the content publisher. The authorization manager 1850 can also transmit a notification to the end user to indicate that the end user is not authorized to receive delivery of the video stream. As such, the authorization manager 1850 would specify in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

[0199] In step 2215, the authorization manager 1850 receives a second request from a second end user for delivery of the video stream to the second end user.

[0200] In step 2220, the authorization manager 1850 processes the second request to determine that the second end user is authorized to receive delivery of the video stream.

[0201] In step 2225, the authorization manager 1850 determines that the second end user is the same as the end user. Such a determination is made so as to prevent unauthorized access to video streams by the unscrupulous users (e.g., hackers, spoofers, etc.).

[0202] In step 2230, and in response to querying the subscriber verification table, the authorization manager 1850 determines that the second end user is an authorized subscriber of the content publisher.

[0203] In step 2235, the authorization manager 1850 initiates delivery of the video stream to the second user. For example, the authorization manager 1850 may initiate delivery of the content stream to the end user via a content delivery network.

[0204] In step 2240, the authorization manager 1850 stores session information in the subscriber verification table. The session information is associated with the delivery of the video stream to the end user. Furthermore, the session information is stored in accordance with a relative time at which the request from the end user was received.

[0205] In accordance with another example embodiment, the authorization manager 1850 receives a request from the end user for delivery of the video stream to the end user across a network. In response, the authorization manager 1850 queries a subscription database associated with the content publisher and, then, processes a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream.

[0206] As an example, if the end user is determined to have authorization to receive delivery of the video stream, the authorization manager 1850 creates an entry in a subscriber verification table specifying that the end user is an authorized subscriber of the content publisher. The entry can specify, for example, session information associated with delivery of the video stream to the end user. Furthermore, the session information is stored in accordance with a relative time at which the request from the end user was received. Having determined that the end user is authorized, the authorization manager 1850 initiates delivery of the video stream to the end user.

[0207] Although the present invention has been described with reference to various embodiments, it will be understood that the invention is not limited to the details thereof. Various modifications and substitutions will occur to those of ordinary skill in the art. All such substitutions are intended to be embraced within the scope of the invention as defined in the appended claims.

Claims

What is claimed is:

1. A computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the content publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

performing at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream.

2. The computer-implemented method as in claim 1, wherein receiving a request from the end user comprises:

receiving metadata from the end user;

processing the metadata to identify a content publisher associated with the end user; and

determining whether the content publisher associated with the video stream is the same as the content publisher associated with the end user.

3. The computer-implemented method as in claim 3, wherein the metadata is at least one of a token and a cookie.

4. The computer-implemented method as in claim 1 further comprising:

processing proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted;

based on the processing of the proximity parameters, determining that the end user is not authorized to receive the video stream; and

restricting delivery of the video stream to the end user.

5. The computer-implemented method as in claim 4, wherein determining that the end user is not authorized to receive the video stream comprises:

given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

6. The computer-implemented method of claim 4, wherein restricting delivery of the video stream to the end user is in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user.

7. The computer-implemented method of claim 4, wherein restricting delivery of the video stream to the end user is in accordance with subscription parameters of the content publisher for a group of end users, the

subscription parameters including at least one of a time restriction and a geographic restriction, and wherein the end user is a member of the group of end users to which the subscription parameters apply.

8. The computer-implemented method as in claim 4, wherein restricting delivery of the video stream comprises:

terminating the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

9. The computer-implemented method as in claim 1, wherein processing the reply from the subscription database comprises detecting that the end user is not a subscriber of the content publisher, the method further comprising:

in a subscriber verification table, storing an entry indicating that the end user is not an authorized subscriber of the content publisher, and

wherein transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream comprises:

specifying in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

10. The computer-implemented method as in claim 1, wherein processing the reply from the subscription database comprises detecting that the end user is a subscriber of the content publisher, the method further comprising:

in a subscriber verification table, storing an entry indicating that the end user is an authorized subscriber of the content publisher.

11. The computer-implemented method of claim 10 further comprising:

receiving a second request from a second end user for delivery of the video stream to the second end user;

processing the second request to determine that the second end user is authorized to receive delivery of the video stream; and

initiating delivery of the video stream to the second user.

12. The computer-implemented method of claim 11, wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream comprises:

determining that the second end user is the same as the end user; and

in response to querying the subscriber verification table, determining that the second end user is an authorized subscriber of the content publisher.

13. The computer-implemented method of claim 11, wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream includes analyzing at least one of a token and a cookie, wherein the at least one of a token and a cookie is associated with the second request received from the second end user.

14. The computer-implemented method of claim 10 further comprising:

in the subscriber verification table, storing session information associated with the delivery of the video stream to the end user, wherein the session information is stored in accordance with a relative time at which the request from the end user was received.

15. A computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the client publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream;

if the end user is determined to have authorization to receive delivery of the video stream, creating an entry in a subscriber verification table specifying that the end user is an authorized subscriber of the content publisher, wherein the entry further specifies session information associated with delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received; and

initiating delivery of the video stream to the end user.

16. A system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the system comprising:

a network;

a subscription database accessible via the network;

a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network;

wherein the content server is configured to query the subscription database associated with the content publisher;

wherein the content server is further configured to process a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

wherein the content server is configured to perform at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream

based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream.

17. The system as in claim 16 further comprising:

proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted;

wherein the content server is configured to process the proximity parameters to determine whether the end user is authorized to receive the video stream; and

wherein a determination that the end user is not authorized to receive the video stream comprises:

given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

18. The system as in claim 17 further comprising:

wherein the content server is configured to restrict delivery of the video stream to the end user in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user; and

based on the black out rules, the content server is further configured to terminate the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

19. The system as in claim 16 further comprising:

a subscriber verification table;

if the end user is determined to be an authorized subscriber of the content publisher, the content server is configured to store an entry in the subscriber verification table indicating that the end user is an authorized subscriber of the content publisher, wherein the entry further includes session information associated with the delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received.

20. The system as in claim 16 further comprising:

a subscriber verification table;

if the end user is determined not to be an authorized subscriber of the content publisher, the content server is configured to store an entry in the subscriber verification table indicating that the end user is not an authorized subscriber of the content publisher, and

wherein the content server is configured to specify in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

ABSTRACT

[0208] Embodiments generally disclosed herein include computer-implemented methods for delivery of video content across a network. Such methods comprise a content delivery manager capable of receiving a video stream from a content source for delivery to a end user of a content publisher. The content delivery manager is further capable of detecting a trigger signal within the video stream. For example, the trigger signal can indicate a temporal mark injected into the video stream by the content publisher. During general operation, the content delivery manager processes the trigger signal to determine whether to modify delivery of the video stream to the end user. According to another general embodiment, a computer-implemented method is provided for authorizing delivery of a video stream to an end user.

United States Patent Application

DECLARATION

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am a joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK,

The specification of which
a. ☒ is attached hereto
b. ☐ was filed on as application serial no. and was amended on (if applicable) (in the case of a PCT-filed application) described and claimed in international no. filed and as amended on (if any), which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

a. ☒ no such applications have been filed.
b. ☐ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
None			
ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
None			

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)
None		

I hereby claim the benefit under Title 35, United States Code § 119(c) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING
61/113,941	November 12, 2008

I acknowledge the duty to disclose information that is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (reprinted below):

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

(e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1	Full Name Of Inventor	Family Name Maloney	First Given Name Ian	Second Given Name
	Residence & Citizenship	City Dublin	State or Foreign Country	Country of Citizenship Ireland
	Mailing Address	Address 9 Willowfield, Park Avenue	City Dublin 4	State & Zip Code/Country Ireland
Signature of Inventor 1: Ian Maloney				Date: 16 October 2009

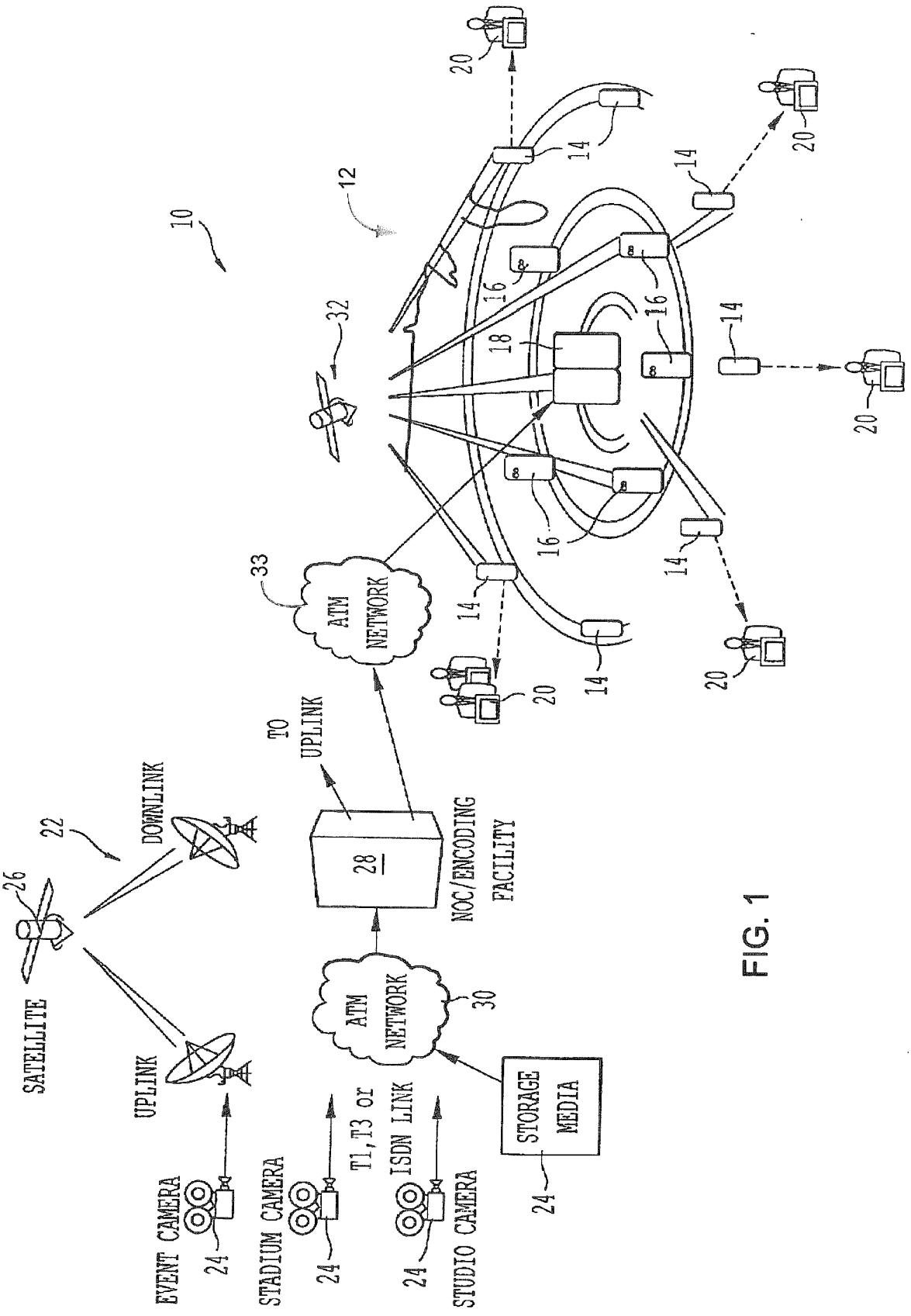

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28
30
32
33
ATM NETWORK
ATM NETWORK
NOC/ENCODING FACILITY
TO UPLINK
DOWNLINK
UPLINK
SATELLITE
EVENT CAMERA
STADIUM CAMERA
STUDIO CAMERA
T1, T3 or ISDN LINK
STORAGE MEDIA

FIG. 1

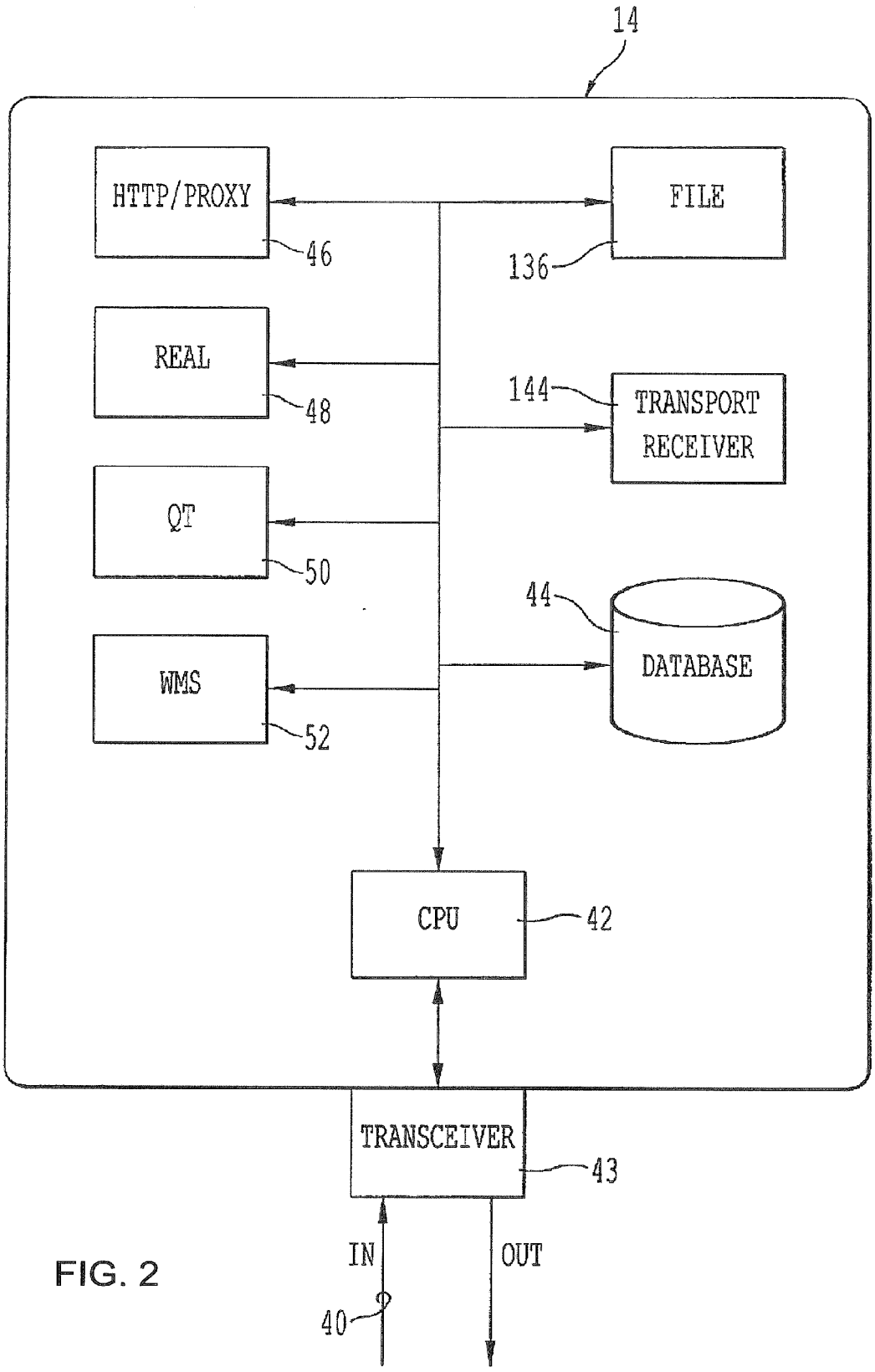

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HTTP/PROXY
46
FILE
136
REAL
48
144
TRANSPORT RECEIVER
QT
50
44
DATABASE
WMS
52
CPU
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TRANSCEIVER
43
IN
OUT
40

FIG. 2

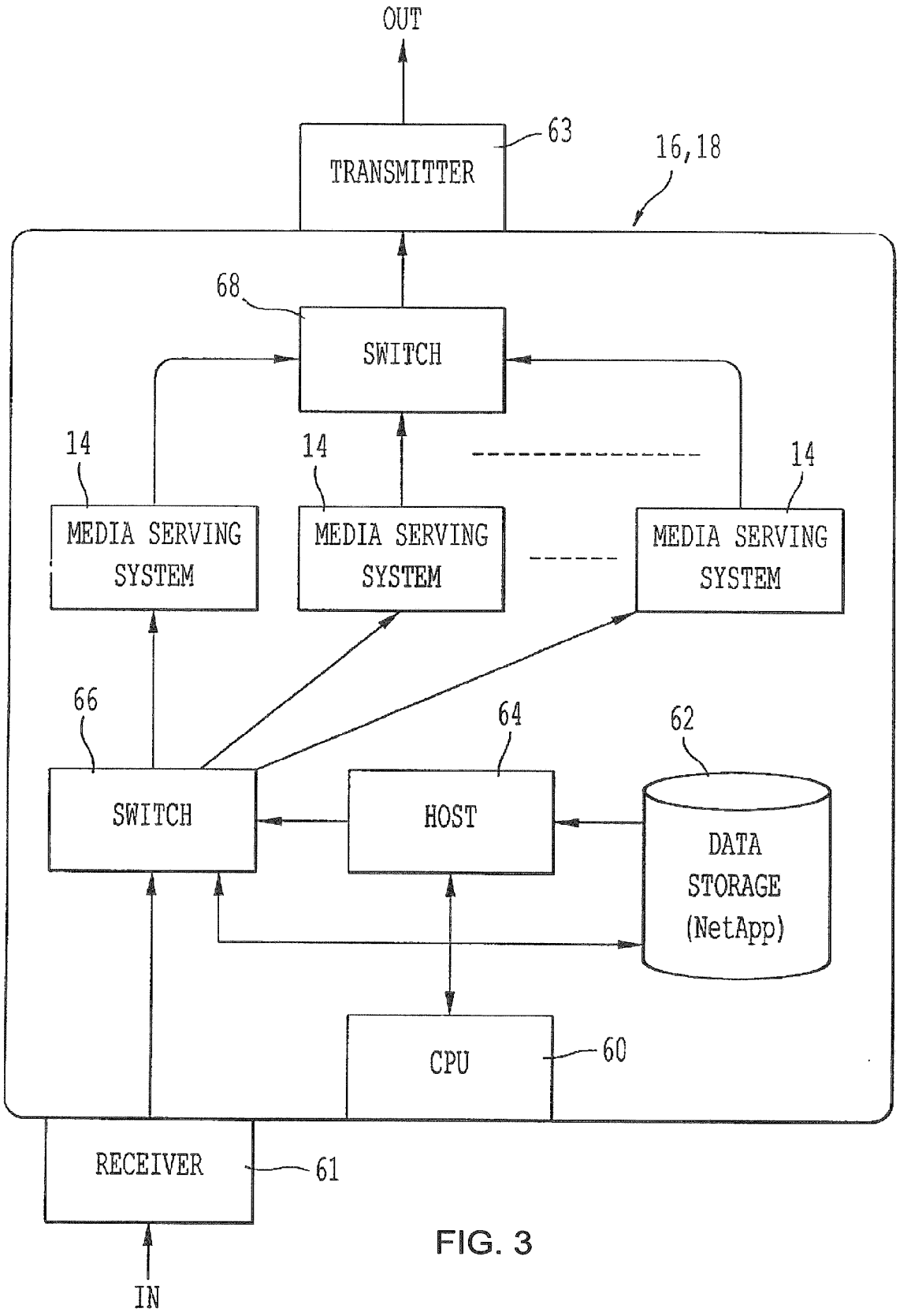

OUT
TRANSMITTER
63
16,18
68
SWITCH
14
14
14
MEDIA SERVING SYSTEM
MEDIA SERVING SYSTEM
MEDIA SERVING SYSTEM
66
64
62
SWITCH
HOST
DATA STORAGE (NetApp)
CPU
60
RECEIVER
61
IN

FIG. 3

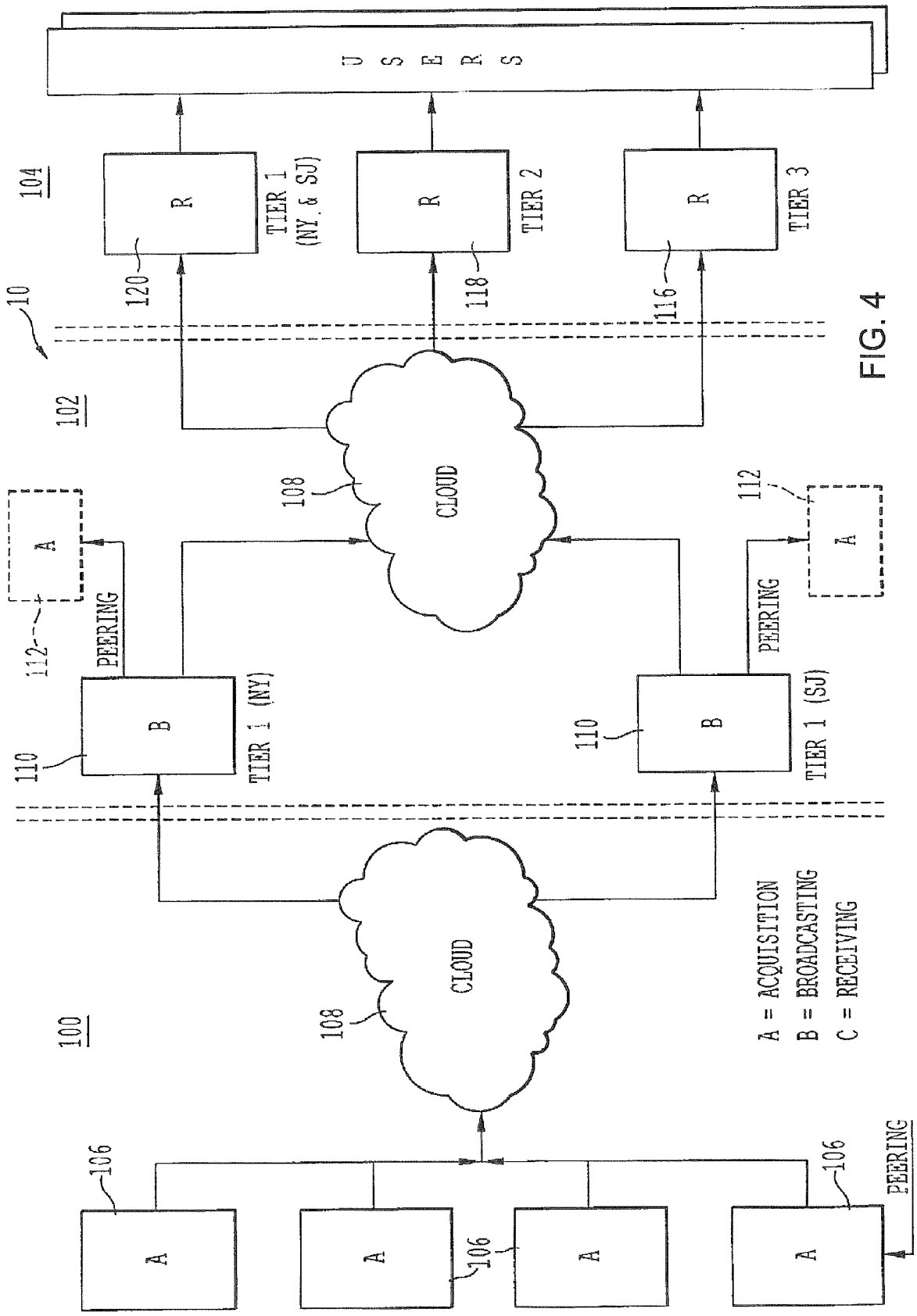

U S E R S
104
R
TIER 1 (NY. & SJ)
R
TIER 2
R
TIER 3
120
118
116
10
102
CLOUD
108
A
112
PEERING
B
TIER 1 (NY)
110
A
112
PEERING
B
TIER 1 (SJ)
110
CLOUD
108
100
A = ACQUISITION
B = BROADCASTING
C = RECEIVING
106
A
A
106
A
A
106
PEERING

FIG. 4

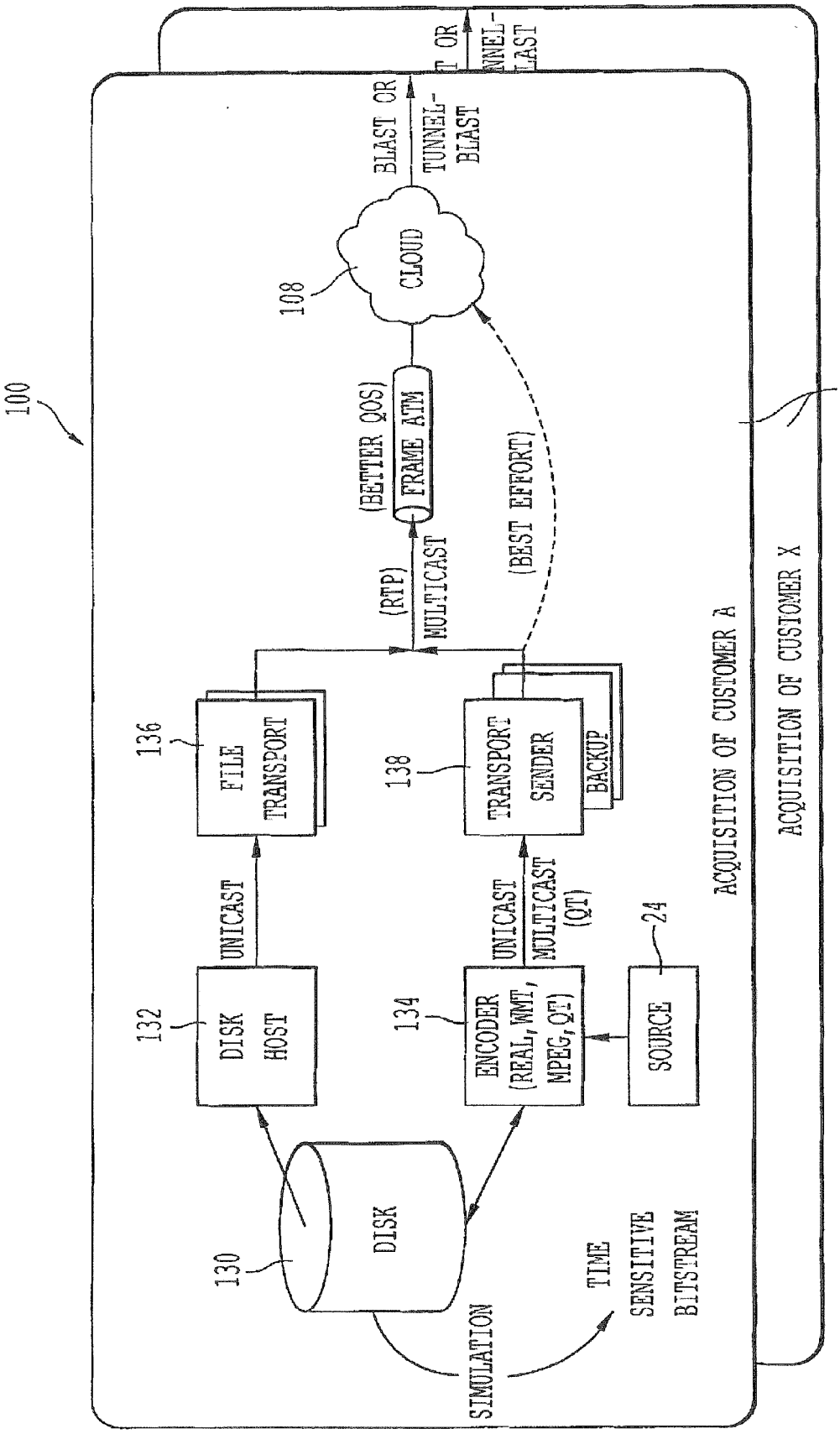

100
106
108
CLOUD
BLAST OR TUNNEL-BLAST
T OR NNEL-LAST
(BETTER QOS)
FRAME ATM
(RTP) MULTICAST
(BEST EFFORT)
136
FILE TRANSPORT
138
TRANSPORT SENDER
BACKUP
UNICAST
UNICAST MULTICAST (QT)
132
DISK HOST
134
ENCODER (REAL, WMT, MPEG, QT)
24
SOURCE
130
DISK
SIMULATION
TIME SENSITIVE BITSTREAM
ACQUISITION OF CUSTOMER A
ACQUISITION OF CUSTOMER X

FIG. 5

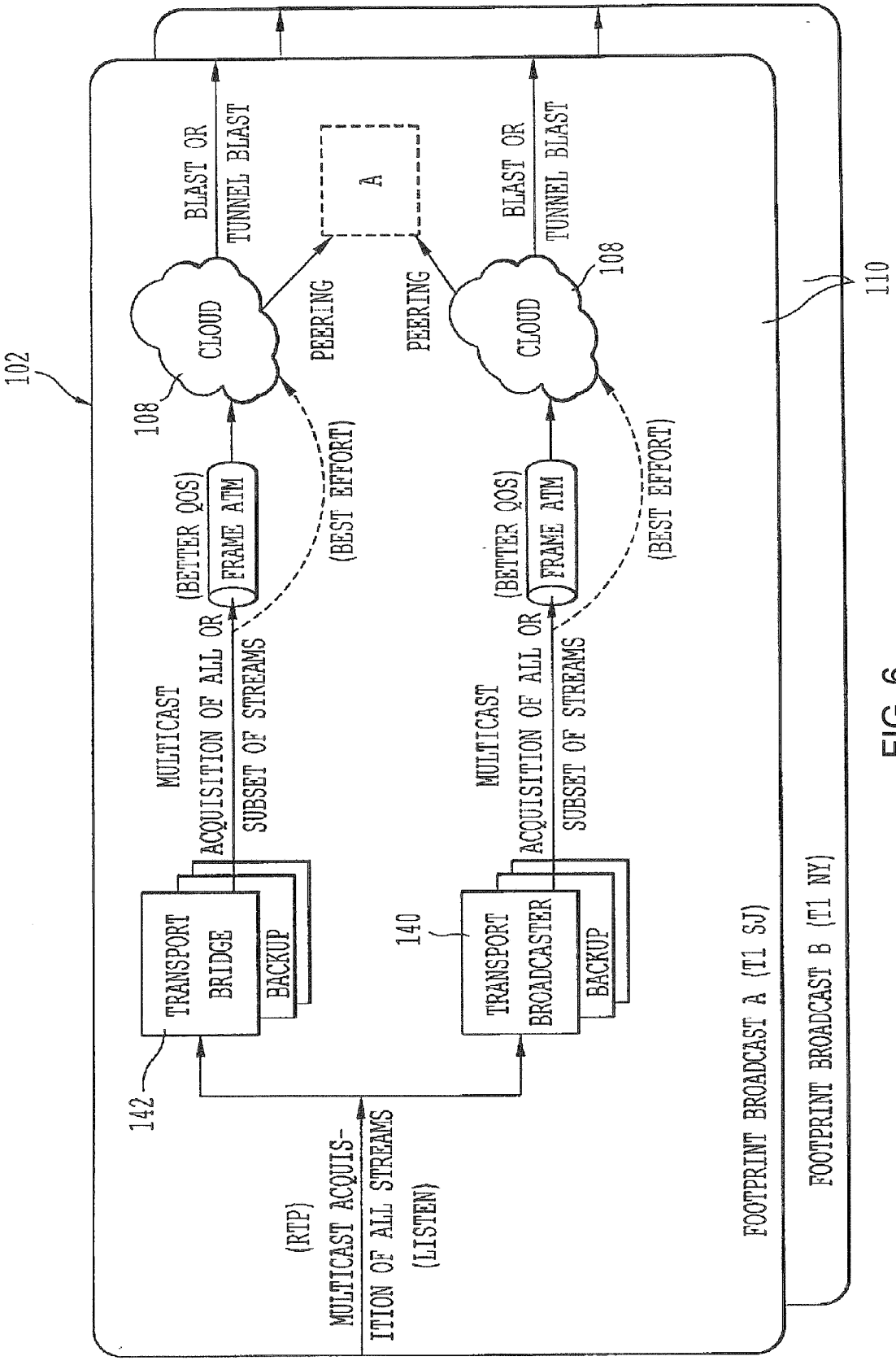

102
110
108
CLOUD
BLAST OR
TUNNEL BLAST
PEERING
A
108
CLOUD
BLAST OR
TUNNEL BLAST
(BETTER QOS)
FRAME ATM
(BEST EFFORT)
MULTICAST
ACQUISITION OF ALL OR
SUBSET OF STREAMS
(BETTER QOS)
FRAME ATM
(BEST EFFORT)
MULTICAST
ACQUISITION OF ALL OR
SUBSET OF STREAMS
140
TRANSPORT
BRIDGE
BACKUP
TRANSPORT
BROADCASTER
BACKUP
142
(RTP)
MULTICAST ACQUIS-
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(LISTEN)
FOOTPRINT BROADCAST A (T1 SJ)
FOOTPRINT BROADCAST B (T1 NY)

FIG. 6

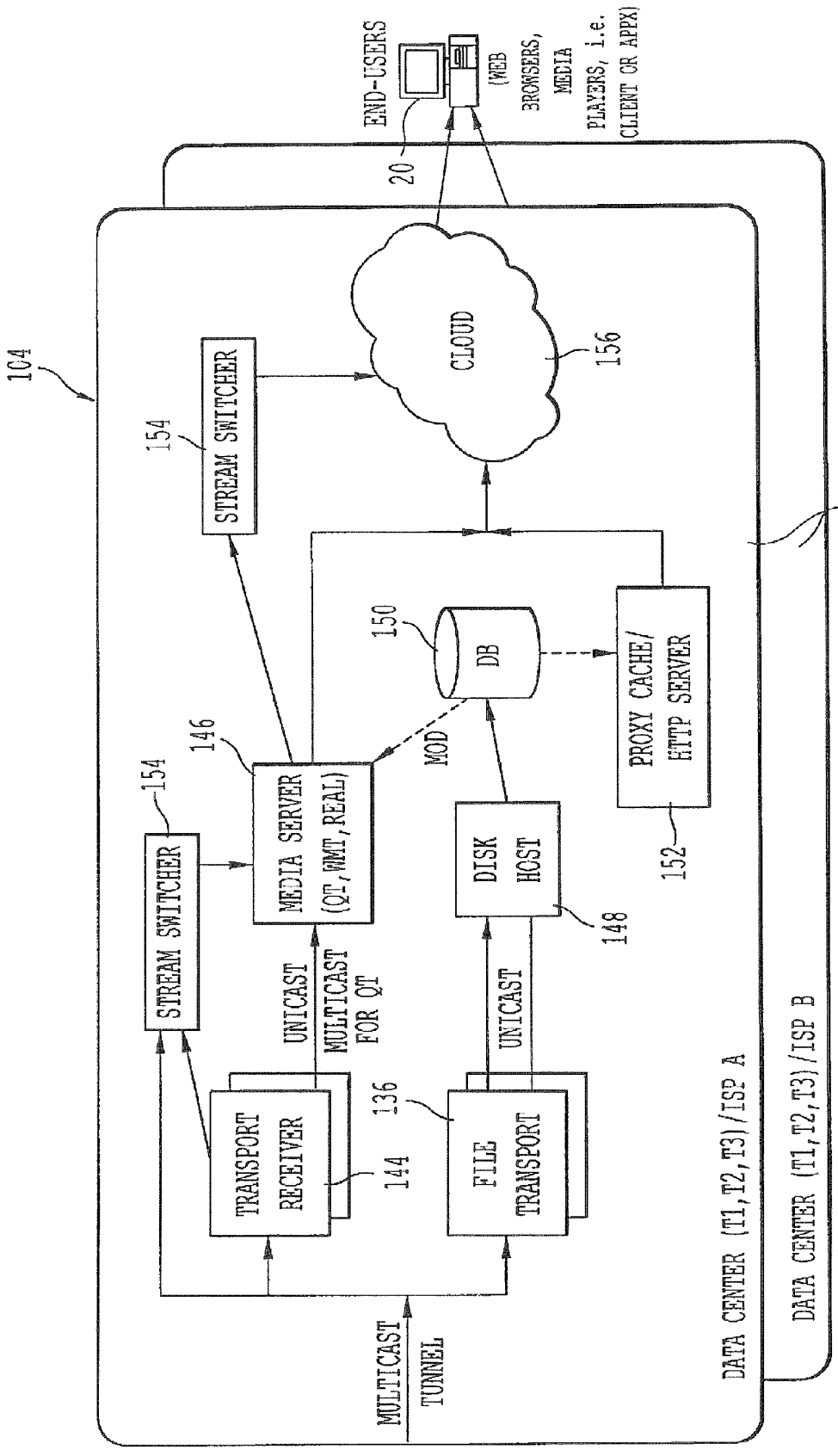

END-USERS
20
(WEB BROWSERS, MEDIA PLAYERS, i.e. CLIENT OR APPX)
104
CLOUD
156
154
STREAM SWITCHER
150
DB
MOD
146
MEDIA SERVER (QT, WMT, REAL)
PROXY CACHE/ HTTP SERVER
152
154
STREAM SWITCHER
UNICAST
MULTICAST FOR QT
DISK HOST
148
UNICAST
136
TRANSPORT RECEIVER
144
FILE TRANSPORT
MULTICAST TUNNEL
DATA CENTER (T1, T2, T3)/ISP A
DATA CENTER (T1, T2, T3)/ISP B
116, 118 or 120

FIG. 7

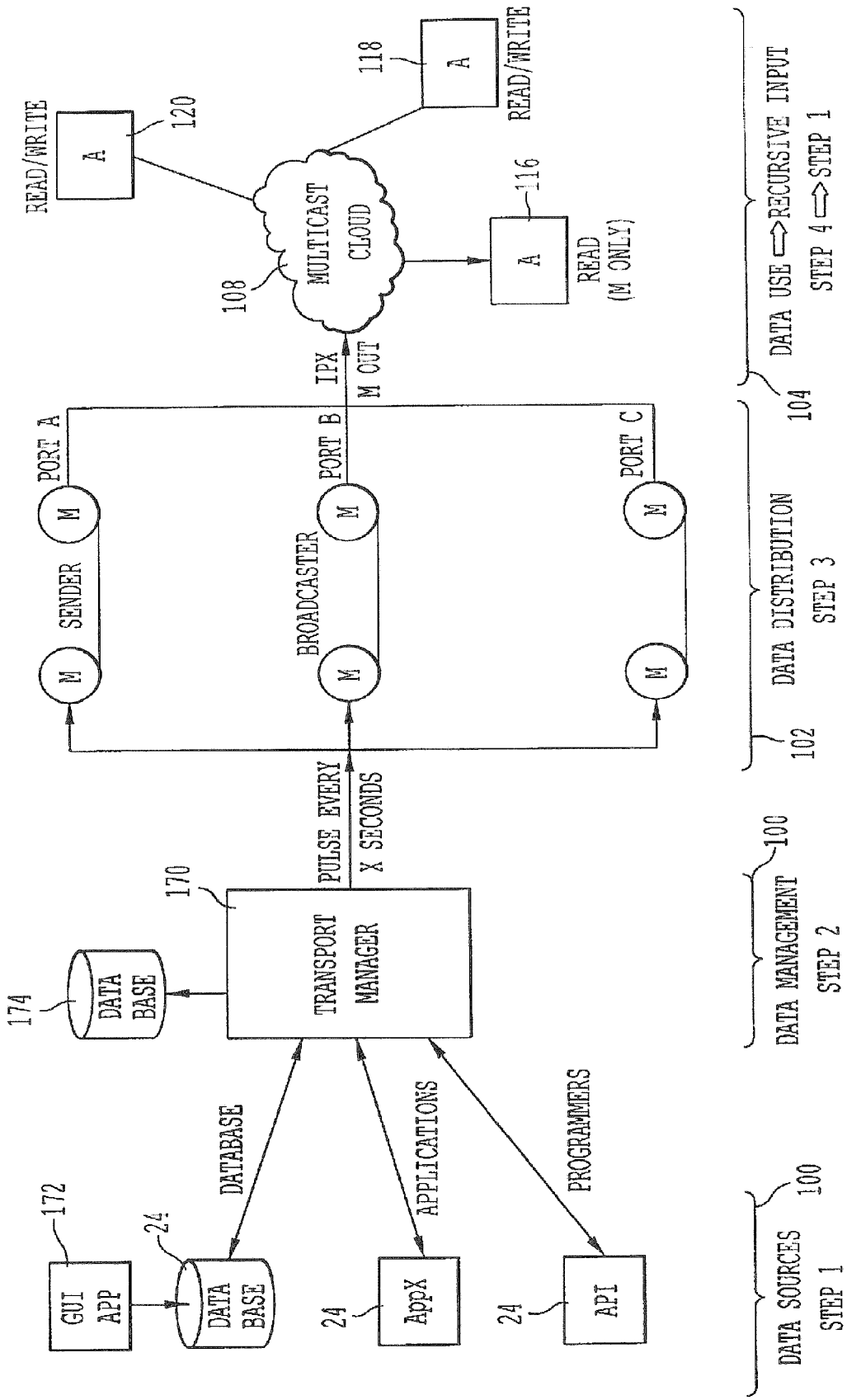

READ/WRITE
A
120
118
A
READ/WRITE
108
MULTICAST CLOUD
116
A
READ (M ONLY)
IPX M OUT
PORT A
PORT B
PORT C
M
SENDER
BROADCASTER
PULSE EVERY X SECONDS
170
TRANSPORT MANAGER
174
DATA BASE
172
GUI APP
24
DATA BASE
DATABASE
APPLICATIONS
PROGRAMERS
24
AppX
24
API
DATA SOURCES STEP 1
100
DATA MANAGEMENT STEP 2
100
DATA DISTRIBUTION STEP 3
102
DATA USE ⇨RECURSIVE INPUT STEP 4⇨STEP 1
104

FIG. 8

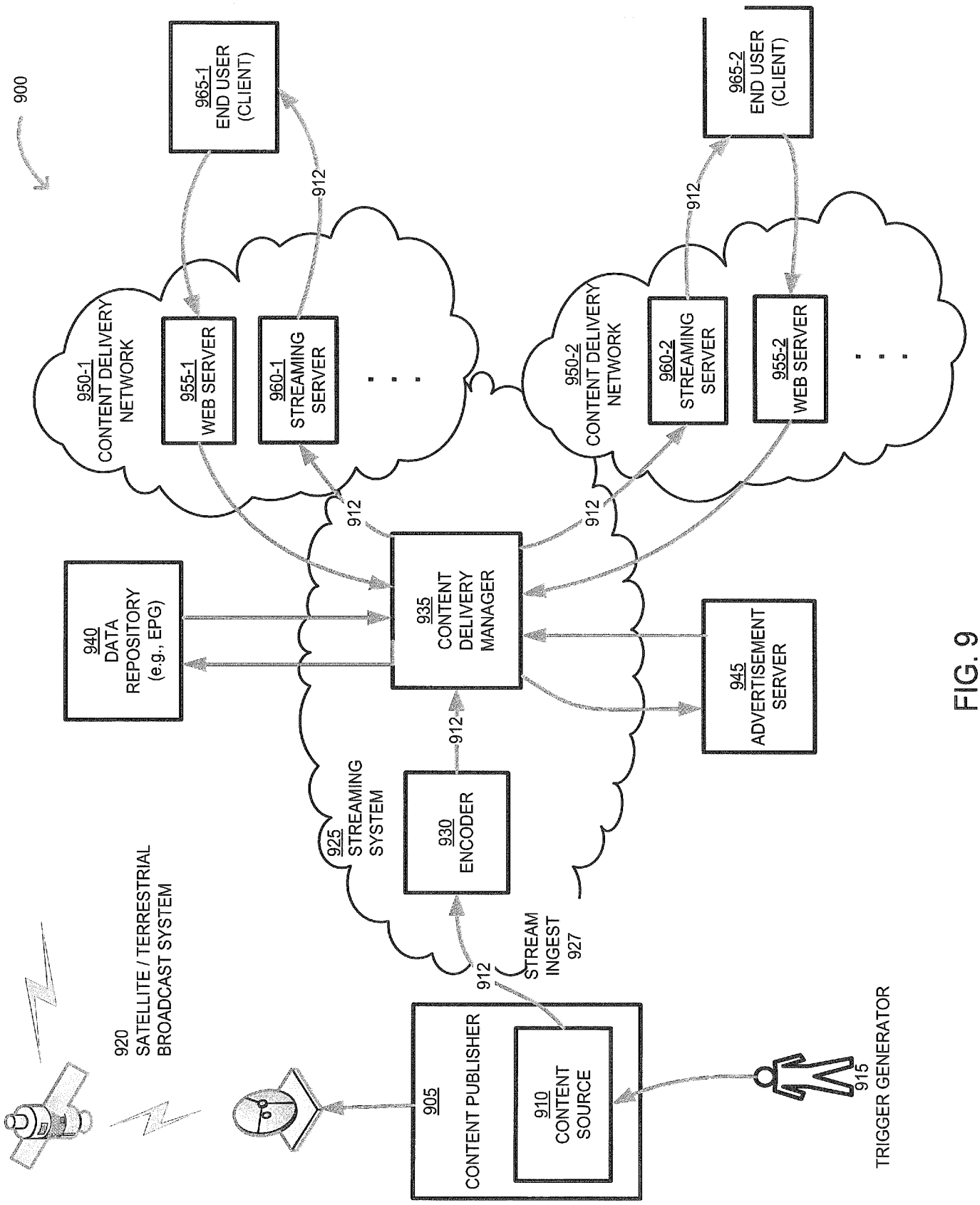

900
965-1 END USER (CLIENT)
965-2 END USER (CLIENT)
912
950-1 CONTENT DELIVERY NETWORK
955-1 WEB SERVER
960-1 STREAMING SERVER
950-2 CONTENT DELIVERY NETWORK
960-2 STREAMING SERVER
955-2 WEB SERVER
940 DATA REPOSITORY (e.g., EPG)
935 CONTENT DELIVERY MANAGER
945 ADVERTISEMENT SERVER
925 STREAMING SYSTEM
930 ENCODER
STREAM INGEST 927
920 SATELLITE / TERRESTRIAL BROADCAST SYSTEM
905 CONTENT PUBLISHER
910 CONTENT SOURCE
915 TRIGGER GENERATOR

FIG. 9

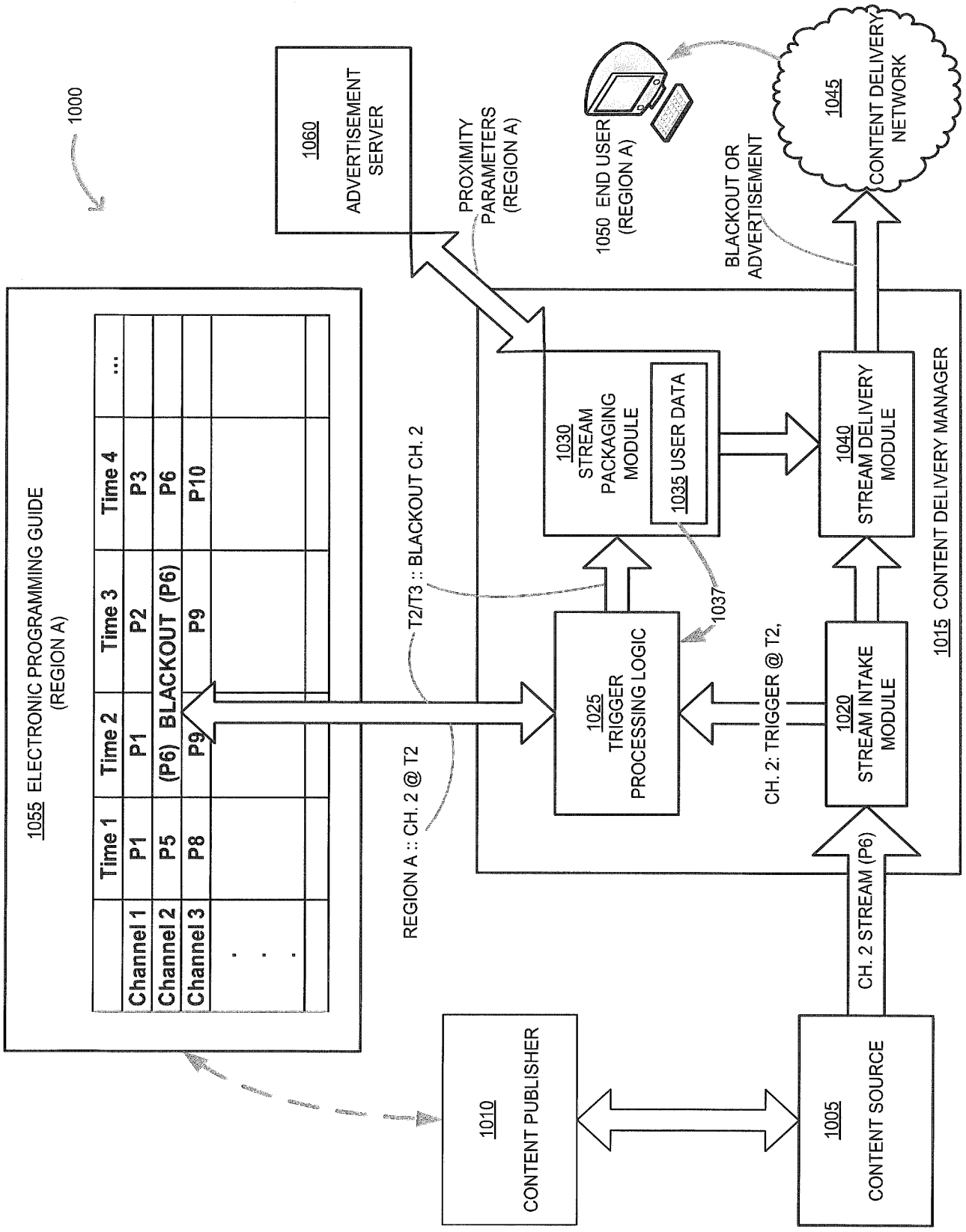

1000
1055 ELECTRONIC PROGRAMMING GUIDE (REGION A)
Time 1
Time 2
Time 3
Time 4
...
Channel 1
P1
P1
P2
P3
Channel 2
P5
(P6) BLACKOUT (P6)
P6
Channel 3
P8
P9
P9
P10
1060 ADVERTISEMENT SERVER
PROXIMITY PARAMETERS (REGION A)
1050 END USER (REGION A)
BLACKOUT OR ADVERTISEMENT
1045 CONTENT DELIVERY NETWORK
1030 STREAM PACKAGING MODULE
1035 USER DATA
1040 STREAM DELIVERY MODULE
T2/T3 :: BLACKOUT CH. 2
REGION A :: CH. 2 @ T2
1025 TRIGGER PROCESSING LOGIC
1037
CH. 2: TRIGGER @ T2,
1020 STREAM INTAKE MODULE
1015 CONTENT DELIVERY MANAGER
CH. 2 STREAM (P6)
1010 CONTENT PUBLISHER
1005 CONTENT SOURCE

FIG. 10

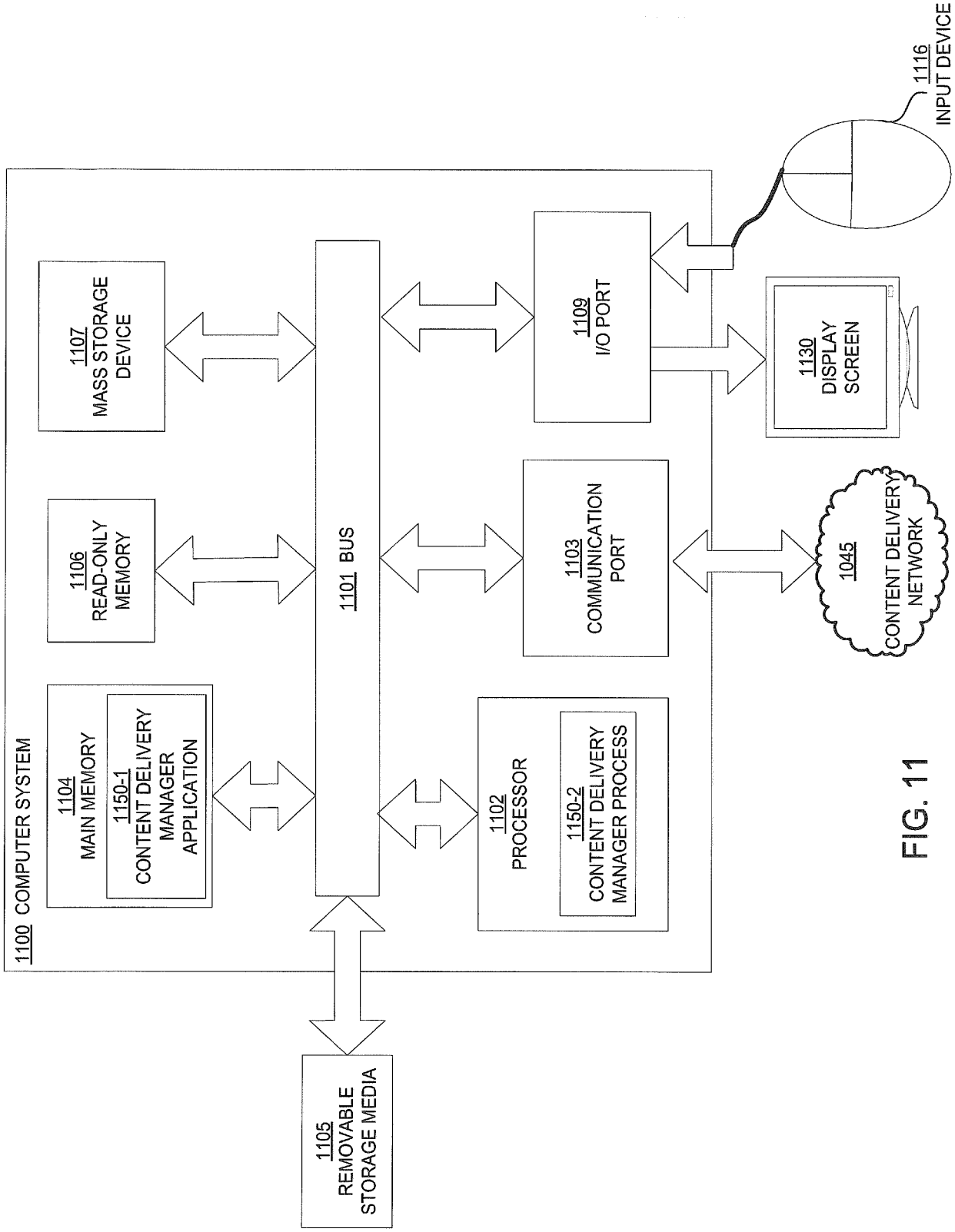

1100 COMPUTER SYSTEM
1104 MAIN MEMORY
1150-1 CONTENT DELIVERY MANAGER APPLICATION
1106 READ-ONLY MEMORY
1107 MASS STORAGE DEVICE
1101 BUS
1102 PROCESSOR
1150-2 CONTENT DELIVERY MANAGER PROCESS
1103 COMMUNICATION PORT
1109 I/O PORT
1130 DISPLAY SCREEN
1116 INPUT DEVICE
1045 CONTENT DELIVERY NETWORK
1105 REMOVABLE STORAGE MEDIA

FIG. 11

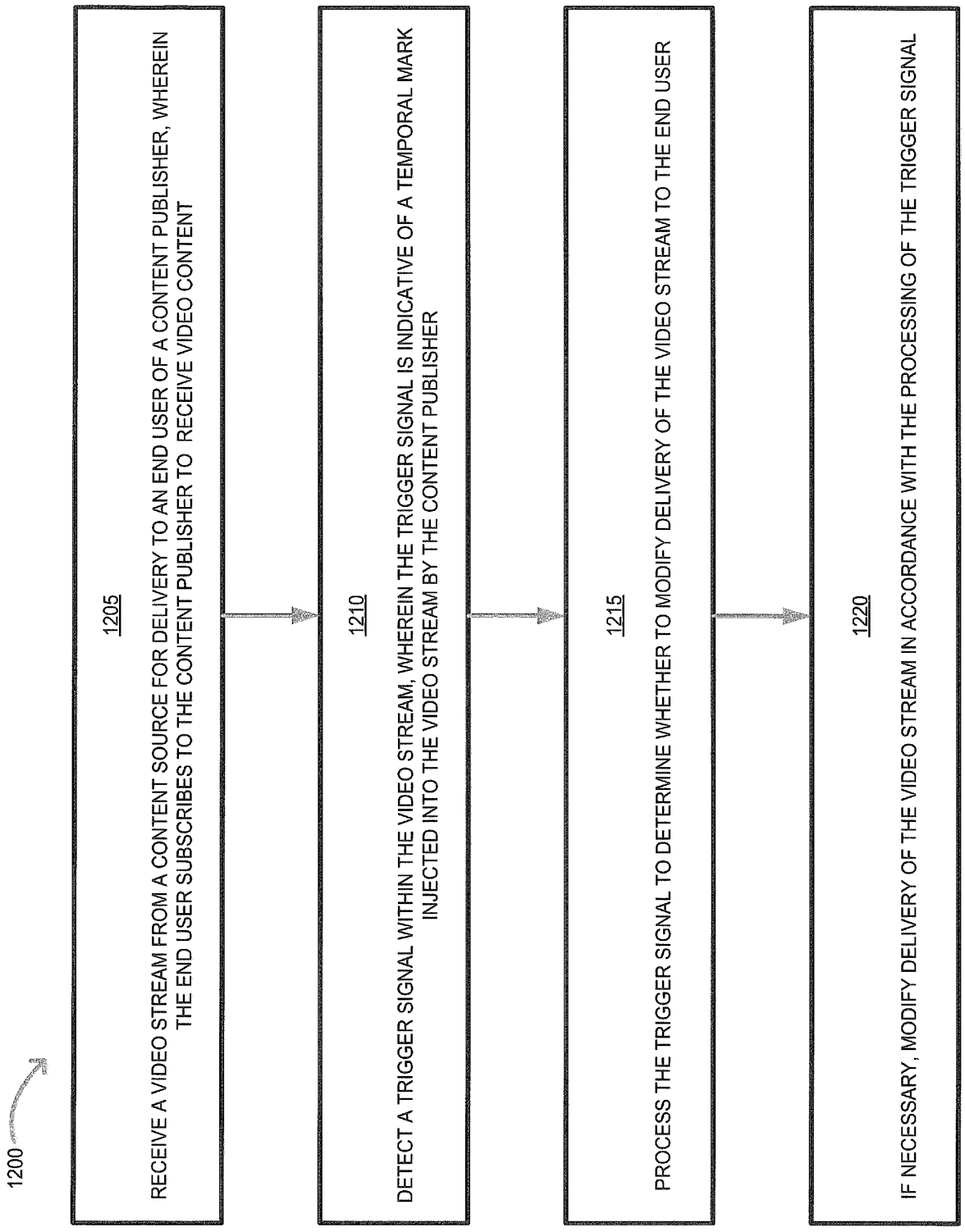

1200
1205
RECEIVE A VIDEO STREAM FROM A CONTENT SOURCE FOR DELIVERY TO AN END USER OF A CONTENT PUBLISHER, WHEREIN THE END USER SUBSCRIBES TO THE CONTENT PUBLISHER TO RECEIVE VIDEO CONTENT
1210
DETECT A TRIGGER SIGNAL WITHIN THE VIDEO STREAM, WHEREIN THE TRIGGER SIGNAL IS INDICATIVE OF A TEMPORAL MARK INJECTED INTO THE VIDEO STREAM BY THE CONTENT PUBLISHER
1215
PROCESS THE TRIGGER SIGNAL TO DETERMINE WHETHER TO MODIFY DELIVERY OF THE VIDEO STREAM TO THE END USER
1220
IF NECESSARY, MODIFY DELIVERY OF THE VIDEO STREAM IN ACCORDANCE WITH THE PROCESSING OF THE TRIGGER SIGNAL

FIG. 12

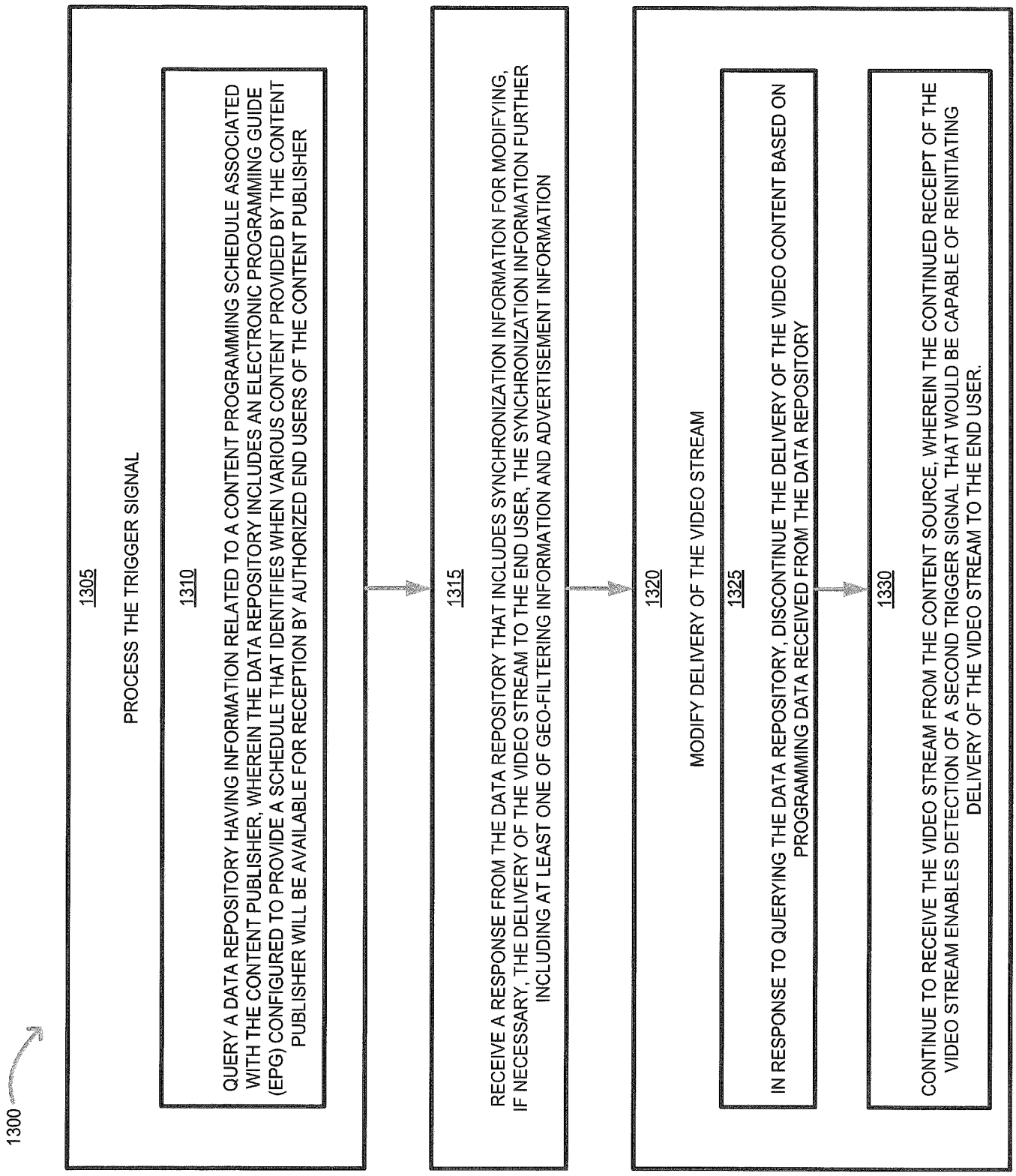

1300
1305
PROCESS THE TRIGGER SIGNAL
1310
QUERY A DATA REPOSITORY HAVING INFORMATION RELATED TO A CONTENT PROGRAMMING SCHEDULE ASSOCIATED WITH THE CONTENT PUBLISHER, WHEREIN THE DATA REPOSITORY INCLUDES AN ELECTRONIC PROGRAMMING GUIDE (EPG) CONFIGURED TO PROVIDE A SCHEDULE THAT IDENTIFIES WHEN VARIOUS CONTENT PROVIDED BY THE CONTENT PUBLISHER WILL BE AVAILABLE FOR RECEPTION BY AUTHORIZED END USERS OF THE CONTENT PUBLISHER
1315
RECEIVE A RESPONSE FROM THE DATA REPOSITORY THAT INCLUDES SYNCHRONIZATION INFORMATION FOR MODIFYING, IF NECESSARY, THE DELIVERY OF THE VIDEO STREAM TO THE END USER, THE SYNCHRONIZATION INFORMATION FURTHER INCLUDING AT LEAST ONE OF GEO-FILTERING INFORMATION AND ADVERTISEMENT INFORMATION
1320
MODIFY DELIVERY OF THE VIDEO STREAM
1325
IN RESPONSE TO QUERYING THE DATA REPOSITORY, DISCONTINUE THE DELIVERY OF THE VIDEO CONTENT BASED ON PROGRAMMING DATA RECEIVED FROM THE DATA REPOSITORY
1330
CONTINUE TO RECEIVE THE VIDEO STREAM FROM THE CONTENT SOURCE, WHEREIN THE CONTINUED RECEIPT OF THE VIDEO STREAM ENABLES DETECTION OF A SECOND TRIGGER SIGNAL THAT WOULD BE CAPABLE OF REINITIATING DELIVERY OF THE VIDEO STREAM TO THE END USER.

FIG. 13

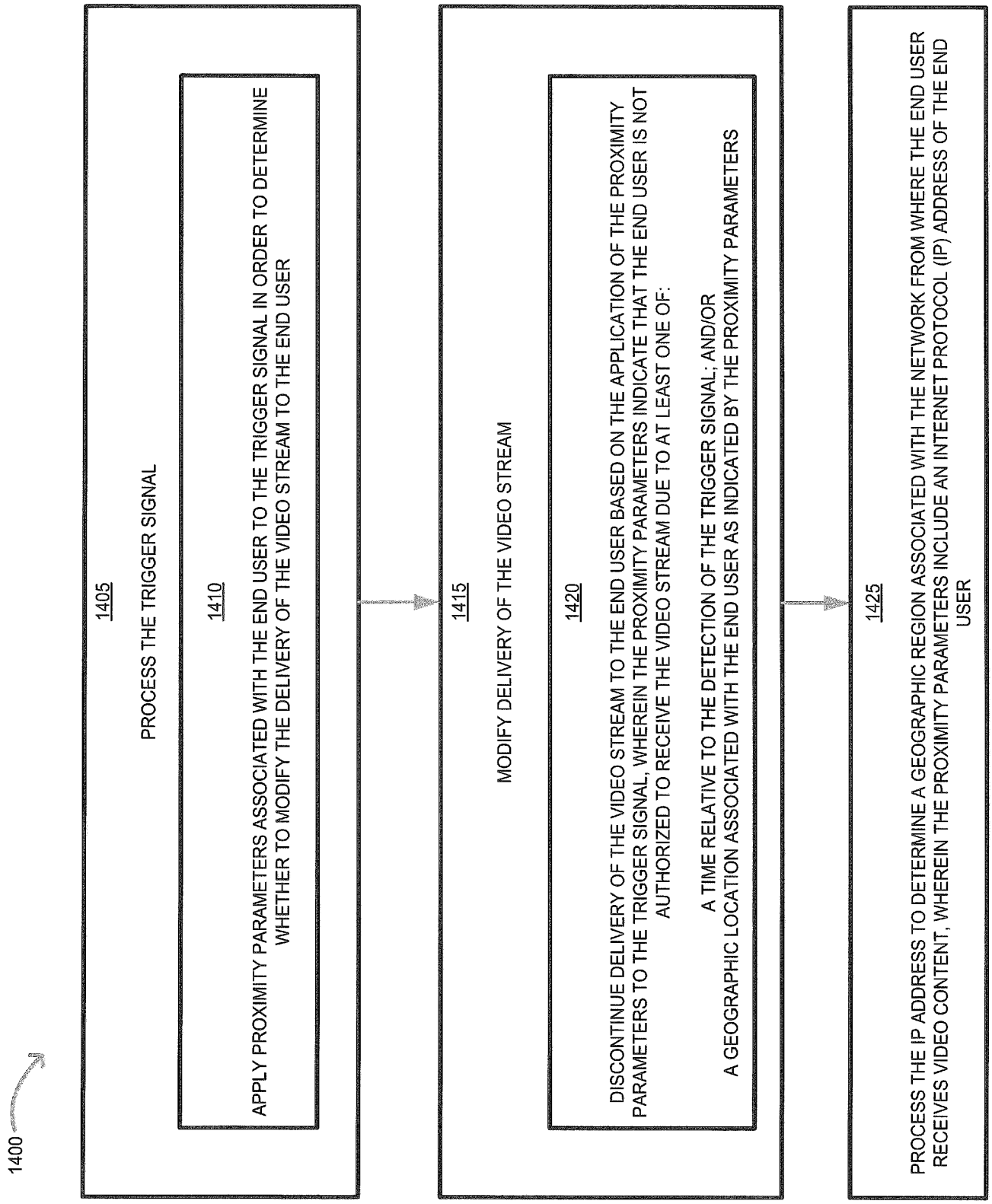

1400
1405
PROCESS THE TRIGGER SIGNAL
1410
APPLY PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER TO THE TRIGGER SIGNAL IN ORDER TO DETERMINE WHETHER TO MODIFY THE DELIVERY OF THE VIDEO STREAM TO THE END USER
1415
MODIFY DELIVERY OF THE VIDEO STREAM
1420
DISCONTINUE DELIVERY OF THE VIDEO STREAM TO THE END USER BASED ON THE APPLICATION OF THE PROXIMITY PARAMETERS TO THE TRIGGER SIGNAL, WHEREIN THE PROXIMITY PARAMETERS INDICATE THAT THE END USER IS NOT AUTHORIZED TO RECEIVE THE VIDEO STREAM DUE TO AT LEAST ONE OF:
A TIME RELATIVE TO THE DETECTION OF THE TRIGGER SIGNAL; AND/OR
A GEOGRAPHIC LOCATION ASSOCIATED WITH THE END USER AS INDICATED BY THE PROXIMITY PARAMETERS
1425
PROCESS THE IP ADDRESS TO DETERMINE A GEOGRAPHIC REGION ASSOCIATED WITH THE NETWORK FROM WHERE THE END USER RECEIVES VIDEO CONTENT, WHEREIN THE PROXIMITY PARAMETERS INCLUDE AN INTERNET PROTOCOL (IP) ADDRESS OF THE END USER

FIG. 14

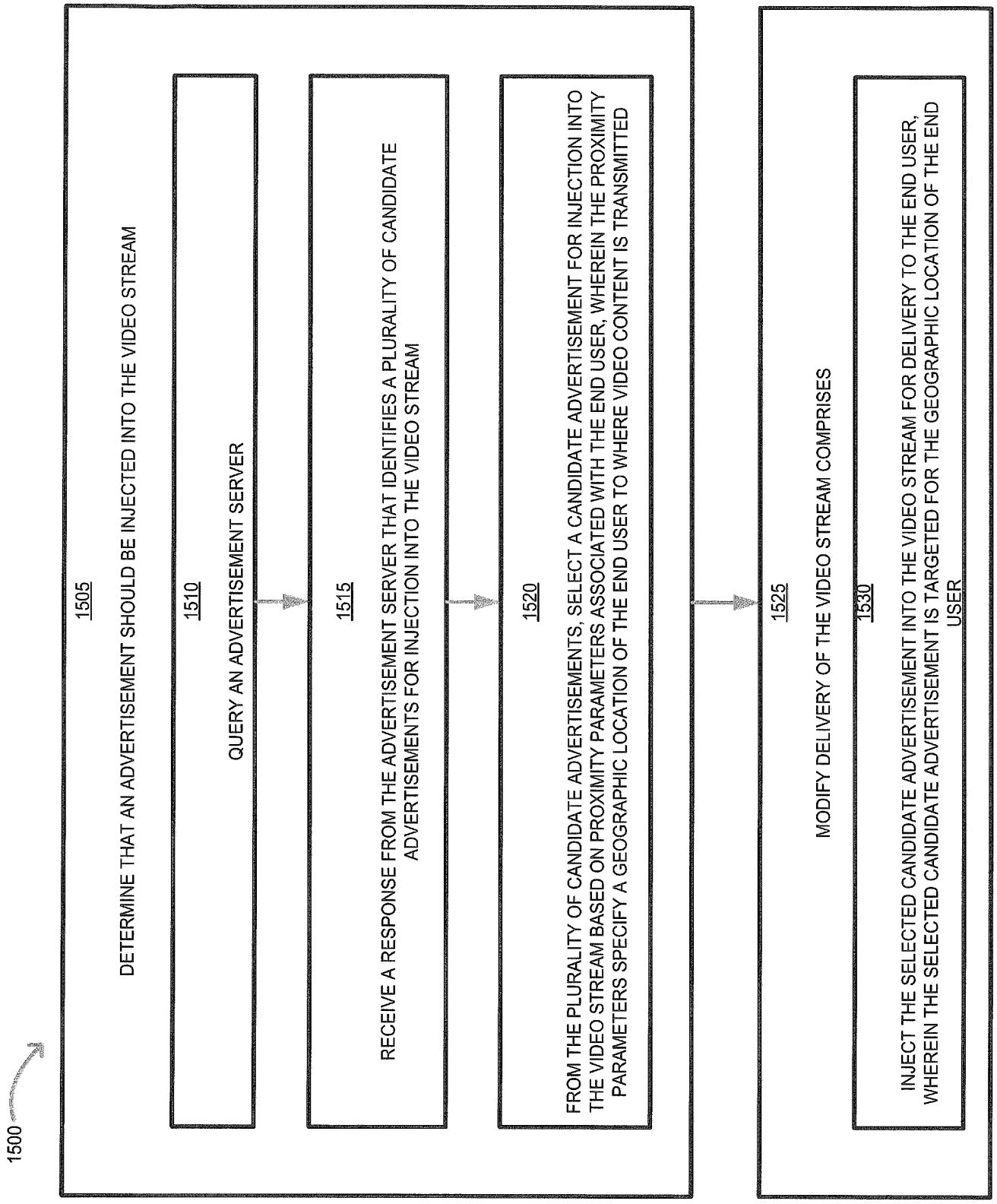

1500
1505
DETERMINE THAT AN ADVERTISEMENT SHOULD BE INJECTED INTO THE VIDEO STREAM
1510
QUERY AN ADVERTISEMENT SERVER
1515
RECEIVE A RESPONSE FROM THE ADVERTISEMENT SERVER THAT IDENTIFIES A PLURALITY OF CANDIDATE ADVERTISEMENTS FOR INJECTION INTO THE VIDEO STREAM
1520
FROM THE PLURALITY OF CANDIDATE ADVERTISEMENTS, SELECT A CANDIDATE ADVERTISEMENT FOR INJECTION INTO THE VIDEO STREAM BASED ON PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER, WHEREIN THE PROXIMITY PARAMETERS SPECIFY A GEOGRAPHIC LOCATION OF THE END USER TO WHERE VIDEO CONTENT IS TRANSMITTED
1525
MODIFY DELIVERY OF THE VIDEO STREAM COMPRISES
1530
INJECT THE SELECTED CANDIDATE ADVERTISEMENT INTO THE VIDEO STREAM FOR DELIVERY TO THE END USER, WHEREIN THE SELECTED CANDIDATE ADVERTISEMENT IS TARGETED FOR THE GEOGRAPHIC LOCATION OF THE END USER

FIG. 15

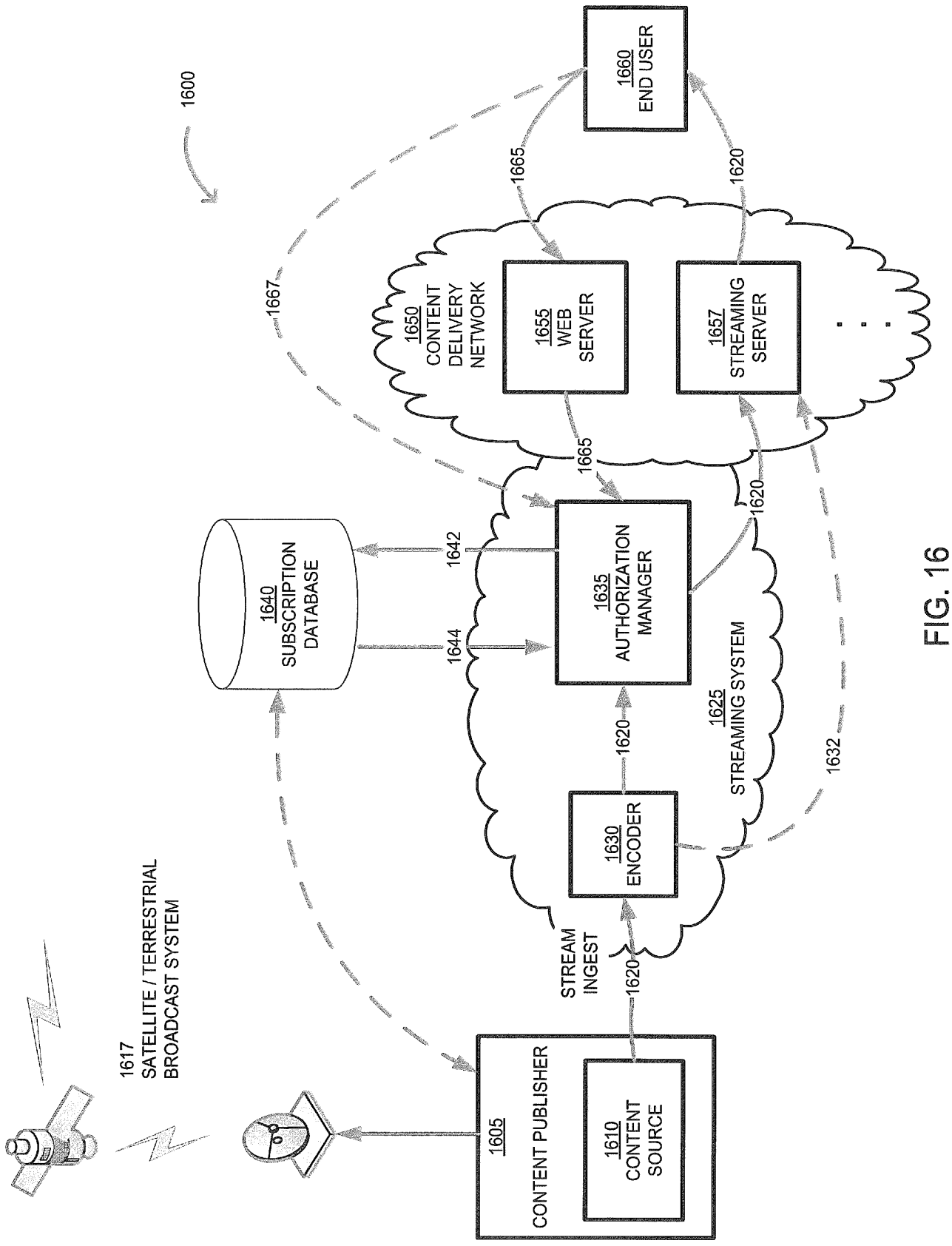

1600
1660 END USER
1665
1620
1667
1650 CONTENT DELIVERY NETWORK
1655 WEB SERVER
1657 STREAMING SERVER
1665
1620
1640 SUBSCRIPTION DATABASE
1642
1644
1635 AUTHORIZATION MANAGER
1620
1625 STREAMING SYSTEM
1620
1630 ENCODER
1632
STREAM INGEST
1620
1605 CONTENT PUBLISHER
1610 CONTENT SOURCE
1617 SATELLITE / TERRESTRIAL BROADCAST SYSTEM

FIG. 16

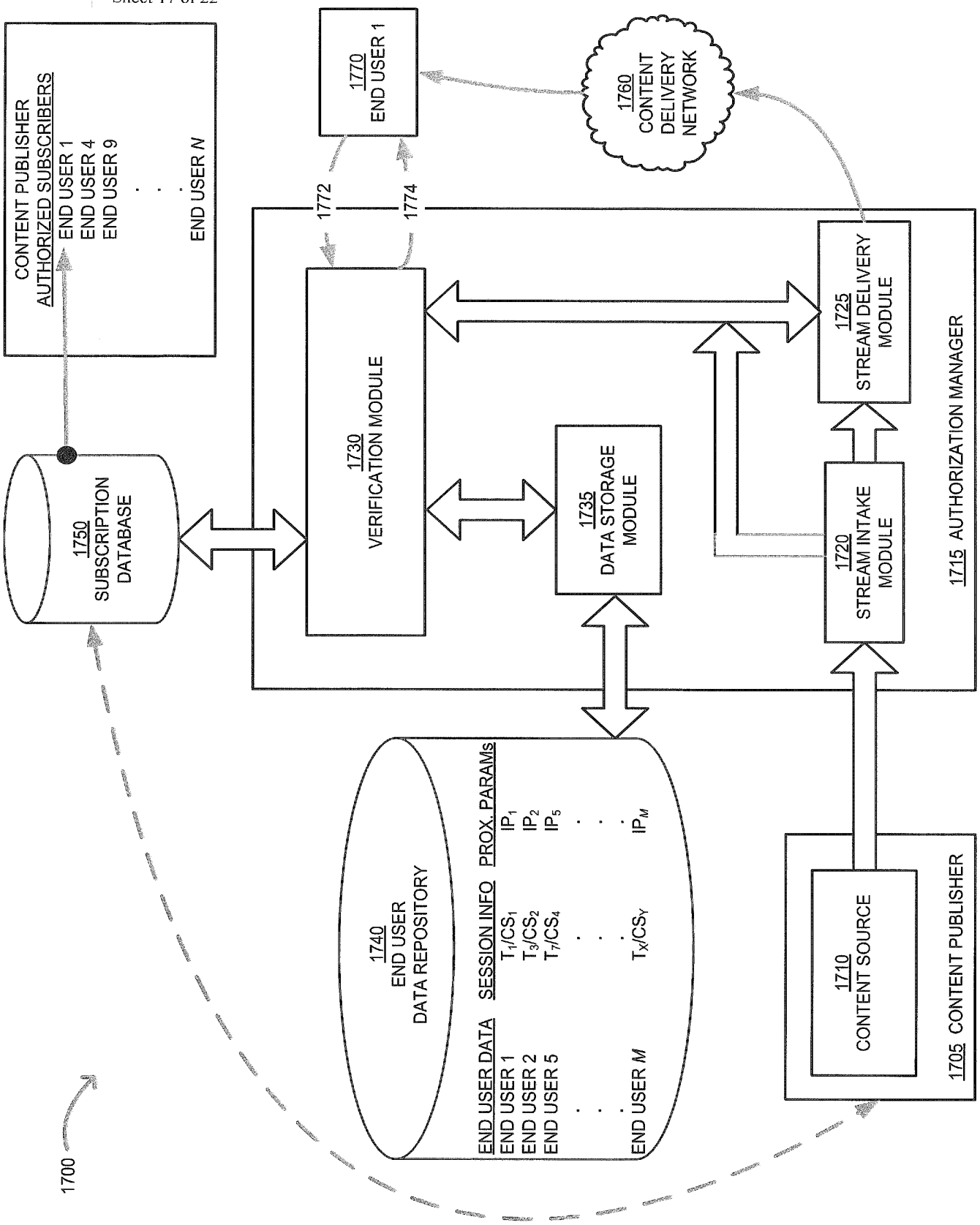

CONTENT PUBLISHER
AUTHORIZED SUBSCRIBERS
END USER 1
END USER 4
END USER 9
. . .
END USER N
1770
END USER 1
1760
CONTENT
DELIVERY
NETWORK
1772
1774
1730
VERIFICATION MODULE
1725
STREAM DELIVERY
MODULE
1750
SUBSCRIPTION
DATABASE
1735
DATA STORAGE
MODULE
1720
STREAM INTAKE
MODULE
1715 AUTHORIZATION MANAGER
1740
END USER
DATA REPOSITORY
END USER DATA
SESSION INFO
PROX. PARAMS
END USER 1
END USER 2
END USER 5
END USER M
1710
CONTENT SOURCE
1705 CONTENT PUBLISHER
1700

FIG. 17

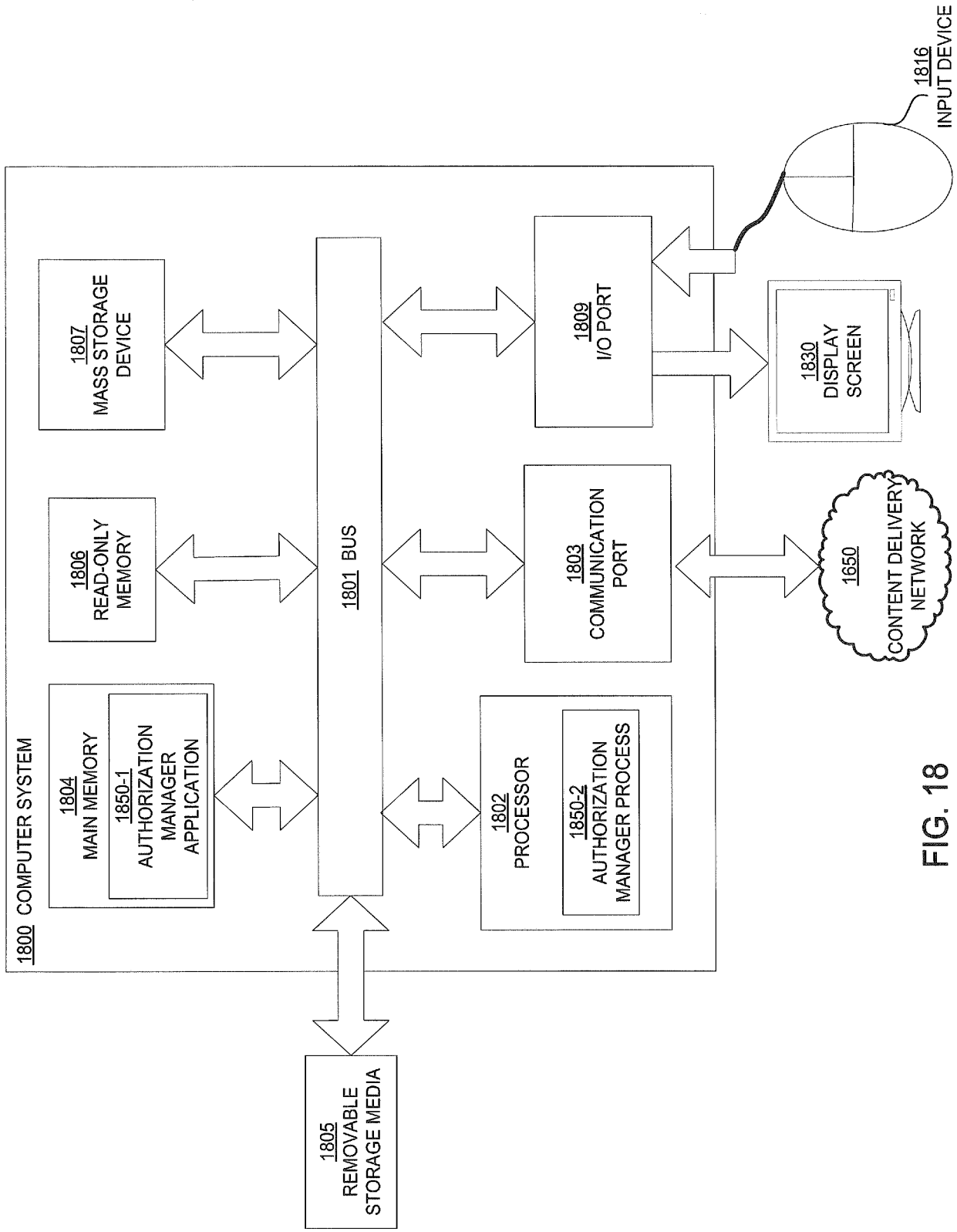

1800 COMPUTER SYSTEM
1804 MAIN MEMORY
1850-1 AUTHORIZATION MANAGER APPLICATION
1806 READ-ONLY MEMORY
1807 MASS STORAGE DEVICE
1801 BUS
1802 PROCESSOR
1850-2 AUTHORIZATION MANAGER PROCESS
1803 COMMUNICATION PORT
1809 I/O PORT
1805 REMOVABLE STORAGE MEDIA
1650 CONTENT DELIVERY NETWORK
1830 DISPLAY SCREEN
1816 INPUT DEVICE

FIG. 18

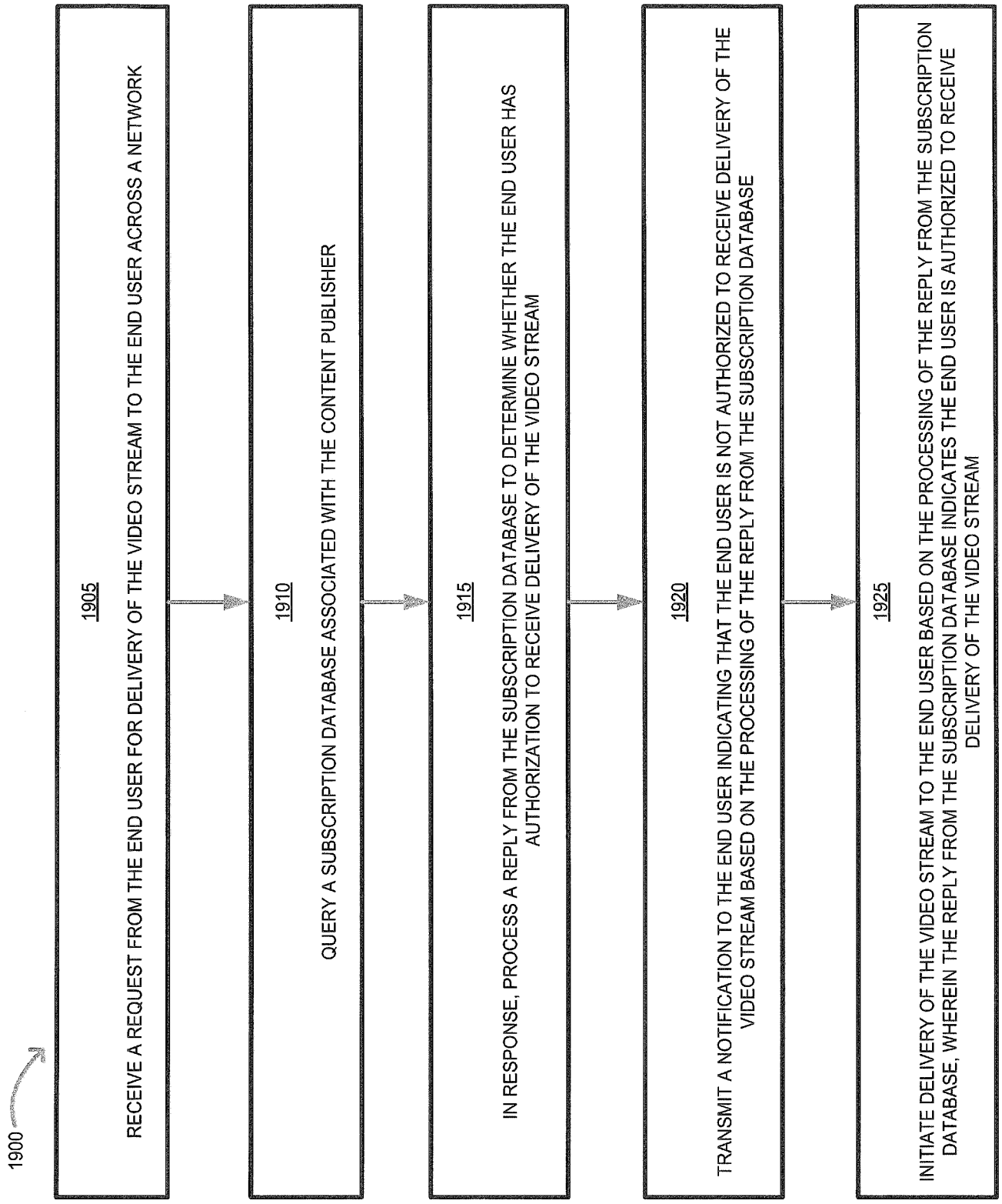

1900
1905
RECEIVE A REQUEST FROM THE END USER FOR DELIVERY OF THE VIDEO STREAM TO THE END USER ACROSS A NETWORK
1910
QUERY A SUBSCRIPTION DATABASE ASSOCIATED WITH THE CONTENT PUBLISHER
1915
IN RESPONSE, PROCESS A REPLY FROM THE SUBSCRIPTION DATABASE TO DETERMINE WHETHER THE END USER HAS AUTHORIZATION TO RECEIVE DELIVERY OF THE VIDEO STREAM
1920
TRANSMIT A NOTIFICATION TO THE END USER INDICATING THAT THE END USER IS NOT AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM BASED ON THE PROCESSING OF THE REPLY FROM THE SUBSCRIPTION DATABASE
1925
INITIATE DELIVERY OF THE VIDEO STREAM TO THE END USER BASED ON THE PROCESSING OF THE REPLY FROM THE SUBSCRIPTION DATABASE, WHEREIN THE REPLY FROM THE SUBSCRIPTION DATABASE INDICATES THE END USER IS AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM

FIG. 19

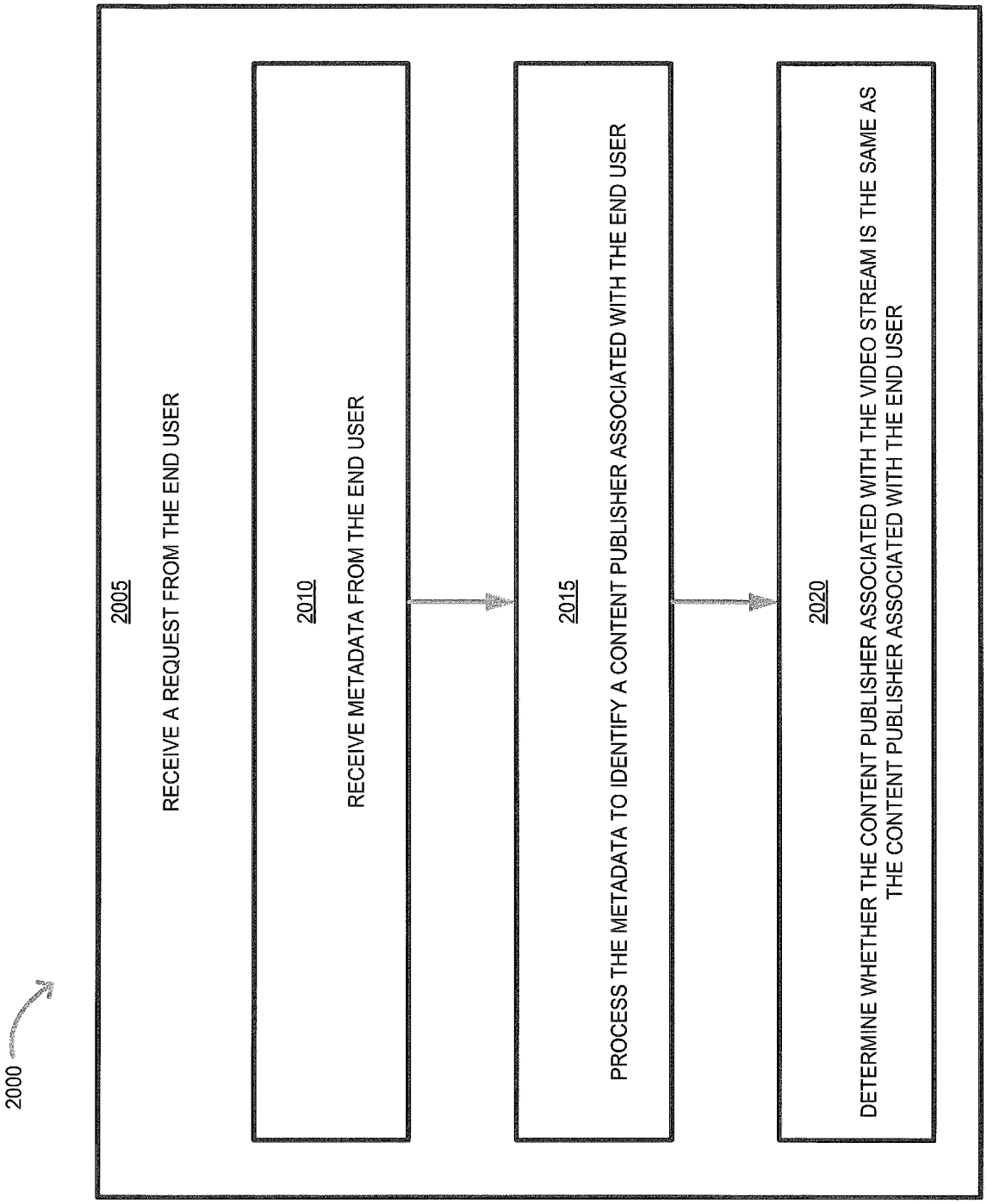

2000
2005
RECEIVE A REQUEST FROM THE END USER
2010
RECEIVE METADATA FROM THE END USER
2015
PROCESS THE METADATA TO IDENTIFY A CONTENT PUBLISHER ASSOCIATED WITH THE END USER
2020
DETERMINE WHETHER THE CONTENT PUBLISHER ASSOCIATED WITH THE VIDEO STREAM IS THE SAME AS THE CONTENT PUBLISHER ASSOCIATED WITH THE END USER

FIG. 20

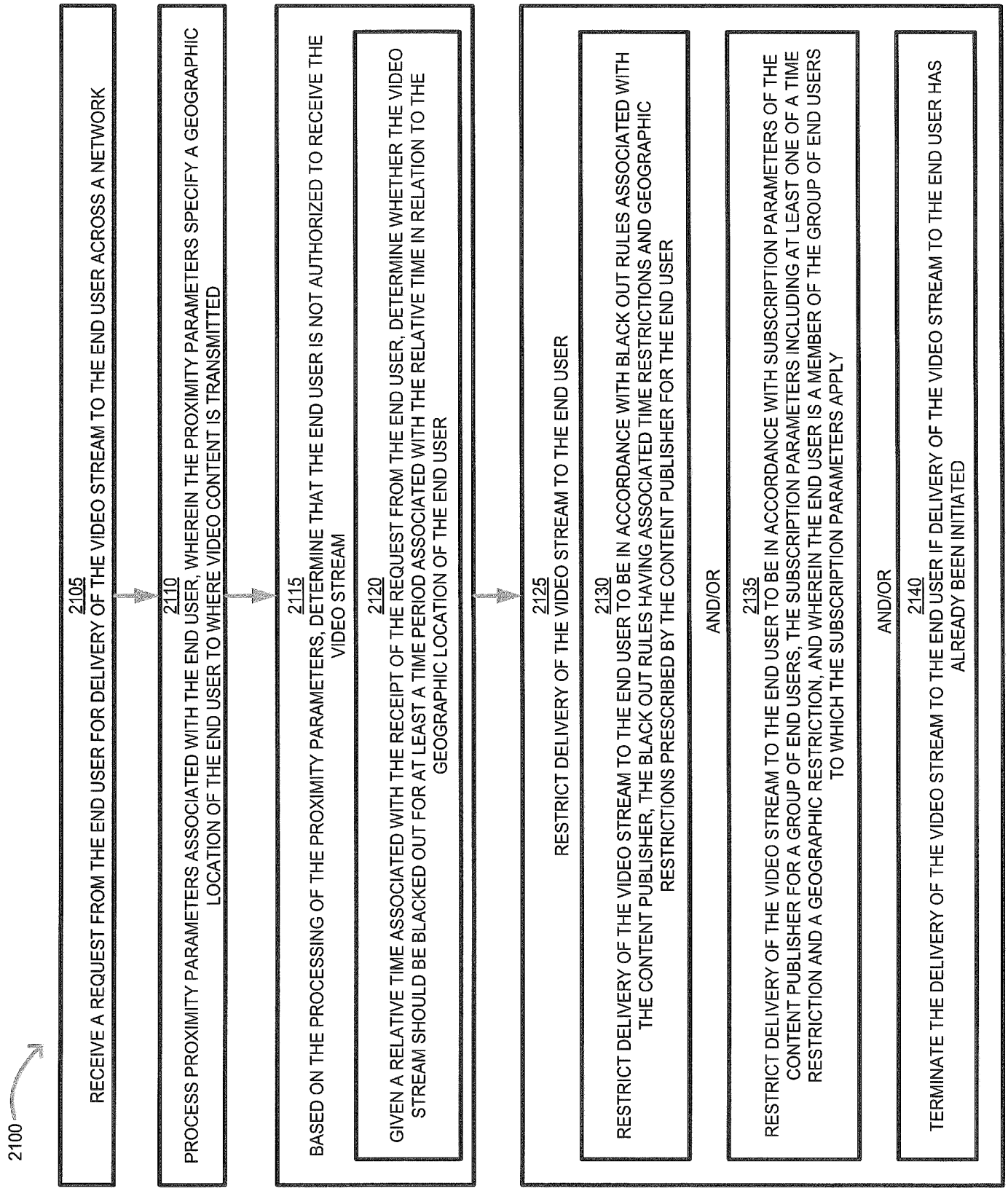

2100
2105
RECEIVE A REQUEST FROM THE END USER FOR DELIVERY OF THE VIDEO STREAM TO THE END USER ACROSS A NETWORK
2110
PROCESS PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER, WHEREIN THE PROXIMITY PARAMETERS SPECIFY A GEOGRAPHIC LOCATION OF THE END USER TO WHERE VIDEO CONTENT IS TRANSMITTED
2115
BASED ON THE PROCESSING OF THE PROXIMITY PARAMETERS, DETERMINE THAT THE END USER IS NOT AUTHORIZED TO RECEIVE THE VIDEO STREAM
2120
GIVEN A RELATIVE TIME ASSOCIATED WITH THE RECEIPT OF THE REQUEST FROM THE END USER, DETERMINE WHETHER THE VIDEO STREAM SHOULD BE BLACKED OUT FOR AT LEAST A TIME PERIOD ASSOCIATED WITH THE RELATIVE TIME IN RELATION TO THE GEOGRAPHIC LOCATION OF THE END USER
2125
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER
2130
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER TO BE IN ACCORDANCE WITH BLACK OUT RULES ASSOCIATED WITH THE CONTENT PUBLISHER, THE BLACK OUT RULES HAVING ASSOCIATED TIME RESTRICTIONS AND GEOGRAPHIC RESTRICTIONS PRESCRIBED BY THE CONTENT PUBLISHER FOR THE END USER
AND/OR
2135
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER TO BE IN ACCORDANCE WITH SUBSCRIPTION PARAMETERS OF THE CONTENT PUBLISHER FOR A GROUP OF END USERS, THE SUBSCRIPTION PARAMETERS INCLUDING AT LEAST ONE OF A TIME RESTRICTION AND A GEOGRAPHIC RESTRICTION, AND WHEREIN THE END USER IS A MEMBER OF THE GROUP OF END USERS TO WHICH THE SUBSCRIPTION PARAMETERS APPLY
AND/OR
2140
TERMINATE THE DELIVERY OF THE VIDEO STREAM TO THE END USER IF DELIVERY OF THE VIDEO STREAM TO THE END USER HAS ALREADY BEEN INITIATED

FIG. 21

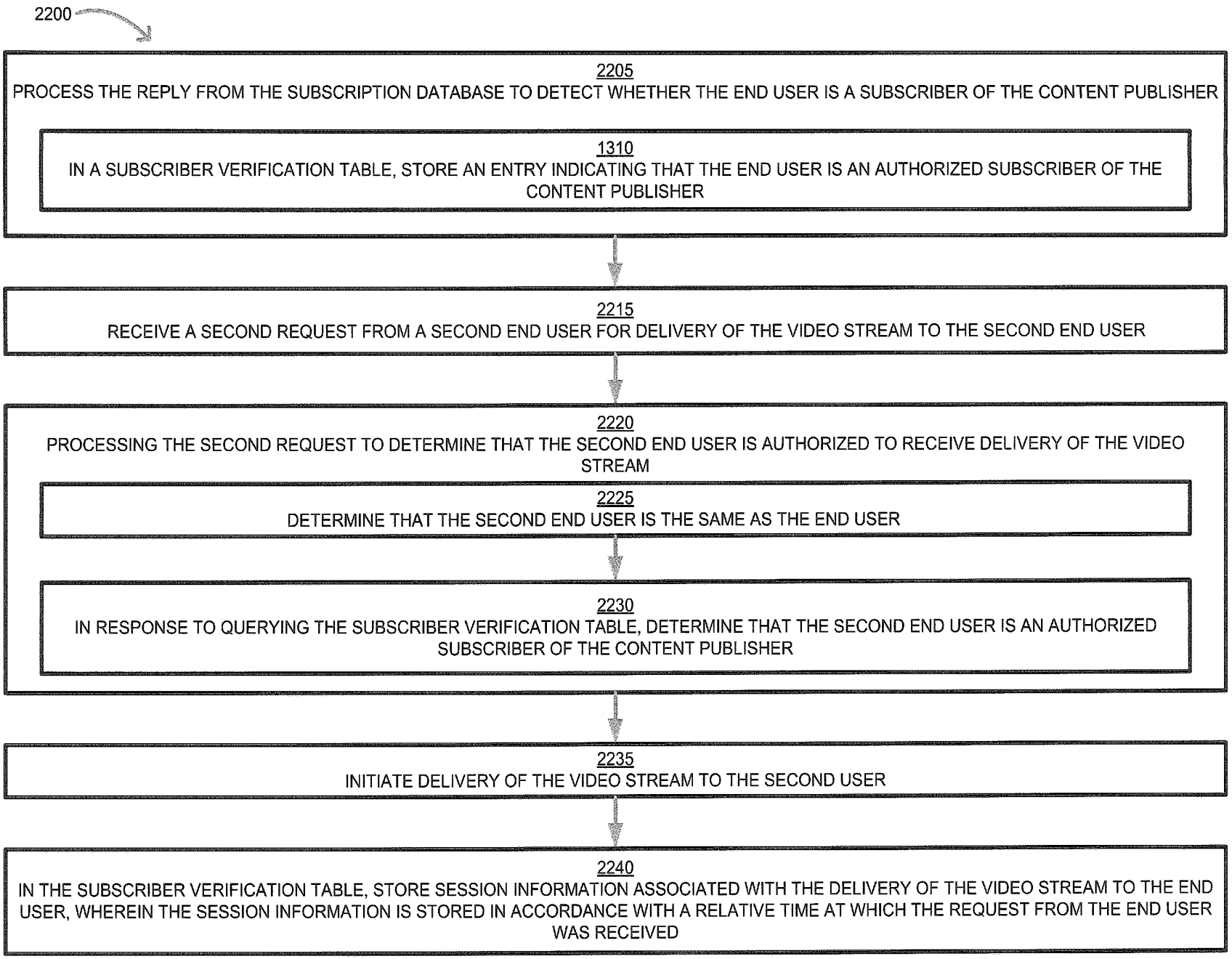

2200
2205
PROCESS THE REPLY FROM THE SUBSCRIPTION DATABASE TO DETECT WHETHER THE END USER IS A SUBSCRIBER OF THE CONTENT PUBLISHER
1310
IN A SUBSCRIBER VERIFICATION TABLE, STORE AN ENTRY INDICATING THAT THE END USER IS AN AUTHORIZED SUBSCRIBER OF THE CONTENT PUBLISHER
2215
RECEIVE A SECOND REQUEST FROM A SECOND END USER FOR DELIVERY OF THE VIDEO STREAM TO THE SECOND END USER
2220
PROCESSING THE SECOND REQUEST TO DETERMINE THAT THE SECOND END USER IS AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM
2225
DETERMINE THAT THE SECOND END USER IS THE SAME AS THE END USER
2230
IN RESPONSE TO QUERYING THE SUBSCRIBER VERIFICATION TABLE, DETERMINE THAT THE SECOND END USER IS AN AUTHORIZED SUBSCRIBER OF THE CONTENT PUBLISHER
2235
INITIATE DELIVERY OF THE VIDEO STREAM TO THE SECOND USER
2240
IN THE SUBSCRIBER VERIFICATION TABLE, STORE SESSION INFORMATION ASSOCIATED WITH THE DELIVERY OF THE VIDEO STREAM TO THE END USER, WHEREIN THE SESSION INFORMATION IS STORED IN ACCORDANCE WITH A RELATIVE TIME AT WHICH THE REQUEST FROM THE END USER WAS RECEIVED

FIG. 22

PTO/SB/14 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-136-USP2
	Application Number	
Title of Invention	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Ian		Maloney	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Dublin	State/Province		Country of Residence	IR

Citizenship under 37 CFR 1.41(b) IR

Mailing Address of Applicant:

Address 1	9 Willowfield, Park Avenue
Address 2	

City	Dublin 4	State/Province	
Postal Code	4	Country	IR

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	83579		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK		
Attorney Docket Number	519-136-USP2	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	22	Suggested Figure for Publication (if any)	1

PTO/SB/14 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-136-USP2
	Application Number	
Title of Invention	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	83579		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	61113941	2008-11-12

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country[1]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

PTO/SB/14 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	519-136-USP2
	Application Number	
Title of Invention	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK	

If the Assignee is an Organization check here. ☒			
Organization Name	Level 3 Communications, LLC		
Mailing Address Information:			
Address 1	1025 Eldorado Blvd.		
Address 2			
City	Broomfield	**State/Province**	CO
Country	US	Postal Code	80021
Phone Number	720-888-1000	Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the **Add** button.			

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.					
Signature				Date (YYYY-MM-DD)	2009-10-23
First Name	Allison	Last Name	Olenginski	Registration Number	55509

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Applicant	:	Ian Maloney	
Appln. No.	:	Unassigned	Confirmation No: Unassigned
Filing Date	:	October 23, 2009	Group Art Unit: Unassigned
Title:	:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK	Atty. Docket No.: 519-136-USP2

PRELIMINARY AMENDMENT

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

Dear Sir:

This Preliminary Amendment is being filed in compliance with 37 CFR 1.121.

Amendments to the Drawings begin on page 2 of this paper and include both attached replacement drawing sheets and annotated drawing sheets showing changes.

Remarks begin on page 3 of this paper.

Amendments to the Drawings:

Annotated and replacement sheets for sheets 1-22, including Figures 1-22, are appended hereto. Annotated sheets 1-22 show that the Figures 1-22 have been amended to provide appropriate margins. The Figures have also been amended to include sheet numbers. Additionally, as shown on annotated sheet 22 and replacement sheet 22, Figure 22 has been amended to correct a typographical error.

Attachments: Annotated Sheets 1-22
Replacement Sheets 1-22

REMARKS

Applicant has amended figures 1-22 to include appropriate margins, add sheet numbers, and to correct a typographical error. No new matter has been added to the drawings.

If the Office should require any additional information or believes a telephone conference would expedite the prosecution of the application, the Examiner is invited to contact the undersigned attorney.

Dated October 23, 2009

Respectfully submitted,

Allison Olenginski
Reg. No. 55,509
Customer No. 83579

Hensley Kim & Holzer, LLC
1660 Lincoln Street, Suite 3000
Denver, Colorado 80264
Tel: 720-377-0770
Fax: 720-377-0779

1/22

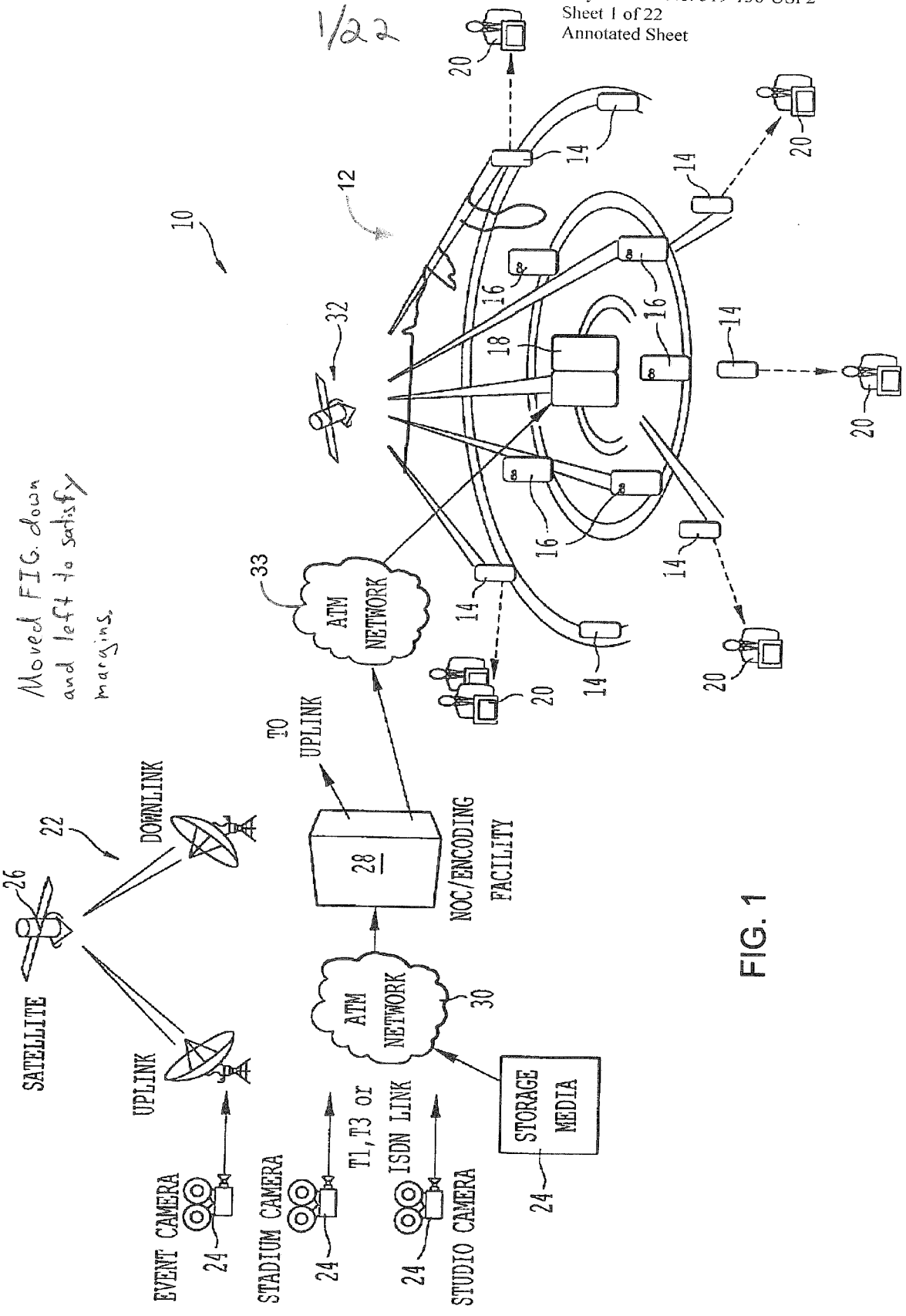
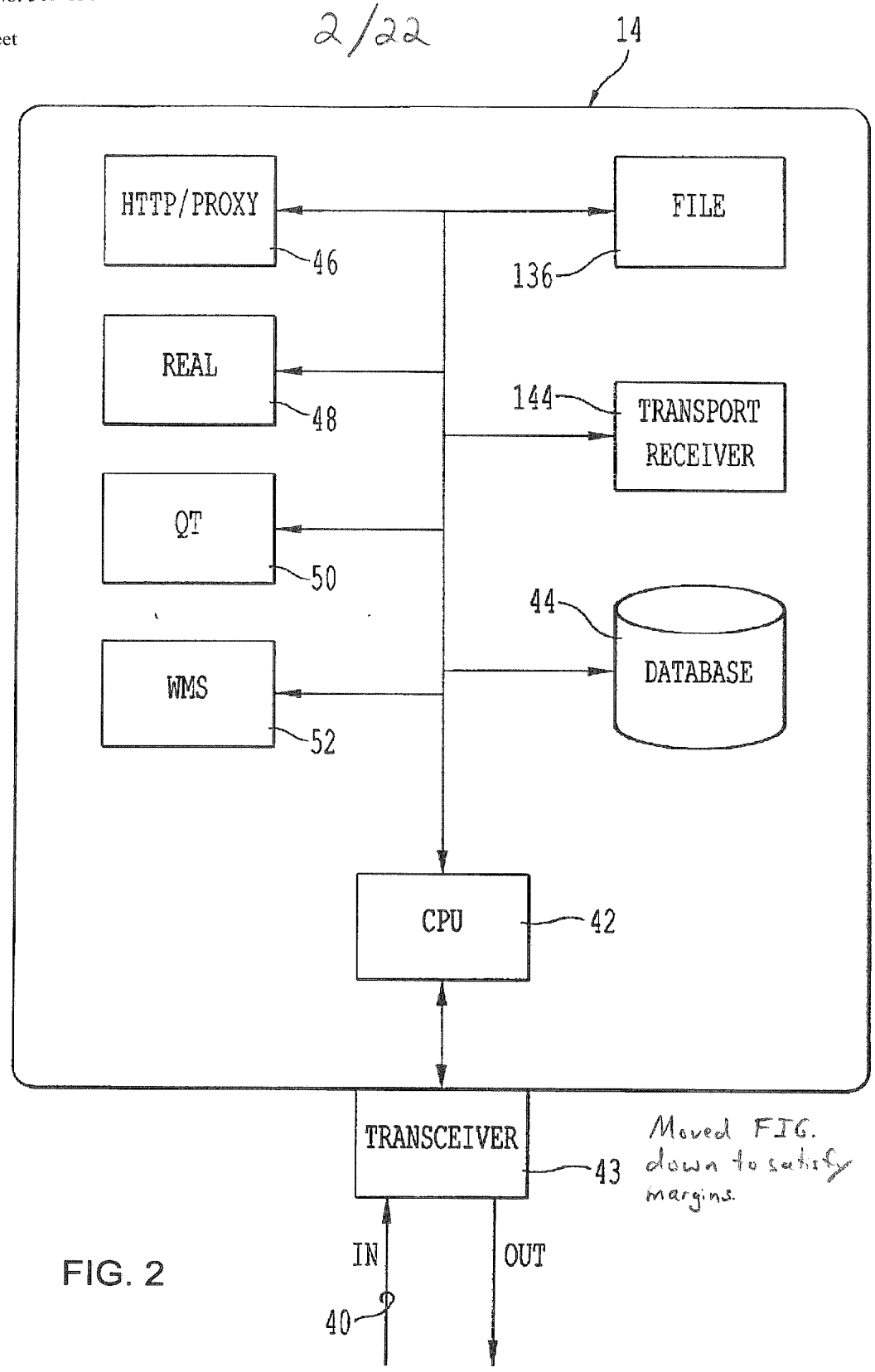


FIG. 1

Moved FIG. down and left to satisfy margins.

2/22



Moved FIG. down to satisfy margins.

FIG. 2

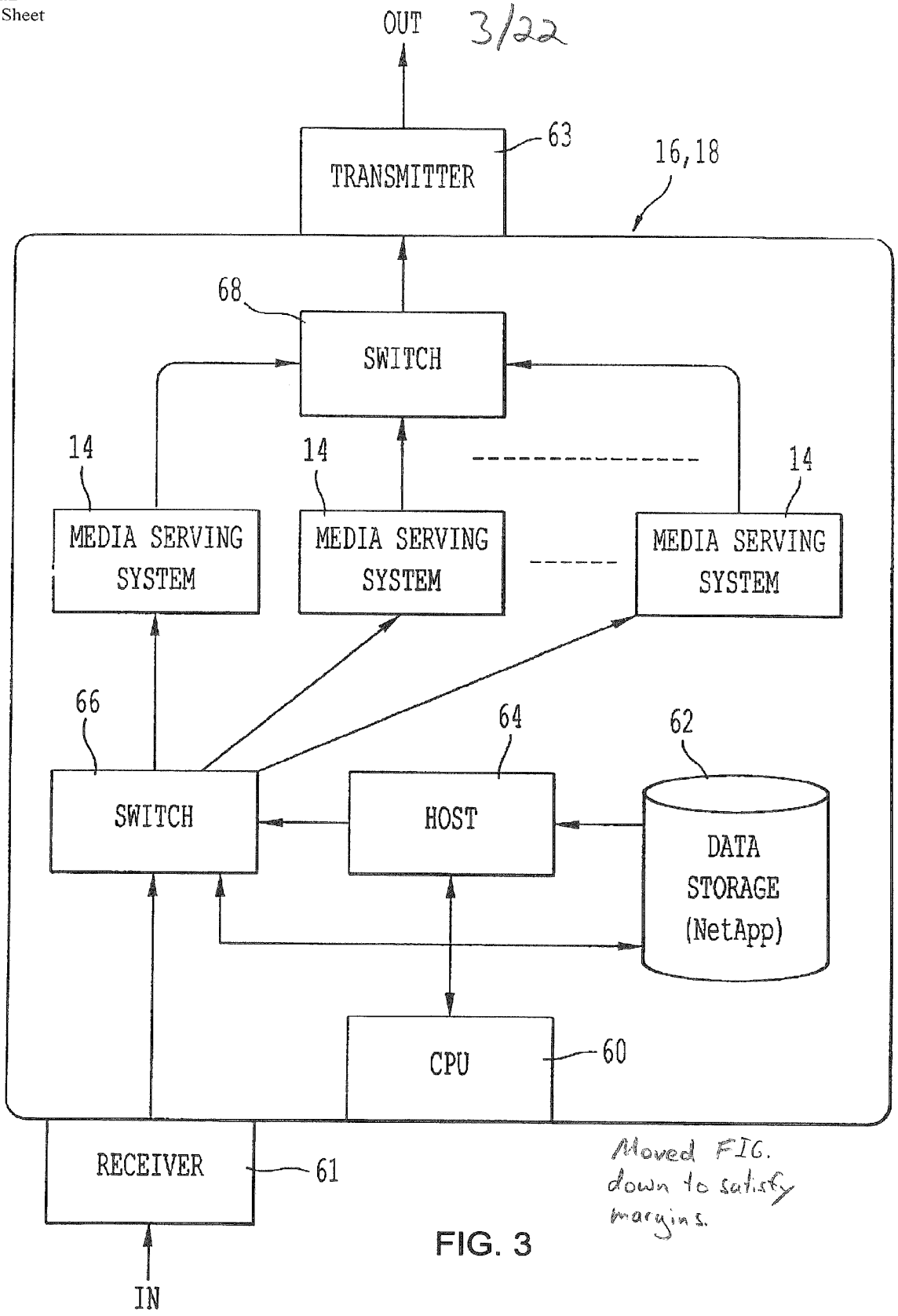

OUT
3/22
TRANSMITTER
63
16,18
68
SWITCH
14
14
14
MEDIA SERVING SYSTEM
MEDIA SERVING SYSTEM
MEDIA SERVING SYSTEM
66
64
62
SWITCH
HOST
DATA STORAGE (NetApp)
CPU
60
RECEIVER
61
IN
Moved FIG. down to satisfy margins.

FIG. 3

4/22

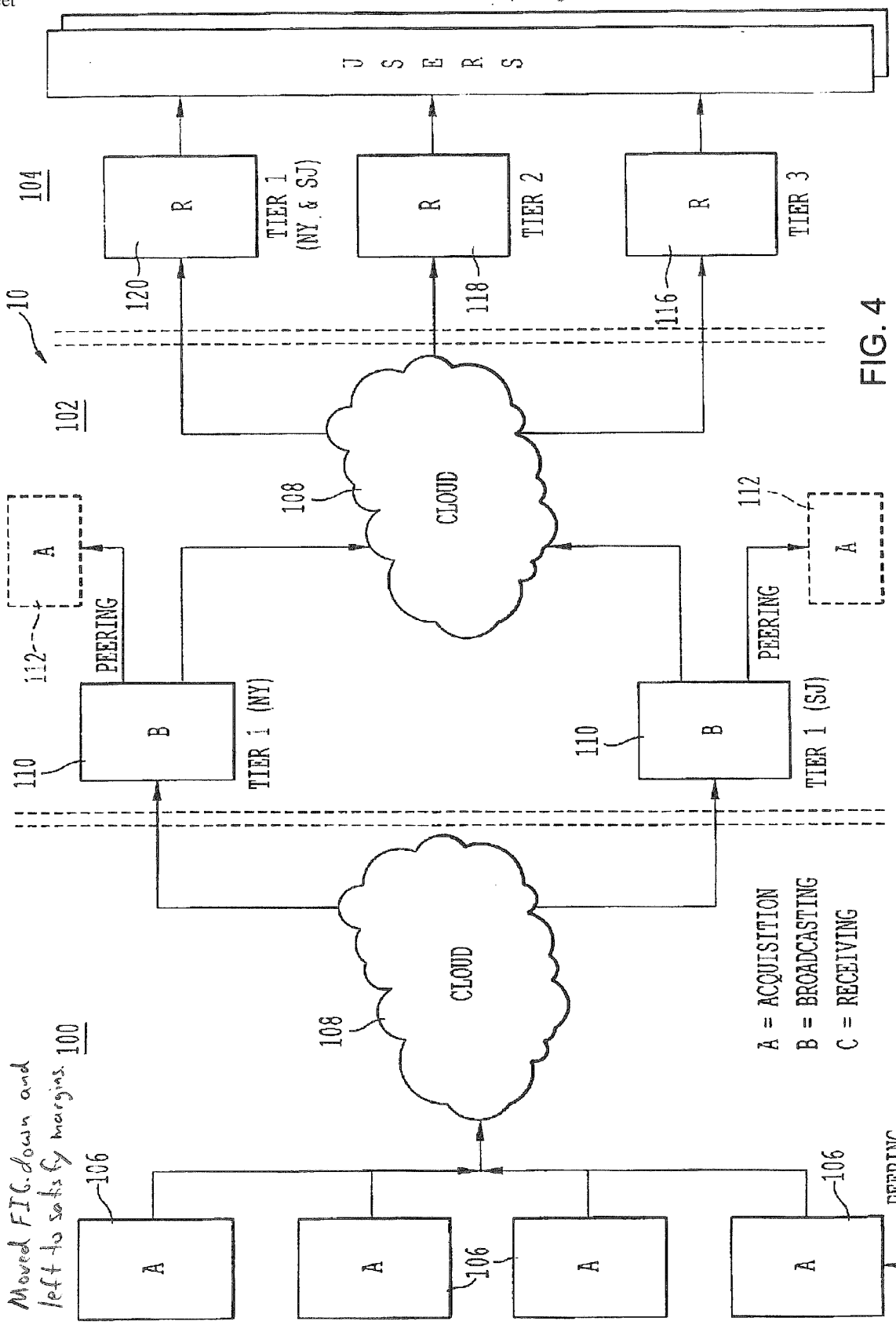

USERS
104
R
TIER 1 (NY & SJ)
R
TIER 2
R
TIER 3
120
118
116
10
102
CLOUD
108
A
112
PEERING
B
TIER 1 (NY)
110
A = ACQUISITION
B = BROADCASTING
C = RECEIVING
Moved FIG. down and left to satisfy margins.
100
106
PEERING

FIG. 4

5/22

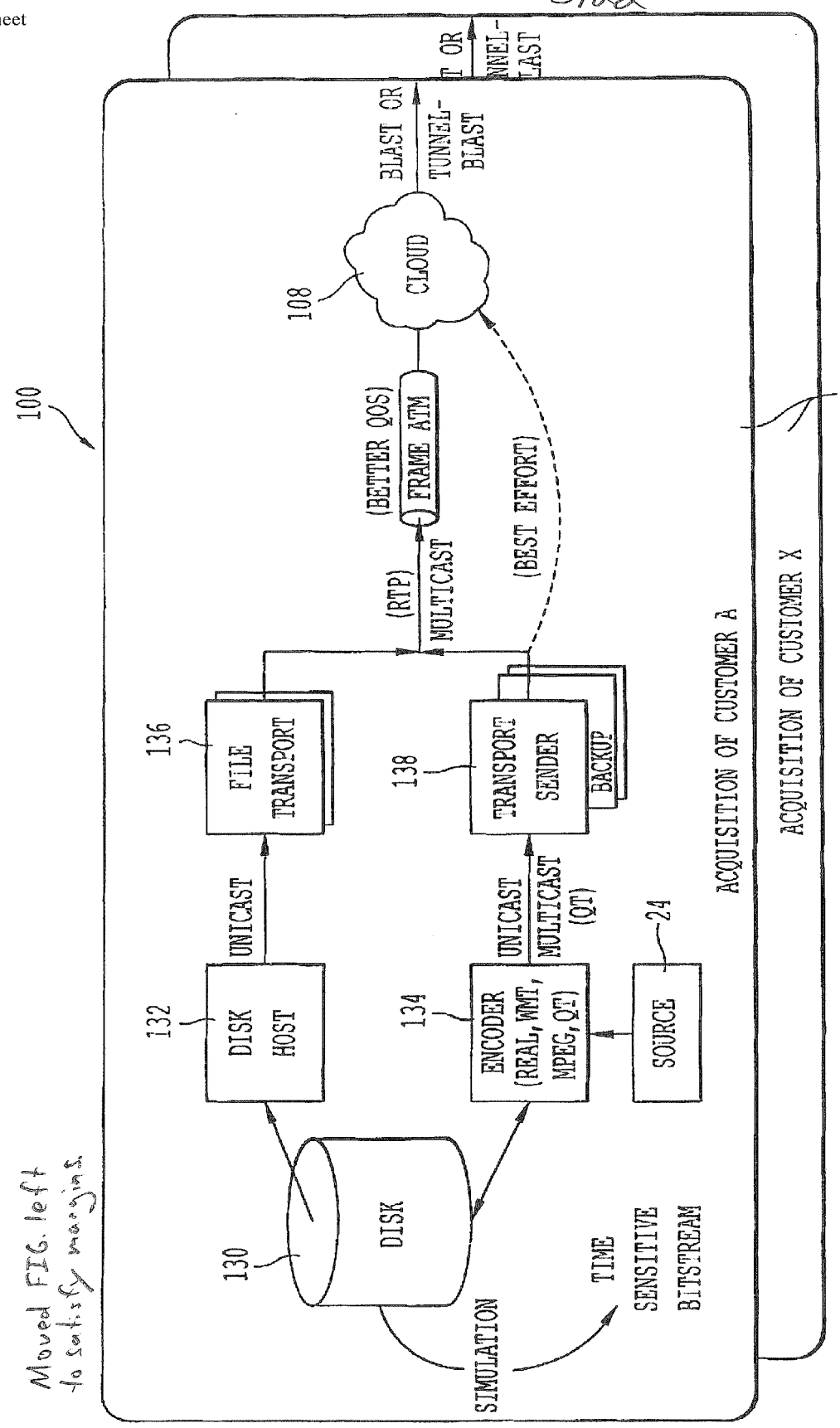


FIG. 5

Moved FIG. left to satisfy margins

6/22

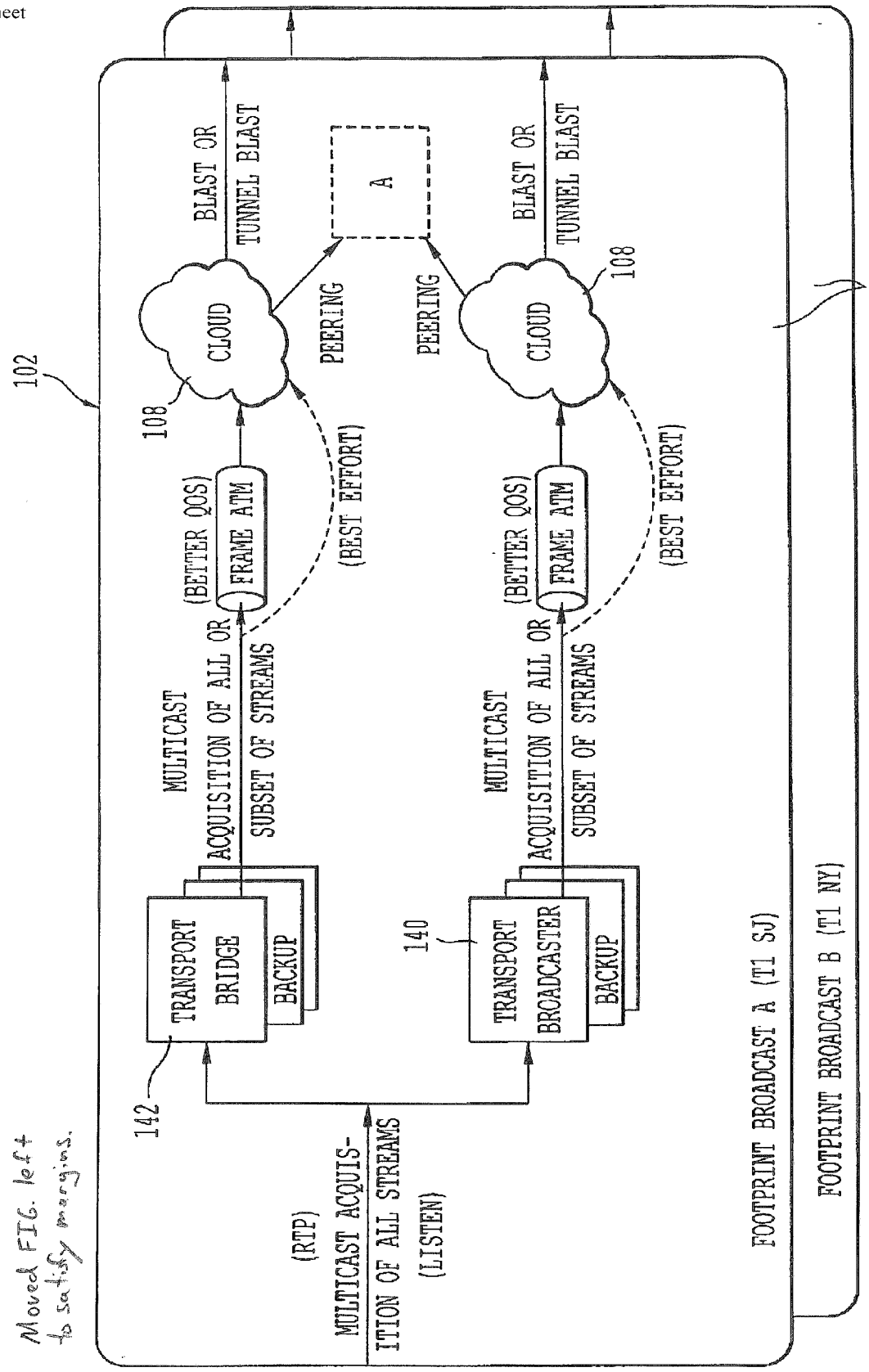


FIG. 6

Moved FIG. left to satisfy margins.

7/22

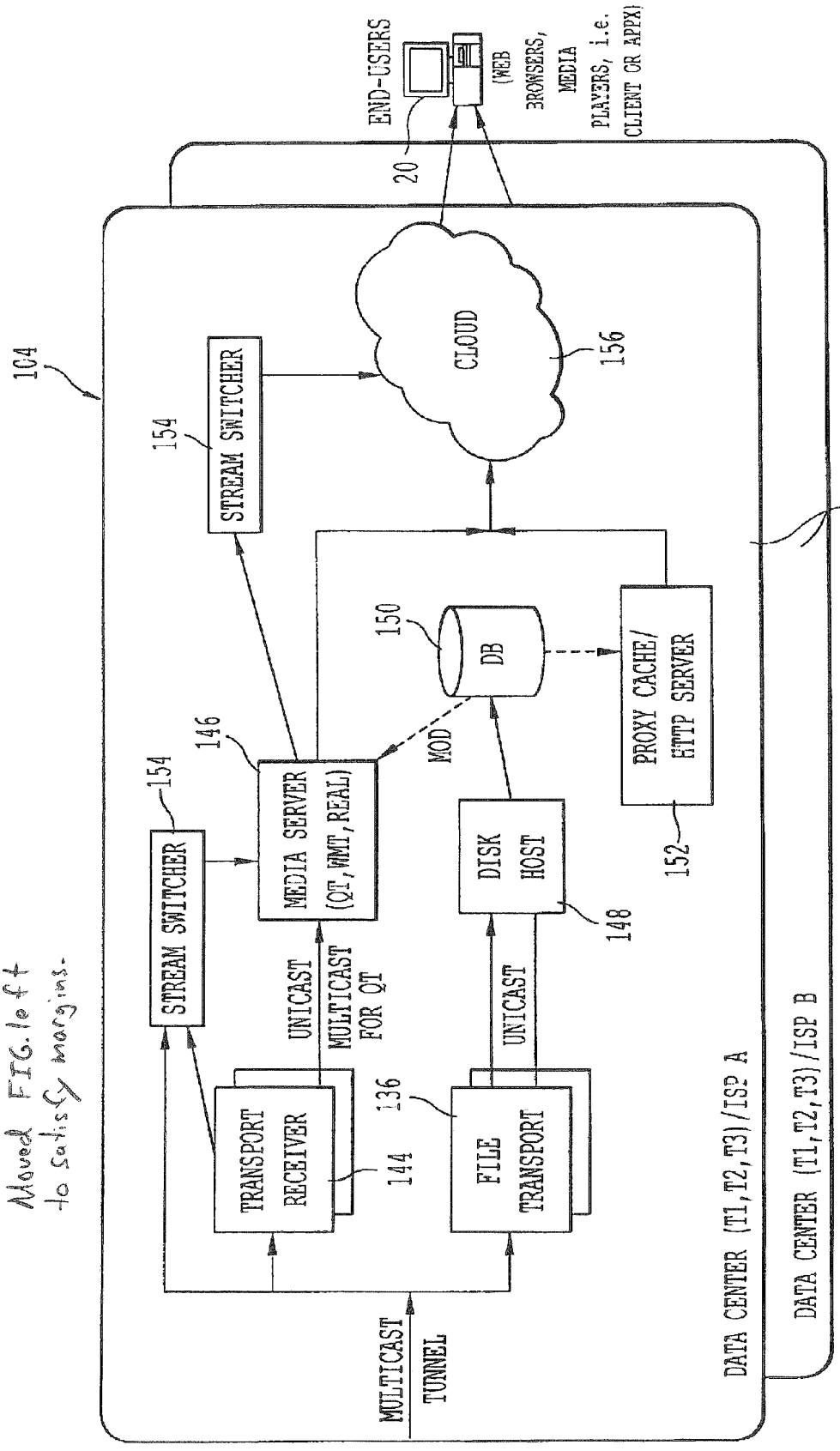


FIG. 7

Moved FIG. left to satisfy margins.

8/22

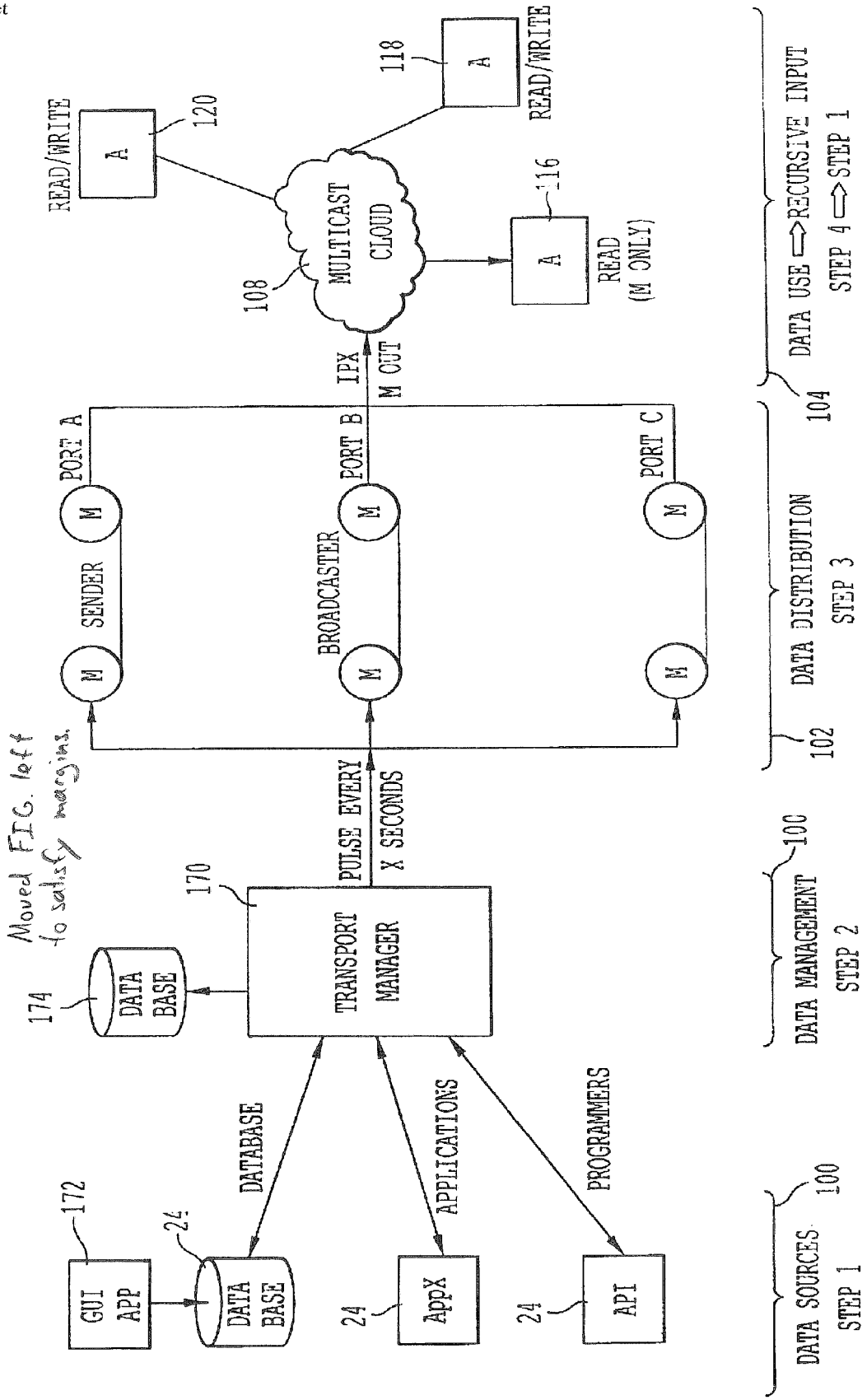

READ/WRITE
A
120
118
A
READ/WRITE
108
MULTICAST CLOUD
116
A
READ (M ONLY)
IPX M OUT
PORT A
PORT B
PORT C
M
SENDER
BROADCASTER
DATA USE ⇒RECURSIVE INPUT
STEP 4 ⇒STEP 1
104
DATA DISTRIBUTION
STEP 3
102
PULSE EVERY X SECONDS
170
TRANSPORT MANAGER
174
DATA BASE
Moved FIG. left to satisfy margins.
DATABASE
APPLICATIONS
PROGRAMMERS
172
GUI APP
24
DATA BASE
24
AppX
24
API
DATA MANAGEMENT
STEP 2
100
DATA SOURCES
STEP 1
100

FIG. 8

9/22

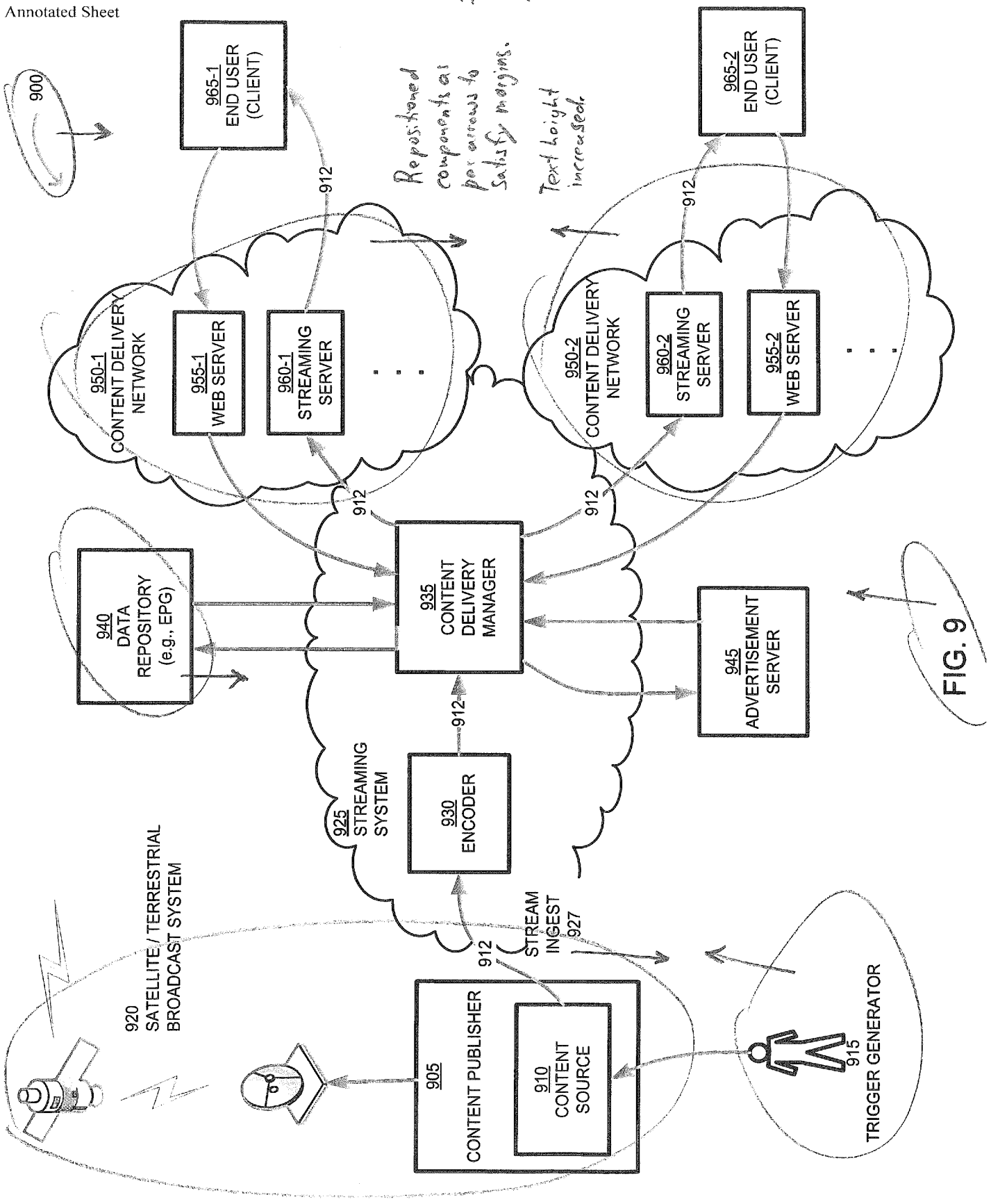

900
965-1 END USER (CLIENT)
912
950-1 CONTENT DELIVERY NETWORK
955-1 WEB SERVER
960-1 STREAMING SERVER
Repositioned components as necessary to satisfy margins.
Text height increased.
965-2 END USER (CLIENT)
950-2 CONTENT DELIVERY NETWORK
960-2 STREAMING SERVER
955-2 WEB SERVER
940 DATA REPOSITORY (e.g., EPG)
935 CONTENT DELIVERY MANAGER
945 ADVERTISEMENT SERVER
925 STREAMING SYSTEM
930 ENCODER
STREAM INGEST 927
920 SATELLITE / TERRESTRIAL BROADCAST SYSTEM
905 CONTENT PUBLISHER
910 CONTENT SOURCE
915 TRIGGER GENERATOR

FIG. 9

10/22

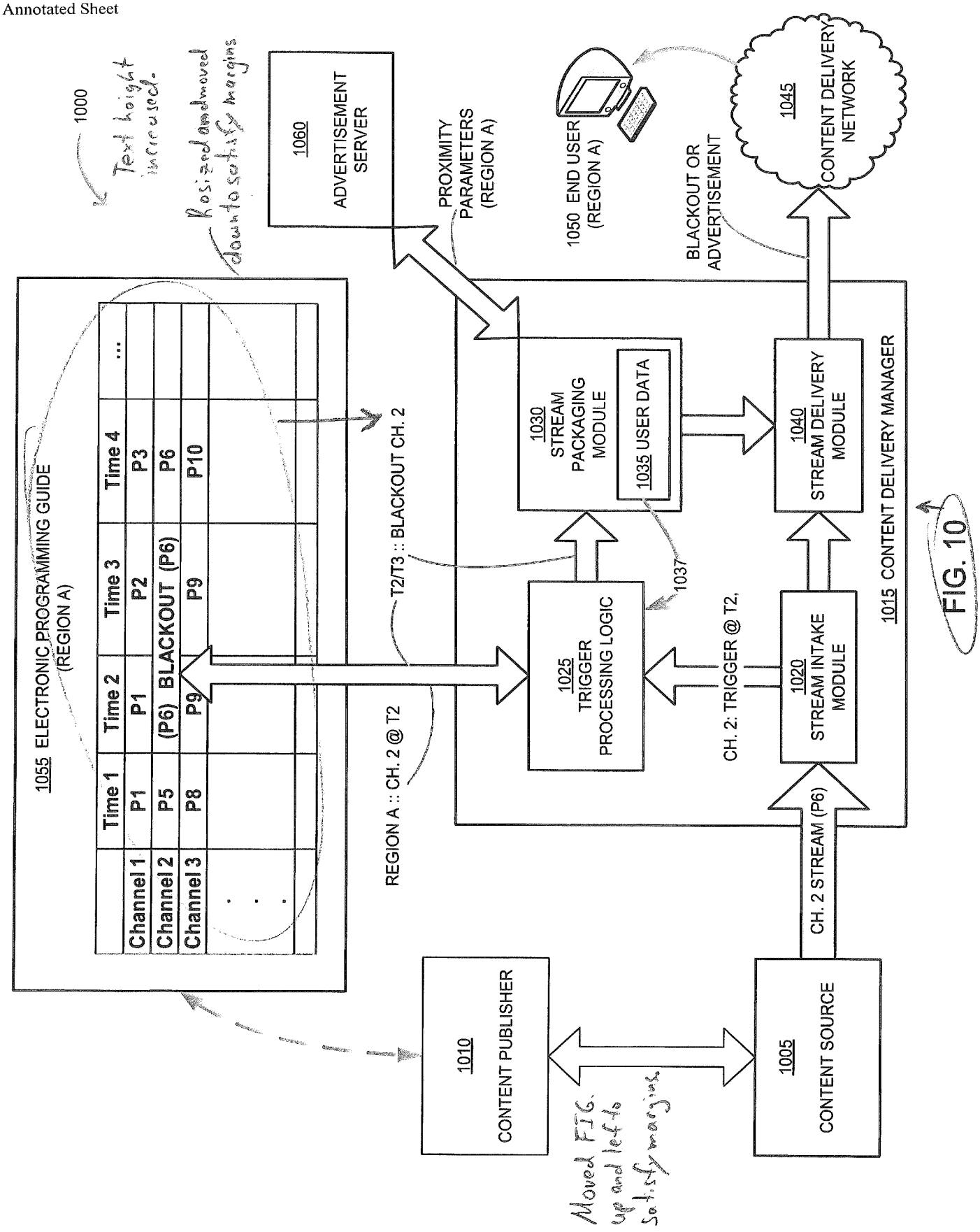

1000
Text height increased.
Resized and moved down to satisfy margins
1060 ADVERTISEMENT SERVER
PROXIMITY PARAMETERS (REGION A)
1050 END USER (REGION A)
BLACKOUT OR ADVERTISEMENT
1045 CONTENT DELIVERY NETWORK
1055 ELECTRONIC PROGRAMMING GUIDE (REGION A)
Time 1 | Time 2 | Time 3 | Time 4 | ...
Channel 1 | P1 | P1 | P2 | P3
Channel 2 | P5 | (P6) BLACKOUT | (P6) | P6
Channel 3 | P8 | P9 | P9 | P10
T2/T3 :: BLACKOUT CH. 2
1030 STREAM PACKAGING MODULE
1035 USER DATA
1040 STREAM DELIVERY MODULE
1037
1025 TRIGGER PROCESSING LOGIC
CH. 2: TRIGGER @ T2,
1020 STREAM INTAKE MODULE
1015 CONTENT DELIVERY MANAGER
REGION A :: CH. 2 @ T2
CH. 2 STREAM (P6)
1010 CONTENT PUBLISHER
1005 CONTENT SOURCE
Moved FIG. up and left to satisfy margins

FIG. 10

11/22

Text height increased.

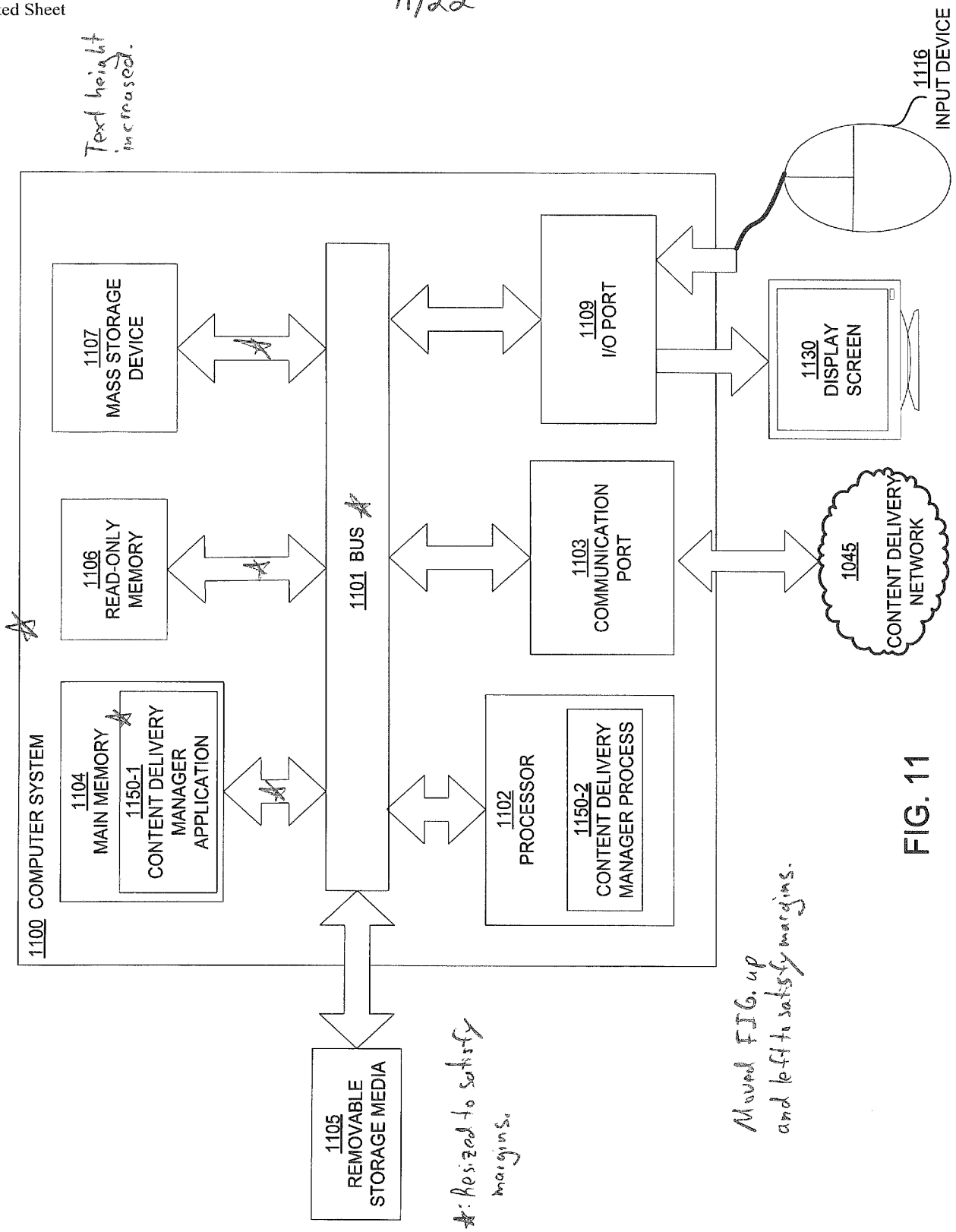


FIG. 11

*: Resized to satisfy margins.

Moved FIG. up and left to satisfy margins.

12/22

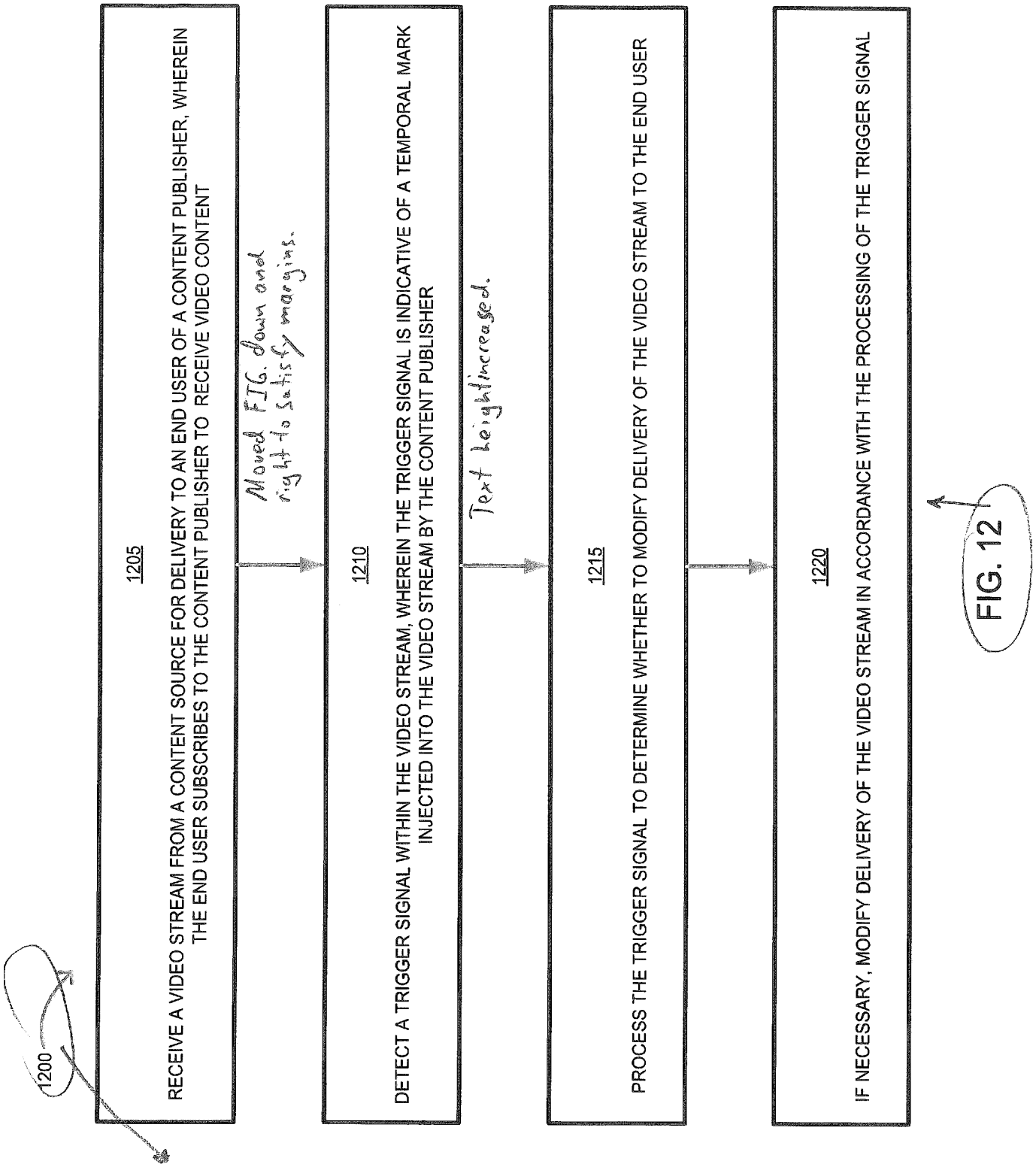

1200
1205
RECEIVE A VIDEO STREAM FROM A CONTENT SOURCE FOR DELIVERY TO AN END USER OF A CONTENT PUBLISHER, WHEREIN THE END USER SUBSCRIBES TO THE CONTENT PUBLISHER TO RECEIVE VIDEO CONTENT
Moved FIG. down and right to satisfy margins.
1210
DETECT A TRIGGER SIGNAL WITHIN THE VIDEO STREAM, WHEREIN THE TRIGGER SIGNAL IS INDICATIVE OF A TEMPORAL MARK INJECTED INTO THE VIDEO STREAM BY THE CONTENT PUBLISHER
Text heightincreased.
1215
PROCESS THE TRIGGER SIGNAL TO DETERMINE WHETHER TO MODIFY DELIVERY OF THE VIDEO STREAM TO THE END USER
1220
IF NECESSARY, MODIFY DELIVERY OF THE VIDEO STREAM IN ACCORDANCE WITH THE PROCESSING OF THE TRIGGER SIGNAL

FIG. 12

13/22

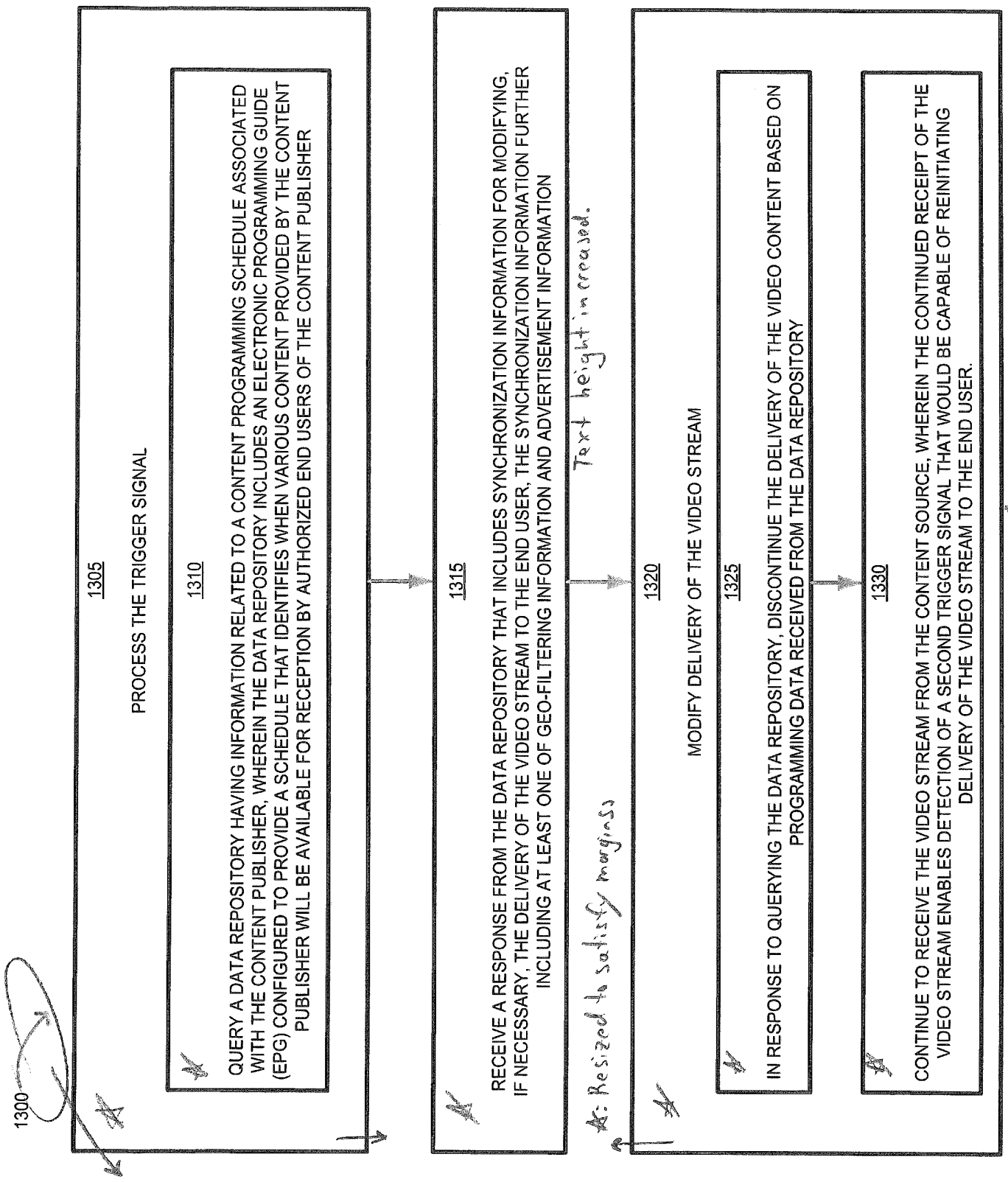

1300
1305
PROCESS THE TRIGGER SIGNAL
1310
QUERY A DATA REPOSITORY HAVING INFORMATION RELATED TO A CONTENT PROGRAMMING SCHEDULE ASSOCIATED WITH THE CONTENT PUBLISHER, WHEREIN THE DATA REPOSITORY INCLUDES AN ELECTRONIC PROGRAMMING GUIDE (EPG) CONFIGURED TO PROVIDE A SCHEDULE THAT IDENTIFIES WHEN VARIOUS CONTENT PROVIDED BY THE CONTENT PUBLISHER WILL BE AVAILABLE FOR RECEPTION BY AUTHORIZED END USERS OF THE CONTENT PUBLISHER
1315
RECEIVE A RESPONSE FROM THE DATA REPOSITORY THAT INCLUDES SYNCHRONIZATION INFORMATION FOR MODIFYING, IF NECESSARY, THE DELIVERY OF THE VIDEO STREAM TO THE END USER, THE SYNCHRONIZATION INFORMATION FURTHER INCLUDING AT LEAST ONE OF GEO-FILTERING INFORMATION AND ADVERTISEMENT INFORMATION
Text height increased.
A: Resized to satisfy margins
1320
MODIFY DELIVERY OF THE VIDEO STREAM
1325
IN RESPONSE TO QUERYING THE DATA REPOSITORY, DISCONTINUE THE DELIVERY OF THE VIDEO CONTENT BASED ON PROGRAMMING DATA RECEIVED FROM THE DATA REPOSITORY
1330
CONTINUE TO RECEIVE THE VIDEO STREAM FROM THE CONTENT SOURCE, WHEREIN THE CONTINUED RECEIPT OF THE VIDEO STREAM ENABLES DETECTION OF A SECOND TRIGGER SIGNAL THAT WOULD BE CAPABLE OF REINITIATING DELIVERY OF THE VIDEO STREAM TO THE END USER.

FIG. 13

14/22

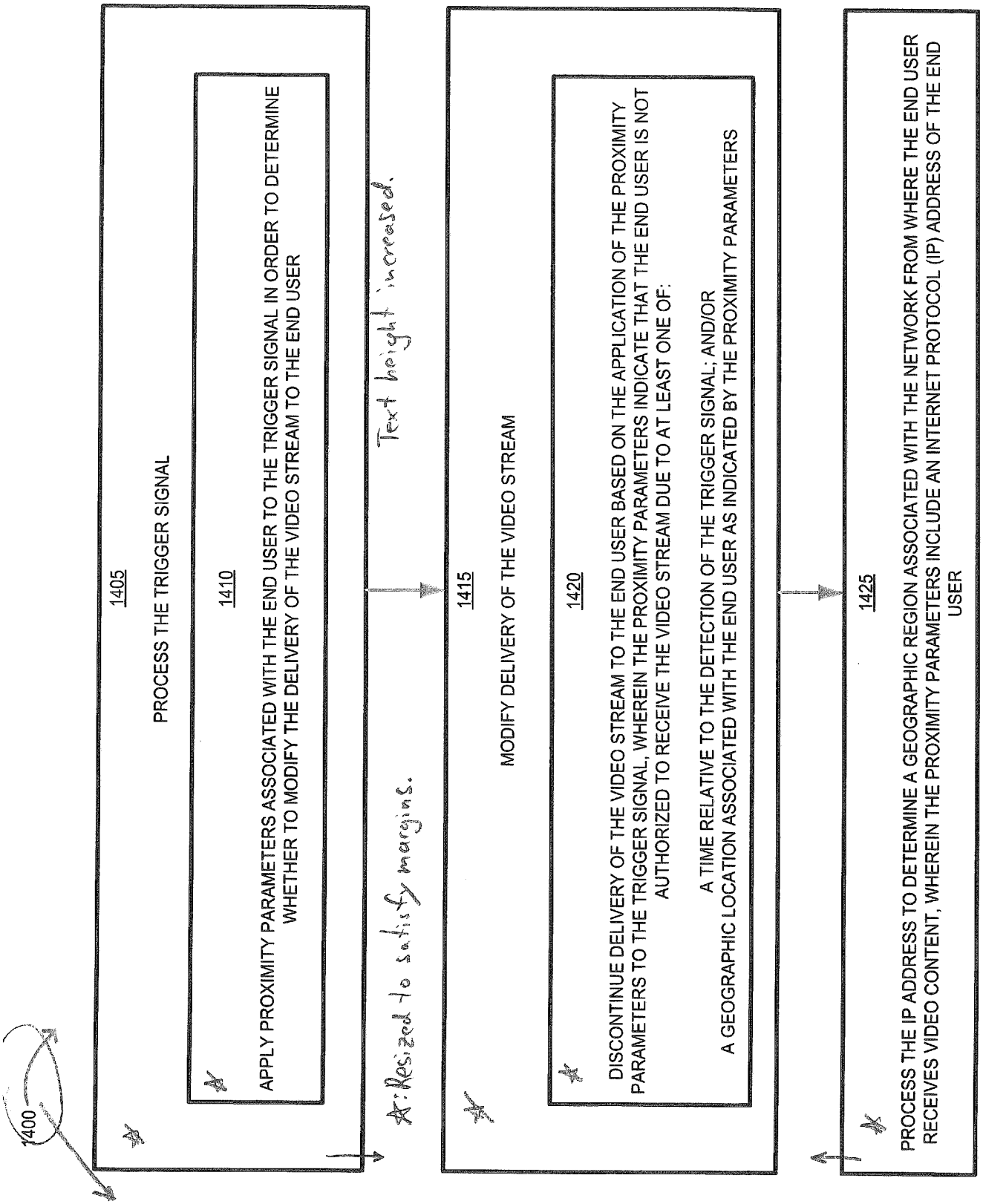

1400
1405
PROCESS THE TRIGGER SIGNAL
1410
APPLY PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER TO THE TRIGGER SIGNAL IN ORDER TO DETERMINE WHETHER TO MODIFY THE DELIVERY OF THE VIDEO STREAM TO THE END USER
Text height increased.
* Resized to satisfy margins.
1415
MODIFY DELIVERY OF THE VIDEO STREAM
1420
DISCONTINUE DELIVERY OF THE VIDEO STREAM TO THE END USER BASED ON THE APPLICATION OF THE PROXIMITY PARAMETERS TO THE TRIGGER SIGNAL, WHEREIN THE PROXIMITY PARAMETERS INDICATE THAT THE END USER IS NOT AUTHORIZED TO RECEIVE THE VIDEO STREAM DUE TO AT LEAST ONE OF:
A TIME RELATIVE TO THE DETECTION OF THE TRIGGER SIGNAL; AND/OR
A GEOGRAPHIC LOCATION ASSOCIATED WITH THE END USER AS INDICATED BY THE PROXIMITY PARAMETERS
1425
PROCESS THE IP ADDRESS TO DETERMINE A GEOGRAPHIC REGION ASSOCIATED WITH THE NETWORK FROM WHERE THE END USER RECEIVES VIDEO CONTENT, WHEREIN THE PROXIMITY PARAMETERS INCLUDE AN INTERNET PROTOCOL (IP) ADDRESS OF THE END USER

FIG. 14

15/22

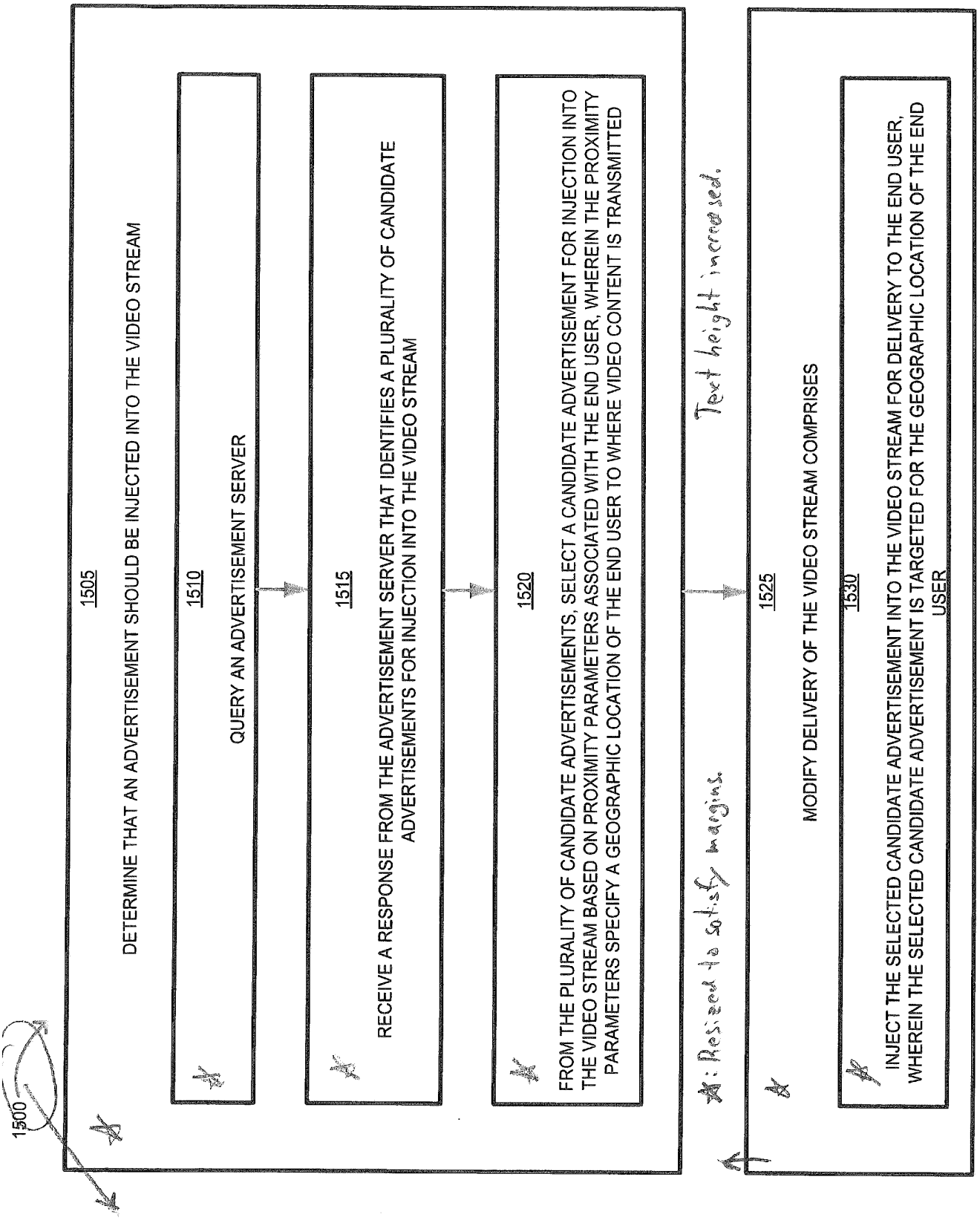

1500
1505
DETERMINE THAT AN ADVERTISEMENT SHOULD BE INJECTED INTO THE VIDEO STREAM
1510
QUERY AN ADVERTISEMENT SERVER
1515
RECEIVE A RESPONSE FROM THE ADVERTISEMENT SERVER THAT IDENTIFIES A PLURALITY OF CANDIDATE ADVERTISEMENTS FOR INJECTION INTO THE VIDEO STREAM
1520
FROM THE PLURALITY OF CANDIDATE ADVERTISEMENTS, SELECT A CANDIDATE ADVERTISEMENT FOR INJECTION INTO THE VIDEO STREAM BASED ON PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER, WHEREIN THE PROXIMITY PARAMETERS SPECIFY A GEOGRAPHIC LOCATION OF THE END USER TO WHERE VIDEO CONTENT IS TRANSMITTED
*: Revised to satisfy margins.
Text height increased.
1525
MODIFY DELIVERY OF THE VIDEO STREAM COMPRISES
1530
INJECT THE SELECTED CANDIDATE ADVERTISEMENT INTO THE VIDEO STREAM FOR DELIVERY TO THE END USER, WHEREIN THE SELECTED CANDIDATE ADVERTISEMENT IS TARGETED FOR THE GEOGRAPHIC LOCATION OF THE END USER

FIG. 15

16/22

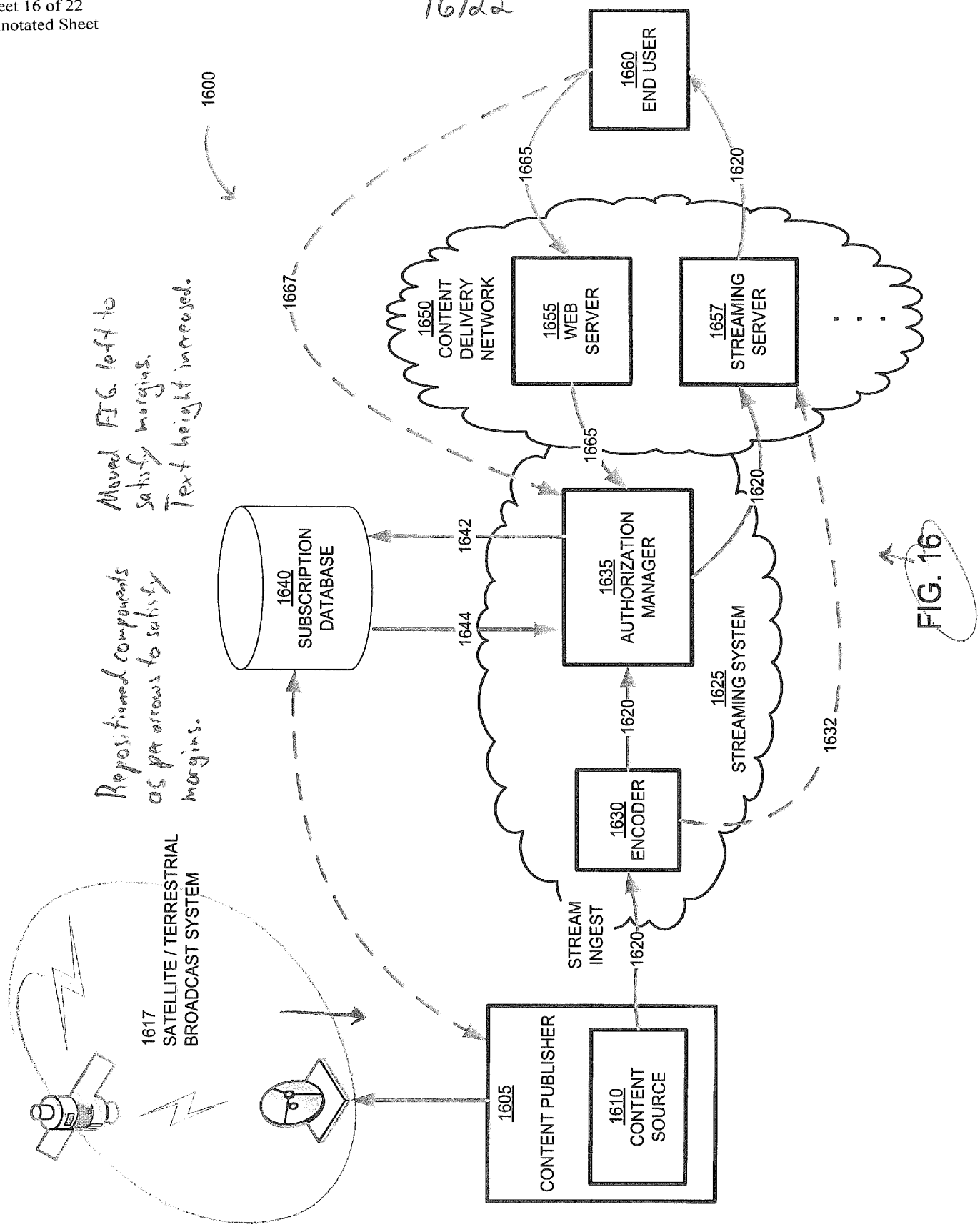


FIG. 16

Moved FIG. left to satisfy margins. Text height increased.

Repositioned components as per arrows to satisfy margins.

17/22

1700
Text height increased.
Moved FIG. left and up to satisfy margins.
*: Moved and resized to satisfy margins.
1705 CONTENT PUBLISHER
1710 CONTENT SOURCE
1715 AUTHORIZATION MANAGER
1720 STREAM INTAKE MODULE
1725 STREAM DELIVERY MODULE
1730 VERIFICATION MODULE
1735 DATA STORAGE MODULE
1740 END USER DATA REPOSITORY
END USER DATA
SESSION INFO
PROX. PARAMs
END USER 1
END USER 2
END USER 5
END USER M
T_1/CS_1
T_3/CS_2
T_7/CS_4
T_X/CS_Y
IP_1
IP_2
IP_5
IP_M
1750 SUBSCRIPTION DATABASE
CONTENT PUBLISHER AUTHORIZED SUBSCRIBERS
END USER 1
END USER 4
END USER 9
END USER N
1760 CONTENT DELIVERY NETWORK
1770 END USER 1
1772
1774

FIG. 17

18/22

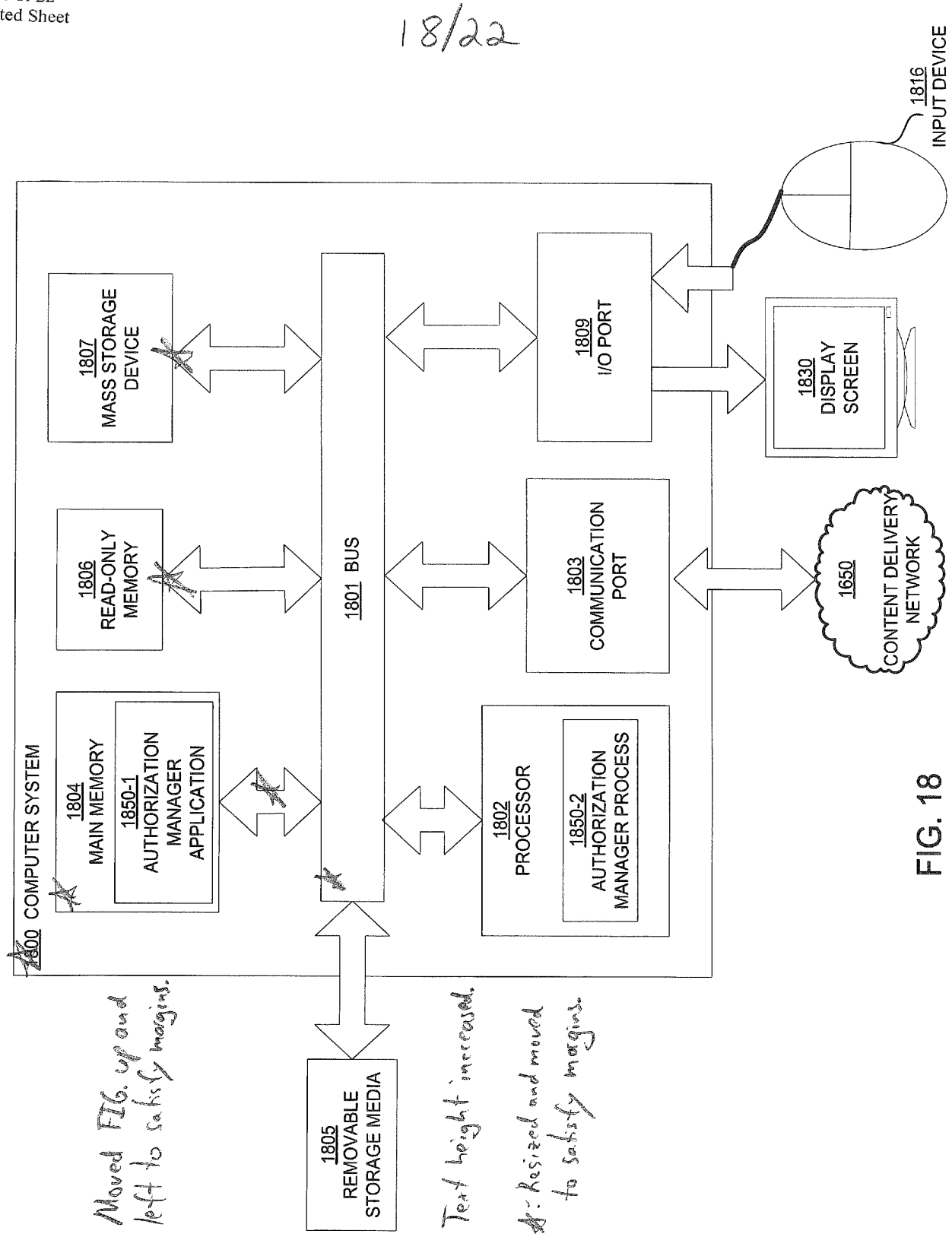

1800 COMPUTER SYSTEM
1804 MAIN MEMORY
1850-1 AUTHORIZATION MANAGER APPLICATION
1806 READ-ONLY MEMORY
1807 MASS STORAGE DEVICE
1801 BUS
1802 PROCESSOR
1850-2 AUTHORIZATION MANAGER PROCESS
1803 COMMUNICATION PORT
1809 I/O PORT
1805 REMOVABLE STORAGE MEDIA
1650 CONTENT DELIVERY NETWORK
1830 DISPLAY SCREEN
1816 INPUT DEVICE
Moved FIG. up and left to satisfy margins.
Text height increased.
Re-sized and moved to satisfy margins.

FIG. 18

19/22

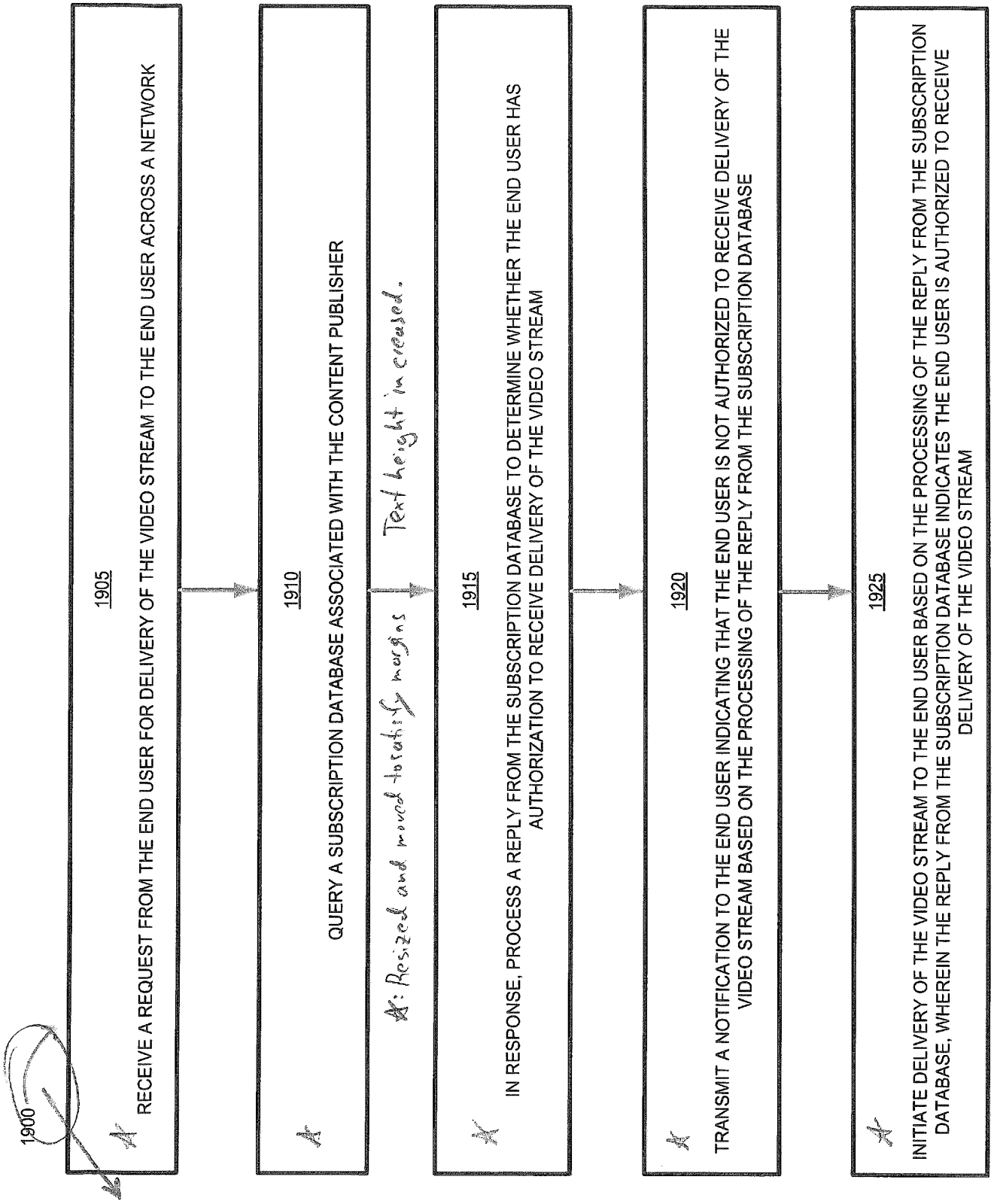

1900
1905
RECEIVE A REQUEST FROM THE END USER FOR DELIVERY OF THE VIDEO STREAM TO THE END USER ACROSS A NETWORK
1910
QUERY A SUBSCRIPTION DATABASE ASSOCIATED WITH THE CONTENT PUBLISHER
*: Resized and moved horizontally margins
Text height increased.
1915
IN RESPONSE, PROCESS A REPLY FROM THE SUBSCRIPTION DATABASE TO DETERMINE WHETHER THE END USER HAS AUTHORIZATION TO RECEIVE DELIVERY OF THE VIDEO STREAM
1920
TRANSMIT A NOTIFICATION TO THE END USER INDICATING THAT THE END USER IS NOT AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM BASED ON THE PROCESSING OF THE REPLY FROM THE SUBSCRIPTION DATABASE
1925
INITIATE DELIVERY OF THE VIDEO STREAM TO THE END USER BASED ON THE PROCESSING OF THE REPLY FROM THE SUBSCRIPTION DATABASE, WHEREIN THE REPLY FROM THE SUBSCRIPTION DATABASE INDICATES THE END USER IS AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM

FIG. 19

20/22

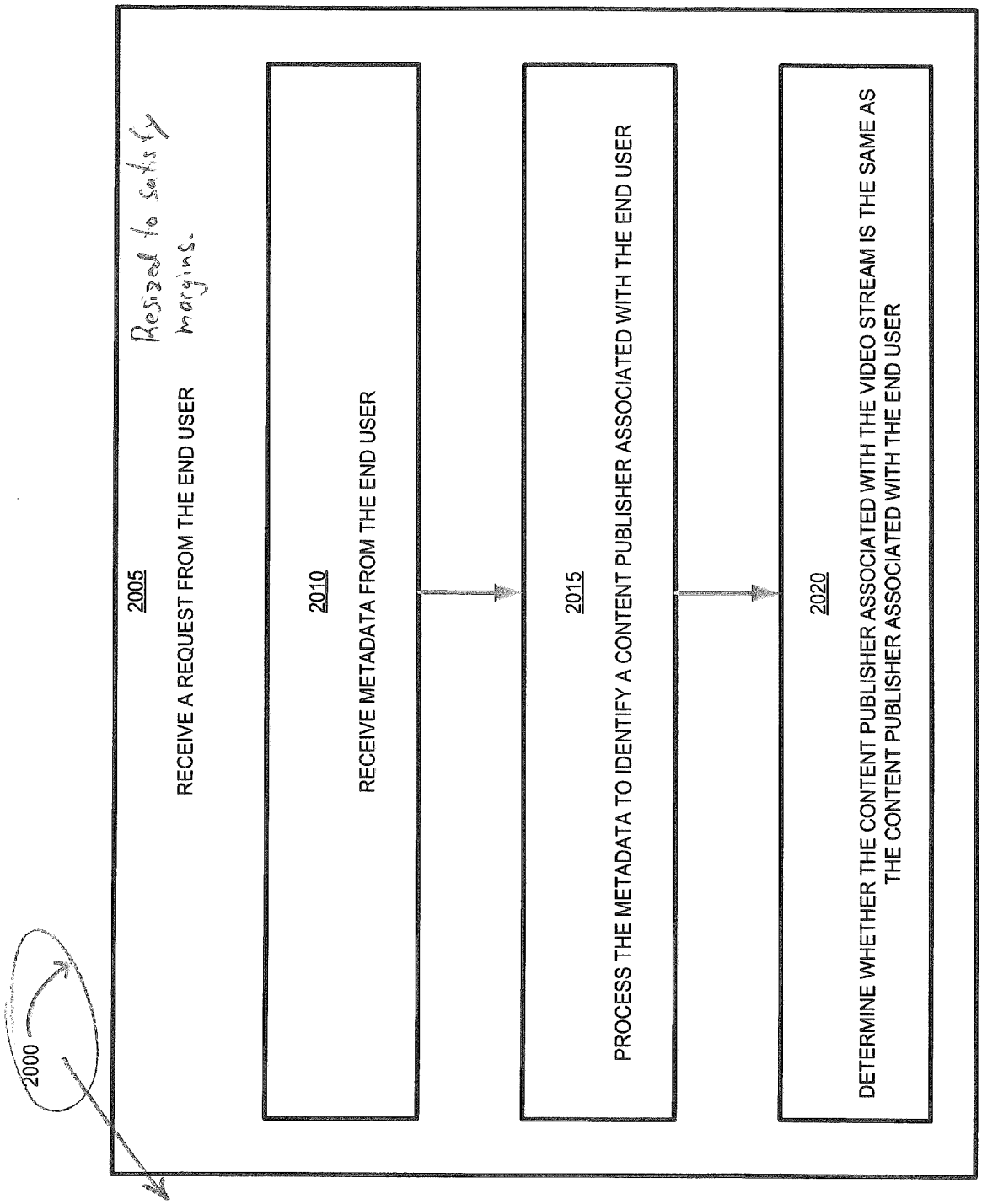

2000
2005
RECEIVE A REQUEST FROM THE END USER
2010
RECEIVE METADATA FROM THE END USER
2015
PROCESS THE METADATA TO IDENTIFY A CONTENT PUBLISHER ASSOCIATED WITH THE END USER
2020
DETERMINE WHETHER THE CONTENT PUBLISHER ASSOCIATED WITH THE VIDEO STREAM IS THE SAME AS THE CONTENT PUBLISHER ASSOCIATED WITH THE END USER
Resized to satisfy margins.
Text height increased.
Moved FIG. down and left to satisfy margins.

FIG. 20

21/22

2100
2105
RECEIVE A REQUEST FROM THE END USER FOR DELIVERY OF THE VIDEO STREAM TO THE END USER ACROSS A NETWORK
2110
PROCESS PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER, WHEREIN THE PROXIMITY PARAMETERS SPECIFY A GEOGRAPHIC LOCATION OF THE END USER TO WHERE VIDEO CONTENT IS TRANSMITTED
Moved reference numbers outside of boxes to satisfy margins.
2115
BASED ON THE PROCESSING OF THE PROXIMITY PARAMETERS, DETERMINE THAT THE END USER IS NOT AUTHORIZED TO RECEIVE THE VIDEO STREAM
2120
GIVEN A RELATIVE TIME ASSOCIATED WITH THE RECEIPT OF THE REQUEST FROM THE END USER, DETERMINE WHETHER THE VIDEO STREAM SHOULD BE BLACKED OUT FOR AT LEAST A TIME PERIOD ASSOCIATED WITH THE RELATIVE TIME IN RELATION TO THE GEOGRAPHIC LOCATION OF THE END USER
*: Resized and moved to satisfy margins.
Text height increased
2125
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER
2130
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER TO BE IN ACCORDANCE WITH BLACK OUT RULES ASSOCIATED WITH THE CONTENT PUBLISHER, THE BLACK OUT RULES HAVING ASSOCIATED TIME RESTRICTIONS AND GEOGRAPHIC RESTRICTIONS PRESCRIBED BY THE CONTENT PUBLISHER FOR THE END USER
AND/OR
2135
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER TO BE IN ACCORDANCE WITH SUBSCRIPTION PARAMETERS OF THE CONTENT PUBLISHER FOR A GROUP OF END USERS, THE SUBSCRIPTION PARAMETERS INCLUDING AT LEAST ONE OF A TIME RESTRICTION AND A GEOGRAPHIC RESTRICTION, AND WHEREIN THE END USER IS A MEMBER OF THE GROUP OF END USERS TO WHICH THE SUBSCRIPTION PARAMETERS APPLY
AND/OR
2140
TERMINATE THE DELIVERY OF THE VIDEO STREAM TO THE END USER IF DELIVERY OF THE VIDEO STREAM TO THE END USER HAS ALREADY BEEN INITIATED

FIG. 21

22/22

2200
2205
PROCESS THE REPLY FROM THE SUBSCRIPTION DATABASE TO DETECT WHETHER THE END USER IS A SUBSCRIBER OF THE CONTENT PUBLISHER
1310
IN A SUBSCRIBER VERIFICATION TABLE, STORE AN ENTRY INDICATING THAT THE END USER IS AN AUTHORIZED SUBSCRIBER OF THE CONTENT PUBLISHER
Moved reference numbers outside of boxes to satisfy margins
2215
RECEIVE A SECOND REQUEST FROM A SECOND END USER FOR DELIVERY OF THE VIDEO STREAM TO THE SECOND END USER
*: Resized and moved to satisfy margins.
Text height increased.
2220
PROCESSING THE SECOND REQUEST TO DETERMINE THAT THE SECOND END USER IS AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM
2225
DETERMINE THAT THE SECOND END USER IS THE SAME AS THE END USER
2230
IN RESPONSE TO QUERYING THE SUBSCRIBER VERIFICATION TABLE, DETERMINE THAT THE SECOND END USER IS AN AUTHORIZED SUBSCRIBER OF THE CONTENT PUBLISHER
2235
INITIATE DELIVERY OF THE VIDEO STREAM TO THE SECOND USER
2240
IN THE SUBSCRIBER VERIFICATION TABLE, STORE SESSION INFORMATION ASSOCIATED WITH THE DELIVERY OF THE VIDEO STREAM TO THE END USER, WHEREIN THE SESSION INFORMATION IS STORED IN ACCORDANCE WITH A RELATIVE TIME AT WHICH THE REQUEST FROM THE END USER WAS RECEIVED

FIG. 22

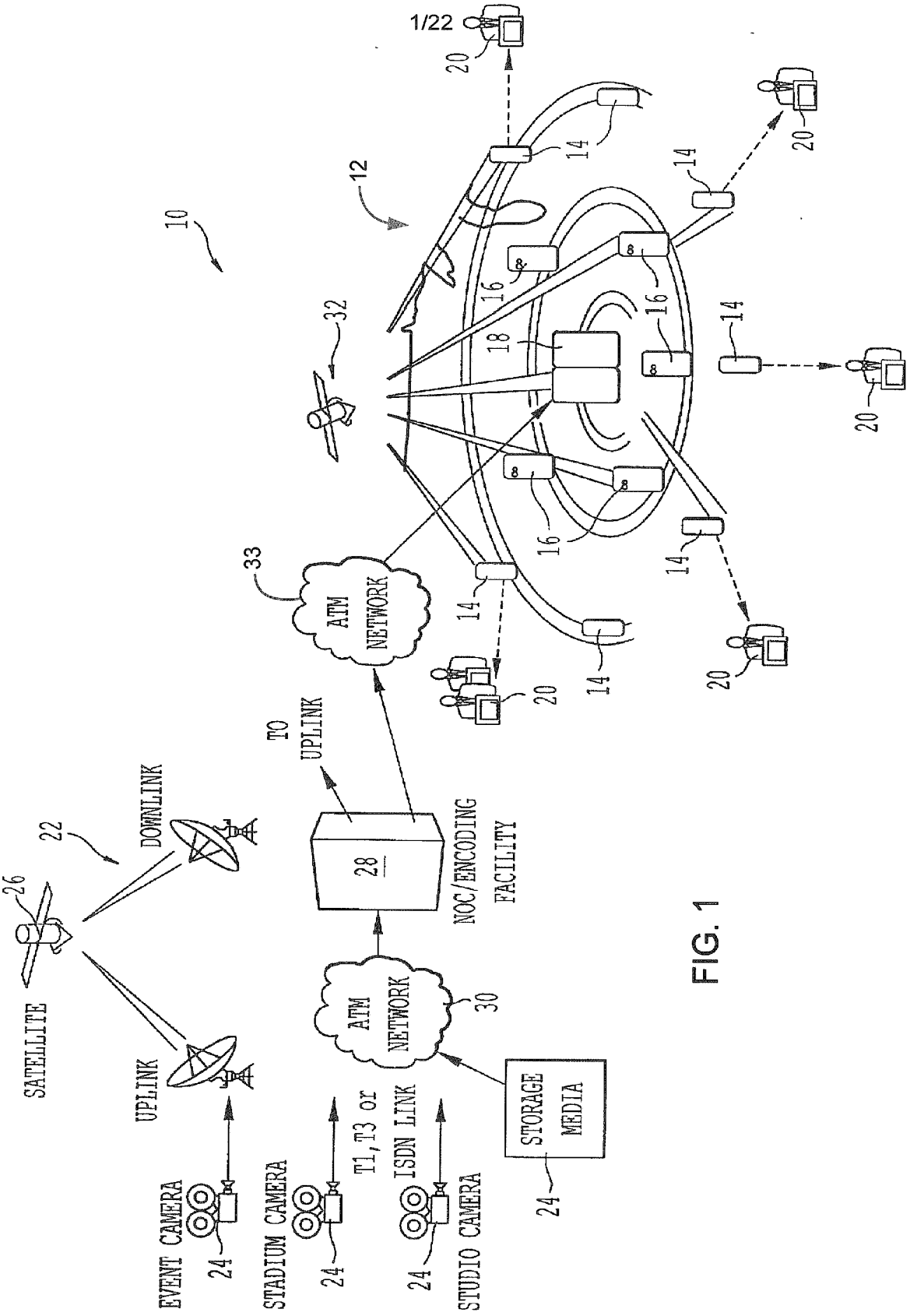

1/22
10
12
20
14
16
18
32
33
ATM NETWORK
TO UPLINK
28
NOC/ENCODING FACILITY
22
DOWNLINK
26
SATELLITE
UPLINK
ATM NETWORK
30
T1, T3 or ISDN LINK
STORAGE MEDIA
24
EVENT CAMERA
STADIUM CAMERA
STUDIO CAMERA

FIG. 1

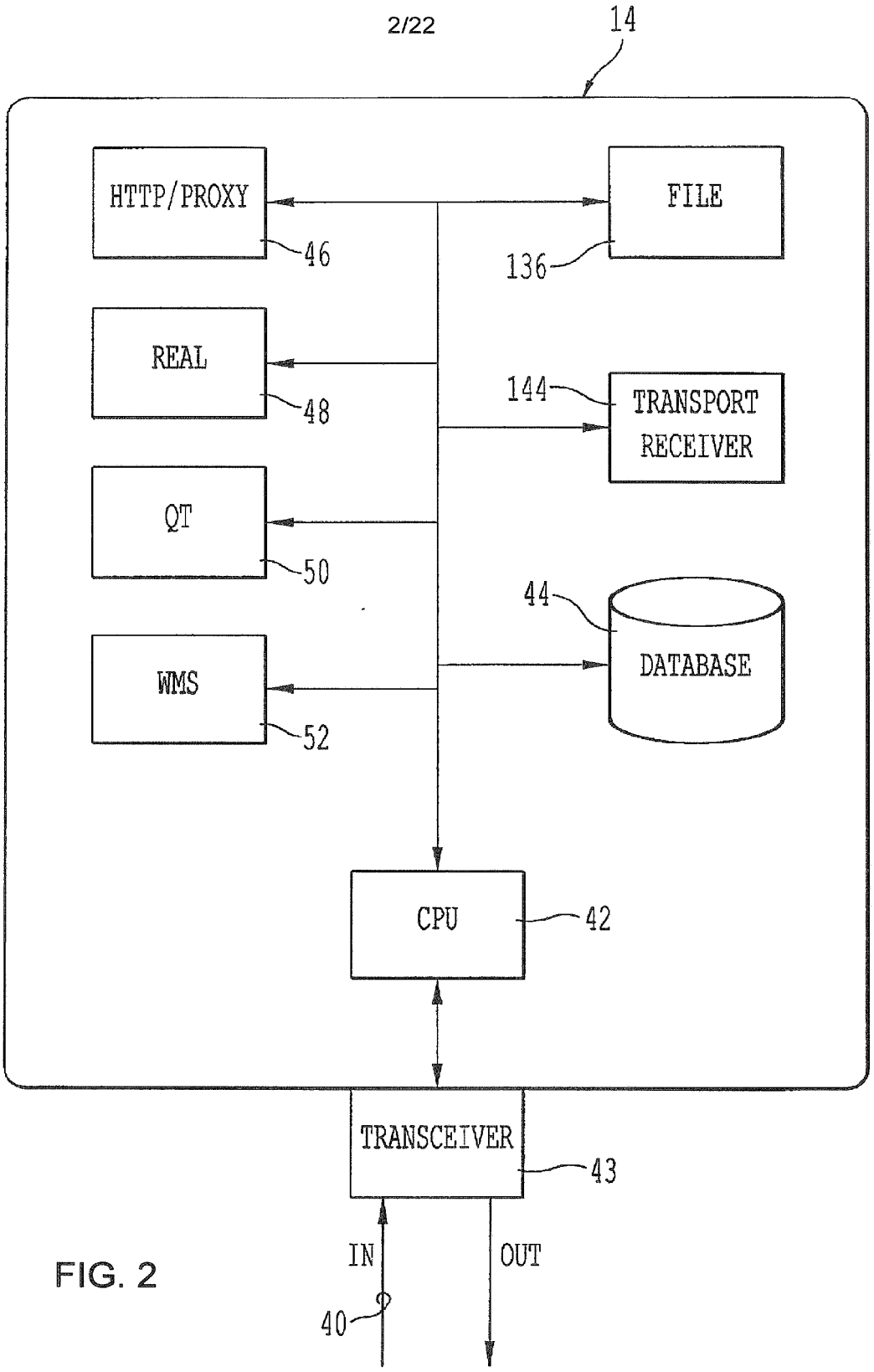

14
HTTP/PROXY
46
FILE
136
REAL
48
144
TRANSPORT RECEIVER
QT
50
44
DATABASE
WMS
52
CPU
42
TRANSCEIVER
43
IN
OUT
40

FIG. 2

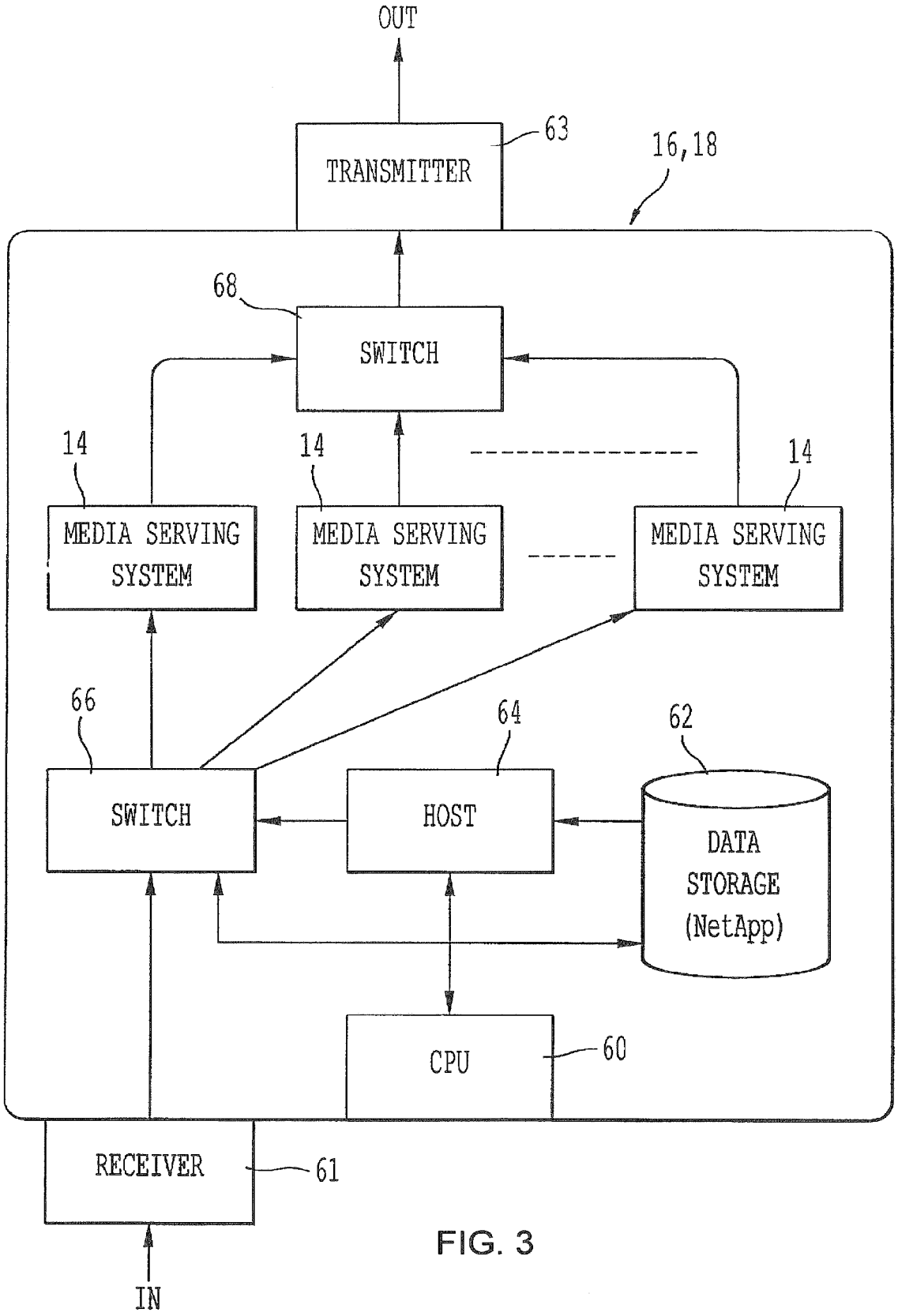

OUT
TRANSMITTER
63
16,18
68
SWITCH
14
14
14
MEDIA SERVING SYSTEM
MEDIA SERVING SYSTEM
MEDIA SERVING SYSTEM
66
64
62
SWITCH
HOST
DATA STORAGE (NetApp)
CPU
60
RECEIVER
61
IN

FIG. 3

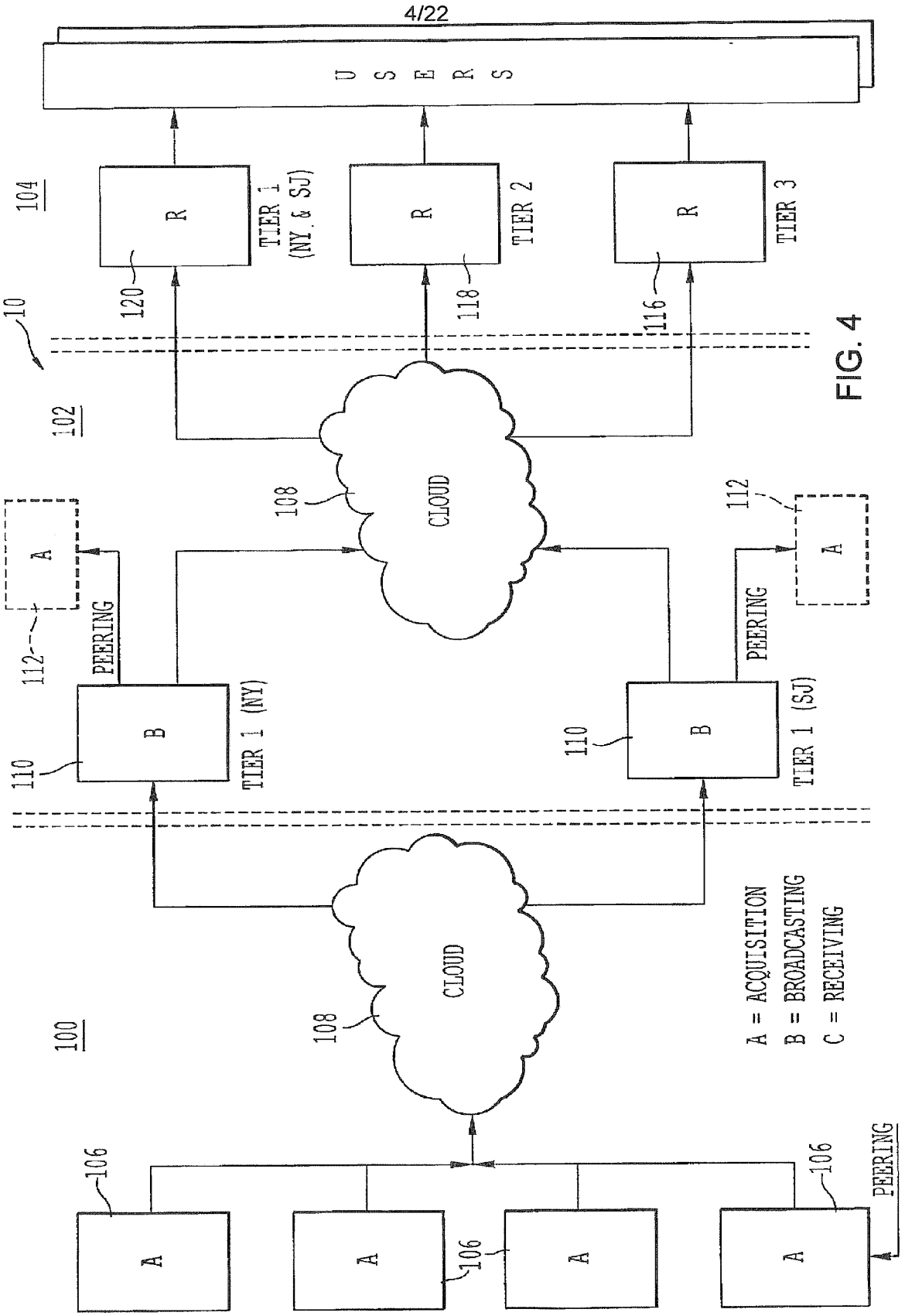

4/22
U S E R S
104
R
TIER 1 (NY & SJ)
R
TIER 2
R
TIER 3
120
118
116
10
102
CLOUD
108
112
A
PEERING
B
TIER 1 (NY)
TIER 1 (SJ)
110
100
106
A = ACQUISITION
B = BROADCASTING
C = RECEIVING

FIG. 4

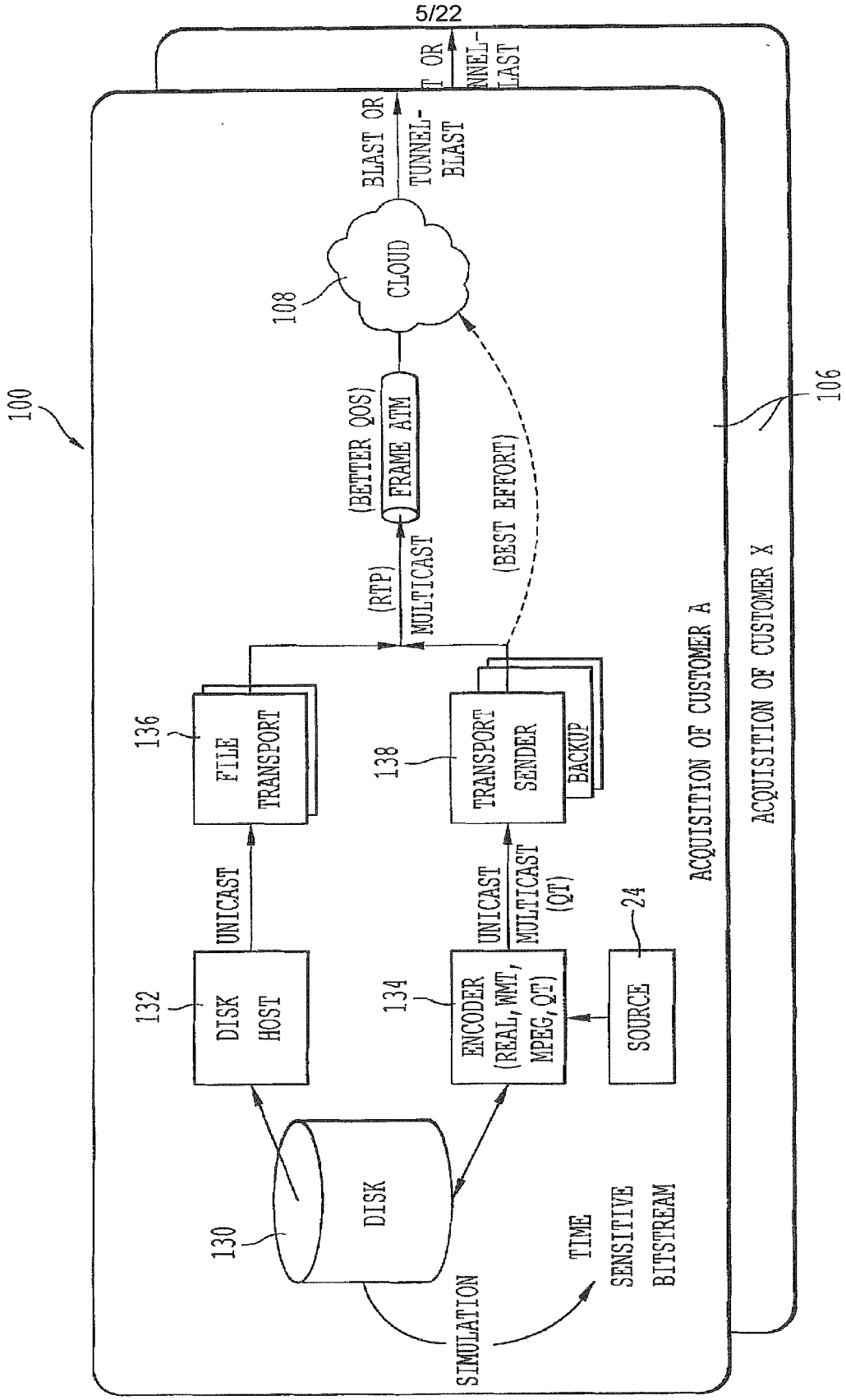

100
106
108
CLOUD
BLAST OR TUNNEL-BLAST
T OR NNEL-LAST
(BETTER QOS)
FRAME ATM
(RTP) MULTICAST
(BEST EFFORT)
136
FILE TRANSPORT
138
TRANSPORT SENDER
BACKUP
UNICAST
UNICAST MULTICAST (QT)
132
DISK HOST
134
ENCODER (REAL, WMT, MPEG, QT)
24
SOURCE
130
DISK
SIMULATION
TIME SENSITIVE BITSTREAM
ACQUISITION OF CUSTOMER A
ACQUISITION OF CUSTOMER X

FIG. 5

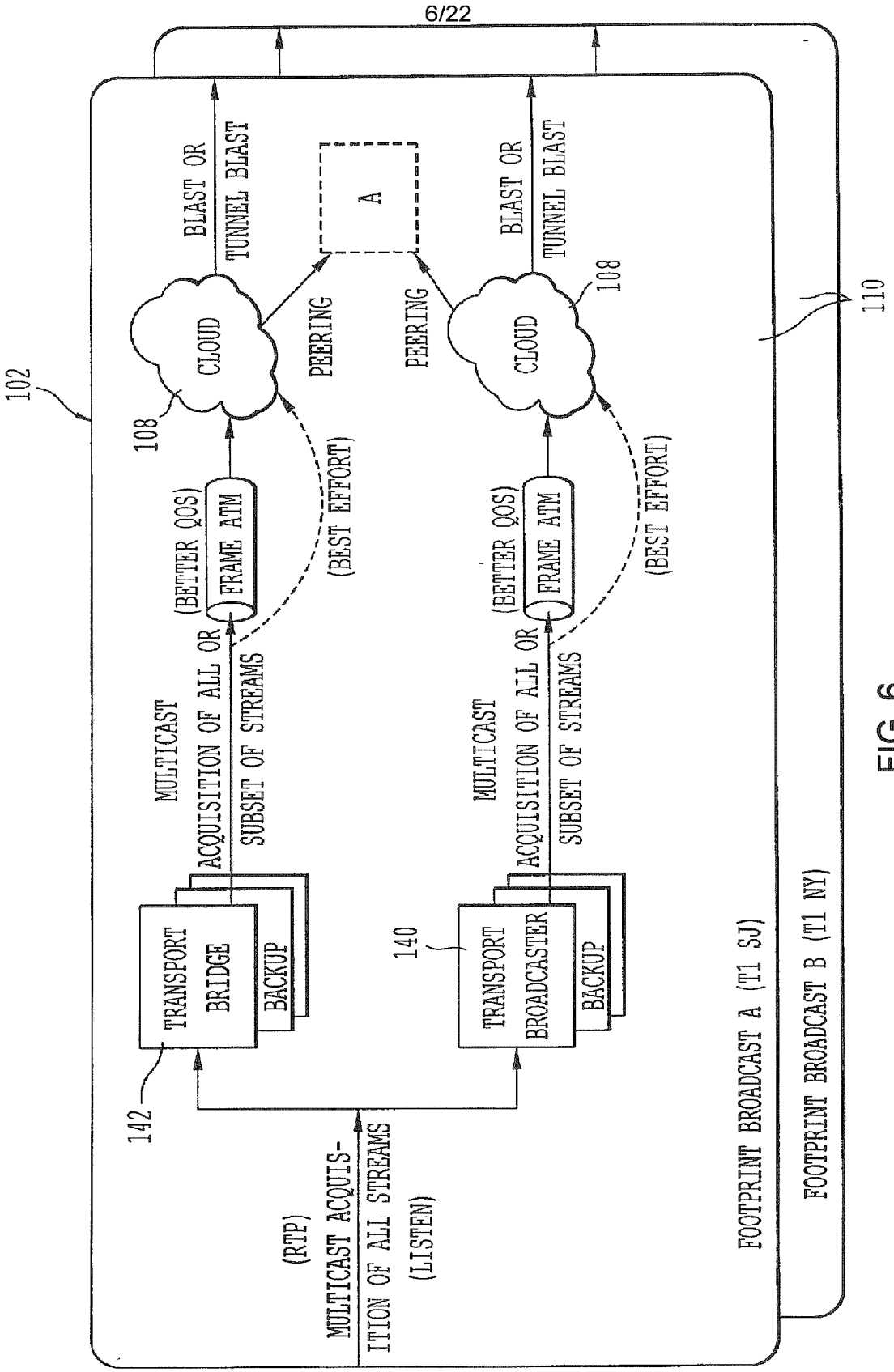

102
FOOTPRINT BROADCAST A (T1 SJ)
FOOTPRINT BROADCAST B (T1 NY)
110
MULTICAST ACQUISITION OF ALL STREAMS (LISTEN)
(RTP)
142
TRANSPORT BRIDGE
BACKUP
140
TRANSPORT BROADCASTER
BACKUP
MULTICAST ACQUISITION OF ALL OR SUBSET OF STREAMS
(BETTER QOS)
FRAME ATM
(BEST EFFORT)
108
CLOUD
PEERING
A
BLAST OR TUNNEL BLAST

FIG. 6

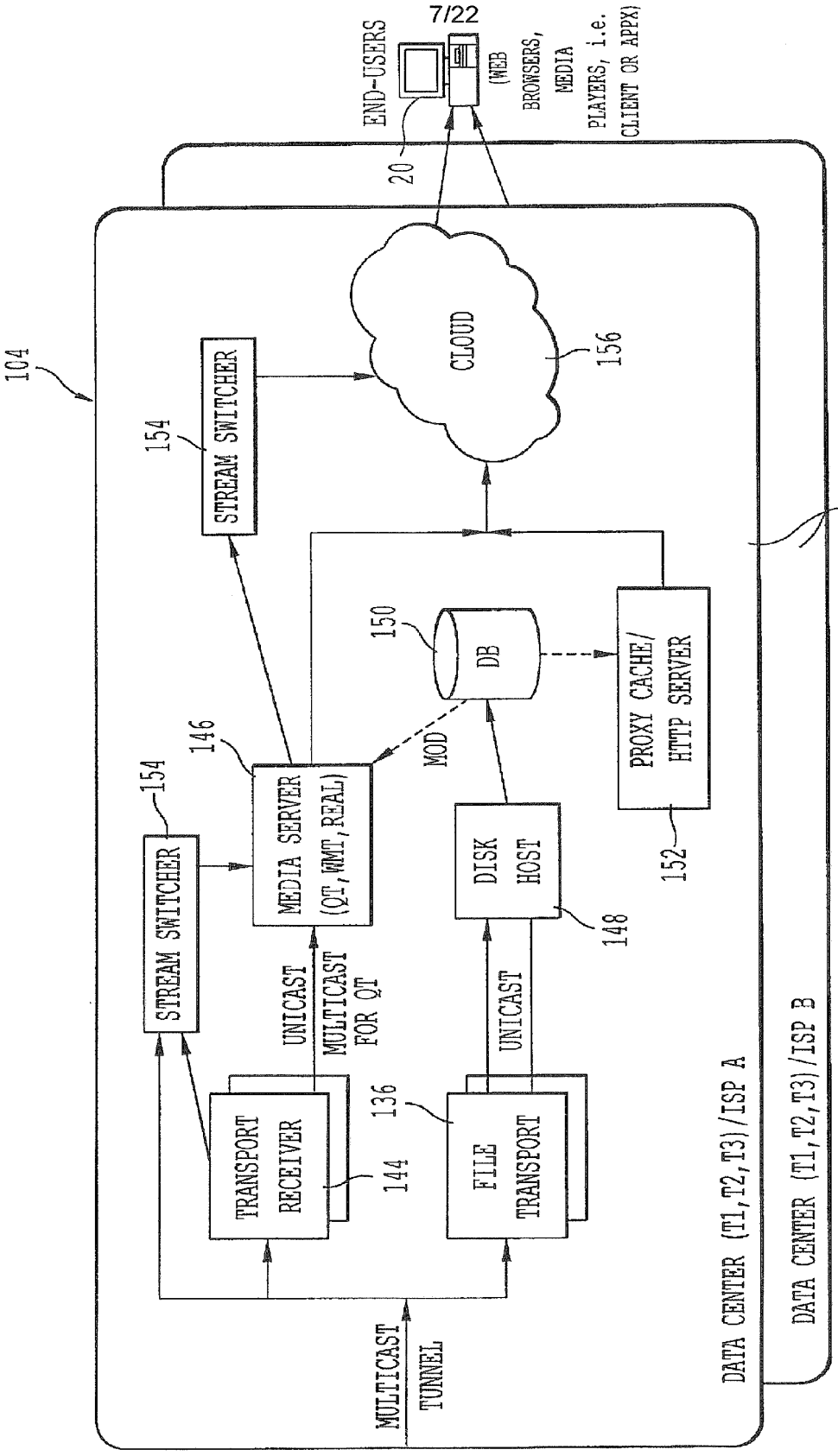

END-USERS
20
(WEB BROWSERS, MEDIA PLAYERS, i.e. CLIENT OR APPX)
104
CLOUD
156
154
STREAM SWITCHER
150
DB
MOD
146
MEDIA SERVER (QT, WMT, REAL)
PROXY CACHE/ HTTP SERVER
152
116, 118 or 120
154
STREAM SWITCHER
UNICAST
MULTICAST FOR QT
DISK HOST
148
UNICAST
136
TRANSPORT RECEIVER
144
FILE TRANSPORT
MULTICAST TUNNEL
DATA CENTER (T1, T2, T3)/ISP A
DATA CENTER (T1, T2, T3)/ISP B

FIG. 7

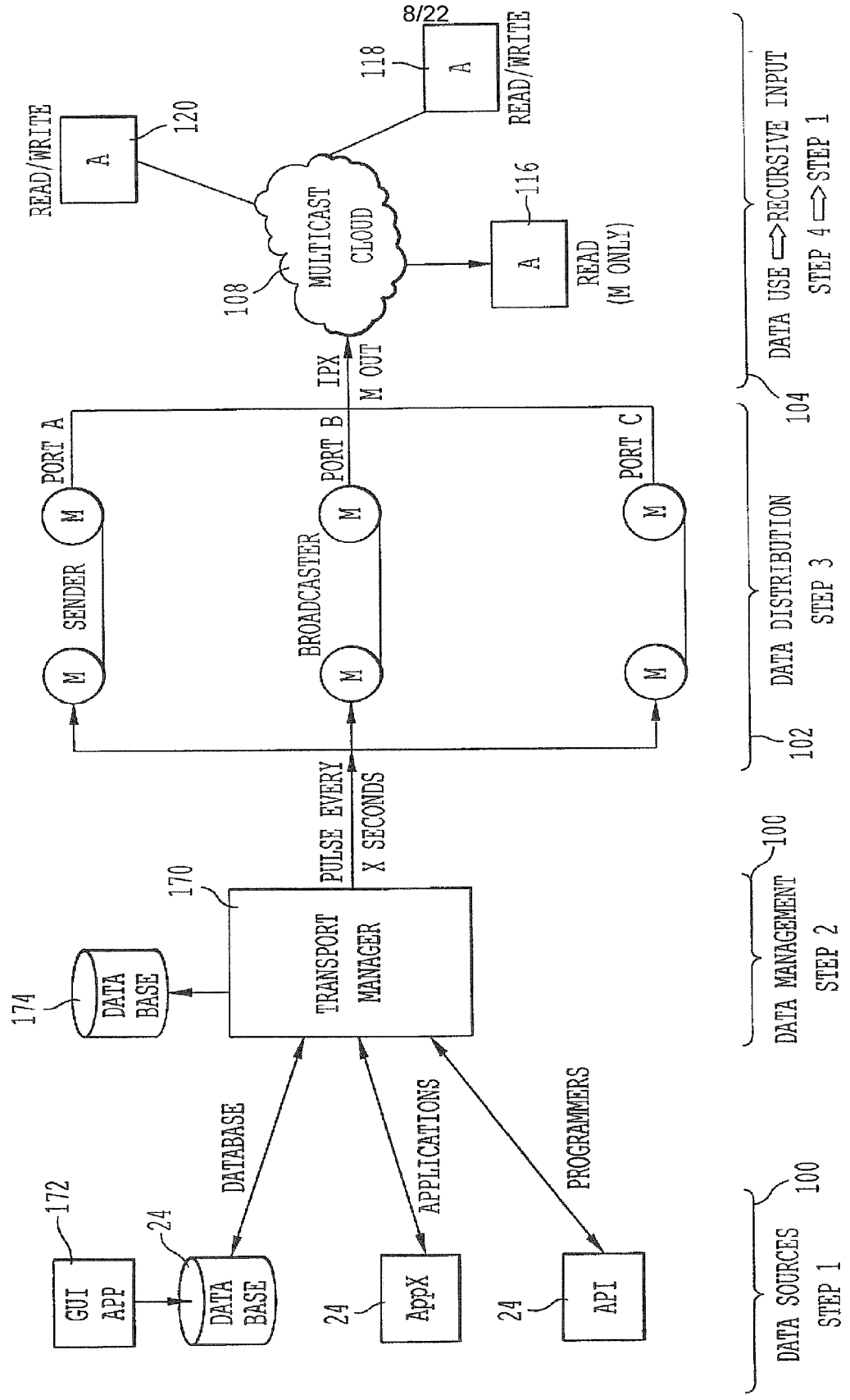

8/22
READ/WRITE
A
120
118
A
READ/WRITE
MULTICAST CLOUD
108
A
116
READ (M ONLY)
IPX M OUT
PORT A
PORT B
PORT C
M
SENDER
BROADCASTER
PULSE EVERY X SECONDS
170
TRANSPORT MANAGER
174
DATA BASE
172
GUI APP
24
DATA BASE
DATABASE
APPLICATIONS
PROGRAMMERS
24
AppX
24
API
DATA SOURCES STEP 1
100
DATA MANAGEMENT STEP 2
100
DATA DISTRIBUTION STEP 3
102
DATA USE ⇨ RECURSIVE INPUT STEP 4 ⇨ STEP 1
104

FIG. 8

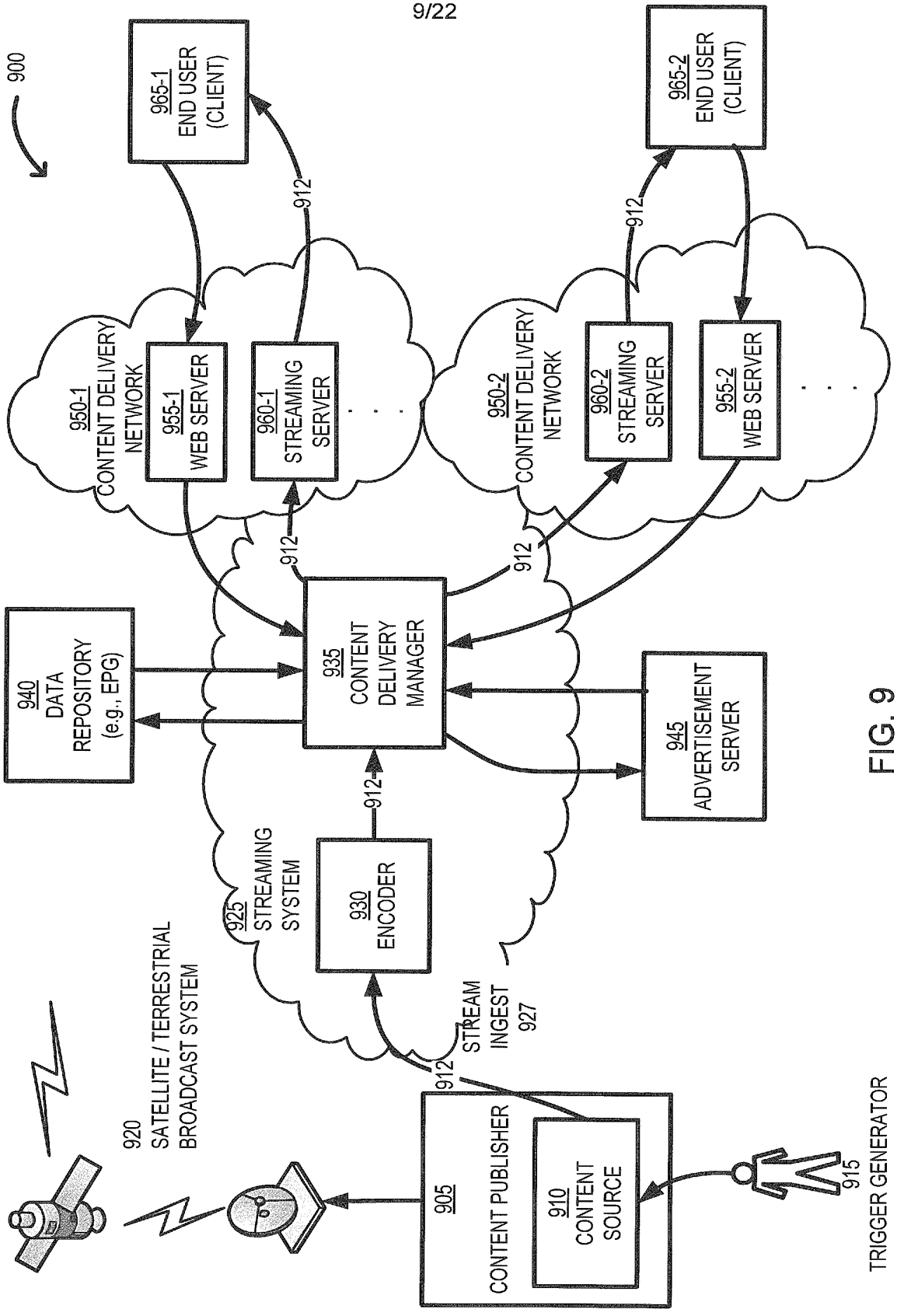

900
965-1 END USER (CLIENT)
965-2 END USER (CLIENT)
912
950-1 CONTENT DELIVERY NETWORK
955-1 WEB SERVER
960-1 STREAMING SERVER
950-2 CONTENT DELIVERY NETWORK
960-2 STREAMING SERVER
955-2 WEB SERVER
940 DATA REPOSITORY (e.g., EPG)
935 CONTENT DELIVERY MANAGER
945 ADVERTISEMENT SERVER
925 STREAMING SYSTEM
930 ENCODER
STREAM INGEST 927
920 SATELLITE / TERRESTRIAL BROADCAST SYSTEM
905 CONTENT PUBLISHER
910 CONTENT SOURCE
915 TRIGGER GENERATOR

FIG. 9

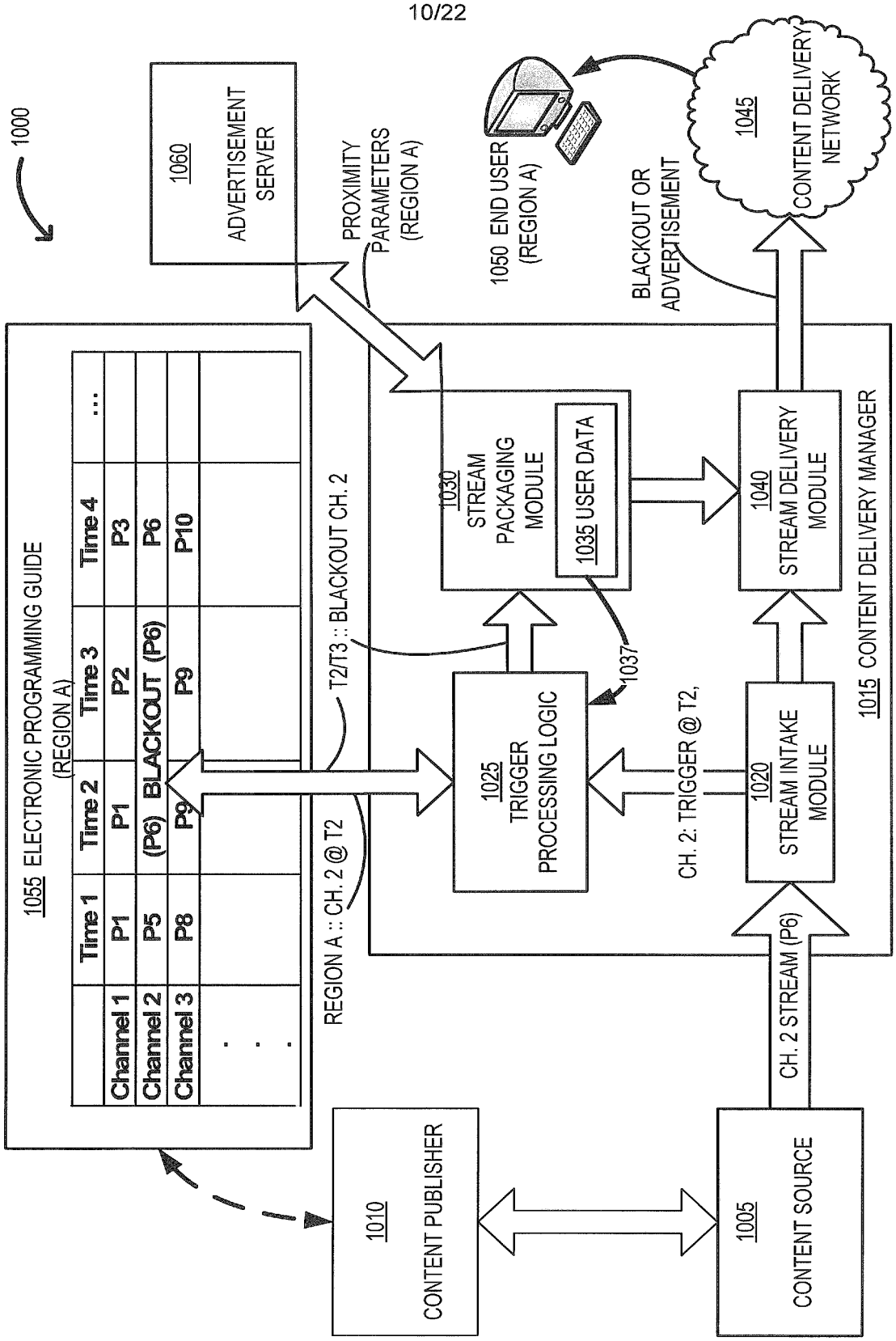

1000
1060 ADVERTISEMENT SERVER
PROXIMITY PARAMETERS (REGION A)
1050 END USER (REGION A)
BLACKOUT OR ADVERTISEMENT
1045 CONTENT DELIVERY NETWORK
1055 ELECTRONIC PROGRAMMING GUIDE (REGION A)
Time 1 Time 2 Time 3 Time 4 ...
Channel 1 P1 P1 P2 P3
Channel 2 P5 (P6) BLACKOUT (P6) P6
Channel 3 P8 P9 P9 P10
1030 STREAM PACKAGING MODULE
1035 USER DATA
1040 STREAM DELIVERY MODULE
T2/T3 :: BLACKOUT CH. 2
1037
1025 TRIGGER PROCESSING LOGIC
CH. 2: TRIGGER @ T2,
1020 STREAM INTAKE MODULE
1015 CONTENT DELIVERY MANAGER
REGION A :: CH. 2 @ T2
CH. 2 STREAM (P6)
1010 CONTENT PUBLISHER
1005 CONTENT SOURCE

FIG. 10

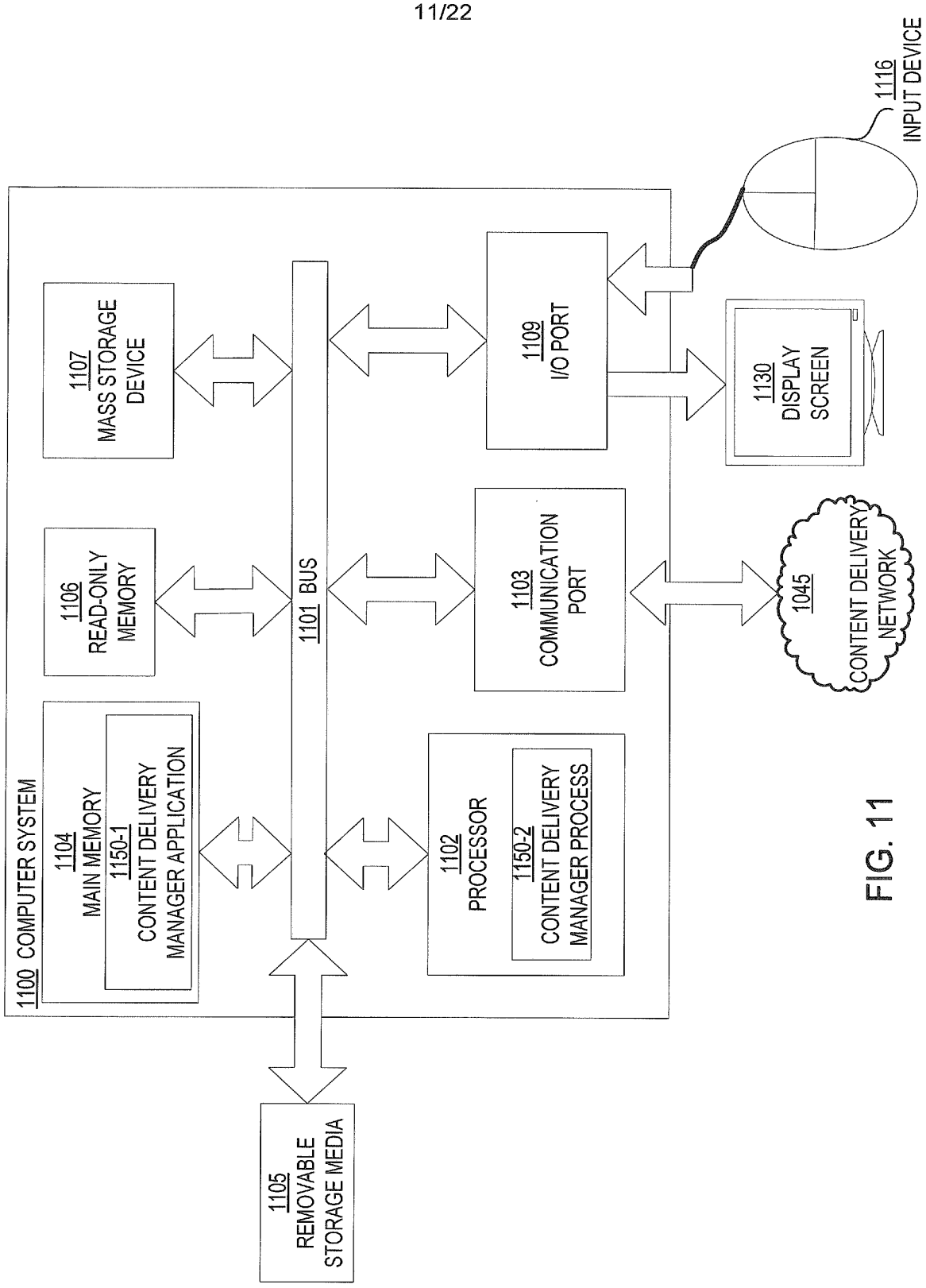

1116 INPUT DEVICE
1107 MASS STORAGE DEVICE
1109 I/O PORT
1130 DISPLAY SCREEN
1106 READ-ONLY MEMORY
1101 BUS
1103 COMMUNICATION PORT
1045 CONTENT DELIVERY NETWORK
1100 COMPUTER SYSTEM
1104 MAIN MEMORY
1150-1 CONTENT DELIVERY MANAGER APPLICATION
1102 PROCESSOR
1150-2 CONTENT DELIVERY MANAGER PROCESS
1105 REMOVABLE STORAGE MEDIA

FIG. 11

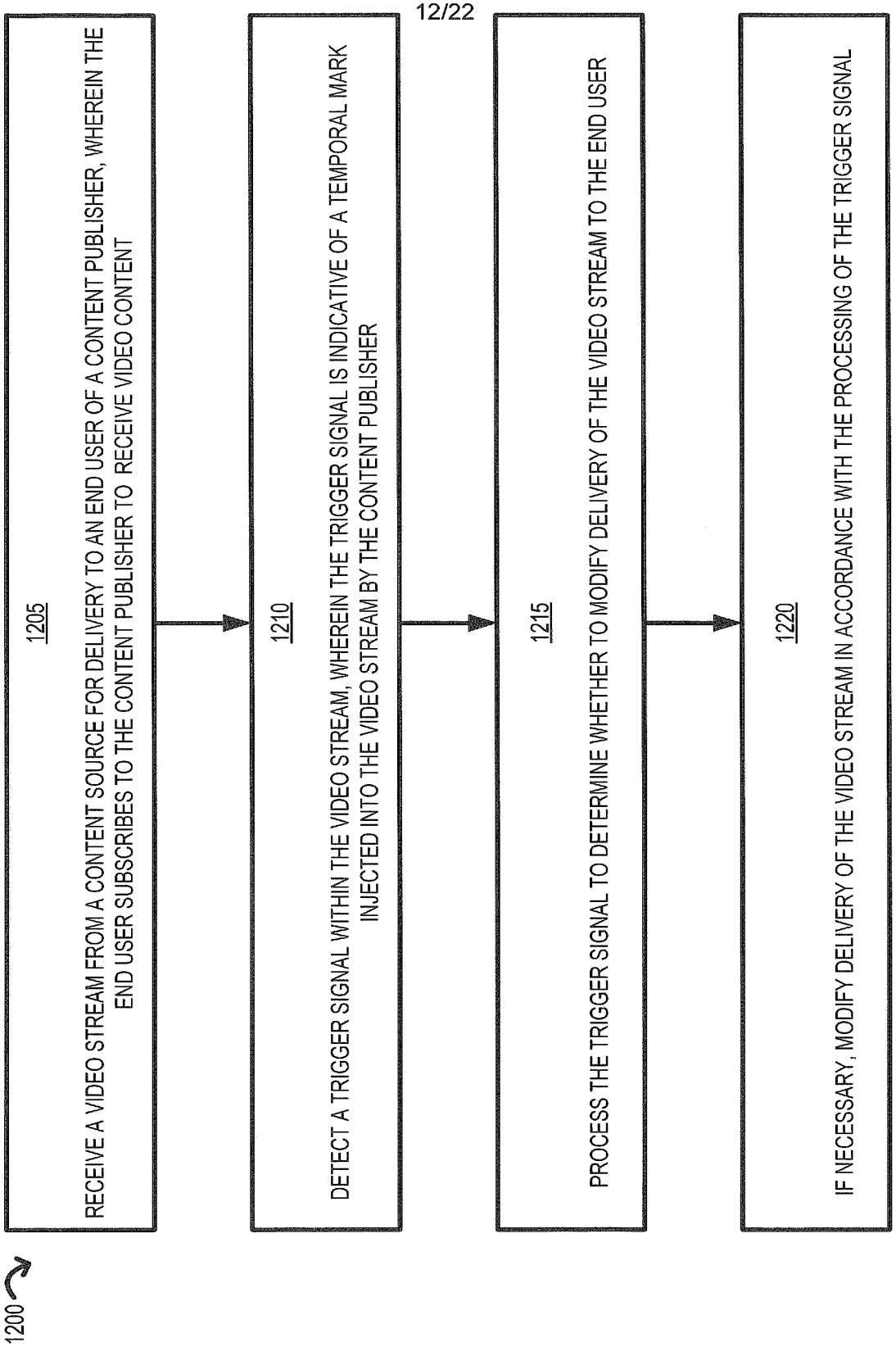

1200
1205
RECEIVE A VIDEO STREAM FROM A CONTENT SOURCE FOR DELIVERY TO AN END USER OF A CONTENT PUBLISHER, WHEREIN THE END USER SUBSCRIBES TO THE CONTENT PUBLISHER TO RECEIVE VIDEO CONTENT
1210
DETECT A TRIGGER SIGNAL WITHIN THE VIDEO STREAM, WHEREIN THE TRIGGER SIGNAL IS INDICATIVE OF A TEMPORAL MARK INJECTED INTO THE VIDEO STREAM BY THE CONTENT PUBLISHER
1215
PROCESS THE TRIGGER SIGNAL TO DETERMINE WHETHER TO MODIFY DELIVERY OF THE VIDEO STREAM TO THE END USER
1220
IF NECESSARY, MODIFY DELIVERY OF THE VIDEO STREAM IN ACCORDANCE WITH THE PROCESSING OF THE TRIGGER SIGNAL

FIG. 12

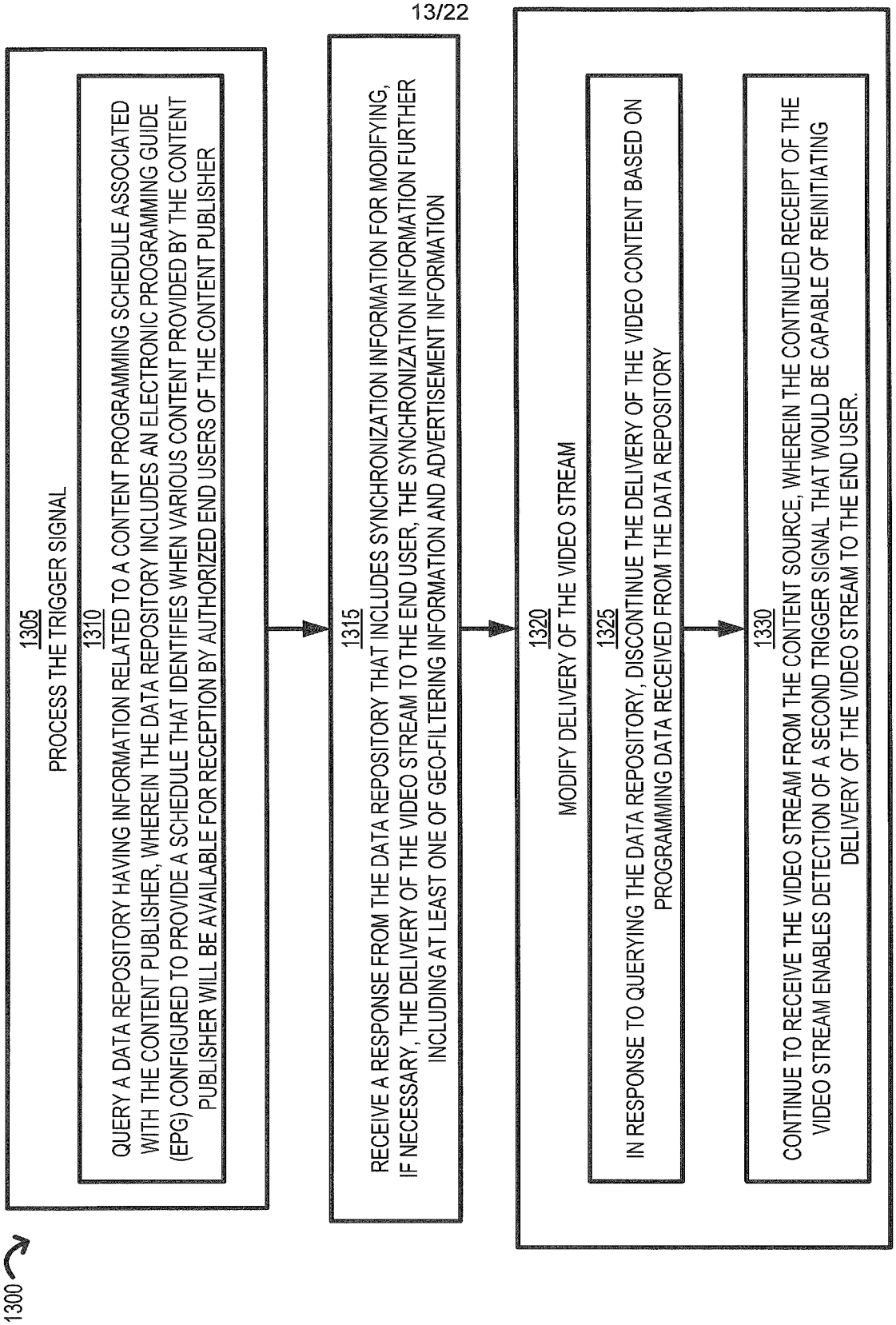

1300
1305
PROCESS THE TRIGGER SIGNAL
1310
QUERY A DATA REPOSITORY HAVING INFORMATION RELATED TO A CONTENT PROGRAMMING SCHEDULE ASSOCIATED WITH THE CONTENT PUBLISHER, WHEREIN THE DATA REPOSITORY INCLUDES AN ELECTRONIC PROGRAMMING GUIDE (EPG) CONFIGURED TO PROVIDE A SCHEDULE THAT IDENTIFIES WHEN VARIOUS CONTENT PROVIDED BY THE CONTENT PUBLISHER WILL BE AVAILABLE FOR RECEPTION BY AUTHORIZED END USERS OF THE CONTENT PUBLISHER
1315
RECEIVE A RESPONSE FROM THE DATA REPOSITORY THAT INCLUDES SYNCHRONIZATION INFORMATION FOR MODIFYING, IF NECESSARY, THE DELIVERY OF THE VIDEO STREAM TO THE END USER, THE SYNCHRONIZATION INFORMATION FURTHER INCLUDING AT LEAST ONE OF GEO-FILTERING INFORMATION AND ADVERTISEMENT INFORMATION
1320
MODIFY DELIVERY OF THE VIDEO STREAM
1325
IN RESPONSE TO QUERYING THE DATA REPOSITORY, DISCONTINUE THE DELIVERY OF THE VIDEO CONTENT BASED ON PROGRAMMING DATA RECEIVED FROM THE DATA REPOSITORY
1330
CONTINUE TO RECEIVE THE VIDEO STREAM FROM THE CONTENT SOURCE, WHEREIN THE CONTINUED RECEIPT OF THE VIDEO STREAM ENABLES DETECTION OF A SECOND TRIGGER SIGNAL THAT WOULD BE CAPABLE OF REINITIATING DELIVERY OF THE VIDEO STREAM TO THE END USER.

FIG. 13

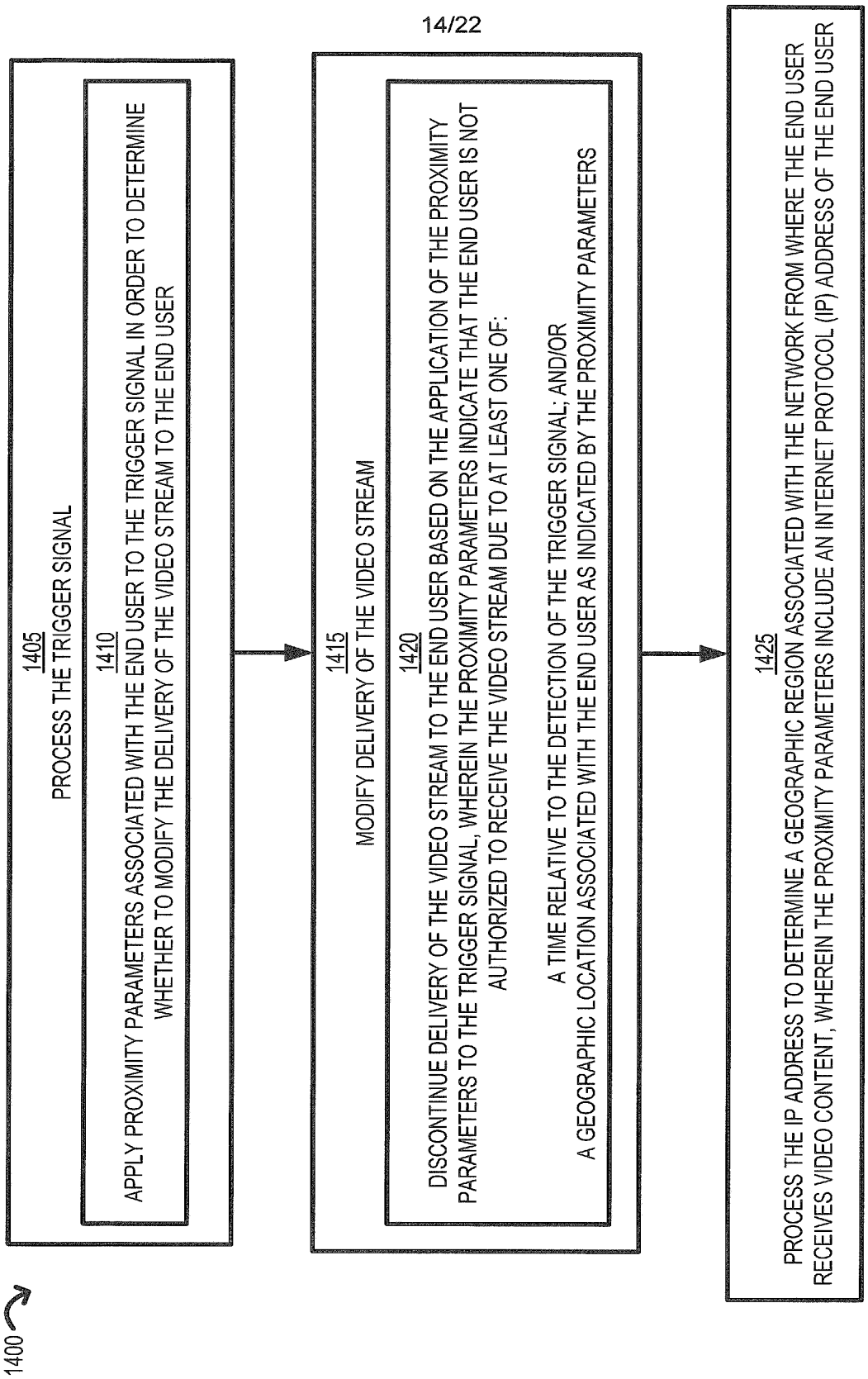

1400
1405
PROCESS THE TRIGGER SIGNAL
1410
APPLY PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER TO THE TRIGGER SIGNAL IN ORDER TO DETERMINE WHETHER TO MODIFY THE DELIVERY OF THE VIDEO STREAM TO THE END USER
1415
MODIFY DELIVERY OF THE VIDEO STREAM
1420
DISCONTINUE DELIVERY OF THE VIDEO STREAM TO THE END USER BASED ON THE APPLICATION OF THE PROXIMITY PARAMETERS TO THE TRIGGER SIGNAL, WHEREIN THE PROXIMITY PARAMETERS INDICATE THAT THE END USER IS NOT AUTHORIZED TO RECEIVE THE VIDEO STREAM DUE TO AT LEAST ONE OF:
A TIME RELATIVE TO THE DETECTION OF THE TRIGGER SIGNAL; AND/OR
A GEOGRAPHIC LOCATION ASSOCIATED WITH THE END USER AS INDICATED BY THE PROXIMITY PARAMETERS
1425
PROCESS THE IP ADDRESS TO DETERMINE A GEOGRAPHIC REGION ASSOCIATED WITH THE NETWORK FROM WHERE THE END USER RECEIVES VIDEO CONTENT, WHEREIN THE PROXIMITY PARAMETERS INCLUDE AN INTERNET PROTOCOL (IP) ADDRESS OF THE END USER

FIG. 14

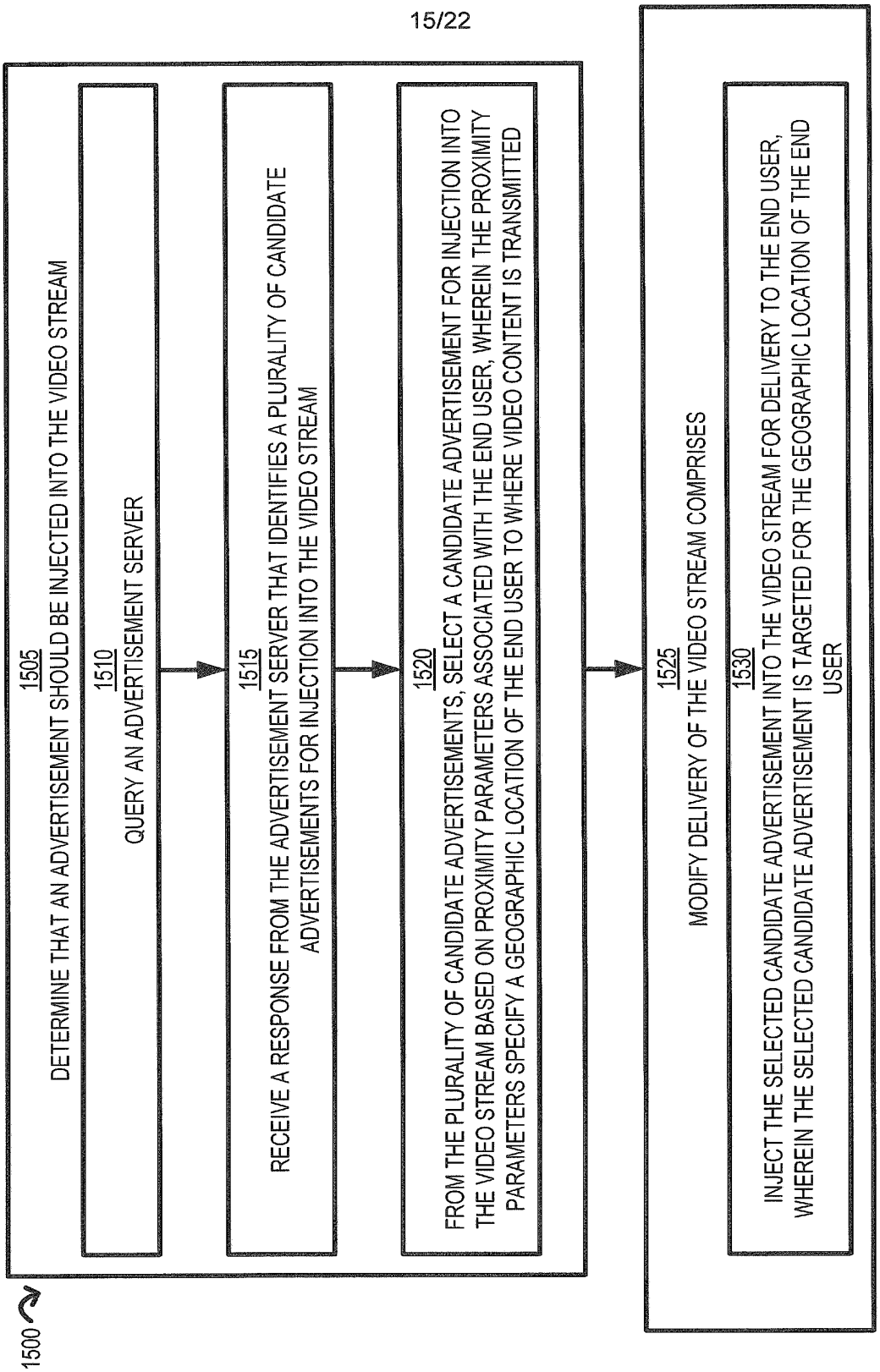

1500
1505
DETERMINE THAT AN ADVERTISEMENT SHOULD BE INJECTED INTO THE VIDEO STREAM
1510
QUERY AN ADVERTISEMENT SERVER
1515
RECEIVE A RESPONSE FROM THE ADVERTISEMENT SERVER THAT IDENTIFIES A PLURALITY OF CANDIDATE ADVERTISEMENTS FOR INJECTION INTO THE VIDEO STREAM
1520
FROM THE PLURALITY OF CANDIDATE ADVERTISEMENTS, SELECT A CANDIDATE ADVERTISEMENT FOR INJECTION INTO THE VIDEO STREAM BASED ON PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER, WHEREIN THE PROXIMITY PARAMETERS SPECIFY A GEOGRAPHIC LOCATION OF THE END USER TO WHERE VIDEO CONTENT IS TRANSMITTED
1525
MODIFY DELIVERY OF THE VIDEO STREAM COMPRISES
1530
INJECT THE SELECTED CANDIDATE ADVERTISEMENT INTO THE VIDEO STREAM FOR DELIVERY TO THE END USER, WHEREIN THE SELECTED CANDIDATE ADVERTISEMENT IS TARGETED FOR THE GEOGRAPHIC LOCATION OF THE END USER

FIG. 15

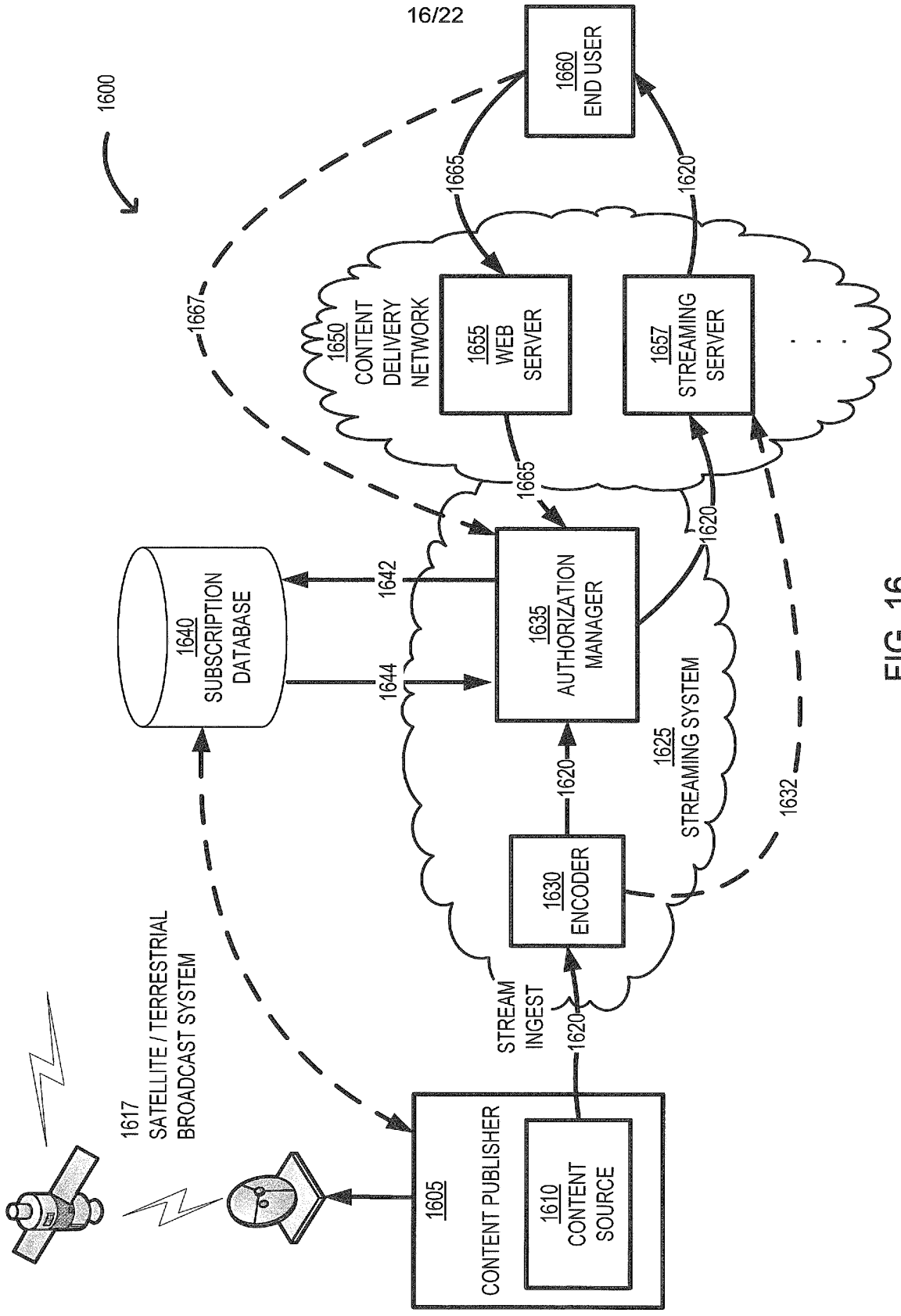

1600
1660 END USER
1665
1620
1667
1650 CONTENT DELIVERY NETWORK
1655 WEB SERVER
1657 STREAMING SERVER
1640 SUBSCRIPTION DATABASE
1642
1644
1635 AUTHORIZATION MANAGER
1625 STREAMING SYSTEM
1630 ENCODER
1632
STREAM INGEST
1617 SATELLITE / TERRESTRIAL BROADCAST SYSTEM
1605 CONTENT PUBLISHER
1610 CONTENT SOURCE

FIG. 16

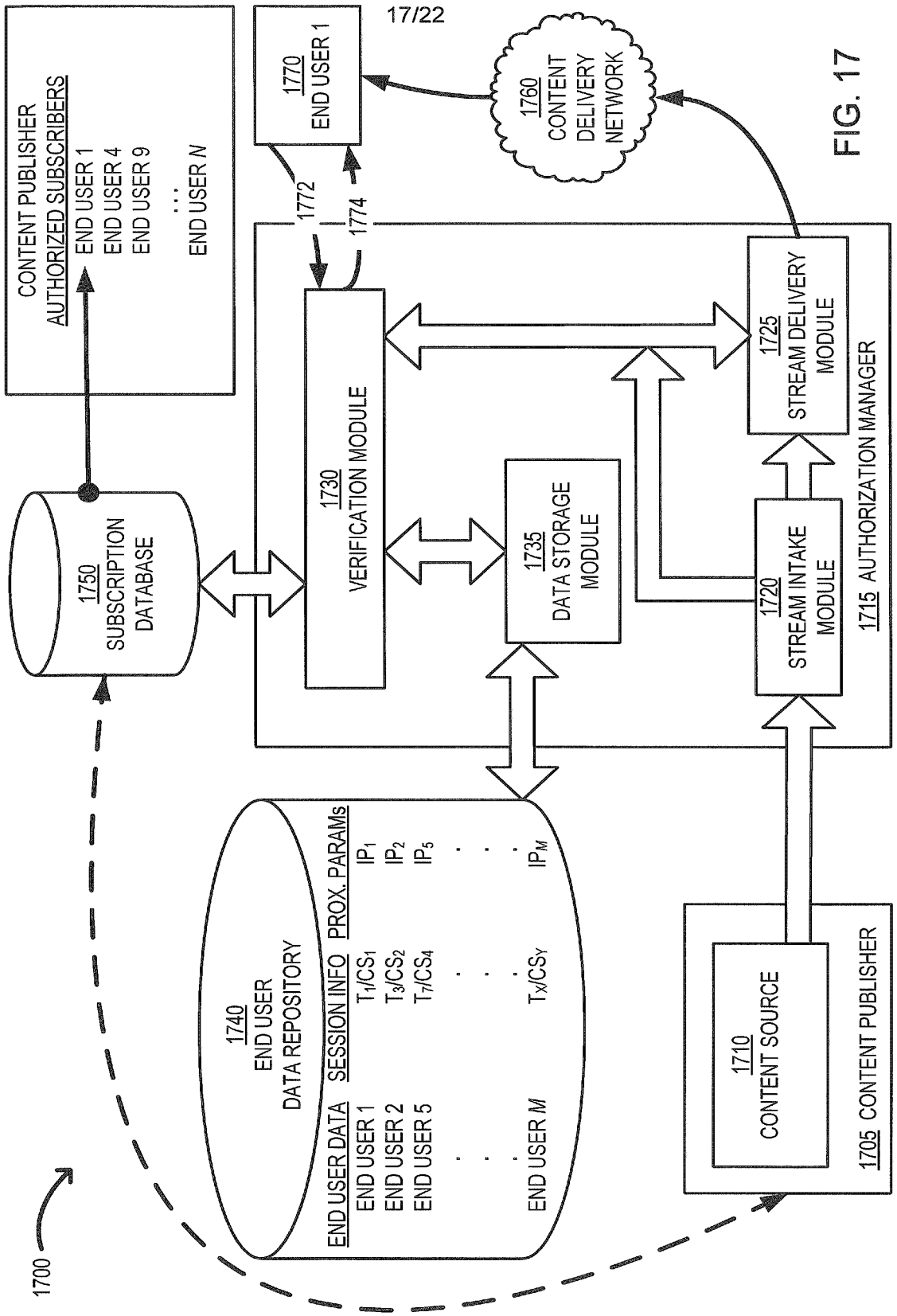

CONTENT PUBLISHER
AUTHORIZED SUBSCRIBERS
END USER 1
END USER 4
END USER 9
...
END USER N
1770 END USER 1
1760 CONTENT DELIVERY NETWORK
1772
1774
1730 VERIFICATION MODULE
1725 STREAM DELIVERY MODULE
1750 SUBSCRIPTION DATABASE
1735 DATA STORAGE MODULE
1720 STREAM INTAKE MODULE
1715 AUTHORIZATION MANAGER
1740 END USER DATA REPOSITORY
END USER DATA
SESSION INFO
PROX. PARAMS
END USER 1
END USER 2
END USER 5
END USER M
T_1/CS_1
T_3/CS_2
T_7/CS_4
T_X/CS_Y
IP_1
IP_2
IP_5
IP_M
1710 CONTENT SOURCE
1705 CONTENT PUBLISHER
1700

FIG. 17

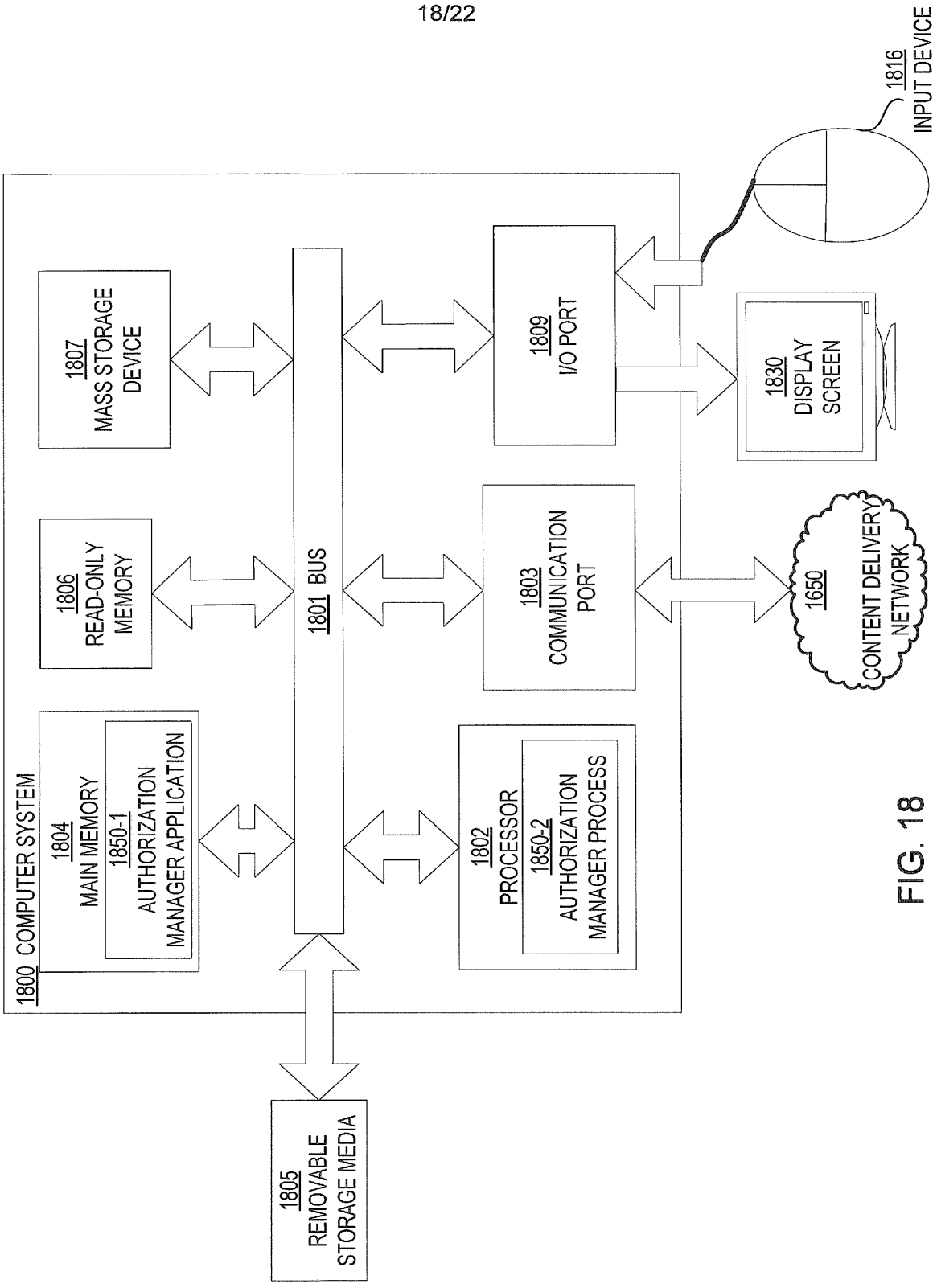

1816 INPUT DEVICE
1807 MASS STORAGE DEVICE
1809 I/O PORT
1830 DISPLAY SCREEN
1806 READ-ONLY MEMORY
1801 BUS
1803 COMMUNICATION PORT
1650 CONTENT DELIVERY NETWORK
1800 COMPUTER SYSTEM
1804 MAIN MEMORY
1850-1 AUTHORIZATION MANAGER APPLICATION
1802 PROCESSOR
1850-2 AUTHORIZATION MANAGER PROCESS
1805 REMOVABLE STORAGE MEDIA

FIG. 18

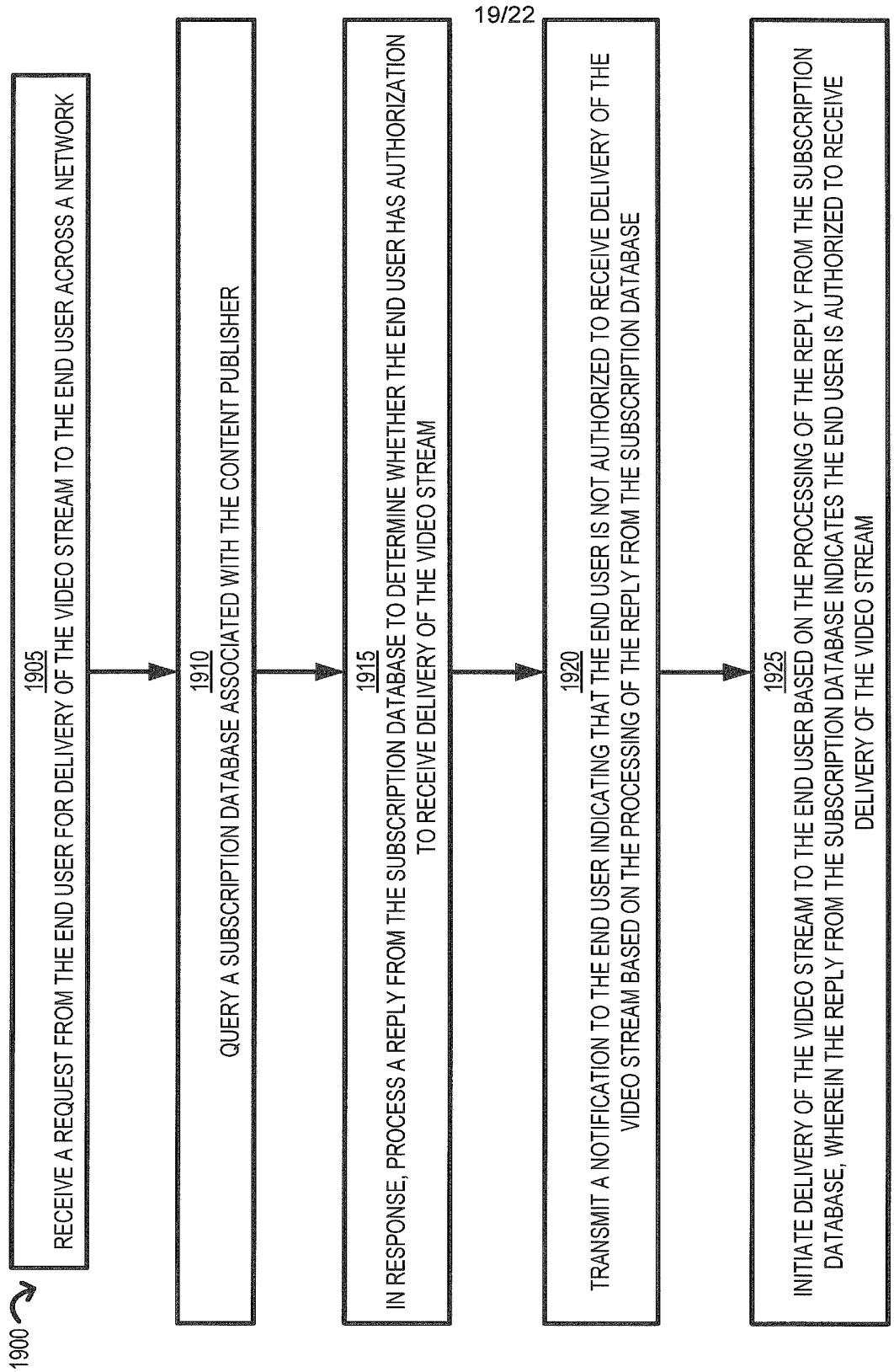

1900
1905
RECEIVE A REQUEST FROM THE END USER FOR DELIVERY OF THE VIDEO STREAM TO THE END USER ACROSS A NETWORK
1910
QUERY A SUBSCRIPTION DATABASE ASSOCIATED WITH THE CONTENT PUBLISHER
1915
IN RESPONSE, PROCESS A REPLY FROM THE SUBSCRIPTION DATABASE TO DETERMINE WHETHER THE END USER HAS AUTHORIZATION TO RECEIVE DELIVERY OF THE VIDEO STREAM
1920
TRANSMIT A NOTIFICATION TO THE END USER INDICATING THAT THE END USER IS NOT AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM BASED ON THE PROCESSING OF THE REPLY FROM THE SUBSCRIPTION DATABASE
1925
INITIATE DELIVERY OF THE VIDEO STREAM TO THE END USER BASED ON THE PROCESSING OF THE REPLY FROM THE SUBSCRIPTION DATABASE, WHEREIN THE REPLY FROM THE SUBSCRIPTION DATABASE INDICATES THE END USER IS AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM

FIG. 19

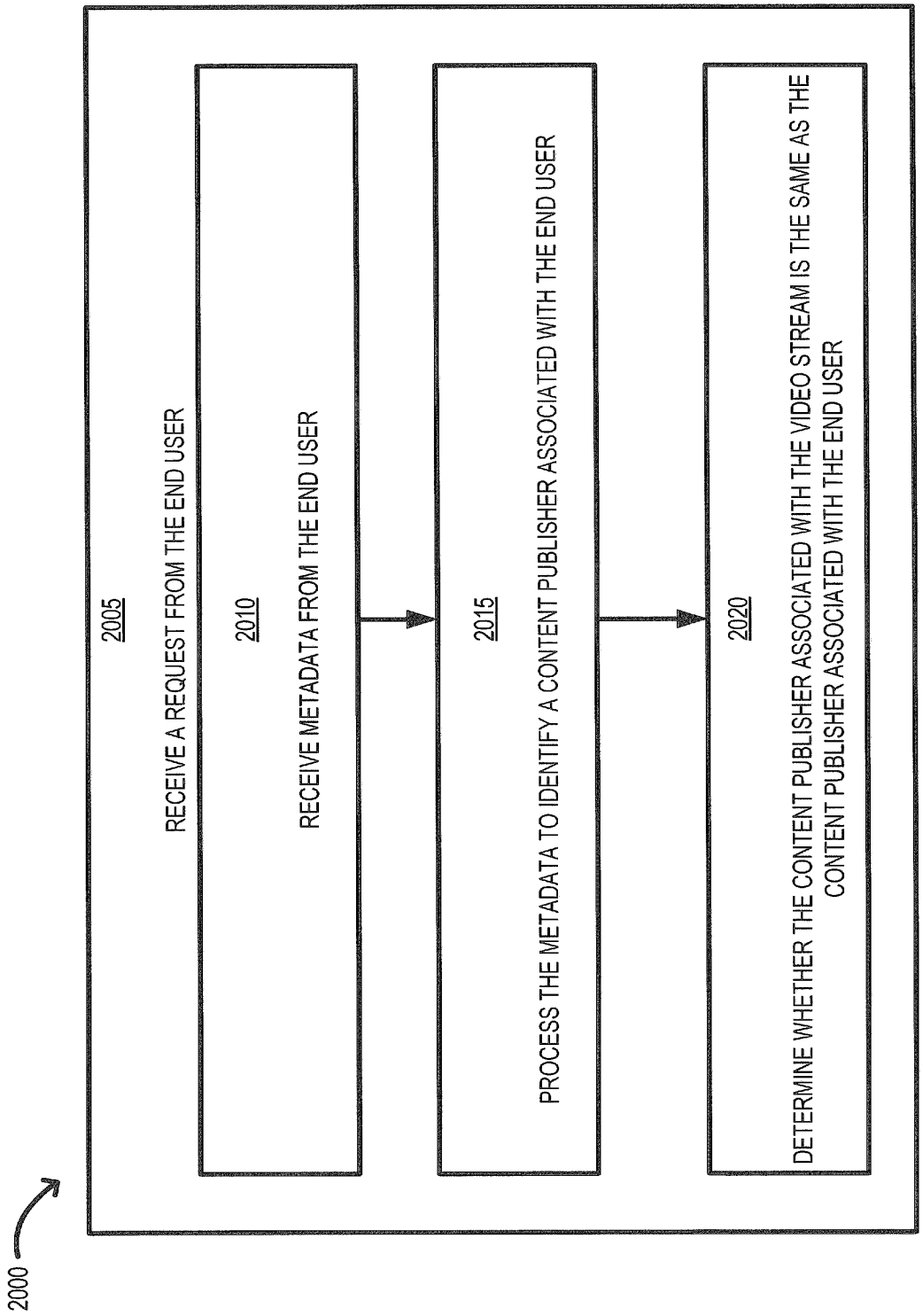

2000
2005
RECEIVE A REQUEST FROM THE END USER
2010
RECEIVE METADATA FROM THE END USER
2015
PROCESS THE METADATA TO IDENTIFY A CONTENT PUBLISHER ASSOCIATED WITH THE END USER
2020
DETERMINE WHETHER THE CONTENT PUBLISHER ASSOCIATED WITH THE VIDEO STREAM IS THE SAME AS THE CONTENT PUBLISHER ASSOCIATED WITH THE END USER

FIG. 20

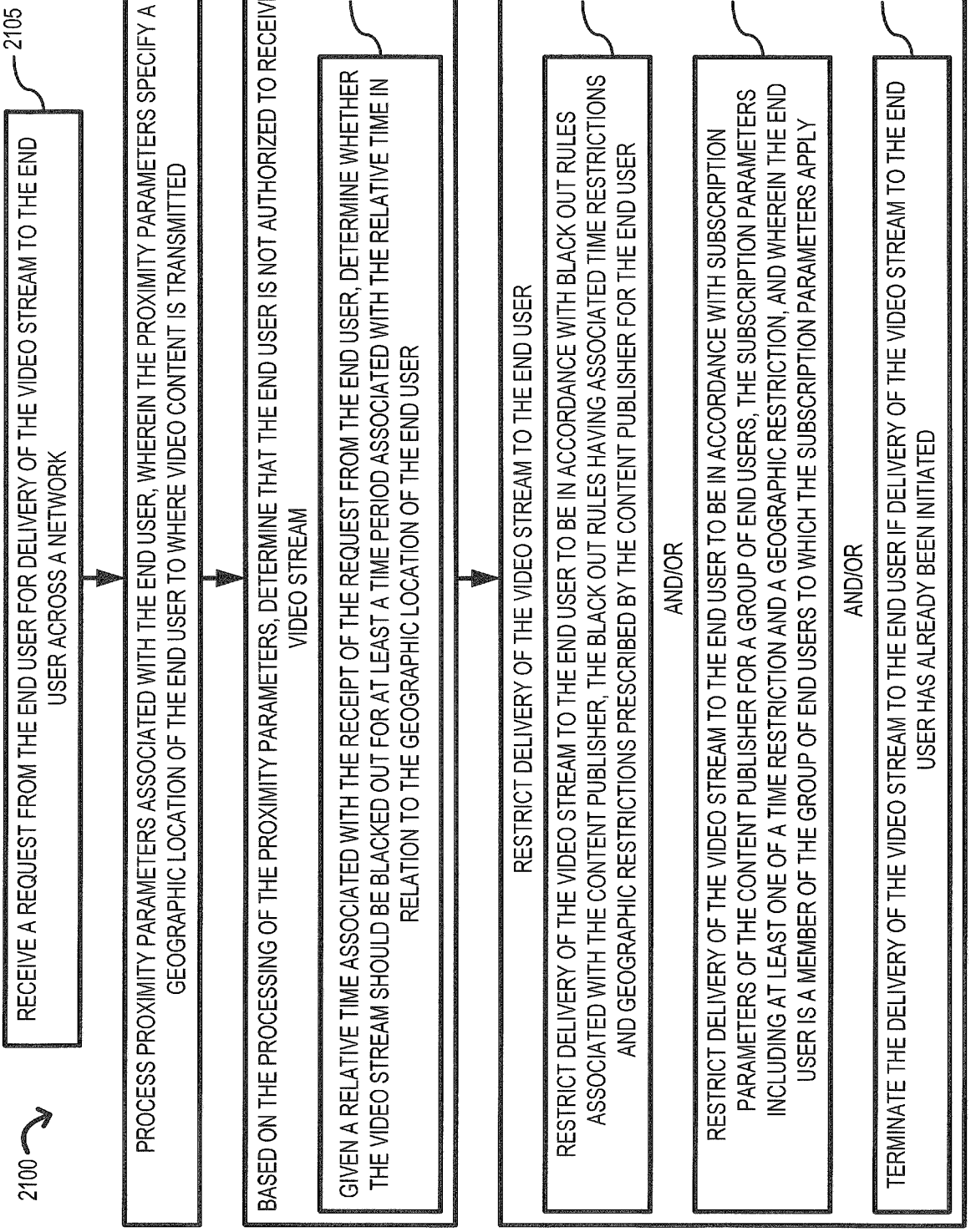

2100
2105
RECEIVE A REQUEST FROM THE END USER FOR DELIVERY OF THE VIDEO STREAM TO THE END USER ACROSS A NETWORK
2110
PROCESS PROXIMITY PARAMETERS ASSOCIATED WITH THE END USER, WHEREIN THE PROXIMITY PARAMETERS SPECIFY A GEOGRAPHIC LOCATION OF THE END USER TO WHERE VIDEO CONTENT IS TRANSMITTED
2115
BASED ON THE PROCESSING OF THE PROXIMITY PARAMETERS, DETERMINE THAT THE END USER IS NOT AUTHORIZED TO RECEIVE THE VIDEO STREAM
2120
GIVEN A RELATIVE TIME ASSOCIATED WITH THE RECEIPT OF THE REQUEST FROM THE END USER, DETERMINE WHETHER THE VIDEO STREAM SHOULD BE BLACKED OUT FOR AT LEAST A TIME PERIOD ASSOCIATED WITH THE RELATIVE TIME IN RELATION TO THE GEOGRAPHIC LOCATION OF THE END USER
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER
2130
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER TO BE IN ACCORDANCE WITH BLACK OUT RULES ASSOCIATED WITH THE CONTENT PUBLISHER, THE BLACK OUT RULES HAVING ASSOCIATED TIME RESTRICTIONS AND GEOGRAPHIC RESTRICTIONS PRESCRIBED BY THE CONTENT PUBLISHER FOR THE END USER
AND/OR
2125
2135
RESTRICT DELIVERY OF THE VIDEO STREAM TO THE END USER TO BE IN ACCORDANCE WITH SUBSCRIPTION PARAMETERS OF THE CONTENT PUBLISHER FOR A GROUP OF END USERS, THE SUBSCRIPTION PARAMETERS INCLUDING AT LEAST ONE OF A TIME RESTRICTION AND A GEOGRAPHIC RESTRICTION, AND WHEREIN THE END USER IS A MEMBER OF THE GROUP OF END USERS TO WHICH THE SUBSCRIPTION PARAMETERS APPLY
AND/OR
2140
TERMINATE THE DELIVERY OF THE VIDEO STREAM TO THE END USER IF DELIVERY OF THE VIDEO STREAM TO THE END USER HAS ALREADY BEEN INITIATED

FIG. 21

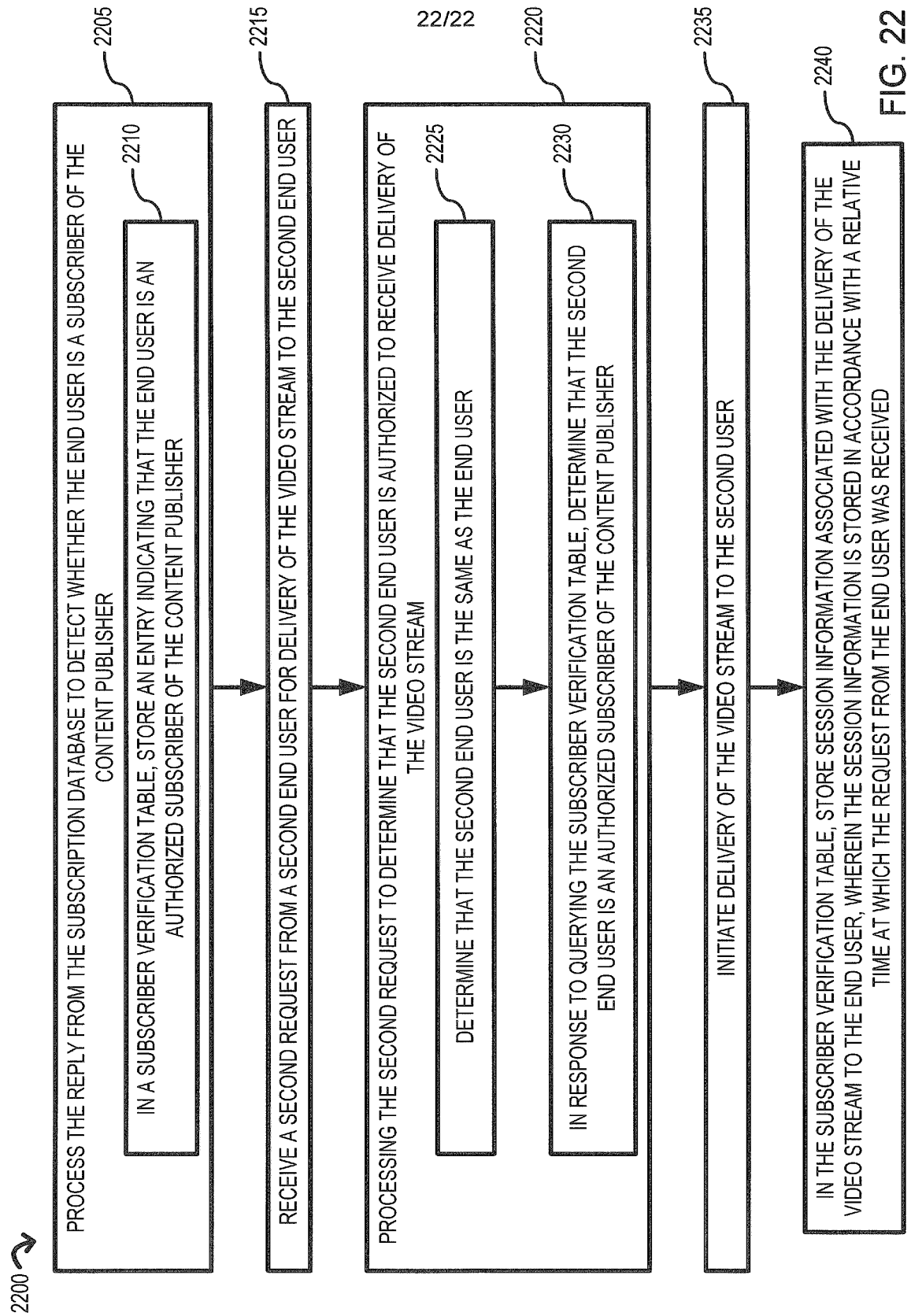

2200
PROCESS THE REPLY FROM THE SUBSCRIPTION DATABASE TO DETECT WHETHER THE END USER IS A SUBSCRIBER OF THE CONTENT PUBLISHER
2205
IN A SUBSCRIBER VERIFICATION TABLE, STORE AN ENTRY INDICATING THAT THE END USER IS AN AUTHORIZED SUBSCRIBER OF THE CONTENT PUBLISHER
2210
RECEIVE A SECOND REQUEST FROM A SECOND END USER FOR DELIVERY OF THE VIDEO STREAM TO THE SECOND END USER
2215
PROCESSING THE SECOND REQUEST TO DETERMINE THAT THE SECOND END USER IS AUTHORIZED TO RECEIVE DELIVERY OF THE VIDEO STREAM
2220
DETERMINE THAT THE SECOND END USER IS THE SAME AS THE END USER
2225
IN RESPONSE TO QUERYING THE SUBSCRIBER VERIFICATION TABLE, DETERMINE THAT THE SECOND END USER IS AN AUTHORIZED SUBSCRIBER OF THE CONTENT PUBLISHER
2230
INITIATE DELIVERY OF THE VIDEO STREAM TO THE SECOND USER
2235
IN THE SUBSCRIBER VERIFICATION TABLE, STORE SESSION INFORMATION ASSOCIATED WITH THE DELIVERY OF THE VIDEO STREAM TO THE END USER, WHEREIN THE SESSION INFORMATION IS STORED IN ACCORDANCE WITH A RELATIVE TIME AT WHICH THE REQUEST FROM THE END USER WAS RECEIVED
2240

FIG. 22

Electronic Patent Application Fee Transmittal					
Application Number:					
Filing Date:					
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK				
First Named Inventor/Applicant Name:	Ian Maloney				
Filer:	Allison Olenginski/Sara McPeak				
Attorney Docket Number:	519-136-USP2				
Filed as Large Entity					
Utility under 35 USC 111(a) Filing Fees					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
Utility application filing		1011	1	330	330
Utility Search Fee		1111	1	540	540
Utility Examination Fee		1311	1	220	220
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1090**

Electronic Acknowledgement Receipt	
EFS ID:	6319612
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	Allison Olenginski/Sara McPeak
Filer Authorized By:	Allison Olenginski
Attorney Docket Number:	519-136-USP2
Receipt Date:	23-OCT-2009
Filing Date:	
Time Stamp:	13:55:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1090
RAM confirmation Number	192
Deposit Account	503199
Authorized User	OLENGINSKI,ALLISON
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	TRANSMITTAL_NEW_PATENT_APPLICATION_519_136_USP2.PDF	287988 d106cdd5725c9e2c42100d6c289fd7e36173da9c	no	2
Warnings:					
Information:					
2	Miscellaneous Incoming Letter	FEE_TRANSMITTAL_519_136_USP2.PDF	242077 856b8482e651d9bbc9f41d94d068dd98da8a4389	no	1
Warnings:					
Information:					
3		PATENT_APPLICATION_519_136_USP2.PDF	7072261 81777c31d169ab15b5cf835e66301f63ee6eb969	yes	64

Multipart Description/PDF files in .zip description

Document Description	Start	End
Miscellaneous Incoming Letter	1	1
Specification	2	56
Claims	57	63
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Warnings:					
Information:					
4	Oath or Declaration filed	DECLARATION_519_136_USP2.PDF	364455 13c11f129a0d8c225b1ce5f4ea8f2ba5e6bd5d94	no	3
Warnings:					
Information:					
5	Drawings-only black and white line drawings	DRAWINGS_519_136_USP2.PDF	2805650 340617c53e4056edb084b766be0f0bd18aefc586	no	22
Warnings:					
Information:					
6	Application Data Sheet	APPLICATION_DATA_SHEET_519_136_USP2.PDF	527230 6a490c823a23727304088147e201e75e12c5be92	no	4
Warnings:					
Information:					

This is not an USPTO supplied ADS fillable form					
7		PRELIMINARY_AMENDMENT_519_136_USP2.PDF	105951 4e3c412b3e5eb4b1c5fb08cb4f7fd6cddeca d735	yes	3
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Preliminary Amendment		1	1	
	Drawings-only black and white line drawings		2	2	
	Applicant Arguments/Remarks Made in an Amendment		3	3	
Warnings:					
Information:					
8	Drawings-only black and white line drawings	ANNOTATED_DRAWINGS_519_136-USP2.PDF	3068502 40b231c780d39eacfa7f9ac178c8d34c2eae d892	no	22
Warnings:					
Information:					
9	Drawings-only black and white line drawings	REPLACEMENT_DRAWINGS_519_136_USP2.PDF	2699431 4b671368da6fcf29c8c7686d77e44f926d08 19d8	no	22
Warnings:					
Information:					
10	Fee Worksheet (PTO-875)	fee-info.pdf	32988 80467cb25dd030a18a7f014539a54cffd283 8015	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	17206533		

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

PTO/SB/06 (12-04)

Filing Date: 10/23/09

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/604,678

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	**330**
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	**540**
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	**220**
TOTAL CLAIMS (37 CFR 1.16(i))	**20** minus 20 =		x$26		OR	x$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	**3** minus 3 =	*	x$110			x$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195			390	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	**1090**

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDI-TIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDI-TIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDI-TIONAL FEE ($)	OR	RATE ($)	ADDI-TIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/604,678	10/23/2009	2443	1090	519-136-USP2	20	3

CONFIRMATION NO. 9034

83579
LEVEL 3 COMMUNICATIONS, LLC
c/o CPA Global
P.O. Box 52050
Minneapolis, MN 55402

FILING RECEIPT

OC000000038658870

Date Mailed: 11/13/2009

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

Applicant(s)

Ian Maloney, Dublin, IRELAND;

Assignment For Published Patent Application

Level 3 Communications, LLC, Broomfield, CO

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/113,941 11/12/2008

Foreign Applications

If Required, Foreign Filing License Granted: 11/06/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/604,678**

Projected Publication Date: 05/13/2010

Non-Publication Request: No

Early Publication Request: No

Title

USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

Preliminary Class

709

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/604,678	10/23/2009	Ian Maloney	0136-US-U2

CONFIRMATION NO. 9034

83579
LEVEL 3 COMMUNICATIONS, LLC
c/o CPA Global
P.O. Box 52050
Minneapolis, MN 55402

PUBLICATION NOTICE



Title:USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

Publication No.US-2010-0122303-A1
Publication Date:05/13/2010

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,226,618		Downs	
		US- 6,398,245		Gruse	
		US- 6,418,421		Hurtado	
		US- 6,587,837		Spagna	
		US- 7,110,984		Spagna	
		US- 7,206,748		Gruse	
		US- 6,490,580		Dey	
		US- 7,039,633		Dey	
		US- 6,493,707		Dey	
		US- 6,965,890		Dey	
		US- 6,405,188		Schwartz	
		US- 7,162,468		Schwartz	
		US- 6,311,182		Colbath	
		US- 5,996,025		Day	
		US- 6,189,039		Harvey	
		US- 6,195,680		Goldszmidt	
		US- 6,272,566		Craft	
		US- 6,460,082		Lumelsky	
		US- 6,463,508		Wolf	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

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Sheet 2 of 4

Complete if Known	
Application Number	12/604,678
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First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
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		US- 6,763,377		Belknap	
		US- 6,963,910		Belknap	
		US- 7,117,259		Rohwer	
		US- 6,263,313		Milsted	
		US- 7,103,564		Ehnebuske	
		US- 7,188,085		Pelletier	
		US- 6,049,831		Gardell	
		US- 6,859,791		Spagna	
		US- 6,185,598		Farber	
		US- 6,654,807		Farber	
		US- 7,054,935		Farber	
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		US- 20100027974		Ansari	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 20070233846		Farber	
		US- 20070233705		Farber	
		US- 20070233884		Farber	
		US- 20070233706		Farber	
		US- 20080215755		Farber	
		US- 20080140800		Farber	
		US- 20080104268		Farber	
		US- 20080215735		Farber	
		US- 20080215750		Farber	
		US- 20040139097		Farber	
		US- 20050114296		Farber	
		US- 20080071855		Farber	
		US- 20060015574		Seed	
		US- 20080071859		Seed	
		US- 20080065724		Seed	
		US-			
		US-			
		US-			
		US-			

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Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

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PTO/SB/08b (07-09)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 4 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		US Application No. 12/495,990, entitled "Flexible Token For Use In Content Delivery," filed July 1, 2009 (Hopkins)	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	8248127
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	18-AUG-2010
Filing Date:	23-OCT-2009
Time Stamp:	20:09:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	0136_US_U2_IDS_Transmittal_cute.pdf	20644 9ee9986d0e25a122b1d13af1ec0847cc5e368c4d	no	2

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Filed (SB/08)	0136_US_U2_1449.pdf	205998 8a6d480a7e5c75283b96fefc885ce251f6002452	no	4
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	NPL Documents	NPL_12495990_cute.pdf	1673774 c7c7276025f1eb29c08c0bb2413aa858e1498770	no	46
Warnings:					
Information:					
		Total Files Size (in bytes):	1900416		

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	MALONEY, Ian	Examiner:	KOENIG, Andrew Y.
Serial No.:	12/604,678	Group Art Unit:	2423
Filed:	October 23, 2009	Docket No.:	0136-US-U2
Title:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK		

INFORMATION DISCLOSURE STATEMENT (37 C.F.R. §1.97(b))

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

Dear Sir:

With regard to the above-identified application, the items of information listed on the enclosed Form 1449 are brought to the attention of the Examiner.

This statement and the items of information listed on the enclosed Form 1449 should be considered in the absence of any fees because this submission is made before the mailing date of a first Office Action on-the-merits in accordance with 37 C.F.R. §1.97(b). If this understanding is incorrect, i.e., if an Office Action has been mailed prior to submission of this Information Disclosure Statement, please charge the fee set forth in 37 C.F.R. §1.17(p) to Deposit Account No. 50-5063, in accordance with 37 C.F.R. §1.97(c).

In accordance with 37 C.F.R. §1.98(a)(2)(i), a copy of the U.S. patents and U.S. patent publications listed on the enclosed Form 1449 are not provided, as this application was filed after June 30, 2003. A copy of any foreign patent document or "Other Document" listed on the Form 1449 is enclosed, in accordance with 37 C.F.R. §1.98(a)(2).

No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§ 102 and 103 and Applicant reserves the right, pursuant to 37 C.F.R. § 1.131 or

otherwise, to establish that the reference(s) are not "prior art." Moreover, Applicants do not represent that a reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended.

Consideration of the items listed is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, it is requested that the Examiner return a copy of the attached Form 1449, marked as being considered and initialed by the Examiner, to the undersigned with the next official communication.

Please charge any additional fees or credit any overpayment to Deposit Account No. 50-5063.

Respectfully submitted,

Date: August 18, 2010

/JCS/

Jonathan C. Siekmann
Registration No. 58,259
USPTO Customer No. 83579
Level 3 Communications, LLC
1025 Eldorado Blvd.
Broomfield, Colorado 80021
Tel: 720-888-2140
Fax: 720-888-5619

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12604678
	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					
If you wish to add additional U.S. Patent citation information please click the Add button.						

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050021202	A1	2005-01-27	Russell, Richard et al.	
	2	20060015892	A1	2006-01-19	Hirt, Walter et al.	
	3	20080104624	A1	2008-05-01	Narasimhan, Nitya et al.	
	4	20030063752	A1	2003-04-03	Medvinsky, Alexander et al.	
	5	20040205810	A1	2004-10-14	Grandy, Leslie L. et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12604678
	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

	6	20050235307	A1	2005-10-20	Relan, Sandeep et al.	
	7	20060277576	A1	2006-12-07	Acharya, Swarup et al.	
	8	20080263602	A1	2008-10-23	Murray, Thomas J. et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	1020040084932	A		2004-10-06	Fujitsu Limited		☐
	2	1020040084932	A		2004-10-06	Fujitsu Limited	Abstract	☒

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report from WIPO, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing ISR 15 June 2010, 3 pages.	☐
	2	Written Opinion, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Written Opinion 15 June 2010, 5 pages.	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
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	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

	3	International Preliminary Report on Patentability, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Preliminary Report 17 May 2011, 1 page.	☐
	4	International Search Report from WIPO, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing ISR 19 May 2010, 5 pages.	☐
	5	Written Opinion, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing Written Opinion 19 May 2010, 5 pages.	☐
	6	International Preliminary Report on Patentability, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing Preliminary Report 17 May 2011, 1 page.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12604678
	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Thomas J. Osborne, Jr./	Date (YYYY-MM-DD)	2011-06-16
Name/Print	Thomas J. Osborne, Jr.	Registration Number	39,796

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

(19)대한민국특허청(KR)
(12) 등록특허공보(B1)

(51) 。Int. Cl.
H04N 5/445 (2006.01)
H04N 7/173 (2006.01)

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번역문 제출일자 2004년08월20일
(86) 국제출원번호 PCT/JP2003/001947
국제출원일자 2003년02월21일
(65) 공개번호 10-2004-0084932
(43) 공개일자 2004년10월06일
(87) 국제공개번호 WO 2003/071803
국제공개일자 2003년08월28일

(30) 우선권주장 60/359,036 2002년02월21일 미국(US)

(73) 특허권자 후지쯔 가부시끼가이샤
일본국 가나가와켄 가와사키시 나카하라꾸 가미고다나카 4초메 1-1

(72) 발명자 노무라,유지
일본 211-8588 가나가와껭 가와사끼시 나까하라꾸 가미꼬다나까 4쪼메 1-1 후지쯔 가부시끼가이샤 내

(74) 대리인 장수길
구영창

심사관 : 탁형열

(54) 프로그램 가이드에 따른 인터넷 컨텐트 획득을 위한 방법및 시스템

요약

컨텐트의 메타데이터를 기술하는 프로그램 가이드를 처리하는 프로토콜에 대한 특정 조건을 개시하고 있다. 이 프로토콜은 사용자와 장치가 대다수의 불필요한 컨텐트로부터 최신의 적절한 컨텐트를 선택할 수 있게 해준다. 프로토콜은 (프로그램 가이드 수신기를 갖는) 가입자가 (프로그램 가이드 송신기로부터) 전체 프로그램 가이드 또는 프로그램 가이드의 일부에 대한 업데이트를 수신할 수 있게 해주며, 여기서 프로그램 가이드의 일부는 한 세트의 선호도와 제한 조건에 따라서 규정된다. 프로그램 가이드 송신기와 프로그램 가이드 수신기 간의 통신은 SIP(session initiated protocol) 등과 같은 프로토콜을 이용하여 달성된다.

대표도

도 3a

색인어

프로그램 가이드, 수신기, 송신기, 멀티미디어 컨텐트, 업데이트

명세서

기술분야

본 발명은 일반적으로 네트워크 기반 컨텐트 획득 분야에 관한 것으로, 보다 상세하게는 프로그램 가이드를 이용한 인터넷 기반 컨텐트 획득에 관한 것이다.

배경기술

프로그램 가이드는 전송된 컨텐트에 관련하여 스케줄을 제공한다. 예를 들어, 케이블 TV (CATV) 시스템과 관련되는 프로그램 가이드는 프로그램의 스케줄(현재의 프로그램과 장래의 프로그램 둘 다)을 제공하고, 가입자는 이 프로그램을 보고 관심있는 것을 선택할 수가 있다. 부가적으로, TiVo(등록상표) 등의 현재 제품들은 사용자에게 전송된 컨텐트를 조작하는 능력을 제공한다. 이러한 제품들은 VCR과 유사할 수 있다(즉, 이들은 전송된 컨텐트에 대해 다음의 기능, 녹화, 일시 중지, 되감기 및 빨리 감기를 실행할 수 있다).

종래의 시스템에 기술된 바와 같이 프로그램 가이드와 관련되는 문제점은 프로그램의 컨텐트와 관련되는 방송 시간이 동적으로 변경될 수 있다는 사실이다. 이 시나리오의 전형적인 예가 스포츠 경기의 라이브 컨텐트이다. 이 경기의 시작 시간은 기상 조건으로 인해 연기될 수 있으며 그 종료 시간도 확실하지 않을 수 있다. 그 결과, 대체 컨텐트를 방송하거나 후속 컨텐트의 방송 시간이 영향을 받을 수도 있다. 따라서, 이러한 종래의 시스템에서는 프로그램 가이드가 이와 같은 변경을 반영하여 갱신되지 않았다.

이러한 프로그램 가이드의 다른 제한적인 면은 멀티미디어 컨텐트를 전달하고 저장하는 것과 관련된 리소스가 제한적일 수 있다는 사실을 고려하지 않는다는 것이다. 멀티미디어 컨텐트는 이러한 컨텐트를 전송하고 수신하는 데에 이용되는 리소스가 제한적이기 때문에 다양한 임시적인 특성을 갖는다. 특히, 멀티미디어 컨텐트는 (송신기와 수신기의 말단 상에서) 대용량의 저장 용량을 필요로 하기 때문에 값비싼 저장 시스템을 필요로 한다. 대안적으로는, 저장 용량의 측면에서, (멀티미디어 컨텐트의) 송신기가 저장 용량의 증가를 필요로 하는 멀티미디어 컨텐트를 제공하기를 원하는 경우, 송신기는 새로운 컨텐트를 연속적이거나 주기적으로 제공하고 오래된 컨텐트를 시스템으로부터 제거할 수 있다. 따라서, 가입자는 기존의 컨텐트의 이용 가능성(availability)에 대한 스케줄과 새로운 컨텐트의 변경 및 이용 가능성을 저장 매체 상에 저장해 둘 필요가 있다.

또한, 이러한 컨텐트의 전송과 수신은 송신기의 전송 리소스 뿐만 아니라 (인터넷 등의) 네트워크 상에 큰 대역폭의 리소스를 필요로 한다. 많은 경우, 적당한 대역폭을 이용할 수 없게 되는 것에 기인하여 컨텐트 수신 능력이 크게 제한된다. 대역폭의 부족과 관련된 문제를 해결하기 위한 하나의 해결책으로 타임-시프트 억세스 기술을 이용하고 있는데, 여기서 컨텐트는 적당한 대역폭이 이용 가능할 때에만 수신된다. 이러한 해결책은 큰 대역폭을 필요로 하는 컨텐트와 관련되는 억세스 시간을 제한하게 된다. 그러나, 현재의 시스템은 리소스를 동적으로 할당하거나 사용자에게 리소스의 이용 가능성이나 리소스가 언제 이용 가능하게 될지를 알리는 경우에는 효율적이지 못하다.

대역폭의 제한과 결부되는 이러한 컨텐트 크기의 증가, 즉 저장 용량이 제한으로 인해 특정 억세스 시간에서 이 컨텐트를 이용하지 못할 수도 있게 된다. 예를 들어, 이들 컨텐트 특성은 그 이용 가능성을 동적으로 제한 및 변경할 수가 있다. 사용자는 컨텐트에 억세스하기 전에 프로그램 가이드에 의해 기술되는 이 정보를 수신할 필요가 있다.

전술한 종래 기술의 프로그램 가이드의 엄밀한 장점, 특성 및 이점들이 무엇이든 간에, 이들 중 어느 것도 본 발명의 목적을 성취하거나 달성하지는 못한다.

<종래 기술 문서 정보의 기술>

(1) "세션 알림 프로토콜 (Session Announcement Protocol)"

by M. Handley

ACIRI

C. Perkins

USC/ISI

E. Whelan

UCL

네트워크 워킹 그룹

코멘트 요청: 2974

카테고리: 실험에 의거

2000년 10월

(2) TiVo(등록상표)

<URL: http://www.tivo.com/0.0.asp>

발명의 상세한 설명

본 발명은 프로그램 가이드나 프로그램 가이드의 일부에 대한 업데이트를 프로그램 가이드 송신기로부터 수신하기 위한 방법 및 시스템을 제공하며, 여기서 프로그램 가이드의 일부는 한 세트의 선호도와 제한 조건에 따라 규정된다. 프로그램 가이드 수신기에서 구현되는 이 방법은 (a) 프로그램 가이드나 프로그램 가이드의 일부와 관련되는 업데이트의 통지를 요청하는 가입 요청을 프로그램 가이드 송신기에 전송하는 단계, (b) 가입 요청을 허용하는 확인 신호(acknowledgement)를 수신하는 단계, (c) 프로그램 가이드나 프로그램 가이드의 일부에 대한 업데이트를 식별하는 통지 신호(notification)를 수신하는 단계, (d) 상기 수신된 통지 신호로부터 업데이트를 수용할 위치(예를 들어, URL 등의 포인터)를 식별하는 단계, (e) 식별된 위치로부터 업데이트를 수신하는 단계, 및 (f) 수신된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하는 단계 중의 적어도 한 단계를 포함한다. 특정 실시예에서, 프로그램 가이드 송신기와 프로그램 가이드 수신기 간의 통신은 SIP(session initiated protocol)을 이용하여 달성된다.

프로그램 가이드는 하나 이상의 프로그램을 포함하고, 이 프로그램 각각은 한 세트의 세그먼트를 포함하고, 이 프로그램이나 세그먼트는 소스나 메타데이터 정보를 포함한다. 특정 실시예에서, 메타데이터는 XML 포맷으로 되어 있다. 소스 정보는 (이것에 국한되지는 않지만) 하기의 것, 즉 사용자가 억세스하는 미디어, 채널, URI, 파일이나 경로명(pathname), 주파수, 위치, 오디오, 비디오 코덱, 대역폭, 윈도우 크기, 억세스 가능한 영역, 또는 그 등가물 중 임의의 것을 포함한다. 메타데이터 정보는 (이것에 국한되지는 않지만) 하기의 것, 즉 시간 정보, 저작권 정보, 분배 방침, 유효성, 타이틀, 서브타이틀, CD 또는 DVD 번호, 음악가(musician), 드라마, 쇼, 시놉시스, 키워드, 캐스트, 디렉터, 프로듀서, 본 방송 날짜, 코멘트, 또는 관련 URL 중 임의의 것을 포함한다.

일 태양에 있어서, 상기 시스템은 프로그램 가이드를 이용하여 네트워크를 통해 멀티미디어 컨텐트를 수신하기 위한 시스템으로, 상기 프로그램 가이드는 부분적으로 또는 전체적으로 프로그램 가이드 수신기에서 동적으로 갱신되며, 상기 시스템은 상기 프로그램 가이드 수신기에 의해 (a) 프로그램 가이드의 일부나 전체 프로그램 가이드와 관련되는 업데이트의 통지를 요청하는 요청을 프로그램 가이드 송신기에 전송하고, (b) 상기 요청을 허용하는 확인 신호를 수신하고, (c) 상기 프로그램 가이드의 일부나 상기 전체 프로그램 가이드의 업데이트를 식별하는 통지 신호를 수신하고, (d) 상기 수신된 통지 신호로부터 상기 업데이트를 수신할 위치를 식별하고, (e) 상기 식별된 위치로부터 상기 업데이트를 수신하고, (f) 상기 수신된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하고, (g) 상기 새로 작성된 프로그램 가이드를 이용하여 상기 멀티미디어 컨텐트를 검색하도록 동작한다.

다른 태양에 있어서, 상기 시스템은 프로그램 가이드를 이용하여 네트워크를 통해 멀티미디어 컨텐트를 수신하기 위한 시스템으로서, 상기 시스템은 프로그램 가이드의 일부나 전체 프로그램 가이드와 관련되는 업데이트의 통지를 요청하는 요청을 전송하고, 수신된 통지 신호로부터 업데이트를 수신할 위치를 식별하고, 상기 업데이트를 상기 식별된 위치로부터 수신하고, 상기 수신된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하고, 상기 새로 작성된 프로그램 가이드를 이용하여 상기 멀티미디어 컨텐트를 검색하기 위한 프로그램 가이드 수신기와, 상기 프로그램 가이드의 일부나 상기 전체 프로그램 가이드에 대한 업데이트를 식별하는 통지 신호를 상기 프로그램 가이드 수신기로부터의 상기 요청에 응답하여 상기 프로그램 가이드에 전송하기 위한 프로그램 가이드 송신기를 포함한다.

일 실시예에서, 상기 식별된 업데이트는 프로그램 가이드 수신기의 사용자와 관련되는 외부 장치(이동 전화, 무선 전화, 페이저, 개인 휴대 정보 단말기(PDA), 셋톱 박스, 또는 모바일 컴퓨터)에 전달된다. 프로그램 가이드 수신기와 외부 장치 간의 통신은 (이것에 국한되지는 않지만) 다음의 프로토콜, 즉 SIP, POP, SMTP 또는 HTTP 중 어느 하나의 프로토콜을 통해서 발생한다.

다른 실시예에서, 프로그램 가이드 송신기는 간헐적으로 (근거리 통신망(LAN), 원거리 통신망(WAN), 또는 인터넷과 같은) 네트워크의 일부로서 이용 가능하며, 프로그램 가이드 송신기는 프로그램 가이드 송신기가 네트워크의 일부인 기간 중에 통지 신호를 수신한다.

또 다른 실시예에서, 프로그램 가이드 수신기는 프로그램 가이드 수신기의 사용자에게 컨텐트의 품질을 나타내기 위해 컨텐트 검색/저장 중에 네트워크 트래픽과 관련되는 통계치를 저장한다.

도면의 간단한 설명

도 1은 본 발명의 프로그램 가이드 프로토콜과 관련되는 일반 기능을 설명하는 도면.

도 2는 본 발명의 프로그램 가이드의 일 구성예를 나타내는 도면.

도 3a는 프로그램의 방송 시간의 변경으로 인해 업데이트 통지 신호가 송신기(예를 들어, 비디오 서버/프로그램 가이드 송신기)에 의해 사용자의 단말기에 보내지는 시나리오와 관련되는 타임라인 도면.

도 3b는 송신기에 의한 프로그램 가이드 업데이트의 통지를 나타내는 플로우챠트.

도 3c는 URL 등의 포인터를 매개로 하는 업데이트 데이터의 검색을 나타내는 플로우챠트.

도 4는 프로그램 가이드에 대한 업데이트가 프로그램 가이드 송신기로부터 프로그램 가이드 수신기/사용자의 단말기가 아닌 장치에 보내지는 예를 설명하는 도면.

도 5a는 네트워크를 통해 억세스 가능하게 되었을 때 사용자의 단말기가 카메라 등의 외부 장치로부터 컨텐트를 취득하는 예를 설명하는 도면.

도 5b는 도 5a의 타임라인 도면에 대응되는 등가의 플로우챠트를 도시하는 도면.

도 6은 수신/저장된 컨텐트의 품질에 따라서 사용자가 컨텐트를 선택할 수 있게 하는 스크린 화상의 예를 나타내는 도면.

도 7은 컨텐트 업데이트의 일례를 나타내는 도면.

도 8은 컨텐트 업데이트의 또다른 일례를 나타내는 도면.

도 9는 로드 밸런싱 및 효율적인 저장 용량 이용에 유용한 프로그램 가이드의 예를 나타내는 도면.

실시예

본 발명이 바람직한 실시예로 설명 및 기재되고 있지만, 본 발명은 많은 다른 구성, 형태 및 재료로도 제조될 수 있다. 도면을 참조하여 바람직한 실시예에 대해 상세하게 설명하고 있는 하기의 상세한 설명은 본 발명의 원리의 예시 및 그 구성을 위한 관련 기능의 상세를 예시한 것으로서, 예시된 실시예에 의해 본 발명을 제한하고자 하는 것이 아니다. 당업자라면, 본 발명의 범주 내에서 많은 다른 가능한 변형이 가능함을 이해할 것이다.

본 발명의 프로그램 가이드는 멀티미디어 컨텐트의 특징을 기술하는 메타데이터의 세트이다. 예를 들어, 메타데이터의 비제한적 리스트는 고유 리소스 식별자(URI), 방송 시간, 대역폭, 파일 크기, 텍스트 요약, 장르, 타이틀 등 중 어느 것이나 포함할 수 있다. 또한, 용어 "컨텐트"는 음악, 비디오 클립, 뉴스 프로그램, 영화 등과 같은 멀티미디어 컨텐트를 의미한다. 용어 "프로그램 가이드"는 시작 시간, 종료 시간, 상영 시간, 타이틀, 채널, 주파수 및 대역폭 등과 같은 메타데이터를 기술한다.

본 명세서에서 용어 "장치"는 이 장치의 사용자에 의해 어떤 역할이 할당되었는 지에 따라서 컨텐트 송신기와 컨텐트 수신기의 역할 모두에 적용된다는 것에 유의해야 한다. 두 종류의 장치, 즉 "송신기"와 "수신기"가 있다. 용어 "송신기"는 프로그램 가이드를 송신하는 장치를 말한다. 용어 "수신기"는 프로그램 가이드를 수신하는 장치를 말한다. 또한, 컨텐트를 송신하는 장치는 인터넷 등의 네트워크의 코어나 에지에 위치될 수 있다. 따라서, 프로그램 가이드는 인터넷 등의 네트워크를 통해 컨텐트를 송신하고 수신하는 장치에 의해 이용된다. 수신기는 프로그램 가이드와 업데이트 통지 둘 다를 취득할 수 있다 (유사하게는, 송신기는 프로그램 가이드와 업데이트 통지 둘 다를 송신할 수 있다).

추가적으로, 본 발명은 장치들이 네트워크 상에서 항상 이용 가능한 것은 아니고 수신기나 송신기로서의 역할이 안정적이지 않다는 사실을 고려하고 있다. 따라서, 프로그램 가이드는 사용자에게 있어서 대안적이고 더욱 편리한 장치에 의해 취득될 수 있다. 본 발명의 프로그램 가이드 프로토콜을 통해 통신할 수 있는 장치의 예로는, 이것에 국한되지는 않지만, 휴대폰, PDA(Personal Digital Assistant), 퍼스널 컴퓨터, 스트리밍 비디오 서버, 셋톱 박스, 비디오 카메라, 및 PVR (Personal Video Recorder)을 포함한다.

본 발명의 프로그램 가이드의 케이스 모델은 일반적으로, 다음의 4가지 카테고리에 속하는데, 이 카테고리는 (1) 프로그램 가이드를 (자동 또는 수동으로) 억세스하는 수단 및 (2) 컨텐트 검색 수단(실시간 및 타임 시프트)을 이용하여 분류된다. 아래 표 1은 이들 모델 및 전형적인 예를 나타낸다.

[표 1]

	수동	자동
실시간	(1) TV	(3) 라이브 컨퍼런스 방송
타임 시프트	(2) VCR	(4) 선호도에 따른 녹화

텔레비전 모델: 사용자(인간)는 수동으로 프로그램 가이드를 이용하고, 컨텐트를 지정하고, 이를 실시간으로 시청한다. 방송 시간이 갑자기 변경되어 프로그램 가이드의 송신기가 이를 사용자에게 통지하면, 사용자는 선호하는 컨텐트를 수동으로 추종할 수 있게 된다.

VCR 모델: 사용자는 수동으로 프로그램 가이드를 이용하여, 저장될 컨텐트를 지정하고, 선호하는 컨텐트의 타임 시프트 버전을 시청한다. 방송 시간이 갑자기 변경되어 프로그램 가이드의 송신기가 이를 사용자에게 통지하면, 사용자는 이 선호하는 컨텐트를 다시 수동으로 지정할 수 있다.

라이브 컨퍼런스 방송 모델: 장치는 자동적으로 프로그램 가이드를 이용하여, 컨텐트를 지정하고, 이 컨텐트가 이용 가능하게 될 때 사용자에게 이를 보여준다. 이용 가능성이 예기치 않게 변경되어 프로그램 가이드의 송신기가 장치에게 이 변경과 관련하여 통지하면, 이 장치는 자동적으로 이 변경을 추종할 수 있게 된다.

선호도에 따른 녹화 모델: 장치는 프로그램 가이드를 이용하여 선호도와 컨피규레이션(configuration)과 같은 사용자의 지시에 따라 컨텐트를 자동적으로 저장한다. 이용 가능성이 갑자기 변경되고 프로그램 가이드의 송신기가 이 변경에 관해 장치에게 통지하면, 이 장치는 자동적으로 이 변경을 추종할 수 있게 된다.

본 발명의 프로그램 가이드 프로토콜은 요청-응답 메시지 동작을 지원하여, 수신기가 가장 편리한 때에 프로그램 가이드를 취득할 수 있게 한다. 예를 들어, 일 실시예에서, 사용자는 요구가 있는 즉시(on demand) 프로그램 가이드를 취득할 수 있다. 프로그램 가이드가 대량의 메타데이터를 포함하고 있을 수 있기 때문에, 프로그램 가이드의 송신기는 사용자에게 데이터를 강요할 필요가 없고, 반대로 프로그램 가이드를 전달하기 전에 요청을 대기한다.

다른 실시예에서, 본 발명의 프로토콜은 수신기가 맞춤식 프로그램 가이드를 취득하는 것을 허용한다. 예를 들어, 사용자는 그의 선호도와 컨피규레이션에 따라서 프로그램 가이드의 서브세트를 요청 및 수신할 수 있다. 선호도는 프로그램 가이드 요청 메시지에 포함될 수 있다. 그렇지 않으면, 프로토콜은 선호도를 송신하기 위한 개별의 트랜잭션을 가질 수 있다.

상술한 바와 같이, 본 발명의 프로그램 가이드는 그 컨텐트가 변경될 때 갱신될 수 있다. 갱신 통지는 즉시성(immediateness)과 유동성(mobility)을 갖는다. 사용자가 (사용자가 가입한) 프로그램 가이드의 변경에 관하여 통지 받기를 원할 때, 프로그램 가이드의 송신기는 이 변경과 관련하여 (선호도와 컨피규레이션에 기초하여 선정한) 적당한 장치에 즉각 통지한다. 이 장치는 프로그램 가이드를 요청한 원래의 장치일 수도 있고 아닐 수도 있다. 예를 들어, 사용자가 자신의 거주지로부터 멀리 있는 경우에는, 업데이트 통지를 (사용자 가정의 PC 또는 VCR 등의) 원래의 장치 대신에 사용자의 휴대폰을 통해 수신하는 것이 유용하다. 대안적으로, 사용자가 집에 있는 경우, 원래의 장치가 바람직할 수 있다. 사용자는 또한 다수의 장치에 통지 신호를 송신하는 것이 유용한 경우가 있을 수 있다.

다른 시나리오에서는, 저장 장치가 IP 접근 가능 비디오 카메라 상에 존재하는 최신 비디오 파일을 필요로 하지만, 카메라가 IP 접근 가능하지 않는(즉, 네트워크를 통해 접근될 수 없는) 상태라는 것을 알게 된다. 이 경우, 저장 장치는 (네트워크를 통해 접근 가능할 때) 새로운 비디오 파일이 이용 가능함을 나타내는 비디오 카메라로부터의 통지를 대기한다. 따라서, 컨텐트 송신기는 사용자의 단말기에 그 이용 가능함을 통지하여 (즉, 인터넷 등의 네트워크를 통해 접근 가능할 때), 사용자의 단말기가 이용 가능한 컨텐트를 억세스할 수 있게 된다.

이러한 메커니즘은 컨텐트의 취득 여부를 결정하는 것이 수신기이기 때문에 컨텐트 푸시(push)나 동기화와는 다르다는 것에 유의해야 한다. 따라서, 컨텐트 송신기가 연장된 기간 중에 네트워크의 일부로서 접속되어 있지 않더라도, 송신기는 이러한 네트워크의 일부가 될 때 컨텐트의 업데이트를 통지할 수 있다. 이것은 SIP INVITE 등의 송신기 초기화(initiated) 통지를 필요로 하다.

본 발명의 프로그램 가이드 프로토콜은 TCP 등의 신뢰성있는 전송 프로토콜을 통해 신뢰성있는 메시지 교환을 제공한다. 바람직한 실시예에서, 프로그램 가이드 프로토콜은 다음의 3개의 단계, 즉 1) 프로그램 가이드 요청, 2) 통지 요청, 3) 업데이트 통지로 이루어진다.

프로그램 가이드 요청

수신기는 프로그램 가이드의 요청 메시지를 보내고, 송신기는 이러한 요청의 수신시 프로그램 가이드를 포함하는 메시지로 응답한다. 상술한 바와 같이, 수신기는 또한 요청 메시지 내에 맞춤식 프로그램 가이드를 요청할 수 있다. 이러한 요청의 수신시, 송신기는 (요청에 따라 맞춤화된) 맞춤식 프로그램 가이드를 포함하는 메시지로 응답한다.

통지 요청

수신기는 수신기가 통지받는 조건을 지정하는 통지 요청 메시지를 보낸다. 송신기가 통지 요청 메시지를 수신하고 이 요청을 충족하는 업데이트를 제공할 수 있으면, 송신기는 확인 메시지로 응답한다.

업데이트 통지

송신기가 프로그램 가이드의 변경을 검출한 경우 수신기가 이 변경을 통지해 줄 것을 요청하였다면, 업데이트 통지가 수신기에 보내진다. 이러한 업데이트 통지의 수신시, 수신기는 확인 메시지로 응답한다. 상술한 바와 같이, 이 업데이트 통지 메시지는 사용자의 선호도에 기초하여 적당한 장치에 보내질 수 있다.

추가적으로, 본 발명의 프로그램 가이드는 다양한 멀티미디어 컨텐트를 기술하는 것에 유의해야 한다. 메타데이터는 상이한 프로그램 가이드를 제공하는 다른 송신기의 포인터를 나타내는 메타 프로그램 가이드를 기술할 수 있다. 컨텐트의 메타데이터는 다양한 포맷을 이용하여 나타낼 수 있다. 예를 들어, SDPng는 XML를 이용하여 컨텐트의 메타데이터를 기술할 수 있다. 이것이 다자간 멀티미디어 컨퍼런스를 어드레스하기 때문에, 일반적인 멀티미디어 컨텐트를 기술하기 위해서 XML 스키마(schema)를 확장할 필요가 있다. 다른 예에서, MPEG-7은 XML을 이용하여 컨텐트의 메타데이터를 기술할 수 있다. 이것은 일반 멀티미디어 컨텐트의 XML 스키마를 규정한다. 또한, 이것은 프로그램 가이드의 구성을 기술할 수 있다.

이벤트 통지와 요청 응답 메시지 동작에 관련하여, 다양한 프로토콜을 이용할 수 있다. 예를 들어, SIP 및 SIP-특정 이벤트 통지를 프로그램 가이드의 업데이트를 통지하는 데에 이용할 수 있다. SIP-특정 이벤트 통지는 특정 프로그램 가이드에 가입하여 업데이트에 관한 통지를 수신할 수 있도록 한다. 또한, HTTP는 프로그램 가이드의 메시지 동작을 요청/응답하는 데에 이용될 수 있다.

상기 예에서는 SIP 및 HTTP 등의 프로토콜을 이용하고 있지만, SOAP 또는 XML 컨텐트 로드를 이용하여 동일한 기능을 달성하는 다른 실시예도 가능하다는 것에 유의해야 한다. 따라서, 서버로부터 최신의 컨텐트를 취득하기를 원하는 사용자는 이를 "인스턴트 메시징"(instant messaging) 방법으로 취득할 수 있다.

도 1은 프로그램 가이드 프로토콜과 관련된 일반 기능을 설명한다. 사용자는 선호도의 세트(102)(이로 인해 컨텐트(100)를 바람직한 컨텐트(103)로 줄임)와 저장 용량, 시간 및 대역폭 등의 제한 조건(104)(이로 인해 바람직한 컨텐트(103)를 저장 가능 컨텐트(105)로 줄임)에 따라서 인터넷 등의 네트워크 상에서 컨텐트(100)를 선택할 수 있다. 프로그램 가이드가 컨텐트의 이용 가능성을 기술하기 때문에, 사용자는 주어진 기간 내에 컨텐트를 선택하여 취득할 수 있다. 한편, 사용자가 컨텐트 다운로드에 가장 편리한 특정 시간을 가지면, 사용자는 그 때에 적당한 컨텐트를 선택하여 가질 수 있다. 예를 들어, 사용자는 사용자의 저장 장치가 충분한 디스크 공간을 갖거나 네트워크가 전송에 필요한 충분한 대역폭을 가질 때 컨텐트를 수신하도록 결정할 수 있다.

도 2는 프로그램 가이드의 일 구성예를 나타낸다. 프로그램 가이드(202)를 기술하는 데에는 2 종류의 유닛, 즉 프로그램 섹션(204, 206, 208, 210, 212, 214) 및 세그먼트 섹션(216, 218, 220, 222, 224, 226, 228)이 있다. 사용자는 통상 프로그램을 기본 유닛으로 주시하고 있다. 각 프로그램 섹션은 0 또는 그 이상의 세그먼트 섹션으로 이루어진다. 예를 들어, 세그먼트 섹션은 음악, 뉴스 토픽, 광고 필름 등을 포함할 수 있다. 세그먼트들을 개별적으로 주시할 수 있다는 데에 유의해야 한다. 프로그램 섹션과 세그먼트 섹션 모두는 메타데이터를 포함한다. 프로그램 섹션에 기술되는 데이터는 세그먼트 섹션에서 생략될 수 있다.

프로그램 또는 세그먼트 섹션은 다음의 정보, 즉 소스 정보 및 메타데이터 정보를 포함한다. 소스 정보는 이것에 국한되지는 않지만 사용자가 억세스하는 미디어, 채널, URI, 파일이나 경로명, 주파수, 위치, 오디오, 비디오 코덱, 대역폭, 윈도우 크기, 억세스 가능한 영역 등을 포함한다. 몇몇 소스가 프로그램이나 세그먼트에서 발생할 수 있다는 데에 유의해야 한다. 메타데이터 정보는 (이것에 국한되지는 않지만) 시간 정보(시작 시간, 종료 시간, 상영 시간 등), 저작권 정보, 분배 방침, 유효성, 타이틀, 서브타이틀, CD 또는 DVD 번호, 음악가, 드라마, 쇼, 시놉시스, 키워드, 캐스트, 디렉터, 프로듀서, 원 방송 날짜, 코멘트, 관련 URL 등을 포함한다.

도 3a는 프로그램의 방송 시간 변경으로 인해 업데이트 통지가 송신기(302) (예를 들어, 비디오 서버/프로그램 가이드 송신기)에 의해 사용자의 단말기(304)로 송신되는 시나리오와 관련되는 타임라인 도면을 도시한다. 이 예에서, 사용자의 단말기(프로그램 가이드 수신기; 304)는 송신기(302)로부터 업데이트를 수신하도록 (SIP 프로토콜에 따라 SUBSCRIBE 메시지를 통해) 가입 요청한다. 사용자의 단말기(304)는 SUBSCRIBE 메시지에 장르, 상영 시간 등의 선호도 정보를 포함시킬 수 있다. 송신기(302)가 이 요청을 수용하면, SIP 프로토콜에 따라 ACCEPT 메시지를 송신한다. SUBSCRIBE 메시지가 사용자의 선호도 정보를 포함하면, 서버는 (워드 매칭 등의 패턴 매치 메커니즘을 이용하여) 사용자의 선호도에 부합하는 프로그램 가이드의 변경을 주시한다.

이어서, 송신기(302)는 SIP 프로토콜에 따라 변경을 검출하여 NOTIFY 메시지를 송신한다. 다음에, 수신기는 SIP 프로토콜에 따라 OK 메시지로써 확인 신호를 응답한다. NOTIFY 메시지는 이 변경을 기재한 정보 또는 변경을 나타내는 URL 등의 포인터를 포함한다. NOTIFY 메시지가 URL을 포함하면, 수신기는 HTTP 또는 FTP 등의 프로토콜을 이용하여 프로그램 가이드 변경에 관한 정보를 취득한다. 수신기(304)가 프로그램 가이드를 취득한 후에, 수신기는 프로그램 가이드에 의해 기술되는 멀티미디어 컨텐트를 얻을 수 있다.

도 3b 및 도 3c는 도 3a의 타임라인 도면에 대응하는 등가의 플로우챠트를 도시한다. 도 3b는 송신기에 의한 프로그램 가이드 업데이트의 통지를 나타내는 플로우챠트를 설명한다. 인증된 가입 요청이 최초 요청인지를 식별하는 체크가 실행되고(306), 그렇다면(308) NOTIFY 메시지는 프로그램 가이드와 함께 전송된다(310). 상기 요청이 최초 요청이 아닌 경우(312), NOTIFY 메시지는 단지 변경된 프로그램 가이드 데이터(즉, 프로그램 가이드의 변경에 대응하는 현재 델타)와 함께 전송된다(314).

도 3c는 URL 등의 포인터를 통해 업데이트 데이터의 검색을 나타내는 플로우챠트를 도시한다. 가장 최근에 수정된 시간이 업데이트 되었는 지를 알기 위한 체크가 실행되고(316), 시간이 업데이트 되지 않았다면(317) 현재 프로그램 가이드가 유지된다(318). 최신 수정 시간이 업데이트된 경우(319), URL 등의 포인터가 업데이트의 위치를 나타내도록 제공되었는 지를 판단하는 또다른 체크가 실행된다(320). 이러한 포인터가 존재하면(322), 프로그램 가이드가 취득된다(324)(즉, 프로그램 가이드의 변경을 이용하여 새로운 프로그램 가이드를 작성하거나(325) 전체 프로그램 가이드를 취득한다(327)). 포인터가 존재하지 않으면(326), 통지 메시지의 본문으로부터 프로그램 가이드를 취득하거나(328), 프로그램 가이드의 변경을 이용하여 새로운 프로그램 가이드를 작성하거나(325) 전체 프로그램 가이드를 취득한다(327).

도 4는 프로그램 가이드의 업데이트를 프로그램 가이드 송신기(402)로부터 프로그램 가이드 수신기/사용자의 단말기(404)가 아닌 장치(406)에 송신하는 예를 도시한다. 이 예에서, 수신기(404)는 INVITE 메시지를 SIP 프로토콜에 따라 외부 장치(예를 들어, 휴대폰, 페이저, PDA 등; 406)에 송신한다. INVITE 메시지는 프로그램 가이드의 변경이나 이러한 변경을 나타내는 URL 등의 포인터를 포함한다. INVITE 메시지가 URL을 포함하면, (휴대폰 등의) 외부 장치(406)는 (상술한 예와 같이) HTTP 또는 FTP 등의 프로토콜을 이용하여 이 변경을 억세스할 수 있다. URL은 사용자의 단말기 또는 비디오 서버(404)의 정보를 제공한다. 따라서, 최신의 프로그램 가이드를 얻기를 원하는 사용자는 단말기(404) 근처에 있지 않을 때에도 최신 프로그램 가이드를 얻을 수 있게 된다.

도 5a는 사용자의 단말기가 네트워크를 통해 억세스 가능하게 될 때 카메라(504) 등의 외부 장치로부터 컨텐트를 얻는 예를 도시한다. 따라서, 사용자의 단말기(502)가 동일한 네트워크 상에 접속된 인식 불가능한 (즉, 사용자의 단말기가 접속된 네트워크를 통해 인식 불가능한) 비디오 카메라(504) 상에 위치되어 있는 파일을 필요로 하는 경우, 카메라는 단말기(502)에게 동일한 네트워크 상에 접속되어 있다는 것을 통지한다. 카메라 상의 리소스가 이용 가능하면, 먼저 카메라(504)는 프로그램 가이드의 URL을 포함하는 INVITE 메시지를 단말기(502)에 송신한다. 단말기(502)가 ACKNOWLEDGEMENT 신호를 송신하고 그 응답을 수신한 후에, 단말기(502)는 URL에 의해 주어진 프로그램 가이드를 얻게 된다. 마지막으로, 단말기는 프로그램 가이드에 따라 파일을 얻게 된다. 사용자가 일단 프로그램 가이드를 얻게 되면, 사용자는 카메라가 새로운 컨텐트를 갖고 있는지를 확인할 수 있다. 따라서, 사용자는 네트워크 상에서 간헐적으로 접속되는 장치 상의 최신 컨텐트를 얻을 수 있게 된다.

도 5b는 도 5a의 타임라인 도면에 대응하는 등가의 플로우챠트를 도시한다. 새로운 컨텐트가 최종 통지 후에 저장되었는지를 확인하기 위한 체크가 실행되고(506), 그렇다면 최종 상태 및 현재 상태를 비교하는 메타데이터가 준비된다(508). 단계(510)에서, 통지 메시지는 업데이트된 메타데이터와 함께 전송된다.

상기 예에서 (그리고 후속 예에서) SIP, HTTP, 및 FTP 등의 특정 프로토콜이 이용되고 있지만, 그 외 다른 등가의 프로토콜 및 통지 메커니즘도 동일한 기능을 달성할 수 있다. 예를 들어, 수신기는 POP 또는 SMTP를 이용하여 외부 장치(예를 들어, 휴대폰)에 이메일 등의 전자 메시지를 보낼 수 있다. 따라서, 이용되는 메시징 프로토콜의 유형은 본 발명의 범위를 제한하는 것으로 이용되어서는 안된다.

본 발명의 프로그램 가이드 프로토콜을 이용하여, 사용자는 VCR과 같은 사용자의 단말기 등의 저장 장치에 컨텐트를 저장할 수 있다. 이러한 컨텐트를 저장함으로써 사용자는 이 컨텐트를 보기 전에 컨텐트의 품질을 확인할 수 있다. 예를 들어, 저장 장치가 인터넷 등의 네트워크 상의 컨텐트를 취득하면, 이 저장 장치는 패킷 손실률과 같이 수신된 컨텐트의 품질을 설명하는 통계치를 기록할 수 있다. 이 저장 장치는 컨텐트를 기록한 후에 사용자에게 상기 통계치를 보여줄 수 있다. 이어서, 사용자는 이 통계치에 따른 컨텐트의 품질을 결정할 수 있다. 인터넷의 트래픽 품질은 취득된 당시에는 대개 불명확하기 때문에, 사용자는 실시간으로 그 품질을 확인할 수 있다. 사용자는 또한 프로그램 가이드를 이용하여 미리 저장될 컨텐트를 확인할 수 있다. 도 6은 수신/저장된 컨텐트의 품질에 따라서 컨텐트를 선택하기 위한 스크린 화상의 예를 나타낸다.

도 7은 메타데이터 서버(704)가 컨텐트 클라이언트(706)에게 임의의 신청 업데이트를 제공하고 컨텐트 서버(702)가 컨텐트 클라이언트(706)에 의한 멀티미디어 컨텐트 검색을 허용하고 있는 시나리오를 설명한다. 먼저, 컨텐트 클라이언트(706)는 메타데이터 서버(704)로부터 메타데이터를 요청하여 검색한다. 다음에, 컨텐트 클라이언트(706)는 컨텐트 서버(702)로부터 멀티미디어 컨텐트를 검색한다. HTTP과 같은 전송 메커니즘이 메타데이터를 전달하는 데에 이용될 수 있음에 유의해야 한다. 그러나, 메타데이터 전송에 HTTP 프로토콜을 이용하는 것은 비효율적인 리프레시 메커니즘이다(즉, 리프레시 메커니즘이 폴링(polling)에 의한 것이기 때문에 비효율적임). 메타데이터를 리프레시하는 메커니즘은 빈번한 HTTP 요청을 송신하기 위해 개발될 필요가 있지만, 이러한 빈번한 요청은 요청을 수신하는 호스트 상의 로드를 증가시키게 된다. 본 발명에 기초한 해결책은 메타데이터가 변경될 때 메타데이터 서버(704)가 컨텐트 클라이언트에 업데이트 통지를 송신하는 것이다. 따라서, 업데이트에 필요한 메시지의 수는 상술한 시나리오에서 필요로 하는 HTTP 리프레시 메시지의 수보다 적다. 컨텐트 클라이언트(706)는 Real Video(등록상표), Windows(등록상표) Media, 또는 HTTP 등의 기존의 컨텐트 전송 메커니즘을 이용하여 컨텐트를 검색할 수 있다.

도 8은 SIP를 통한 업데이트 통지의 기본 프로토콜 동작을 도시한다. 먼저, 메타데이터/컨텐트 클라이언트(802)는 메타데이터 서버(804)로부터 후속의 업데이트 통지를 수신하기 위해서 메타데이터 서버(804)에 SUBSCRIBE 요청을 보낸다. 메타데이터 서버(804)가 가입 요청을 인증하면, 서버(804)는 SUBSCRIBE 확인 응답 및 NOTIFY 요청을 동일한 클라이언트(802)에게 보낸다. 이 요청은 요청된 메타데이터 또는 메타데이터의 위치를 나타내는 URL을 포함한다. 클라이언트(802)는 상기 요청을 수신하면 본문에 특정된 메타데이터를 얻으려고 한다. 메타데이터가 변경되면, 서버는 NOTIFY 요청을 클

라이언트에게 보낸다. 요청 본문은 메타데이터의 URL 또는 메타데이터 그 자체를 포함하고 있다. 클라이언트가 요청을 수신하면, 가입자는 URL에 의해 본문에 특정된 메타데이터를 얻으려고 한다. 최종적으로, 클라이언트는 HTTP를 이용하여 메타데이터를 얻는다.

도 9는 로드 밸런싱과 효율적인 저장 용량 이용에 유용한 프로그램 가이드의 예를 도시한다. 프로그램 가이드 송신기 노드는 유니캐스트 시나리오(각 사용자의 다양한 스케줄이 유니캐스트 시나리오로 보내질 수 있음) 또는 멀티캐스트 시나리오로 네트워크(또는 송신기 노드) 상의 대역폭의 효율적인 이용 및 로드의 밸런싱을 위해 사용자 억세스 시간을 제어한다. 컨텐트 분산 네트워크나 비디오 서버 상의 허용 가능한 세션의 수는 통상 대역폭 또는 (서버, 노드 또는 분배 시간 리소스 등의) 네트워크 리소스의 부족으로 인해 제한되게 된다. 이러한 시나리오의 해결책은 개별 사용자에게 맞추어진 프로그램 가이드를 분배하는 것이다. 예를 들어, 로드 밸런싱 상황의 경우, 영화 A를 전달하기 위한 네트워크 리소스가 제한되므로, 영화 A는 오후 7시에 사용자 1에게, 오후 9시에 사용자 2에게, 오후 11시 또는 익일 오전 1시에 사용자 3에게 이용 가능하게 된다. 프로그램 시간은 리소스의 이용 가능성에 따라서 동적으로 변경될 수 있다는 것에 유의해야 한다. 추가 리소스가 이용 가능하게 되면, 예를 들어, 사용자 3은 영화를 오후 9시에서 익일 오전 1시까지 억세스할 수 있게 된다.

저장 용량에 관해서는, 컨텐트 서버의 저장 용량 리소스가 제한된다면, 영화 A는 오후 7시에서 9시까지, 영화 B는 오후 9시에서 11시까지, 영화 C는 오후 11시에서 익일 오전 1시까지 사용자가 이용할 수 있다. 이것은 이용 가능 시간의 제한을 가져온다. 송신기 노드가 최종 사용자에게 제공되는 컨텐트 제공(offering)의 횟수를 늘리기를 원한다면, 저장 노드 상의 컨텐트를 주기적으로 갱신할 수 있다.

대안적으로는, 네트워크 리소스 이용 상태를 추적함으로써, 프로그램 가이드는 분산 네트워크를 통해 제공되는 것을 보장하기 위해 제한된 대역폭의 사용자에게 스케줄링된 시간을 제공할 수 있다. 또한, 본 발명의 프로그램 가이드는 (인스턴트 메시징 방식의 연속적인 SIPG 폴링 통지에 의해) 이러한 사용자가 더 크고 더 빠른 파이프라인에 의해 타임아웃(time-out)되지 않도록 보장한다. SIPG 통지는 실시간으로 신속하게 생성되어 각 클라이언트/서버 노드에서 동적인 맞춤식 가이드를 제공할 수 있다. 개인화된 프로파일의 표시가 가능하도록 패킷 내에 사용자의 프로파일을 임베드할 수 있다.

많은 현재의 피어-투-피어 어플리케이션은 분산된 양상을 보이는 한편 중앙의 관리자(facilitator)에 의존하여 프로그램 가이드의 특성을 분산시키도록 하는 동작을 조정한다. 인스턴트 메시징 시스템의 사용자에게는, 이 어플리케이션은 메시지를 수신하고 있는 클라이언트 노드에 데이터를 직접 송신하는 피어-투-피어 어플리케이션처럼 보이게 된다. 그래도, 많은 인스턴트 메시징 시스템은 노드가 서로 통신하는 것을 용이하게 하는 백-엔드(back-end) 상의 서버를 가진다. 서버는 사용자의 이름과 현재 IP 어드레스 간의 결합을 유지하여, 사용자가 오프라인인 경우 메시지를 버퍼링하여, 방화벽을 지나 사용자에게 메시지를 보낸다. 본 발명의 시스템은 가능한 경우 직접적인 클라이언트 노드간 통신을 허용할 수 있지만, 프로그램 가이드 시스템의 사용자가 필요로 하는 폴백(fallback)으로서 서버 노드를 갖는다.

결론

프로그램 가이드에 따른 인터넷 컨텐트 획득을 위한 방법 및 시스템의 효율적인 구현을 위한 시스템 및 방법을 상기 실시예에서 나타내었다. 다양한 바람직한 실시예를 도시 및 기재하였지만, 이러한 설명으로 본 발명을 제한하고자 하는 의도는 전혀 아니고, 오히려 첨부한 청구범위에서 규정되는 바와 같이 본 발명의 정신 및 범위에 속하는 모든 변형 및 대체 구성을 포괄하고자 하는 것을 알 수 있을 것이다. 예를 들어, 본 발명은 메시징 프로토콜의 유형, 메타데이터의 포맷, 본 발명의 프로그램 가이드 프로토콜을 통해 통신할 수 있는 외부 장치의 유형, 소프트웨어/프로그램, 연산 환경, 또는 특정 연산 하드웨어로 제한되어서는 안된다.

상기 실시예는 다양한 연산 환경에서 구현된다. 예를 들어, 본 발명은 종래의 IBM PC 또는 그 등가물, 멀티노드 시스템(예를 들어, LAN), 또는 네트워크 시스템(예를 들어, 인터넷, WWW, 무선 웹) 상에서 구현될 수 있다. 모든 프로그래밍 및 이와 관련된 데이터는 정적 또는 동적인 컴퓨터 메모리에 저장되며, 종래의 컴퓨터 저장 장치, 디스플레이(즉, CRT) 및/또는 하드카피(즉, 인쇄물) 포맷 중 임의의 것으로 사용자에 의해 검색될 수 있다. 본 발명의 프로그래밍은 웹 프로그래밍 기술 분야(예를 들어, HTML, XML 등)의 당업자에 의해 구현될 수 있다.

(57) 청구의 범위

청구항 1.

프로그램 가이드 수신기에서 부분적으로 또는 전체적으로 동적으로 업데이트되는 프로그램 가이드를 이용하여 네트워크를 통해 멀티미디어 컨텐트를 수신하기 위한 방법에 있어서,

상기 방법은 상기 프로그램 가이드 수신기에서 구현되되,

a. 프로그램 가이드의 일부나 전체 프로그램 가이드와 관련되는 업데이트의 통지를 요청하는 요청을 프로그램 가이드 송신기에 전송하는 단계와,

b. 상기 요청을 허용하는 확인 신호를 수신하는 단계와,

c. 상기 프로그램 가이드의 일부나 상기 전체 프로그램 가이드에 대한 업데이트를 식별하는 통지 신호를 수신하는 단계와,

d. 상기 수신된 통지 신호로부터 상기 업데이트를 수신할 위치를 식별하는 단계와,

e. 상기 식별된 위치로부터 상기 업데이트를 수신하는 단계와,

f. 상기 수신된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하는 단계와,

g. 상기 새로 작성된 프로그램 가이드를 이용하여 상기 멀티미디어 컨텐트를 검색하는 단계를 포함하는 방법.

청구항 2.

제1항에 있어서, 상기 새로 작성된 프로그램 가이드를 이용한 상기 멀티미디어 컨텐트의 검색은 선호도와 제한 조건에 기초하는 방법.

청구항 3.

제1항에 있어서, 상기 멀티미디어 컨텐트는 계정 로드 밸런싱 제한 조건이나 스토리지 제한 조건에 기초하여 컨텐트 서버로부터 검색되는 방법.

청구항 4.

제1항에 있어서, 상기 업데이트를 식별하는 상기 통지 신호는 인스턴트 메시징 프로토콜을 매개로 수신되는 방법.

청구항 5.

멀티미디어 컨텐트의 검색을 보조하는 프로그램 가이드를 네트워크를 통해 동적으로 업데이트하기 위한 방법에 있어서,

상기 방법은 프로그램 가이드 송신기에서 구현되되,

a. 프로그램 가이드와 관련되는 업데이트의 통지를 요청하는 요청을 프로그램 가이드 수신기로부터 수신하는 단계와,

b. 상기 요청을 허용하는 확인 신호를 상기 프로그램 가이드 수신기에 전송하는 단계와,

c. 상기 프로그램 가이드 수신기와 관련되는 선호도 및 제한 조건을 식별하는 단계와,

d. 상기 식별된 선호도와 제한 조건에 기초하여 상기 프로그램 가이드와 관련된 변경을 모니터링하는 단계와,

e. 상기 프로그램 가이드에서의 변경을 검출한 경우, 상기 프로그램 가이드에 대한 업데이트를 식별하는 통지 신호를 전송하는 단계 - 상기 통지 신호는 상기 업데이트를 수신할 URL을 식별함 - 를 포함하며,

상기 프로그램 가이드 수신기는 상기 통지 신호를 수신하고, 상기 URL로부터 상기 업데이트를 검색하고, 상기 검색된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하고, 상기 새로 작성된 프로그램 가이드에 기초하여 멀티미디어 컨텐트를 검색하는 방법.

청구항 6.

네트워크 상에서 간헐적으로 동작하는 송신기로부터 멀티미디어 컨텐트를 수신하기 위한 방법에 있어서,

상기 멀티미디어 컨텐트의 수신은 상기 송신기에 의해 업데이트되는 프로그램 가이드에 기초하고, 상기 업데이트는 상기 네트워크에서의 상기 송신기의 이용 가능성에 기초하여 실행되고, 상기 방법은 프로그램 가이드 수신기에서 구현되되,

a. 상기 네트워크에서 이용 가능한 경우 상기 송신기로부터의 요청 신호(invitation)를 수신하는 단계 - 상기 요청 신호는 상기 프로그램 가이드의 업데이트에 대한 포인터를 제공함 - 와,

b. 상기 요청 신호의 수신을 확인하는 신호를 전송하는 단계와,

c. 상기 포인터에 따라 상기 업데이트를 검색하는 단계와,

d. 상기 검색된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하는 단계와,

e. 상기 새로 작성된 프로그램 가이드에 따라 상기 송신기가 상기 네트워크의 일부로서 이용 가능하게 되는 타임 프레임(time frame) 중에 멀티미디어 컨텐트를 검색하는 단계를 포함하는 방법.

청구항 7.

프로그램 가이드 또는 프로그램 가이드의 일부에 대한 업데이트를 사용자와 관련되는 외부 장치에 전달하기 위한 방법에 있어서,

상기 사용자는 프로그램 가이드 수신기와 또한 관련되며, 상기 프로그램 가이드의 일부는 한 세트의 선호도와 제한 조건에 따라 규정되고, 상기 업데이트는 네트워크를 통해 실행되고, 상기 방법은 상기 프로그램 가이드 수신기에서 구현되되,

a. 상기 프로그램 가이드 또는 상기 프로그램 가이드의 일부와 관련된 업데이트의 통지를 요청하는 요청을 프로그램 가이드 송신기에 전송하는 단계와,

b. 상기 요청을 허용하는 확인 신호를 수신하는 단계와,

c. 상기 프로그램 가이드 또는 상기 프로그램 가이드의 일부에 대한 업데이트를 식별하는 통지 신호를 수신하는 단계와,

d. 상기 수신된 통지 신호로부터 상기 업데이트를 검색하기 위한 URL을 식별하는 단계와,

e. 상기 프로그램 가이드 수신기와 관련되는 사용자의 상기 외부 장치에 상기 URL을 전달하는 단계를 포함하고,

상기 외부 장치는 업데이트된 프로그램 가이드를 검색하거나 상기 프로그램 가이드의 일부와 관련된 상기 검색된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하고, 상기 외부 장치는 상기 프로그램 가이드를 이용하여 멀티미디어 컨텐트를 검색하는 방법.

청구항 8.

프로그램 가이드 수신기에서 부분적으로 또는 전체적으로 동적으로 업데이트되는 프로그램 가이드를 이용하여 네트워크를 통해 멀티미디어 컨텐트를 수신하기 위한 시스템에 있어서,

상기 프로그램 가이드 수신기에 의해, (a) 프로그램 가이드의 일부 또는 전체 프로그램 가이드와 관련되는 업데이트의 통지를 요청하는 요청을 프로그램 가이드 송신기에 전송하고, (b) 상기 요청을 허용하는 확인 신호를 수신하고, (c) 상기 프로그램 가이드의 일부 또는 상기 전체 프로그램 가이드에 대한 업데이트를 식별하는 통지 신호를 수신하고, (d) 상기 수신된 통지 신호로부터 상기 업데이트를 수신할 위치를 식별하고, (e) 상기 식별된 위치로부터 상기 업데이트를 수신하고, (f) 상기 수신된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하고, (g) 상기 새로 작성된 프로그램 가이드를 이용하여 상기 멀티미디어 컨텐트를 검색하도록 동작하는 시스템.

청구항 9.

프로그램 가이드를 이용하여 네트워크를 통해 멀티미디어 컨텐트를 수신하기 위한 시스템에 있어서,

프로그램 가이드의 일부 또는 전체 프로그램 가이드와 관련되는 업데이트의 통지를 요청하는 요청을 전송하고, 수신된 통지 신호로부터 업데이트를 수신할 위치를 식별하고, 상기 식별된 위치로부터 상기 업데이트를 수신하고, 상기 수신된 업데이트에 기초하여 새로운 프로그램 가이드를 작성하고, 상기 새로 작성된 프로그램 가이드를 이용하여 상기 멀티미디어 컨텐트를 검색하는 프로그램 가이드 수신기와,

상기 프로그램 가이드 수신기로부터의 상기 요청에 응답하여 상기 프로그램 가이드의 일부 또는 상기 전체 프로그램 가이드의 업데이트를 식별하는 통지 신호를 상기 프로그램 가이드에 전송하는 프로그램 가이드 송신기를 포함하는 시스템.

청구항 10.

제9항에 있어서, 상기 멀티미디어 컨텐트는 계정 로드 밸런싱 제한 조건 또는 스토리지 제한 조건에 기초하여 컨텐트 서버로부터 검색되는 시스템.

청구항 11.

삭제

청구항 12.

삭제

청구항 13.

삭제

청구항 14.

삭제

청구항 15.

삭제

청구항 16.

삭제

청구항 17.

삭제

청구항 18.
삭제

청구항 19.
삭제

청구항 20.
삭제

청구항 21.
삭제

청구항 22.
삭제

청구항 23.
삭제

청구항 24.
삭제

청구항 25.
삭제

청구항 26.
삭제

청구항 27.
삭제

청구항 28.
삭제

청구항 29.
삭제

청구항 30.
삭제

청구항 31.
삭제

청구항 32.
삭제

청구항 33.
삭제

청구항 34.
삭제

청구항 35.
삭제

청구항 36.
삭제

청구항 37.
삭제

청구항 38.
삭제

청구항 39.
삭제

청구항 40.
삭제

청구항 41.
삭제

청구항 42.
삭제

청구항 43.
삭제

청구항 44.
삭제

청구항 45.
삭제

청구항 46.
삭제

청구항 47.
삭제

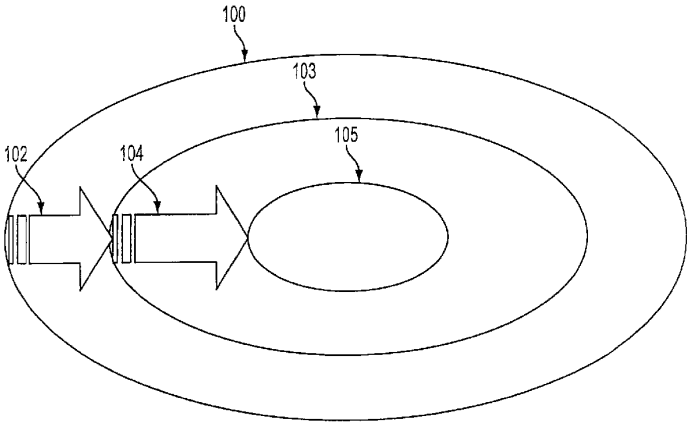
청구항 48.
삭제

청구항 49.
삭제

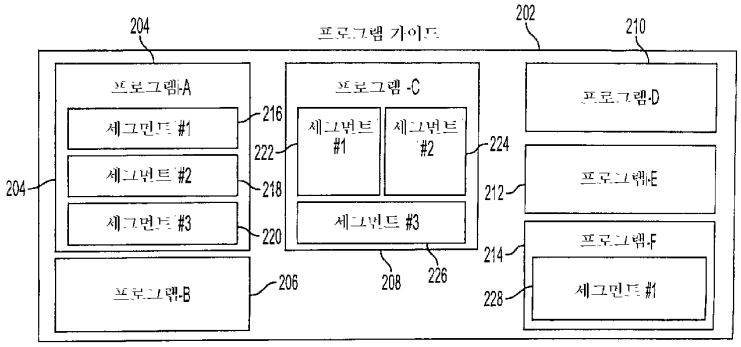
청구항 50.
삭제

도면

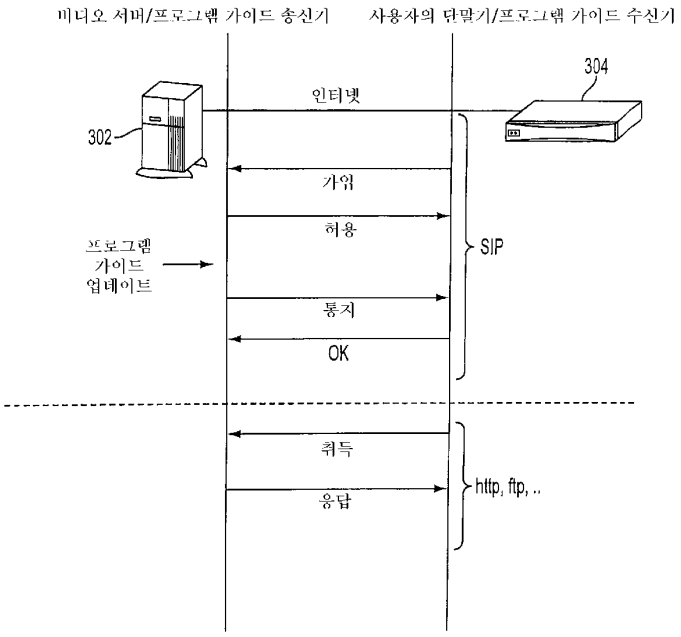
도면1


100
103
105
102
104

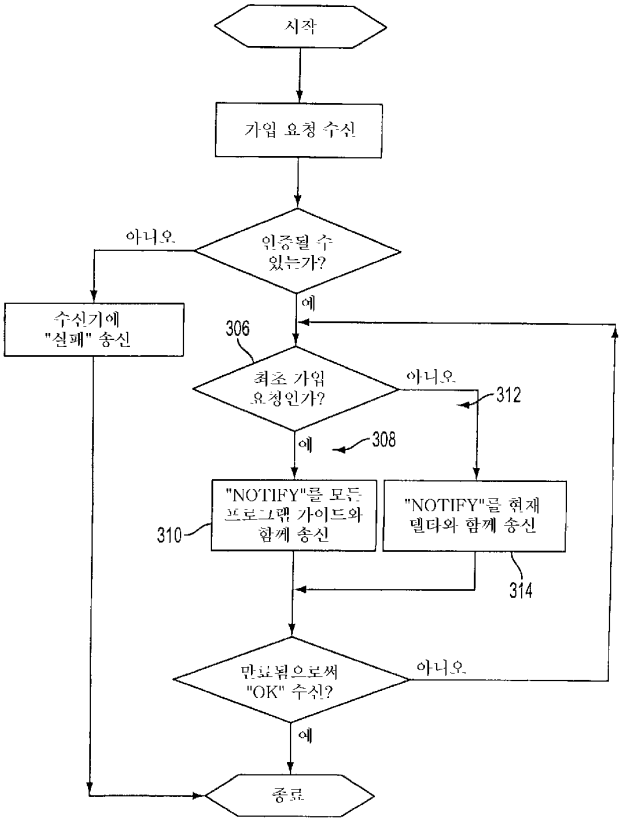
도면2


204
프로그램 가이드
202
210
프로그램-A
세그먼트 #1
세그먼트 #2
세그먼트 #3
216
218
220
204
프로그램-B
206
프로그램 -C
세그먼트 #1
세그먼트 #2
세그먼트 #3
222
224
208
226
프로그램-D
프로그램-E
212
프로그램-F
214
세그먼트 #1
228

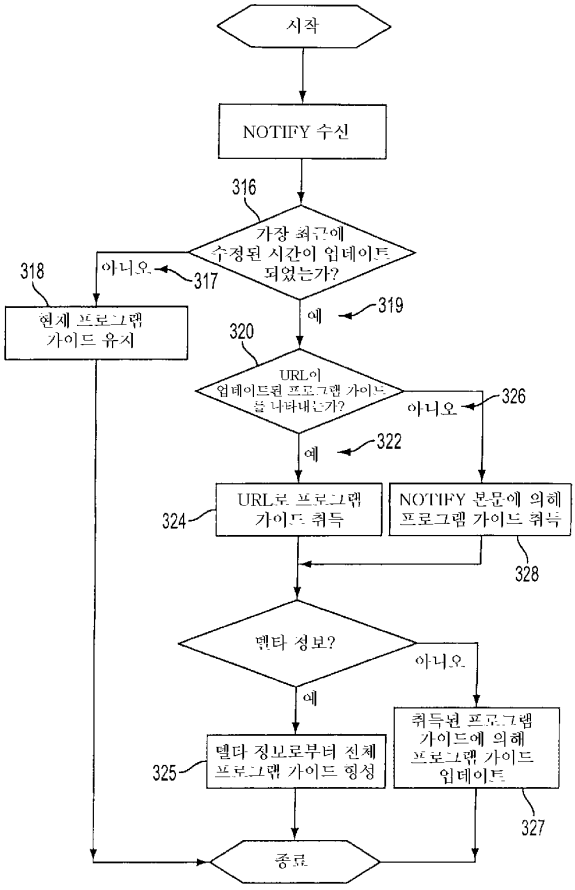
도면3a


미디오 서버/프로그램 가이드 송신기
사용자의 단말기/프로그램 가이드 수신기
304
인터넷
302
가입
허용
프로그램
가이드
업데이트
SIP
통지
OK
취득
응답
http, ftp, ..

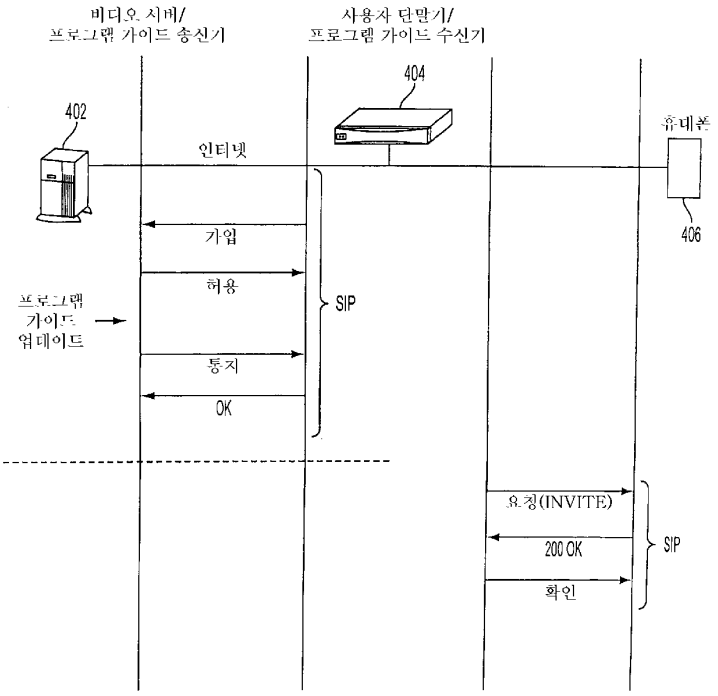
도면3b


시작
가입 요청 수신
인증될 수
있는가?
아니오
예
수신기에
"실패" 송신
306
최초 가입
요청인가?
아니오
312
예
308
"NOTIFY"를 모든
프로그램 가이드와
함께 송신
310
"NOTIFY"를 현재
델타와 함께 송신
314
만료됨으로써
"OK" 수신?
아니오
예
종료

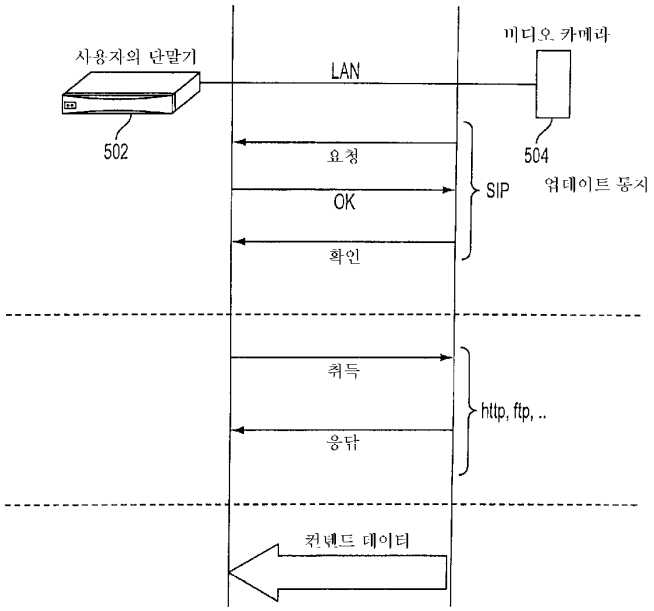
도면3c


시작
NOTIFY 수신
316
가장 최근에 수정된 시간이 업데이트 되었는가?
아니오
317
318
현재 프로그램 가이드 유지
예
319
320
URL이 업데이트된 프로그램 가이드를 나타내는가?
아니오
326
예
322
URL로 프로그램 가이드 취득
324
NOTIFY 본문에 의해 프로그램 가이드 취득
328
델타 정보?
아니오
예
델타 정보로부터 전체 프로그램 가이드 형성
325
취득된 프로그램 가이드에 의해 프로그램 가이드 업데이트
327
종료

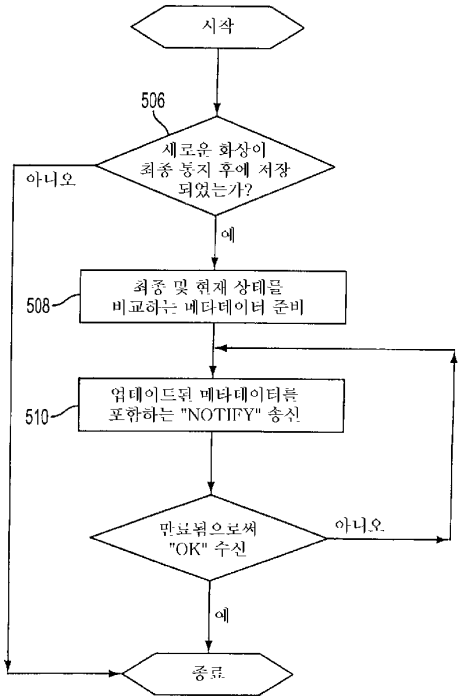
도면4


비디오 서버/
프로그램 가이드 송신기
사용자 단말기/
프로그램 가이드 수신기
404
402
인터넷
휴대폰
406
가입
허용
SIP
프로그램
가이드
업데이트
통지
OK
요청(INVITE)
200 OK
SIP
확인

도면5a


사용자의 단말기
LAN
비디오 카메라
502
504
요청
SIP
업데이트 통지
OK
확인
취득
http, ftp, ..
응답
컨텐트 데이터

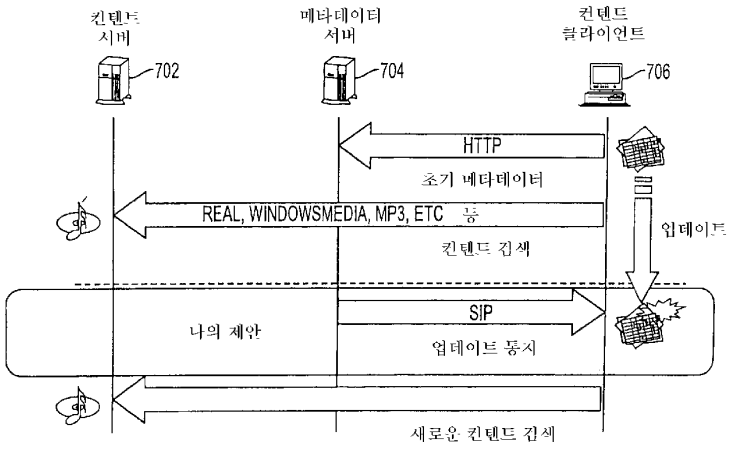
도면5b



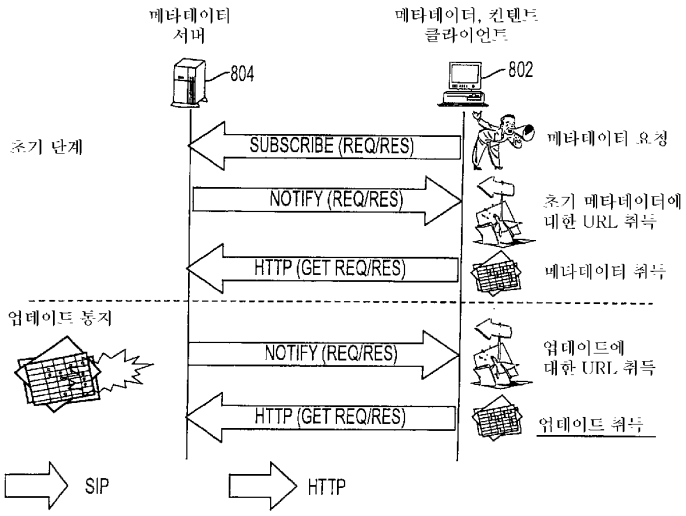
도면6

선택?	타이틀	상영 시간	패킷 손실률
예	영화 1	120분	0%
아니오	영화 2	60분	1%
아니오	뉴스 1	5분	5%
아니오	드라마1	30분	2%

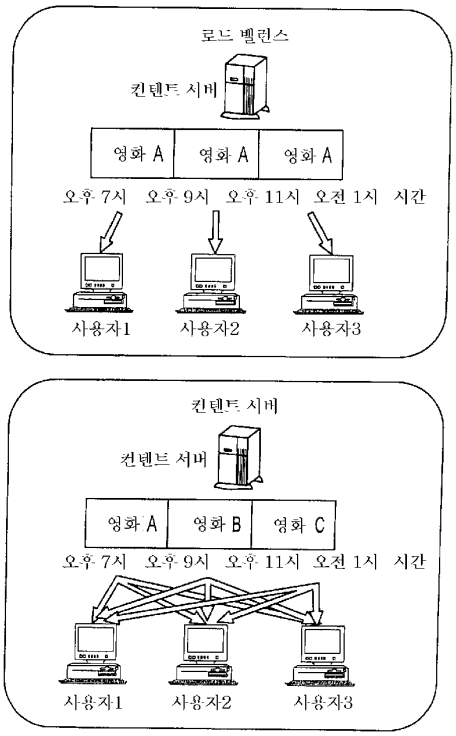
도면7


컨텐트 서버
메타데이터 서버
컨텐트 클라이언트
702
704
706
HTTP
초기 메타데이터
REAL, WINDOWSMEDIA, MP3, ETC 등
컨텐트 검색
업데이트
나의 제안
SIP
업데이트 통지
새로운 컨텐트 검색

도면8


메타데이터 서버
메타데이터, 컨텐트 클라이언트
804
802
초기 단계
SUBSCRIBE (REQ/RES)
메타데이터 요청
NOTIFY (REQ/RES)
초기 메타데이터에 대한 URL 취득
HTTP (GET REQ/RES)
메타데이터 취득
업데이트 통지
NOTIFY (REQ/RES)
업데이트에 대한 URL 취득
HTTP (GET REQ/RES)
업데이트 취득
SIP
HTTP

도면9


로드 밸런스
컨텐트 서버
영화 A
영화 A
영화 A
오후 7시
오후 9시
오후 11시
오전 1시
시간
사용자1
사용자2
사용자3
컨텐트 서버
컨텐트 서버
영화 A
영화 B
영화 C
오후 7시
오후 9시
오후 11시
오전 1시
시간
사용자1
사용자2
사용자3

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1. (KR1020040084932) A METHOD AND SYSTEM FOR INTERNET CONTENT ACQUISITION ACCORDING TO A PF

National Biblio. Data

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Application Number: 1020047013052 **Application Date:** 20.08.2004

Publication Number: 1020040084932 **Publication Date:** 06.10.2004

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H04N 7/173 20060101AFI20040922BHKR

Applicants: FUJITSU LIMITED

Inventors: NOMURA YUJI

Priority Data: 2002 359036 21.02.2002 US

Title: **EN:** A METHOD AND SYSTEM FOR INTERNET CONTENT ACQUISITION ACCORDING TO A PROGRA

Abstract: **EN:**

Specific requirements for a protocol, which deal with a program guide describing meta-data of content, are protocol enables users and devices to select up-to-date and appropriate content out of a large number of u The protocol allows subscribers (having program guide receivers) to receive updates (from a program guid entire program guide or portion of a program guide, wherein the portion of program guide is defined accord preferences and constraints. Communications between the program guide sender and the program guide r accomplished using a protocol such as a session initiated protocol (SIP).

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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
OSBORNE JR., THOMAS

HENSLEY KIM & HOLZER, LLC 1660 LINCOLN STREET
DENVER CO 80264 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	**15 JUNE 2010 (15.06.2010)**
Applicant's or agent's file reference: 519-136-PCT1	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2009/061880	**23 OCTOBER 2009 (23.10.2009)**	12 NOVEMBER 2008 (12.11.2008)

International Patent Classification (IPC) or both national classification and IPC

H04L 12/28(2006.01)i

Applicant

LEVEL 3 COMMUNICATIONS, LLC et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	15 JUNE 2010 (15.06.2010)	KIM Dae Sung Telephone No.82-42-481-8237

Form PCT/ISA/237 (cover sheet) (July 2009)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2009/061880

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. a sequence listing filed or furnished
      ☐ on paper
      ☐ in electronic form

   b. time of filing or furnishing
      ☐ contained in the international application as filed.
      ☐ filed together with the international application in electronic form.
      ☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additioanl copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/061880

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	2-15, 17-20	YES
	Claims	1, 16	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2005-0021202 A1 (RUSSELL, RICHARD A. et al.) 27 January 2005
D2: US 2008-0104624 A1 (NARASIMHAN, NITYA et al.) 01 May 2008

D1 discloses that a method for processing and outputting video frames includes (d1-a) receiving a stream of video frames, inserting geo-location data into a video frame to generate a modified video frame, and outputting the modified video frame; and (d1-b) receiving the geo-location data, wherein the geo-location data inserted into a particular video frame is based on the geo-location data of a scene in the particular video frame, wherein a time tag is also inserted into the video frame.

D2 discloses a content recommendation system to schedule a delivery of diverse content when a user is more receptive to the recommendation. The system can include an outlier scheduling module for scheduling an insertion of an outlier in a recommended content based on a schedule model and a trigger policy, an outlier selection module for selecting the outlier from recommended content of an affinity model based on a selection policy, and an outlier evaluation module for monitoring a current user context and adjusting the selecting and the scheduling of the outlier in response to a user feedback of the outlier. The content recommendation system can expose the user to diverse content based on the user's current consumption pattern and current context.

1. Novelty (PCT Article 33(2)) and Inventive Step (PCT Article 33(3))

1.1. Independent Claim 1

Claim 1 of the present invention relates to a computer-implemented method for delivery of video content across a network comprising: (a) receiving a video stream from a content source for delivery to a client of a content publisher, (a-1) wherein the client subscribes to the content publisher to receive video content; (b) detecting a trigger signal within the video stream, wherein the trigger signal in indicative of a temporal mark injected into the video stream by the content publisher; (c) processing the trigger signal to determine whether to modify delivery of the video stream to the client; and (d) if necessary, modifying delivery of the video stream in accordance with the processing of the trigger signal.

D1 does not have the above-mentioned characteristic that (a-1) the client subscribes to the content publisher to receive video content. However, it would easily be derived from the steps disclosed in D1 (i.e., step (d1-a), step (d1-b)) by a person skilled in the art without the exercise of inventive skill. Accordingly, claim 1 is obvious to a person skilled in the art from D1. Therefore, claim 1 is considered to be novel under PCT Article 33(2) but to lack an inventive step under PCT Article 33(3).

Continued on Supplemental Box

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of :

Box V

1.2. Independent Claim 16

The subject matter of independent claim 16 is regarded to be another embodiment of the present invention based on the method of claim 1. Therefore, claim 16 is considered to be novel under PCT Article 33(2) but to lack an inventive step under PCT Article 33(3) for the reasons given in point 1.1.

1.3. Dependent Claims 2-14 and 17-20

D1 does not contain the features of claims 2-14 (dependent on claim 1) and claims 17-20 (dependent on claim 16) such as querying a data repository having information related to a content programming schedule associated with a content publisher. Claims 2-14 and 17-20 are not obvious to a person skilled in the art from D1. Therefore, claims 2-14 and 17-20 are considered to be novel and to involve an inventive step under PCT Article 33(2)-(3).

1.4. Independent Claim 15

Claim 15 of the present invention describes a computer-implemented method for streaming video content across a network comprising: (a) receiving a video stream from a content source for delivery to a client of a content publisher, wherein the content source is associated with the content publisher, and the client has been pre-authorized to receive video content from the content publisher; (b) detecting a trigger signal within the video stream, wherein the trigger signal in indicative of a temporal mark injected into the video stream by a human associated with the content publisher; (c) querying an Electronic Programming Guide (EPG) to determine whether to modify the delivery of the video stream to the client, wherein the EPG is configured to provide a schedule that identifies when various content provided by the content publisher will be available for reception by authorized clients of the content publisher, (d) receiving a response from the EPG, wherein the response includes at least one of advertisement information and geo-filtering information; and (e) modifying delivery of the video stream to the client in accordance with the at least one of advertisement information and geo-filtering information.

D1 and D2 respectively suggest some methods and apparatus for video on demand, and methods and systems for selection and scheduling of content outliers. However, neither of the documents nor any combination of the documents teaches of fairly suggests the steps (a), (c), (d) and (e) which constitute an efficient procedure for streaming video content across a network. Furthermore, the technical features of the steps (a), (c), (d) and (e) in claim 15 are not obvious to a person skilled in the art. Consequently, claim 15 meets the criteria set out in PCT Article 33(2)-(3).

2. Industrial Applicability (PCT Article 33(4))

Claims 1-20 are industrially applicable under PCT Article 33(4).

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 519-136-PCT1	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2009/061880	International filing date *(day/month/year)* 23 October 2009 (23.10.2009)	Priority date *(day/month/year)* 12 November 2008 (12.11.2008)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant LEVEL 3 COMMUNICATIONS, LLC		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 17 May 2011 (17.05.2011)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Nora Lindner e-mail: pt11.pct@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
OSBORNE JR., THOMAS J.

HENSLEY KIM & HOLZER, LLC 1660 LINCOLN STREET
DENVER CO 80264 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	**19 MAY 2010 (19.05.2010)**
Applicant's or agent's file reference 519-136-PCT2	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2009/061908	**23 OCTOBER 2009 (23.10.2009)**	12 NOVEMBER 2008 (12.11.2008)

International Patent Classification (IPC) or both national classification and IPC

G06F 21/00(2006.01)i

Applicant

LEVEL 3 COMMUNICATIONS, LLC et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302 -701, Republic of Korea Facsimile No. 82-42-472-7140	11 MAY 2010 (11.05.2010)	KYUNG, Youn Jeong Telephone No.82-42-481-8536

Form PCT/ISA/237 (cover sheet) (July 2009)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/061908

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. a sequence listing filed or furnished
      ☐ on paper
      ☐ in electronic form

   b. time of filing or furnishing
      ☐ contained in the international application as filed.
      ☐ filed together with the international application in electronic form.
      ☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additioanl copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/061908

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 3

because:

☐ the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international search *(specify)*:

☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. 3 are so unclear that no meaningful opinion could be formed *(specify)*:

The claim 3 refers the claim 3 recursively.

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed *(specify)*:

☒ no international search report has been established for said claims Nos. 2

☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:

☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Istructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.

☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Istructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.

☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rule 13ter.1(a) or (b).

☐ See Supplemental Box for further details.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/061908

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2,4-14,17-20	YES
	Claims	1,15-16	NO
Inventive step (IS)	Claims	2,5,8-9,17-18,20	YES
	Claims	1,4,6-7,10-16,19	NO
Industrial applicability (IA)	Claims	1-2,4-20	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2005-0235307 A1 (SANDEEP RELAN et al.) 20 October 2005
D2: US 2003-0063752 A1 (ALEXANDER MEDVINSKY et al.) 03 April 2003

1. Novelty and Inventive Step

1.1 Independent Claim 1
D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a authentication user using the subscriber database response on a channel request.
As all of the features of claim 1 are disclosed in D1, this claim is anticipated by D1. Therefore, claim 1 lacks novelty under PCT Article 33(2).

1.2 Dependent Claims 4,6,7,10-14
The additional features of claim 4,6,7,10-14 dependent on claim 1 are identical to the feature of authorization information including a geographical location information and authentication token in D2. Accordingly, claims 4,6,7,10-14 would have been obvious over D1 in view of D2. Therefore, claims 4,6,7,10-14 lack an inventive step under PCT Article 33(3).

1.3 Dependent Claims 2,5,8,9
The subject matter of claims 2,5,8,9 is different from that of D1 in that the method receiving meta data from the end user and determining whether the content publisher associated with the video stream is the same as the content publisher associated with the end user, and determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user. Accordingly, claims 2,5,8,9 are not anticipated by any of the documents, nor is it obvious by the documents, taken alone or in combination. Therefore, claims 2,5,8,9 are novel and involves an inventive step under PCT Article 33(2) and 33(3).

1.4 Independent Claim 15
D1, which is considered to be the closest prior art to the subject matter of claim 15, discloses a authentication user using the subscriber database response on a channel request.
As all of the features of claim 15 are disclosed in D1, this claim is anticipated by D1. Therefore, claim 15 lacks novelty under PCT Article 33(2).

1.5 Independent Claim 16
D1, which is considered to be the closest prior art to the subject matter of claim 16, discloses a authentication user using the subscriber database response on a channel request.
As all of the features of claim 16 are disclosed in D1, this claim is anticipated by D1. Therefore, claim 16 lacks novelty under PCT Article 33(2).

1.6 Dependent Claim 19

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of :

Box V

The additional feature of claim 19 dependent on claim 16 is identical to the feature of the channel request in D2. Accordingly, claim 19 would have been obvious over D1 in view of D2. Therefore, claim 19 lacks an inventive step under PCT Article 33(3).

1.7 Dependent Claims 17,18,20
The subject matter of claims 17,18,20 is different from that of D1 in the relative time in relation to the geographic location of the end user and not authorized user list. Accordingly, claims 17,18,20 are not anticipated by any of the documents, nor is it obvious by the documents, taken alone or in combination. Therefore, claims 17,18,20 are novel and involves an inventive step under PCT Article 33(2) and 33(3).

2. Industrial Applicability
Claims 1,2,4-20 are considered to be industrially applicable under PCT Article 33(4).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 0136-WO-02	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2009/061908	International filing date *(day/month/year)* 23 October 2009 (23.10.2009)	Priority date *(day/month/year)* 12 November 2008 (12.11.2008)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant LEVEL 3 COMMUNICATIONS, LLC		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☒	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 17 May 2011 (17.05.2011)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Gijsbertus Beijer e-mail: pt02.pct@wipo.int

Form PCT/IB/373 (January 2004)

Electronic Acknowledgement Receipt	
EFS ID:	10325565
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	Thomas Joseph Osborne
Filer Authorized By:	
Attorney Docket Number:	0136-US-U2
Receipt Date:	16-JUN-2011
Filing Date:	23-OCT-2009
Time Stamp:	21:02:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	IDS_Cert_State_no_fee_0136_US_U2_as_filed.pdf	40905 8456610df7e6365488f65b1bc39897b9b7b9e1c1	no	6
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	1449_SB08a_08b_0136_US_U2_as_filed.pdf	43403 7b3ac514fadbfaec4593cfb6adb531dd97502f3c	no	5
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	PA_Ref_Patent_KR_10_2004_0084932.pdf	1007528 e4fc8b9aed07d94f11ee9da94e6e2b1c07f9c445	no	21
Warnings:					
Information:					
4	Foreign Reference	PA_Ref_Abstract_KR_10_2004_0084932.pdf	42661 148d58f7ac7c921c1ee1bfbf9b933ccdbad0bf52	no	1
Warnings:					
Information:					
5	Non Patent Literature	PA_International_Search_Report_0136_WO_01_6_15_10.pdf	410210 cf7f52ad42ae01860d103ecd407a23e5d0d9618e	no	3
Warnings:					
Information:					
6	Non Patent Literature	PA_Written_Opinoion_0136_WO_01_5_26_11.pdf	383360 578c43392bffb282e5cce610a25a9e457a58c02e	no	5
Warnings:					
Information:					
7	Non Patent Literature	PA_Prel_Report_Patentability_0136_WO_01_5_26_11.pdf	84779 b0167906375704a1f2f005147e15c9d123f3bd7e	no	1
Warnings:					
Information:					
8	Non Patent Literature	PA_International_Search_Report_0136_WO_02_1_10_10.pdf	615080 ec6c5912998b86c81330a14bc0136099febcfd98	no	5
Warnings:					
Information:					
9	Non Patent Literature	PA_Written_Opinion_0136_WO_02_5_19_10.pdf	549583 f8b4d028c2479280caf09c902929f8e8be98aa56	no	5
Warnings:					
Information:					
10	Non Patent Literature	PA_Prel_Report_Patentability_0136_WO_02_5_26_11.pdf	115068 2d67a62a6ff5563e45263b5d137f08e1382d0805	no	1

Warnings:	
Information:	
Total Files Size (in bytes):	3292577

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

Via EFS Web

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/604,678	Confirmation No.	:	9034
First Applicant	:	Ian Maloney	Art Unit	:	2423
Filed	:	October 23, 2009	Examiner	:	Andrew Y. Koenig
Title	:	USER AUTHENTICATION IN A CONTENT DELIVRY NETWORK			
Docket No.	:	0136-US-U2			
Customer No.	:	83579			

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

INFORMATION DISCLOSURE STATEMENT
PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form PTO-1449 during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; or (4) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant(s) on _____. The issue fee has not been paid herein.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below by an enclosed check or our deposit account.

☒ No fee is due.

☐ The $_____ fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.197(c) or (d) is due.

☐ A check is enclosed for the required fee.

☐ Please charge the required fee to our deposit account no. 503199. A duplicate copy of this information disclosure statement is enclosed.

☐ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to our deposit account no. 503199. A duplicate copy of this information disclosure statement is enclosed.

III
CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant(s) state as follows:

☒ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609(III)(A)(3) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☒ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

☒ Pursuant to the doctrines established by the Court of Appeals for the Federal Circuit in *McKesson Information Solutions, Inc. v. Bridge Medical, Inc.*, 487 F.3d 897 (Fed. Cir. 2007) and *Dayco Products, Inc. v. Total Containment, Inc.*, 329 F.3d 1358 (Fed. Cir. 2003), Applicant(s) submit documents herewith reflecting the prosecution history of applications that Applicant(s) believe may be considered related to the present application.

1. International Search Report from WIPO, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing ISR 15 June 2010, 3 pages.

2. Written Opinion, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Written Opinion 15 June 2010, 5 pages.

3. International Preliminary Report on Patentability, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Preliminary Report 17 May 2011, 1 page.

4. International Search Report from WIPO, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing ISR 19 May 2010, 5 pages.

5. Written Opinion, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing Written Opinion 19 May 2010, 5 pages.

6. International Preliminary Report on Patentability, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing Preliminary Report 17 May 2011, 1 page.

It is respectfully requested that

(1) the Examiner sign the enclosed Form PTO/SB/08a to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) the citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant(s) shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant(s) shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant(s) as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant(s) shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant(s) as such.

Notwithstanding any statements by the Applicant(s), the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted this 16th day of June, 2011

/Thomas J. Osborne, Jr./

Thomas J. Osborne, Jr., Esq.
Registration No. 39,796
Customer No. 83579
HAMILTON, DESANCTIS & CHA LLP
TEL: 303-278-2516
FAX: 720-362-5211

PTO/SB/08a (01-08)
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig

Sheet	1	of	1	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20080275987	Nov 6, 2008	Gardell, Steven E., et al.	
		5822324	Oct 13, 1998	Kostresti, Bruce et al.	
		5903816	May 11, 1999	Broadwin, Elliott et al.	
		5918013	Jun 29, 1999	Mighdoll, Lee S., et al.	
		5929850	Jul 27, 1999	Broadwin, Elliot et al.	
		5982445	Nov 9, 1999	Eyer, Mark K., et al.	
		5987518	Nov 16, 1999	Gotwald, Frederick L.	
		6034689	Mar 7, 2000	White, Christopher M., et al.	
		6240555B1	May 29, 2001	Shoff, Daniel J., et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Electronic Acknowledgement Receipt

EFS ID:	10756512
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	17-AUG-2011
Filing Date:	23-OCT-2009
Time Stamp:	14:49:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	0136_US_U2_Supp_IDS.pdf	38570 264d799f2f103b10860e55c71b4f11ddf9e187d5	no	6
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	136_US_U2_SB08.pdf	29059 8d55e7eac9da126cbea67e4b0dd14a49afa8a656	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	67629

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/604,678	Confirmation No.	:	9034
First Applicant	:	MALONEY, Ian	Art Unit	:	2423
Filed	:	October 23, 2009	Examiner	:	Andrew Y. Koenig
Title	:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK			
Docket No.	:	0136-US-U2			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☒ No fee is due.

☐ The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☐ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
STATEMENT OF RELATEDNESS (Under M.P.E.P. § 2001.06(b))

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with M.P.E.P. § 2001.06(b), the Examiner is respectfully requested to consider the pending applications (2008/0275987, filed July 17, 2008, and listed in the attached IDS document) which is owned by the Applicant of the present application. The pending application may include subject matter similar to that of the present application.

VI
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VII
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: August 17, 2011

/JCS/

Jonathan C. Siekmann
Registration No. 58,259
USPTO Customer No. 83579
Level 3 Communications, LLC
1025 Eldorado Blvd.
Broomfield, Colorado 80021
Tel: 720-888-2140
Fax: 720-888-5619

PTO/SB/08a (01-08)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	1	of	1	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		7720432	May 18, 2010	Colby, Steven M., et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Electronic Acknowledgement Receipt	
EFS ID:	12400125
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	27-MAR-2012
Filing Date:	23-OCT-2009
Time Stamp:	12:32:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	136_US_U2_Supp_IDS.pdf	35716 c5fc4a34383c59d63856a641d7b69d1e51f65c8c	no	5
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	136_US_U2_SB08.pdf	27318 8449faad2c3153450c1b8bc2fe2d67030f965b9b	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	63034

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/604,678	Confirmation No.	:	9034
First Applicant	:	MALONEY, Ian	Art Unit	:	2425
Filed	:	October 23, 2009	Examiner	:	Kieu Oanh T. Bui
Title	:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK			
Docket No.	:	0136-US-U2			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☒ No fee is due.

☐ The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☐ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: March 27, 2012

/JCS/

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PTO/SB/08a (01-08)
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	1	of	1	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20080201736	Aug 21, 2008	Gordon, Donald et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

EXAMINER **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Electronic Acknowledgement Receipt

EFS ID:	13541678
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	21-AUG-2012
Filing Date:	23-OCT-2009
Time Stamp:	10:01:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	136_US_U2_Supp_IDS.pdf	35722 037a158b36d52079a0133094635341 6bf0cdc611	no	5
Warnings:					
Information:					

2	Information Disclosure Statement (IDS) Form (SB08)	136USU2_SB08.pdf	27416 4314f1e6f3e3d9e4140864704fd0465d9272260a	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	63138

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/604,678	Confirmation No.	:	9034
First Applicant	:	MALONEY, Ian	Art Unit	:	2425
Filed	:	October 23, 2009	Examiner	:	Kieu Oanh T. Bui
Title	:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK			
Docket No.	:	0136-US-U2			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☒ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☒ No fee is due.

☐ The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☐ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: August 21, 2012

/JCS/

Jonathan C. Siekmann
Registration No. 58,259
USPTO Customer No. 83579
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	10/23/2009	Ian Maloney	0136-US-U2	9034

83579 7590 08/30/2012

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
BUI, KIEU OANH T	
ART UNIT	**PAPER NUMBER**
2425	

NOTIFICATION DATE	DELIVERY MODE
08/30/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.docketing@level3.com

Office Action Summary	Application No.	Applicant(s)	
	12/604,678	MALONEY, IAN	
	Examiner	Art Unit	
	KIEU OANH T. BUI	2425	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) 1-20 is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on 10/23/2009 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 08/18/2010, 6/16/2011, 08/17/2011, 03/27/2012 & 08/21/2012 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

2. Claim 3 is objected to because of the following informalities: claim 3 could not be dependent on itself (on line 5). Appropriate correction is required.

Claim Rejections - 35 USC 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al. (U.S. Patent No. 6,477,707 B1) in view of Turner (U.S. Patent Pub 2011/0197237 A1).

Regarding claim 1, King teaches a computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher (Figs. 5 & 9, and col. 1/line 45 to col. 2/line 7), the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network (col. 1/line 45-50 & col. 2/line 3-7 for the user is authorized to receive the video stream from the content provider);

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream (col. 8/lines 19-28 for the system has a subscription control manager to control the delivery of streaming video to the end users); and performing at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database (col. 13/lines 8-42 for the system checks whether to enable or disable the user's subscription service based on their subscription and/or from the service provider); and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream (col. 13/lines 43-54).

King does not address to use "querying a subscription database associated with the content publisher" although the subscription control manager might include that technique; however, such a technique of using a query for "querying a subscription database associated with the content publisher is known in the art. In fact, Turner teaches the exact same technique as noted (Turner, page 11/par. 0138 as the requests for access to a content data stream are queried (authorized) for each user/client within a geographic area that being authorized by the database system of using a query to authenticate each user/client). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's streaming

video delivery system with Turner's taught technique of using a query for individually authenticating each user by checking against its subscription database associated with the content publisher or content provider.

For claim 2, in view of claim 1, King teaches "wherein receiving a request from the end user comprises: receiving metadata from the end user; processing the metadata to identify a content publisher associated with the end user; and determining whether the content publisher associated with the video stream is the same as the content publisher associated with the end user" (King, col. 5/lines 42-52 for the metadata determines where the content belongs and where the intended audience is).

As for claim 3, in view of claim 1, Turner further teaches "wherein the metadata is at least one of a token and a cookie" (Turner, page 4/par. 0044 & page 5/par. 0063 for Client token).

For claim 4, in view of claim 1, Turner teaches further "comprising: processing proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted; based on the processing of the proximity parameters, determining that the end user is not authorized to receive the video stream; and restricting delivery of the video stream to the end user" (Turner, page 8/par. 0103 & page 9/par. 0110-0112 for geographic location restrictions).

As for claim 5, in view of claim 4, Turner teaches "wherein determining that the end user is not authorized to receive the video stream comprises: given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic

location of the end user" (Turner, page 11/par. 0133 for under the stored geographic restrictions, the blackout can be occurred).

As for claim 6, in view of claim 4, Turner teaches "wherein restricting delivery of the video stream to the end user is in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user" (Turner, page 8/par. 0103 & page 9/par. 0110-0112 for geographic location restrictions & the blackout as noted in claim 5 above).

For claim 7, in view of claim 4, Turner teaches "wherein restricting delivery of the video stream to the end user is in accordance with subscription parameters of the content publisher for a group of end users, the subscription parameters including at least one of a time restriction and a geographic restriction, and wherein the end user is a member of the group of end users to which the subscription parameters apply" (page 8/par. 0103 for a group of users are authorized using a token; and page 9/par. 0110 for a zip code restriction which indicates a group of users within the zip code are authorized to access or receive the service only).

As for claim 8, in view of claim 4, King teaches "wherein restricting delivery of the video stream comprises: terminating the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated" (King, col. 7/lines 49-55 for automated scheduling algorithms are used to ensure the delivery of video streams is accurate and efficiency).

For claim 9, in view of claim 1, King teaches "wherein processing the reply from the subscription database comprises detecting that the end user is not a subscriber of the content publisher, the method further comprising: in a subscriber verification table, storing an entry

indicating that the end user is not an authorized subscriber of the content publisher, and wherein transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream comprises: specifying in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream" (King, col. 13/lines 25-42 for a disable message service is provided if the system determines not to authorize the user for any reason).

As for claim 10, in view of claim 1, King teaches "wherein processing the reply from the subscription database comprises detecting that the end user is a subscriber of the content publisher, the method further comprising: in a subscriber verification table, storing an entry indicating that the end user is an authorized subscriber of the content publisher" (King, col. 13/lines 43-54).

For claim 11, in view of claim 10, Turner further teaches "comprising: receiving a second request from a second end user for delivery of the video stream to the second end user; processing the second request to determine that the second end user is authorized to receive delivery of the video stream; and initiating delivery of the video stream to the second user" (Turner, page 8/par. 0103).

As for claim 12, in view of claim 11, Turner teaches "wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream comprises: determining that the second end user is the same as the end user; and in response to querying the subscriber verification table, determining that the second end user is an authorized subscriber of the content publisher" (Turner, page 8/par. 0103, the user of one token

can be easily identified which user is which, i.e, if the same user accesses again, the second user will have a second token and the first one is no longer valid).

For claim 13, in view of claim 11, Turner further teaches "wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream includes analyzing at least one of a token and a cookie, wherein the at least one of a token and a cookie is associated with the second request received from the second end user" (page 8/par. 0103 again).

As for claim 14, in view of claim 10, King teaches further "comprising: in the subscriber verification table, storing session information associated with the delivery of the video stream to the end user, wherein the session information is stored in accordance with a relative time at which the request from the end user was received" (King, col. 13/lines 43-54).

Regarding claims 15-20, these claims for "a computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher, the method comprising: receiving a request from the end user for delivery of the video stream to the end user across a network; querying a subscription database associated with the client publisher; in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; if the end user is determined to have authorization to receive delivery of the video stream, creating an entry in a subscriber verification table specifying that the end user is an authorized subscriber of the content publisher, wherein the entry further specifies session information associated with delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was

received; and initiating delivery of the video stream to the end user"; and "a system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content pubnisher, the system comprising: a network; a subscription database accessible via the network; a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network; wherein the content server is configured to query the subscription database associated with the content pubRisher; wherein the content server is further configured to process a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and wherein the content server is configured to perform at least one of: transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream" are rejected for the reasons given in the scope of claims 1-14 as discussed in details above, not limited to the cited paragraphs from the examiner herein but to any teaching, any disclosure and/or any inherently suggestion from both of the entire references of King and Turner therein.

Conclusion

5. **Any response to this action should be mailed to:**
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Washington, D.C. 20231

or faxed to PTO New Central Fax number:
(571) 273-8300, (for Technology Center 2400 only)

Hand deliveries must be made to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to "Krista" Kieu-Oanh Bui whose telephone number is (571) 272-7291. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 5:00 PM. And Flex. On Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Pendleton, can be reached at (571) 272-7527.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/KIEU-OANH BUI/
Primary Examiner, Art Unit 2425
August 23, 2012

Notice of References Cited	Application/Control No. 12/604,678	Applicant(s)/Patent Under Reexamination MALONEY, IAN	
	Examiner KIEU OANH T. BUI	Art Unit 2425	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,477,707	11-2002	King et al.	725/97
*	B	US-2011/0197237	08-2011	Turner, Steven E.	725/78
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

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	P					
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

	Complete if Known
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	1	of	1	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20080201736	Aug 21, 2008	Gordon, Donald et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KB/

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12604678	MALONEY, IAN
	Examiner	Art Unit
	KIEU OANH T BUI	2425

SEARCHED			
Class	Subclass	Date	Examiner
725	87, 91, 93	08/23/2012	KB

SEARCH NOTES		
Search Notes	Date	Examiner
EAST: Class 725 combined with text searched	08/23/2012	KB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	31402	"725"/.ccls.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 16:59
S2	20035	S1 and (server or database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 16:59
S3	13542	S2 and (video and stream$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:00
S4	2	S3 and (query$3 near5 (subscript$3 adj database))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:01
S5	28	S3 and (subscript$3 adj database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:22
S6	18	S5 and author$5	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:22
S7	4	S6 and metadata	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:23
S8	3	S7 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:26
S9	3	S7 and (content and "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:50
S10	2	S9 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:52
S11	246206	video and stream$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:52
S12	337	S11 and (subscript$3 adj database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:52
S13	221	S12 and author$5	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S14	104	S13 and metadata	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S15	98	S14 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S16	71	S15 and (token cookie)	US-PGPUB; USPAT; EPO;	OR	ON	2012/08/23 17:53

			JPO			
S17	58	S16 and (content and "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S18	58	S17 and (geographic location)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:54
S19	3	S18 and ((geographic location) near5 "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:54
S20	58	S18 and ((geographic location) near5 ("end user" user))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:54
S21	58	S20 and rule	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:55
S22	2	S21 and (time adj restriction)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:55
S23	2	S21 and "black out"	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:56
S24	58	S21 and (black$4 blank)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:57
S25	58	S24 and (parameter attribute)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:58
S26	58	S25 and (notification alert message)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:58
S27	58	S26 and publisher	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:59
S28	2	S27 and (authoriz$5 near5 table)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:00
S29	2	S27 and (verification near5 table)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:00
S30	15	S6 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:04
S31	5	S30 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:04
S32	2	S6 and (black$4 "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:22
S33	2	S6 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:22
S34	2	S16 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:22
S35	2	S5 and (black$1out "black out")	US-PGPUB; USPAT; EPO;	OR	ON	2012/08/23 18:23

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S36	188	S3 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:23
S37	51	S36 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:23
S38	16	S37 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:24
S39	16	S38 and (parameter attribute)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:24
S40	10	S39 and ((geographic location) near5 ("end user" user))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:24
S41	0	S40 and (subcript$3 near3 service)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:26
S42	0	S40 and subcript$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:26
S43	3	S40 and subscript$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:26

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	~~2423~~ 2425
Examiner Name	~~Andrew Y. Koenig~~ K.BUI
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,226,618		Downs	
		US- 6,398,245		Gruse	
		US- 6,418,421		Hurtado	
		US- 6,587,837		Spagna	
		US- 7,110,984		Spagna	
		US- 7,206,748		Gruse	
		US- 6,490,580		Dey	
		US- 7,039,633		Dey	
		US- 6,493,707		Dey	
		US- 6,965,890		Dey	
		US- 6,405,188		Schwartz	
		US- 7,162,468		Schwartz	
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		US- 5,996,025		Day	
		US- 6,189,039		Harvey	
		US- 6,195,680		Goldszmidt	
		US- 6,272,566		Craft	
		US- 6,460,082		Lumelsky	
		US- 6,463,508		Wolf	

FOREIGN PATENT DOCUMENTS

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Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,763,377		Belknap	
		US- 6,963,910		Belknap	
		US- 7,117,259		Rohwer	
		US- 6,263,313		Milsted	
		US- 7,103,564		Ehnebuske	
		US- 7,188,085		Pelletier	
		US- 6,049,831		Gardell	
		US- 6,859,791		Spagna	
		US- 6,185,598		Farber	
		US- 6,654,807		Farber	
		US- 7,054,935		Farber	
		US- 5,978,791		Farber	
		US- 6,415,280		Farber	
		US- 6,928,442		Farber	
		US- 20100027974		Ansari	
		US- 20090282159		Wang	
		US- 20090259611		Wang	
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		US- 20060218265		Farber	

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Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 20070233846		Farber	
		US- 20070233705		Farber	
		US- 20070233884		Farber	
		US- 20070233706		Farber	
		US- 20080215755		Farber	
		US- 20080140800		Farber	
		US- 20080104268		Farber	
		US- 20080215735		Farber	
		US- 20080215750		Farber	
		US- 20040139097		Farber	
		US- 20050114296		Farber	
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		US- 20080065724		Seed	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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PTO/SB/08b (07-09)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 4 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		US Application No. 12/495,990, entitled "Flexible Token For Use In Content Delivery," filed July 1, 2009 (Hopkins)	

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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	Complete if Known
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	1	of	1	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		7720432	May 18, 2010	Colby, Steven M., et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	~~2423~~ 2425
Examiner Name	~~Andrew Y. Koenig~~ K.BUI

Sheet	1	of	1	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS					
Examiner Initial *	**Cite No**	**Document Number**	**Publication Date**	**Name of Patentee or Applicant of Cited Document**	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20080275987	Nov 6, 2008	Gardell, Steven E., et al.	
		5822324	Oct 13, 1998	Kostresti, Bruce et al.	
		5903816	May 11, 1999	Broadwin, Elliott et al.	
		5918013	Jun 29, 1999	Mighdoll, Lee S., et al.	
		5929850	Jul 27, 1999	Broadwin, Elliot et al.	
		5982445	Nov 9, 1999	Eyer, Mark K., et al.	
		5987518	Nov 16, 1999	Gotwald, Frederick L.	
		6034689	Mar 7, 2000	White, Christopher M., et al.	
		6240555B1	May 29, 2001	Shoff, Daniel J., et al.	

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Examiner Initials*	**Cite No**	**Foreign Patent Document**	**Publication Date**	**Name of Patentee or Applicant of cited Document**	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T^2

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BIB DATA SHEET

CONFIRMATION NO. 9034

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/604,678	10/23/2009 RULE	725	2425	0136-US-U2

APPLICANTS
Ian Maloney, Dublin, IRELAND;

**** CONTINUING DATA ***************************
This appln claims benefit of 61/113,941 11/12/2008

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
11/06/2009

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /KIEU OANH T BUI/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		IRELAND	22	20	3

ADDRESS
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021
UNITED STATES

TITLE
USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

FILING FEE RECEIVED	FEES: Authority has been given in Paper	☐ All Fees
1090	No._____ to charge/credit DEPOSIT ACCOUNT	☐ 1.16 Fees (Filing)
	No._____ for following:	☐ 1.17 Fees (Processing Ext. of time)
		☐ 1.18 Fees (Issue)
		☐ Other _____
		☐ Credit

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12604678	MALONEY, IAN
	Examiner	Art Unit
	KIEU OANH T BUI	2425

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	08/23/2012								
	1	✓								
	2	✓								
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	20	✓								

PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12604678
Filing Date	2009-10-23
First Named Inventor	Ian Maoloney
Art Unit	~~2423~~ 2425
Examiner Name	~~Andrew T. Koenig~~ K.BUI
Attorney Docket Number	0136-US-U2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050021202	A1	2005-01-27	Russell, Richard et al.	
	2	20060015892	A1	2006-01-19	Hirt, Walter et al.	
	3	20080104624	A1	2008-05-01	Narasimhan, Nitya et al.	
	4	20030063752	A1	2003-04-03	Medvinsky, Alexander et al.	
	5	20040205810	A1	2004-10-14	Grandy, Leslie L. et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KB/ (08/23/2012)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12604678
	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

	6	20050235307	A1	2005-10-20	Relan, Sandeep et al.	
	7	20060277576	A1	2006-12-07	Acharya, Swarup et al.	
	8	20080263602	A1	2008-10-23	Murray, Thomas J. et al.	

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	1020040084932	A		2004-10-06	Fujitsu Limited		☐
	2	1020040084932	A		2004-10-06	Fujitsu Limited	Abstract	☒

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report from WIPO, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing ISR 15 June 2010, 3 pages.	☐
	2	Written Opinion, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Written Opinion 15 June 2010, 5 pages.	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12604678
	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

	3	International Preliminary Report on Patentability, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Preliminary Report 17 May 2011, 1 page.	☐
	4	International Search Report from WIPO, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing ISR 19 May 2010, 5 pages.	☐
	5	Written Opinion, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing Written Opinion 19 May 2010, 5 pages.	☐
	6	International Preliminary Report on Patentability, International Application No. PCT/US2009/061908, International Filing Date 23 October 2009. Date of mailing Preliminary Report 17 May 2011, 1 page.	☐

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EXAMINER SIGNATURE

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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Docket No.: 0136-US-U2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Ian Maloney

Application No.: 12/604,678 | Confirmation No.: 9034

Filed: 23 October 2009 | Art Unit: 2425

For: USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK | Examiner: Kieu Oahn T. Bui

RESPONSE

Via EFS-Web
MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

INTRODUCTORY COMMENTS

In response to the Office Action dated 30 August 2012, Applicant respectfully requests that the Examiner reconsider the above-identified U.S. patent application in view of the amendments and comments set forth below:

Request for an Extension of Time is made on page 2 of this paper.

Amendments to the Claims, if any, are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 10 of this paper.

EXTENSION OF TIME

Applicant hereby petitions for a **TWO-month** extension of time and is electronically submitting the required fee with this response. The Commissioner is authorized to deduct any additional fees from or credit any overpayment to the undersigned's account no. 50-5063.

AMENDMENTS TO THE CLAIMS

1. (Original) A computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the content publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

performing at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream.

2. (Original) The computer-implemented method as in claim 1, wherein receiving a request from the end user comprises:

receiving metadata from the end user;

processing the metadata to identify a content publisher associated with the end user; and

determining whether the content publisher associated with the video stream is the same as the content publisher associated with the end user.

3. (Currently Amended) The computer-implemented method as in claim 2, [[3,]] wherein the metadata is at least one of a token and a cookie.

4. (Original) The computer-implemented method as in claim 1 further comprising:

processing proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted;

based on the processing of the proximity parameters, determining that the end user is not authorized to receive the video stream; and

restricting delivery of the video stream to the end user.

5. (Original) The computer-implemented method as in claim 4, wherein determining that the end user is not authorized to receive the video stream comprises:

given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

6. (Original) The computer-implemented method of claim 4, wherein restricting delivery of the video stream to the end user is in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user.

7. (Original) The computer-implemented method of claim 4, wherein restricting delivery of the video stream to the end user is in accordance with subscription parameters of the content publisher for a group of end users, the subscription parameters including at least one of a time restriction and a geographic restriction, and wherein the end user is a member of the group of end users to which the subscription parameters apply.

8. (Original) The computer-implemented method as in claim 4, wherein restricting delivery of the video stream comprises:

terminating the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

9. (Original) The computer-implemented method as in claim 1, wherein processing the reply from the subscription database comprises detecting that the end user is not a subscriber of the content publisher, the method further comprising:

in a subscriber verification table, storing an entry indicating that the end user is not an authorized subscriber of the content publisher, and

wherein transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream comprises:

specifying in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

10. (Original) The computer-implemented method as in claim 1, wherein processing the reply from the subscription database comprises detecting that the end user is a subscriber of the content publisher, the method further comprising:

in a subscriber verification table, storing an entry indicating that the end user is an authorized subscriber of the content publisher.

11. (Original) The computer-implemented method of claim 10 further comprising:

receiving a second request from a second end user for delivery of the video stream to the second end user;

processing the second request to determine that the second end user is authorized to receive delivery of the video stream; and

initiating delivery of the video stream to the second user.

12. (Original) The computer-implemented method of claim 11, wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream comprises:

determining that the second end user is the same as the end user; and

in response to querying the subscriber verification table, determining that the second end user is an authorized subscriber of the content publisher.

13. (Original) The computer-implemented method of claim 11, wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream includes analyzing at least one of a token and a cookie, wherein the at least one of a token and a cookie is associated with the second request received from the second end user.

14. (Original) The computer-implemented method of claim 10 further comprising:

in the subscriber verification table, storing session information associated with the delivery of the video stream to the end user, wherein the session information is stored in accordance with a relative time at which the request from the end user was received.

15. (Original) A computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the client publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream;

if the end user is determined to have authorization to receive delivery of the video stream, creating an entry in a subscriber verification table specifying that the end user is an authorized

subscriber of the content publisher, wherein the entry further specifies session information associated with delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received; and

initiating delivery of the video stream to the end user.

16. (Original) A system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the system comprising:

a network;

a subscription database accessible via the network;

a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network;

wherein the content server is configured to query the subscription database associated with the content publisher;

wherein the content server is further configured to process a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

wherein the content server is configured to perform at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream.

17. (Original) The system as in claim 16 further comprising:

proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted;

wherein the content server is configured to process the proximity parameters to determine whether the end user is authorized to receive the video stream; and

wherein a determination that the end user is not authorized to receive the video stream comprises:

given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

18. (Original) The system as in claim 17 further comprising:

wherein the content server is configured to restrict delivery of the video stream to the end user in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user; and

based on the black out rules, the content server is further configured to terminate the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

19. (Original) The system as in claim 16 further comprising:

a subscriber verification table;

if the end user is determined to be an authorized subscriber of the content publisher, the content server is configured to store an entry in the subscriber verification table indicating that the end user is an authorized subscriber of the content publisher, wherein the entry further includes session information associated with the delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received.

20. (Original) The system as in claim 16 further comprising:

a subscriber verification table;

if the end user is determined not to be an authorized subscriber of the content publisher, the content server is configured to store an entry in the subscriber verification table indicating that the end user is not an authorized subscriber of the content publisher, and

wherein the content server is configured to specify in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

REMARKS

Applicant hereby traverses the current rejections, and requests reconsideration and withdrawal in light of the remarks contained herein. Claims 1-20 are pending in this application.

Amendments to the Claims

Claim 3 is amended to change the dependency to claim 2. No new matter has been entered.

Rejection Under 35 U.S.C. § 103

Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over King et al., U.S. Patent 6,477,707 B1 (hereinafter King) in view of Turner U.S. Application 2011/0197237 A1 (hereinafter Turner).

To establish prima facie obviousness of a claimed invention, two basic criteria must be met. First, all the claim elements must be shown by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Second, there must be some rationale or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. In other words, there should be an explicit analysis regarding whether there was an apparent reason to combine the known elements in the fashion claimed in the Application at issue. KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). Applicant asserts that the rejection does not satisfy either the first criteria or the second criteria.

Lack of Elements: Independent Claim 1

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner, which the Office Action alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 1 defines a computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher. The method includes receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action relies upon King as teaching these elements and does not rely upon Turner. However, King does not teach these elements. The Office Action relies upon the text at column 1, lines 45-50 and column 2, lines 3-7. However, Applicant notes that these sections discuss a distributed broadcast system for processing, scheduling, and broadcasting a wide variety of media objects, and an end-user that is equipped to receive the transmission and provide the end-user with portions of the broadcast that the end-user is authorized to receive. Nothing in these sections teaches receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action does not rely on Turner as teaching these elements, but does state that Turner teaches "the same technique". The Office Action cites paragraph [0138] for support. Applicant respectfully disagrees. Paragraph [0138] cites earlier paragraphs for operation ("as provided above"). Turner appears to operate by authenticating a player first, and then displaying choices to the player, see paragraphs [0010], [0047], and [0056], which indicates that authenticated players send requests. Thus, Turner appears to operate in a different manner than that of the claims.

Thus, the combination of King and Turner does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 1 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Independent Claim 15

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner, which the Office Action alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 15 defines a computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher. The method includes receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action relies upon King as teaching these elements and does not rely upon Turner. However, King does not teach these elements. The Office Action does not provide an element-by-element analysis for this claim, and relies upon the rejections of claims 1-14. The Office Action appears to rely upon the text at column 1, lines 45-50 and column 2, lines 3-7. However, Applicant notes that these sections discuss a distributed broadcast system for processing, scheduling, and broadcasting a wide variety of media objects, and an end-user that is equipped to receive the transmission and provide the end-user with portions of the broadcast that the end-user is authorized to receive. Nothing in these sections teaches receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action does not rely on Turner as teaching these elements, but does state that Turner teaches "the same technique". The Office Action cites paragraph [0138] for support. Applicant respectfully disagrees. Paragraph [0138] cites earlier paragraphs for operation ("as provided above"). Turner appears to operate by authenticating a player first, and then displaying choices to the player, see paragraphs [0010], [0047], and [0056], which indicates that authenticated players send requests. Thus, Turner appears to operate in a different manner than that of the claims.

Thus, the combination of King and Turner does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 15 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Independent Claim 16

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner, which the Office Action alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 16 defines a system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content publisher. The system includes a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network.

The Office Action relies upon King as teaching these elements and does not rely upon Turner. However, King does not teach these elements. The Office Action does not provide an element-by-element analysis for this claim, and relies upon the rejections of claims 1-14. The Office Action appears to rely upon the text at column 1, lines 45-50 and column 2, lines 3-7. However, Applicant notes that these sections discuss a distributed broadcast system for processing, scheduling, and broadcasting a wide variety of media objects, and an end-user that is equipped to receive the transmission and provide the end-user with portions of the broadcast that the end-user is authorized to receive. Nothing in these sections teaches a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network.

The Office Action does not rely on Turner as teaching these elements, but does state that Turner teaches "the same technique". The Office Action cites paragraph [0138] for support. Applicant respectfully disagrees. Paragraph [0138] cites earlier paragraphs for operation ("as provided above"). Turner appears to operate by authenticating a player first, and then displaying choices to the player, see paragraphs [0010], [0047], and [0056], which indicates that authenticated players send requests. Thus, Turner appears to operate in a different manner than that of the claims.

Thus, the combination of King and Turner does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 16 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Dependent Claims 2-14 and 17-20

Claims 2-14 and 17-20 depend from base claims 1 and 16, respectively, and thus inherit all elements of respective base claim. Claims 2-14 and 17-20 set forth features and elements not recited by the combination of King and Turner. Thus, the Applicant respectfully asserts that for

the above reasons claims 2-14 and 17-20 are patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Rationale: Claims 1-20

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner, which the Office Action alleges to teach having such elements.

The rationale for making the combination was presented as follows:

"King does not address to use "querying a subscription database associated with the content publisher" although the subscription control manager might include that technique; however, such a technique of using a query for "querying a subscription database associated with the content publisher is known in the art. In fact, Turner teaches the exact same technique as noted (Turner, page 11/par. 0138 as the requests for access to a content data stream are queried (authorized) for each user/client within a geographic area that being authorized by the database system of using a query to authenticate each user/client), Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's streaming video delivery system with Turner's taught technique of using a query for individually authenticating each user by checking against its subscription database associated with the content publisher or content provider."

It is well settled that to facilitate review, the obvious rejection analysis should be made explicit. See In re Kahn, 441 F.3d 977, 988 (CA Fed. 2006) ([R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). Furthermore, Applicant notes that the Supreme Court further stated that "As is clear from cases such as Adams, a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 1741 (2007).

Applicant notes that King already has such teachings, see column 8 lines 23-28, wherein the subscription database is used to control access by end-users to broadcast objects, see also column 12, lines 53-55, discussing authorized PCs. Thus, King is already is able to accomplish the stated rationale and the stated rationale is not applicable to this rejection. Moreover, the other statements of the rationale are statements that King and Turner are in the same technical field and their teaching are known in the prior art. These statements are not sufficient enough to provide the necessary rationale. Furthermore, the Office Action does not provide any analysis as to the rationale to support the rejection. There is no articulated reasoning and no rational underpinning. There is no discussion of how King has problems because of a lack elements, or how using the teachings of Tuner provides any benefit to the disclosure of King. Thus, the rationale provided by the Office Action is improper, as the rationale must establish an articulated reasoning with some rational underpinning. The statements provided by the Office Action are a mere conclusion.

No valid rationale has been presented for combining King and Turner. Therefore, the rejection of claims 1-20 should be withdrawn.

Conclusion

In view of the above, Applicant believes the pending application is in condition for allowance.

Applicant respectfully requests that the Examiner call the below listed attorney if the Examiner believes that such a discussion would be helpful in resolving any remaining problems.

Applicant believes no additional fee is due with this response. However, if a fee is due, please charge Deposit Account No. 50-5063 from which the undersigned is authorized to draw. Similarly, please credit any overage amount to the same account.

Respectfully submitted,

Date: January 3, 2013

By: _____/JCS/_____
Jonathan C. Siekmann
Registration No. 58,259
Attorney for Level 3 Communications, LLC
Phone 720-888-2052

Electronic Patent Application Fee Transmittal

Application Number:	12604678
Filing Date:	23-Oct-2009
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0136-US-U2

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	1252	1	570	570

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**570**

Electronic Acknowledgement Receipt	
EFS ID:	14609701
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	03-JAN-2013
Filing Date:	23-OCT-2009
Time Stamp:	16:31:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$570
RAM confirmation Number	6922
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		0136_US_U2_Response_NFOA.pdf	70072 653060e32e7057ccc0cb0325c364abf307ebb96b	yes	16

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Extension of Time	2	2
	Claims	3	9
	Applicant Arguments/Remarks Made in an Amendment	10	16

Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30544 cee9605f25ecffe55a96edc6cbeebe018755495c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	100616		

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

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/604,678	Filing Date 10/23/2009	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT	01/03/2013	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $ =		OR	X $62=	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $250=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)					
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

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

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

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

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

Legal Instrument Examiner:
/JAMES MASON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	10/23/2009	Ian Maloney	0136-US-U2	9034

83579 7590 03/13/2013

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
BUI, KIEU OANH T	
ART UNIT	**PAPER NUMBER**
2425	

NOTIFICATION DATE	DELIVERY MODE
03/13/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.docketing@level3.com

Office Action Summary	Application No.	Applicant(s)	
	12/604,678	MALONEY, IAN	
	Examiner	Art Unit	
	KIEU OANH T. BUI	2425	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2013*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al. (U.S. Patent No. 6,477,707 B1) in view of Turner (US Patent Pub 2011/0197237 A1) and further in view of Ash (U.S. Patent 7,647,418 B2).

Regarding claim 1, King teaches a computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher (Figs. 5 & 9, and col. 1/line 45 to col. 2/line 7), the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network (col. 1/line 45-50 & col. 2/line 3-7 for the user is authorized to receive the video stream from the content provider);

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream (col. 8/lines 19-28 for the system has a subscription control manager to control the delivery of streaming video to the end users); and performing at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database (col. 13/lines 8-42 for the system checks whether to enable or disable the user's subscription service based on their subscription and/or from the service provider); and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream (col. 13/lines 43-54).

King does not address to use "querying a subscription database associated with the content publisher" although the subscription control manager might include that technique; however, such a technique of using a query for "querying a subscription database associated with the content publisher is known in the art. In fact, Turner teaches a technique for the requesting of accessing to a content data stream are queried (authorized) for each user/client within a geographic area (Turner, page 11/par. 0138). In further view, Ash teaches the exact same technique as noted (Ash, col. 3/lines 37-62 & Fig. 3 for a subscription database w/ col. 8/lines 18-41 – is a place where subscription information received from the user terminal or another appropriate source – which suggested from a content provider provides media streaming sources). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's streaming video delivery system with Ash's taught

technique of using a query for individually authenticating each user by checking against its subscription database associated with the content publisher or content provider (col. 3/lines 54-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's system with the teaching technique of Ash's as disclosed in order to obtain an enhanced system that allows the "querying a subscription database associated with the content publisher" as preferred.

For claim 2, in view of claim 1, King teaches "wherein receiving a request from the end user comprises: receiving metadata from the end user; processing the metadata to identify a content publisher associated with the end user; and determining whether the content publisher associated with the video stream is the same as the content publisher associated with the end user" (King, col. 5/lines 42-52 for the metadata determines where the content belongs and where the intended audience is).

As for claim 3, in view of claim 1, Turner further teaches "wherein the metadata is at least one of a token and a cookie" (Turner, page 4/par. 0044 & page 5/par. 0063 for Client token).

For claim 4, in view of claim 1, Turner teaches further "comprising: processing proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted; based on the processing of the proximity parameters, determining that the end user is not authorized to receive the video stream; and restricting delivery of the video stream to the end user" (Turner, page 8/par. 0103 & page 9/par. 0110-0112 for geographic location restrictions).

As for claim 5, in view of claim 4, Turner teaches "wherein determining that the end user is not authorized to receive the video stream comprises: given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user" (Turner, page 11/par. 0133 for under the stored geographic restrictions, the blackout can be occurred).

As for claim 6, in view of claim 4, Turner teaches "wherein restricting delivery of the video stream to the end user is in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user" (Turner, page 8/par. 0103 & page 9/par. 0110-0112 for geographic location restrictions & the blackout as noted in claim 5 above).

For claim 7, in view of claim 4, Turner teaches "wherein restricting delivery of the video stream to the end user is in accordance with subscription parameters of the content publisher for a group of end users, the subscription parameters including at least one of a time restriction and a geographic restriction, and wherein the end user is a member of the group of end users to which the subscription parameters apply" (page 8/par. 0103 for a group of users are authorized using a token; and page 9/par. 0110 for a zip code restriction which indicates a group of users within the zip code are authorized to access or receive the service only).

As for claim 8, in view of claim 4, King teaches "wherein restricting delivery of the video stream comprises: terminating the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated" (King, col. 7/lines 49-55 for automated

scheduling algorithms are used to ensure the delivery of video streams is accurate and efficiency).

For claim 9, in view of claim 1, King teaches "wherein processing the reply from the subscription database comprises detecting that the end user is not a subscriber of the content publisher, the method further comprising: in a subscriber verification table, storing an entry indicating that the end user is not an authorized subscriber of the content publisher, and wherein transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream comprises: specifying in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream" (King, col. 13/lines 25-42 for a disable message service is provided if the system determines not to authorize the user for any reason).

As for claim 10, in view of claim 1, King teaches "wherein processing the reply from the subscription database comprises detecting that the end user is a subscriber of the content publisher, the method further comprising: in a subscriber verification table, storing an entry indicating that the end user is an authorized subscriber of the content publisher" (King, col. 13/lines 43-54).

For claim 11, in view of claim 10, Turner further teaches "comprising: receiving a second request from a second end user for delivery of the video stream to the second end user; processing the second request to determine that the second end user is authorized to receive delivery of the video stream; and initiating delivery of the video stream to the second user" (Turner, page 8/par. 0103).

As for claim 12, in view of claim 11, Turner teaches "wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream comprises: determining that the second end user is the same as the end user; and in response to querying the subscriber verification table, determining that the second end user is an authorized subscriber of the content publisher" (Turner, page 8/par. 0103, the user of one token can be easily identified which user is which, i.e, if the same user accesses again, the second user will have a second token and the first one is no longer valid).

For claim 13, in view of claim 11, Turner further teaches "wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream includes analyzing at least one of a token and a cookie, wherein the at least one of a token and a cookie is associated with the second request received from the second end user" (page 8/par. 0103 again).

As for claim 14, in view of claim 10, King teaches further "comprising: in the subscriber verification table, storing session information associated with the delivery of the video stream to the end user, wherein the session information is stored in accordance with a relative time at which the request from the end user was received" (King, col. 13/lines 43-54).

Regarding claims 15-20, these claims for "a computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher, the method comprising: receiving a request from the end user for delivery of the video stream to the end user across a network; querying a subscription database associated with the client publisher; in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery

of the video stream; if the end user is determined to have authorization to receive delivery of the video stream, creating an entry in a subscriber verification table specifying that the end user is an authorized subscriber of the content publisher, wherein the entry further specifies session information associated with delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received; and initiating delivery of the video stream to the end user"; and "a system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content pubnisher, the system comprising: a network; a subscription database accessible via the network; a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network; wherein the content server is configured to query the subscription database associated with the content pubRisher; wherein the content server is further configured to process a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and wherein the content server is configured to perform at least one of: transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream" are rejected for the reasons given in the scope of claims 1-14 as discussed in details above, not limited to the cited paragraphs from the examiner herein but to any teaching, any disclosure and/or any inherently suggestion from both of the entire references of King and Turner therein.

In addition to King and Turner's, Ash teaches the same technique as noted (Ash, col. 3/lines 37-62 & Fig. 3 for a subscription database w/ col. 8/lines 18-41 – is a place where subscription information received from the user terminal or another appropriate source – which suggested from a content provider provides media streaming sources). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's streaming video delivery system with Ash's taught technique of using a query for individually authenticating each user by checking against its subscription database associated with the content publisher or content provider (col. 3/lines 54-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's system with the teaching technique of Ash's as disclosed in order to obtain an enhanced system that allows the "querying a subscription database associated with the content publisher" as preferred.

Conclusion

4. **Any response to this action should be mailed to:**
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Washington, D.C. 20231

or faxed to PTO New Central Fax number:
(571) 273-8300, (for Technology Center 2400 only)

Hand deliveries must be made to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to "Krista" Kieu-Oanh Bui whose telephone number is (571) 272-7291. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 5:00 PM. And Flex. On Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Pendleton, can be reached at (571) 272-7527.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/KIEU-OANH BUI/
Primary Examiner, Art Unit 2425
March 6, 2013

Notice of References Cited	Application/Control No. 12/604,678	Applicant(s)/Patent Under Reexamination MALONEY, IAN	
	Examiner KIEU OANH T. BUI	Art Unit 2425	Page 1 of 1

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	D	US-			
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	H	US-			
	I	US-			
	J	US-			
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	S					
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*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	W	
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12604678	MALONEY, IAN
	Examiner	Art Unit
	KIEU OANH T BUI	2425

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	08/23/2012	03/06/2013							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
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	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	1	of	6	Attorney Docket No: 0136-US-U2

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Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
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		European Extended Search Report, mailed May 3, 2013, European Appl. No. 09826527.5, Dkt No. 0136-EP-01, 7 pgs.	

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(54) METHODE ET SYSTEME DE CONTROLE D'ACCES AUX CONTENUS MULTIMEDIA ET DE FILTRAGE DES MESSAGES DE SOLLICITATION.

(57) Aujourd'hui le contrôle d'accès aux contenus multimédia est rendu extrêmement difficile car il n'existe pas de point focal par lequel passerait l'ensemble des transactions permettant ainsi un contrôle. L'objet de l'invention est une méthode et un système permettant le contrôle d'accès aux contenus multimédia et de filtrage des messages de sollicitation. L'ensemble des identifiants techniques de communication des utilisateurs sont déclarés dans le système avec un niveau d'autorisation d'accès à des types de contenus. A chaque consultation, les serveurs de contenus multimédia effectuent une requête auprès du système qui leur répond le niveau d'autorisation ou l'autorisation/refus d'accès au contenu. En fonction de cette réponse le serveur de contenus multimédia délivre ou non le contenu demandé par l'utilisateur. Le système est alimenté et mis à jour par les fournisseurs de services, des tiers de confiance et/ou directement par les utilisateurs. Le système permet de filtrer des fichiers de messages de sollicitation, les identifiants des utilisateurs qui ne souhaitent pas être sollicités indépendamment du contenu, et les utilisateurs qui souhaitent être sollicités mais ne sont pas autorisé à avoir accès au type de contenu et au niveau de contenu de la sollicitation. Avant chaque envoi de messages le solliciteur envoie le fichier des identifiants 5 qu'il veut solliciter ainsi que le type de contenu qu'il veut associer et le niveau de ce contenu, le système de contrôle lui retourne alors deux fichiers: un fichier des identifiants à ne pas solliciter et un fichier d'identifiants qui peuvent être sollicités. Les principales applications de l'invention, sans que cette liste limite la portée de l'invention, sont: le contrôle parental, la protection des mineurs vis à vis de contenus et de sollicitations inappropriés, la lutte contre les messages commerciaux non sollicités (SPAM).

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METHODE ET SYSTEME DE CONTROLE D'ACCES AUX CONTENUS MULTIMEDIA ET DE FILTRAGE DES MESSAGES DE SOLLICITATION

CONTEXTE

Avec l'apparition de la visiophonie pour les mobiles, l'ensemble des contenus multimédias est désormais accessible en mode « peer to peer », c'est-à-dire directement de l'utilisateur à l'éditeur sans passage par un portail multimédia. Le passage par un portail permet de contrôler l'accès aux contenus, le portail fonctionnant alors comme une passerelle de contrôle. D'autres systèmes techniques permettent de contrôler à la volée le contenu des flux de données à condition que ces flux passent par un point unique du réseau. Ces systèmes ralentissent les flux de données en cours de transmission.

Ces méthodes et systèmes de contrôle d'accès aux contenus multimédia ne sont pas adaptés à un environnement sans point focal où les contenus sont décentralisés, où chaque utilisateur peut joindre directement un contenu sans passer par un point central qui pourrait servir de point de contrôle.

De plus, de nombreux messages de sollicitation sont envoyés pour que les utilisateurs se connectent aux contenus multimédia. Aujourd'hui aucun contrôle n'est réalisé pour vérifier que la sollicitation n'importune pas et corresponde à un contenu approprié pour l'utilisateur.

La présente invention se propose de répondre à ces deux problématiques, de contrôle d'accès aux contenus multimédias et de filtrage des messages de sollicitation.

RESUME

La présente invention est une méthode et un système qui concernent le contrôle d'accès aux contenus multimédias ainsi que le filtrage de messages de sollicitation. Le système constitutif de l'invention sera nommé ci-après « le système » ou « le système de contrôle ». Le terme multimédia comprend les textes, les sons, les images, ainsi que la vidéo. Le système est constitué d'une base informatique contenant tout ou partie des identifiants techniques des utilisateurs. Par exemple, sans que cette liste limite la portée de l'invention : numéros d'appel mobile, numéro de téléphone fixe, adresse IP. A chaque identifiant correspond un niveau d'autorisation d'accès à un type de contenu.

A chaque tentative d'accès à un contenu multimédia, les serveurs de contenus multimédias envoient une requête vers le système qui retourne l'autorisation ou l'interdiction d'accès au contenu. Ce contrôle d'accès aux contenus permettra entre autre, sans que cela soit exclusif ou limite la portée de l'invention, de réaliser un contrôle parental, les contenus interdits aux moins de 18 ans ne pouvant ainsi être accédés par des mineurs. De plus, le système de contrôle permettra de filtrer des fichiers de sollicitation, les identifiants des utilisateurs qui ne souhaitent pas être sollicités ou ceux pour lesquels le contenu envoyé serait inapproprié.

DESCRIPTION DES FIGURES

Figure 1

La figure 1 présente l'organisation logique des données du système de contrôle. A la racine se trouve l'identifiant technique du réseau : numéro d'appel mobile, numéro d'appel fixe, adresse IP, alias technique, sans que cette liste limite la portée de l'invention. A cet identifiant technique est lié

- un âge correspondant à l'âge du détenteur de l'identifiant.
- un agrément pour des sollicitations, l'utilisateur autorisant ou non l'envoi de sollicitations sur son équipement via son identifiant
- des habilitations pour différents types de contenus. Sans que cette liste soit limitative, les types de contenus sont : Contenus érotiques, Contenus avec des jeux d'argent, Contenus violents. Les habilitations aux contenus sont du type OUI / NON ou gradués sur une échelle. Par exemple de 0 à 5 ; 0 correspondant à une interdiction totale et 5 à une autorisation totale.

Figure 2

La figure 2 décrit le scénario d'un accès au contenu multimédia. (1) L'utilisateur émet un appel ou une requête vers le serveur de contenus afin d'avoir accès au contenu multimédia. (2) Le serveur de contenu envoie l'identifiant technique du client vers le système de contrôle d'accès. (3) Le système retourne au serveur de contenus une autorisation ou interdiction au type de contenu demandé. (4) Le serveur de contenus délivre le contenu à l'utilisateur ou termine la transaction ou l'appel si l'utilisateur n'est pas autorisé.

En (3) le système peut retourner soit une réponse de type OUI / NON soit le détail des autorisations de l'identifiant demandé pour ce type de contenu, soit le détail des autorisations de l'identifiant demandé pour tous les types de contenus.

Figure 3

La figure 3 présente le logigramme d'un accès à un contenu multimédia. Le logigramme démarre avec un appel ou une transaction vers le service de contenu. Le serveur de contenu demande au système de contrôle l'autorisation pour ce type de contenu. La réponse du système de contrôle est analysée. Si la réponse est positive (branche de gauche du schéma), le contenu est délivré puis l'appel ou la transaction se termine. Si la réponse du système de contrôle est négative (branche de droite du schéma), l'appel ou la transaction se termine sans délivrance du contenu multimédia.

Figure 4

La figure 4 présente le logigramme de traitement de filtrage d'un fichier de sollicitation. Ce traitement permet de transformer un fichier brut d'identifiants techniques en deux fichiers : l'un contenant les identifiants qui peuvent être sollicités (fichier OK) en regard du type de contenus ou de l'autorisation de sollicitation, l'autre contenant les identifiants qui ne peuvent être sollicités (fichier NOK).

Le logigramme démarre par la première ligne du fichier, si la fin de fichier est atteinte le traitement s'arrête.

Le premier contrôle concerne l'autorisation de sollicitation. Si l'attribut « sollicitation » est à « NON » dans

le système, l'identifiant est placé dans le fichier NOK. Ensuite l'autorisation de l'identifiant pour le type de contenu et le niveau souhaité est demandé au système de contrôle. Si l'identifiant est autorisé pour le type de contenu et le niveau souhaité, l'identifiant est inscrit dans le fichier des identifiants pouvant être sollicités (fichier OK), sinon il est inscrit dans celui des identifiants ne pouvant pas être sollicités (fichier NOK). La ligne suivante est alors traitée si le traitement n'a pas atteint la fin du fichier. Le traitement est identique dans le cas d'un filtrage portant uniquement sur la sollicitation sans contenu associé. Dans ce cas le test « identifiant autorisé pour ce type de contenu » est toujours positif.

Figure 5

La figure 5 présente la vue fonctionnelle de l'utilisation du système de contrôle. L'ensemble des équipements pouvant accéder aux contenus multimédia sont représentés sur la gauche de la figure, sans que cette liste limite la portée de l'invention : téléphone, téléphone mobile, téléviseur, ordinateur, smartphone. Ces équipements accèdent aux contenus multimédias sur les serveurs de contenus via leurs réseaux respectifs : Internet, réseau cellulaire de seconde génération (GSM), réseau cellulaire de troisième génération (3G), Réseau Téléphonique Commuté (RTC), réseau de Télévision Numérique (TN), etc. , sans que cette liste limite la portée de l'invention. Le serveur de contenus demande l'autorisation d'accès pour ce type de contenu au système de contrôle via un réseau informatique sécurisé. Le système de contrôle retourne au serveur de contenus l'autorisation d'accès ou l'interdiction d'accès. En fonction de cette réponse, le serveur délivre le contenu multimédia dans un cas positif ou termine la transaction ou appel dans un cas négatif.

Figure 6

La figure 6 présente la vue fonctionnelle de l'invention utilisée pour le filtrage d'un fichier de sollicitation. Par un accès informatique sécurisé, un solliciteur soumet au système de contrôle un fichier contenant un ensemble d'identifiants techniques, le type de contenu ainsi que le niveau de ce contenu. Ces identifiants sont comparés à ceux stockés dans la base de données du système de contrôle : chaque identifiant pour lequel l'attribut « sollicitation» de la base est à « Non » sera placé dans un fichier NOK. Ensuite chaque identifiant pour lequel le champ « sollicitation» est à « OUI » mais dont le niveau d'autorisation au contenu est inférieur au niveau demandé sera placé dans le fichier NOK. Enfin l'ensemble des autres identifiants, c'est à dire ceux avec l'attribut « sollicitation » à « OUI » et dont le niveau d'autorisation est égal ou supérieur au niveau soumis sera placé dans le fichier OK. En fin de traitement, le système de contrôle retourne à l'émetteur deux fichiers :

- Un fichier NOK dont les identifiants ne peuvent pas être sollicités pour le type de contenu et le niveau demandé
- Un fichier OK dont les identifiants peuvent être sollicités pour le type de contenu et le niveau demandé

Le solliciteur ne traite pas le fichier NOK, et diffuse à l'ensemble des identifiants du fichier OK le message

qui correspond au type de contenu et au niveau demandé.

Ce type de traitement peut avoir lieu sans type de contenu associé, afin de filtrer les identifiants des utilisateurs qui ne souhaitent pas être sollicité indépendamment de tout type de contenu.

Figure 7

La figure 7 représente la déclaration du niveau d'accès souhaité par les utilisateurs pour les types de contenus. Chaque utilisateur déclarera à son fournisseur de services ou opérateur, le niveau d'accès aux types de contenus qu'il souhaite pour tel équipement. Le fournisseur de services transmettra cette demande au système de contrôle de manière automatisé et à une fréquence régulière et pertinente afin d'offrir le maximum de garantie aux utilisateurs. Pour les utilisateurs dont l'opérateur ou fournisseur de services ne serait pas raccordé au système de contrôle, un accès direct ou via un tiers de confiance disposant d'un accès au système sera disponible. Cet accès pourra ce faire, sans que cette liste limite la portée de l'invention, par un site internet, par SMS. Cet accès permettra à l'utilisateur de se déclarer directement ou indirectement dans le système sans passer par son fournisseur de services.

DESCRIPTION DETAILLEE

Le système est constitué d'une base informatique contenant tout ou partie des identifiants techniques des équipements d'utilisateurs : numéros d'appel mobile, numéro de téléphone fixe, adresse IP, sans que cette liste limite la portée de l'invention.

La base de données du système de contrôle contient (figure 1) relié à l'identifiant technique plusieurs attributs :

- Age : l'âge de l'utilisateur de l'équipement correspondant à l'identifiant technique
- Sollicitation : le souhait ou non de l'utilisateur d'être sollicité par des messages. Par exemple : emails, SMS, MMS, appels vocaux, sans que cette liste limite la portée de l'invention.
- Plusieurs types de contenus : Contenus érotiques, Contenus avec des jeux d'argent, Contenus violents, sans que cette liste limite la portée de l'invention. Les habilitations aux contenus sont du type OUI / NON ou gradués sur une échelle. Par exemple de 0 à 5 ; 0 correspondant à une interdiction totale et 5 à une autorisation totale pour le type de contenu considéré. Les niveaux intermédiaires permettent de graduer l'accès aux contenus.

Le niveau d'accès pour un type de contenu pourra être variable en fonction de l'heure pour un même identifiant.

Lors d'un appel ou de l'initialisation d'une transaction vers un serveur délivrant des contenus multimédia, le serveur de contenus (figure 2) envoie une requête au système de contrôle. Cette requête peut être de deux natures :

- Demande du profil de l'identifiant technique : dans ce cas le système de contrôle retourne au serveur de contenu les données de l'identifiant technique : âge, et/ou niveau d'autorisation pour

tout ou partie des types de contenus. Le serveur de contenus détermine alors en fonction de la réponse et du contenu demandé si l'utilisateur peut avoir accès au contenu.

- Demande d'autorisation d'accès à un type de contenu de tel niveau : dans ce cas le système de contrôle retourne un champ contenant soit 'OUI' soit 'NON' matérialisant l'autorisation ou le refus d'accès au contenu.

En cas d'autorisation d'accès au contenu multimédia (figure 3), le serveur de contenus délivre alors le contenu multimédia à l'utilisateur. En cas de refus d'accès, le serveur termine alors la transaction ou l'appel sans délivrer le contenu multimédia. Le serveur de contenu pourra détenir une copie des requêtes envoyées et des réponses obtenues afin de ne pas ré-émettre de demande auprès du système lorsque l'utilisateur ré-appelle ou ré-initialise une transaction peu de temps après la première. Cette base temporaire sera purgée régulièrement afin de bénéficier des mises à jour du système de contrôle. Un groupe de serveurs de contenus peut adresser des demandes au système dans un même et unique flux.

Le système de contrôle fonctionne avec l'ensemble des équipements utilisant un réseau de communication ou de transmission de données qui attribuent un identifiant unique permettant d'identifier l'équipement ou l'utilisateur (figure 5), à savoir, sans que cette liste limite la portée de l'invention : Réseau téléphonique commuté (RTC), Réseau Internet, Réseau Cellulaire de seconde génération (GSM), Réseau Cellulaire de troisième génération (3G), Réseau de Télévision Numérique (TN). Ces équipements sont mis en relation avec le serveur de contenu soit directement, soit indirectement via un portail d'accès. Le serveur de contenu accédé par l'utilisateur réalise alors une demande d'autorisation au système de contrôle d'accès via un réseau informatique sécurisé. Ce réseau informatique sécurisé permet de garantir une transmission confidentielle des informations entre les deux systèmes.

Le système de contrôle est alimenté de trois manières non exclusives.

- Par les fournisseurs de services (figure 7), sans que la liste limite la portée de l'invention : Opérateurs téléphoniques, Opérateurs de téléphonie mobile, Câblo-opérateurs, Opérateurs de chaîne de télévisions numérique ou à péage, Fournisseurs d'accès internet, Opérateurs Mobiles Virtuels (Mobile Virtual Network Operator ou MVNO), Opérateurs de réseaux virtuels, Société de Commercialisation de Services (SCS). Les fournisseurs de services proposent au titulaire ou à l'utilisateur de l'équipement une mise à jour au système de contrôle.
- Par les utilisateurs eux mêmes via une interface spécifique, sans que cette liste limite la portée de l'invention : site Internet, site WAP, SMS adressé à un numéro spécifique. Dans ce cas le système de contrôle est mis à jour directement.
- Par un tiers de confiance qui vérifie que le demandeur est bien le titulaire ou l'utilisateur, via une interface spécifique.

Cette mise à jour du système comprend l'identifiant technique, éventuellement l'autorisation ou non de sollicitation, l'âge de l'utilisateur et/ou le niveau d'autorisation pour les différents types de contenus.

L'invention permet de plus, à des solliciteurs de ne pas solliciter les utilisateurs qui :

- ne le souhaitent pas – attribut « sollicitation » à « NON »
- ne sont pas autorisé à consulter le contenu sur lequel l'éditeur veut les solliciter

Le solliciteur soumet au système de contrôle un fichier comprenant la liste des identifiants techniques qu'il souhaite solliciter, le type de contenu et le niveau de ce contenu (figure 6). Ce fichier est transmis de manière sécurisée au système de contrôle d'accès. Le système de contrôle d'accès balaie alors le fichier (figure 4) et place dans un fichier NOK :

- Les identifiants dont l'attribut « sollicitation » est à « NON »
- Les identifiants dont l'attribut « sollicitation » est à « OUI » mais dont le niveau d'autorisation au type de contenu est inférieur au niveau demandé par l'éditeur.

Il place dans un fichier OK

- Les identifiants dont l'attribut « sollicitation » est à « OUI » et dont le niveau d'autorisation au type de contenu est supérieur ou égal au niveau demandé par l'éditeur.

Les deux fichiers OK et NOK sont alors transmis par le système de contrôle à l'émetteur de la demande. Ce dernier ne traite pas le fichier NOK mais peut diffuser le contenu envisagé aux identifiants présents dans le fichier OK à travers les différents réseaux des fournisseurs de services. Les solliciteurs peuvent être, sans que cette liste limite la portée de l'invention : des éditeurs de contenus, des agences de marketing direct, des éditeurs de jeux vidéo.

EXEMPLE DE MISE EN PLACE D'UN SYSTEME DE CONTROLE PARENTAL

L'exemple suivant est illustratif et ne limite pas la portée de l'invention. Il présente une manière de mettre en œuvre le système en vue d'un contrôle parental des lignes téléphoniques.

Afin de ne limiter l'accès à des contenus érotiques ou pornographiques qu'aux seuls majeurs, le système de contrôle d'accès peut être mis en œuvre de la manière suivante. L'attribut type de contenu «contenu érotique » est créé et il peut prendre deux valeurs : soit « OUI » soit « NON ». Les opérateurs téléphoniques fixes et mobiles demandent à leurs clients quel niveau de contrôle parental ils souhaitent sur leur ligne téléphonique puis transmettent au système de contrôle les numéros d'appels de leurs clients ainsi que l'autorisation ou non du titulaire de la ligne d'accéder à des contenus érotiques. Lorsque un utilisateur mineur veut accéder au contenu d'un numéro « érotique », le serveur de contenus avant de délivrer le contenu, envoie une requête au système de contrôle en spécifiant le numéro d'appel, et « contenu érotique ». Le système de contrôle consulte le numéro d'appel dans sa base de données et retourne au serveur de contenus le numéro d'appel et le niveau d'accès au contenu de la ligne téléphonique, soit dans le cas d'un mineur « contenu érotique=NON ». Le serveur de contenus termine alors l'appel par un message audio « Vous devez avoir plus de 18 ans pour consulter notre service. Au revoir. ».

EXEMPLE DE MISE EN PLACE D'UN SYSTEME DE FILTRAGE DE SOLLICITATIONS

L'exemple suivant est illustratif et ne limite pas la portée de l'invention. Il présente une manière de mettre en œuvre le système en vue d'un filtrage de messages de sollicitations érotiques.

Certains éditeurs de contenus envoient des MMS (Multimedia Message Service) de sollicitation sur des téléphones cellulaires. Ces messages contiennent des images et du son et peuvent être inappropriés pour des mineurs dans le cas de sollicitation vers des services érotiques. Les éditeurs de services de contenus érotiques peuvent soumettre la liste des identifiants qu'ils envisagent de solliciter au système de contrôle dans un fichier informatique. Le système de contrôle leur retourne deux fichiers : un fichier des identifiants qu'ils peuvent solliciter et un fichier des identifiants des mineurs qu'ils ne doivent pas solliciter. L'éditeur de services de contenus n'adresse alors son message MMS qu'aux identifiants qu'il peut solliciter, c'est-à-dire ceux des majeurs pouvant être sollicités.

REVENDICATIONS

1. Système de contrôle d'accès aux contenus multimédia et de filtrage des messages de sollicitation caractérisé en ce qu'il comprend une base de données informatique contenant l'ensemble des identifiants techniques des utilisateurs ainsi que leur niveaux d'accès aux types de contenus (figure 1) et/ou leur âge, éventuellement leur souhait ou non d'être sollicité par des messages.

2. Système selon la revendication 1 caractérisé en ce que les identifiants, les autorisations d'accès aux contenus ainsi que les autres informations du système, sont alimentés par les fournisseurs de services auxquels sont rattachés les identifiants techniques, et/ou par des tiers de confiance, et/ou directement par les utilisateurs (figure 7).

3. Système selon la revendication 1 caractérisé en ce que lesdits niveaux d'accès aux contenus sont définis par rapport à l'âge de l'utilisateur utilisant l'identifiant technique (figure 1) et/ou dépendant de la plage horaire.

4. Système selon la revendication 1 caractérisé en ce que les identifiants techniques des utilisateurs qui ne doivent pas ou ne souhaitent pas être sollicités de manière générale ou pour le type de contenu et le niveau de contenu de la sollicitation, sont retirés des fichiers de messages de sollicitations (figures 4 et 6).

5. Système selon la revendication 1 caractérisé en ce qu'il est consulté par des serveurs ou groupes de serveurs de contenus multimédias à chaque transaction ou appel d'un utilisateur avant de délivrer le contenu demandé (figures 2, 3 et 5).

6. Serveur de contenus multimédia destiné à fonctionner avec un système selon l'une des revendications précédentes caractérisé en ce qu'il comprend une base de données dans laquelle il stocke temporairement les réponses aux requêtes qu'il a préalablement demandées à un système de contrôle selon la revendication 1.

7. Procédé de contrôle d'accès aux contenus multimédias caractérisé en ce qu'il comprend les étapes suivantes (figure 5):

(a) Appel ou requête par un client utilisateur vers un serveur de contenus afin d'avoir accès au contenu multimédia.

(b) Envoi par ledit serveur de contenus d'un identifiant technique du client vers un système de contrôle d'accès selon la revendication 1.

(c) Renvoi par ledit système de contrôle au serveur de contenus d'une autorisation ou interdiction au type de contenu demandé.

(d) Fourniture du contenu au client ou fin de transaction ou d'appel si le client utilisateur n'est pas autorisé.

8. Procédé de contrôle d'accès aux contenus multimédia caractérisé en ce lors de l'étape (c) le système de contrôle selon la revendication 1 renvoie une réponse de type OUI/NON ou le détail des autorisations de

l'identifiant demandé pour ce type de contenu, ou bien encore le détail des autorisations de l'identifiant demandé pour tous les types de contenus.

9. Procédé de filtrage de messages de sollicitation caractérisé en ce qu'il comprend les étapes suivantes (figure 6) :

(a) Constitution d'un fichier contenant de un à N identifiants techniques à solliciter par un solliciteur

(b) Envoi de ce fichier d'identifiants techniques au système de filtrage selon la revendication 1

(c) Renvoi par ledit système de filtrage d'un fichier contenant les identifiants techniques avec un champ de type OUI/NON autorisant la sollicitation ou le détail des autorisations de l'identifiant demandé pour ce type de contenu, ou bien encore le détail des autorisations de l'identifiant demandé pour tous les types de contenus.

(d) Envoi, par le solliciteur, de messages de sollicitations aux identifiants autorisés.

10. Procédé de filtrage de messages de sollicitation caractérisé en ce lors de l'étape (c) le système de filtrage selon la revendication 1 renvoie deux fichiers distincts : le fichier des identifiants qui peuvent être sollicités et le fichier des identifiants qui ne peuvent pas être sollicités. Ces fichiers peuvent contenir associé à chaque identifiant le détail des autorisations de l'identifiant demandé pour ce type de contenu, ou bien encore le détail des autorisations de l'identifiant demandé pour tous les types de contenus.

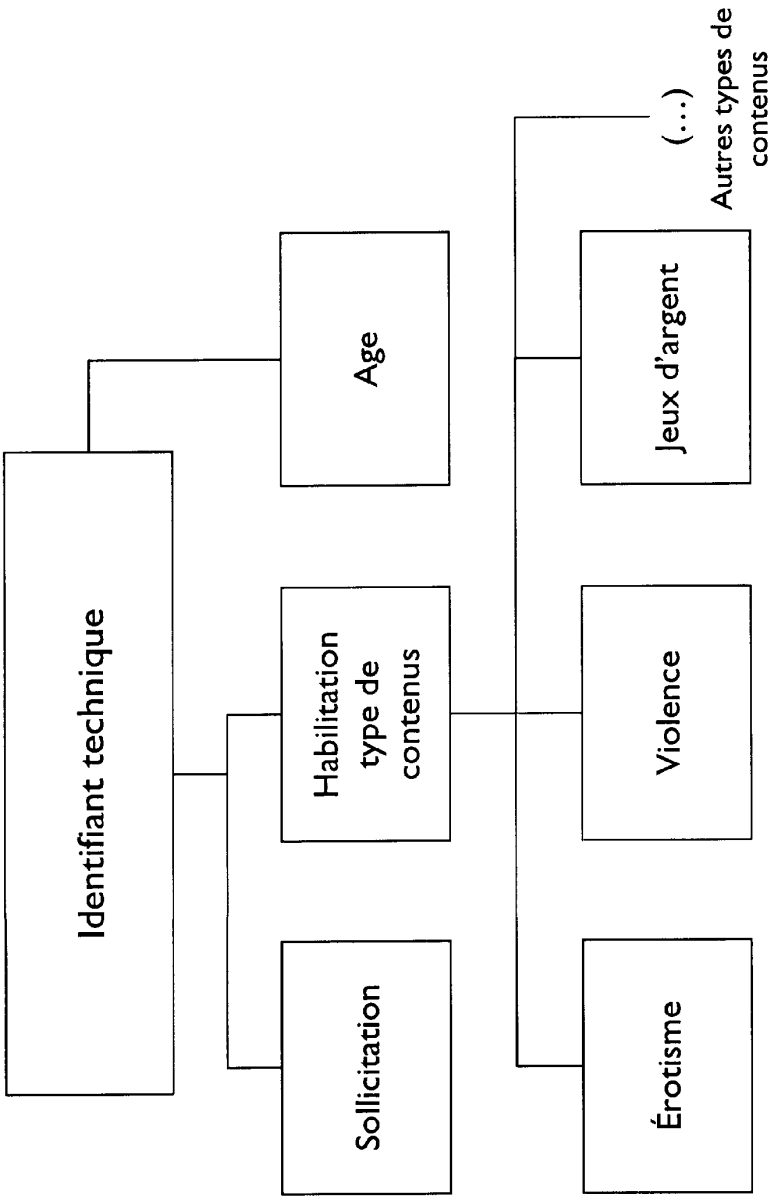

Identifiant technique
Age
Habilitation type de contenus
Sollicitation
Jeux d'argent
Violence
Érotisme
(...)
Autres types de contenus

Figure 1

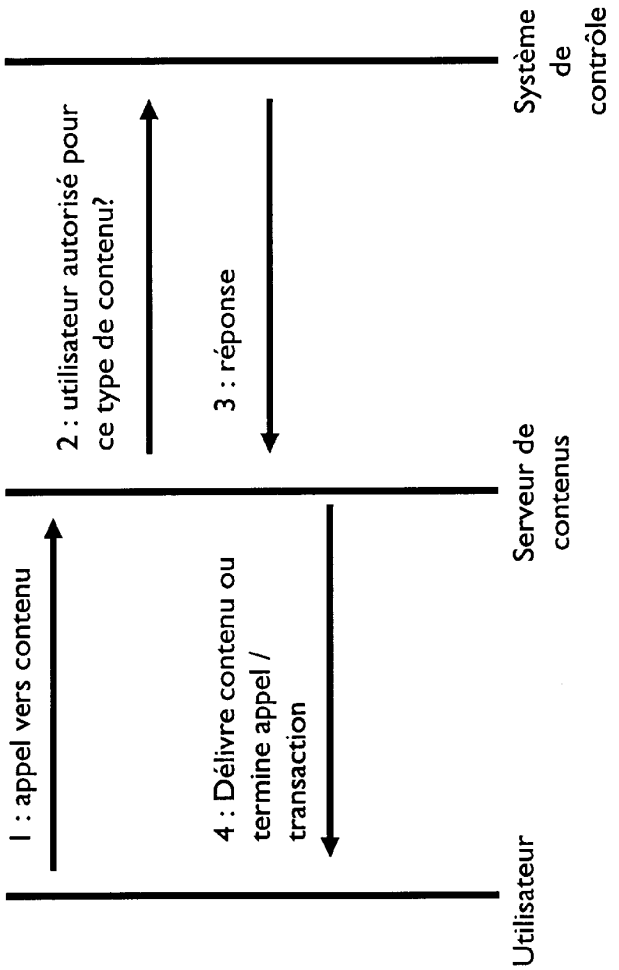

Système de contrôle
2 : utilisateur autorisé pour ce type de contenu?
3 : réponse
Serveur de contenus
1 : appel vers contenu
4 : Délivre contenu ou termine appel / transaction
Utilisateur

Figure 2

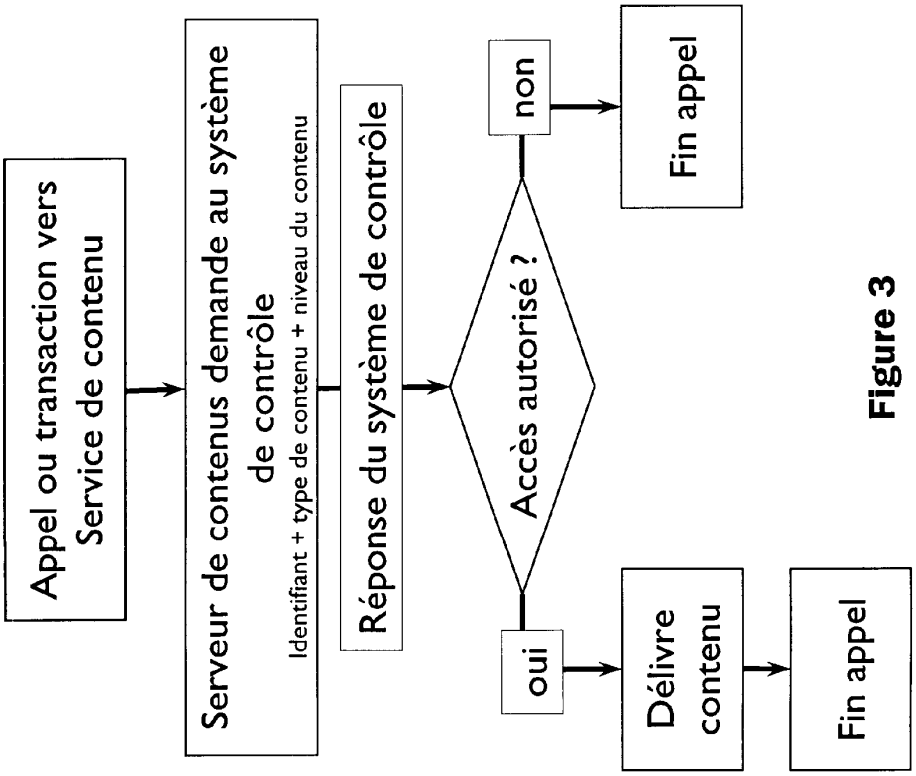
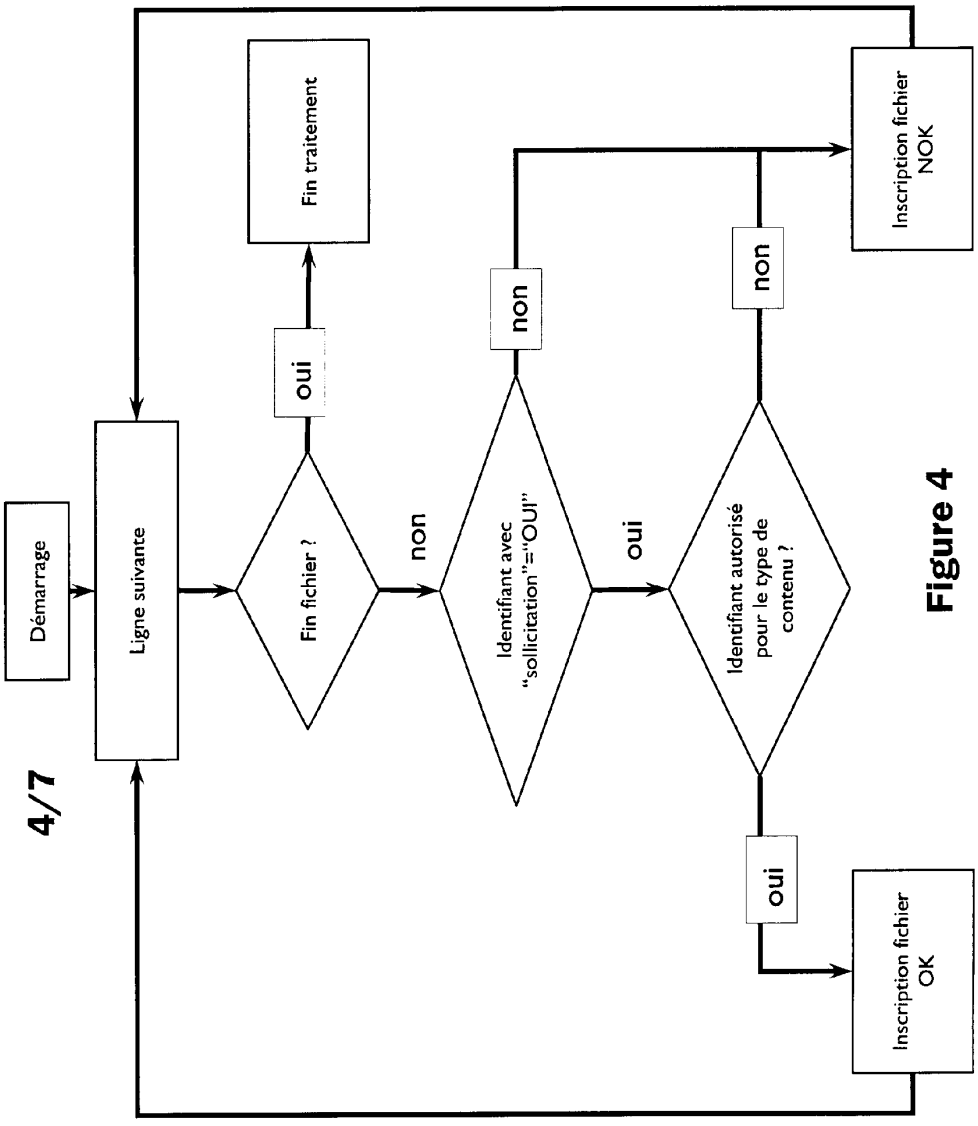
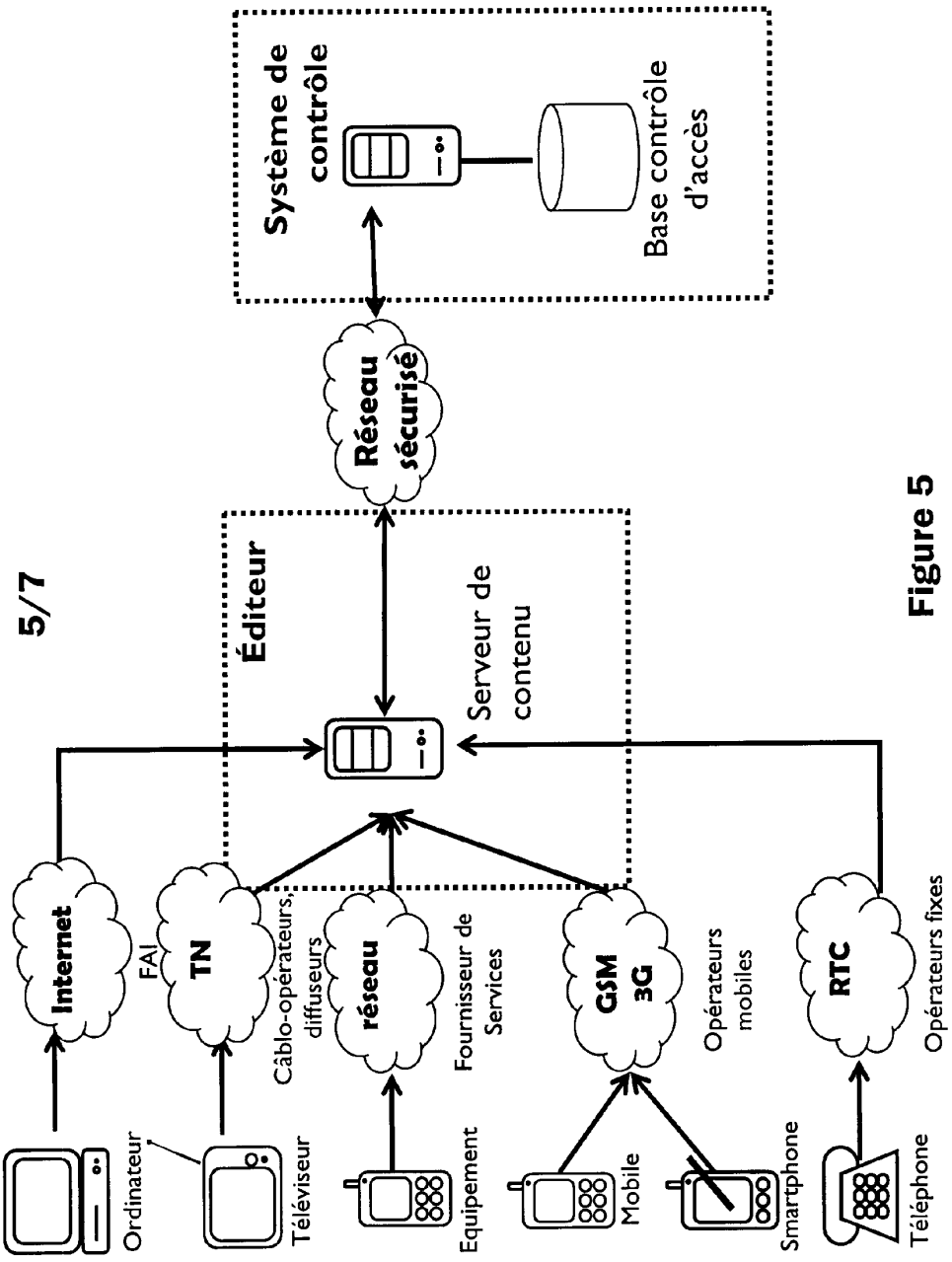

Appel ou transaction vers Service de contenu
Serveur de contenus demande au système de contrôle
Identifiant + type de contenu + niveau du contenu
Réponse du système de contrôle
Accès autorisé ?
oui
non
Délivre contenu
Fin appel
Fin appel

Figure 3


Démarrage
Ligne suivante
Fin fichier ?
oui
Fin traitement
non
Identifiant avec "sollicitation"="OUI"
non
Inscription fichier NOK
oui
Identifiant autorisé pour le type de contenu ?
non
oui
Inscription fichier OK

4/7

Figure 4


Système de contrôle
Base contrôle d'accès
Réseau sécurisé
Éditeur
Serveur de contenu
Internet
FAI
TN
Câblo-opérateurs, diffuseurs
réseau
Fournisseur de Services
GSM 3G
Opérateurs mobiles
RTC
Opérateurs fixes
Ordinateur
Téléviseur
Equipement
Mobile
Smartphone
Téléphone

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Figure 5

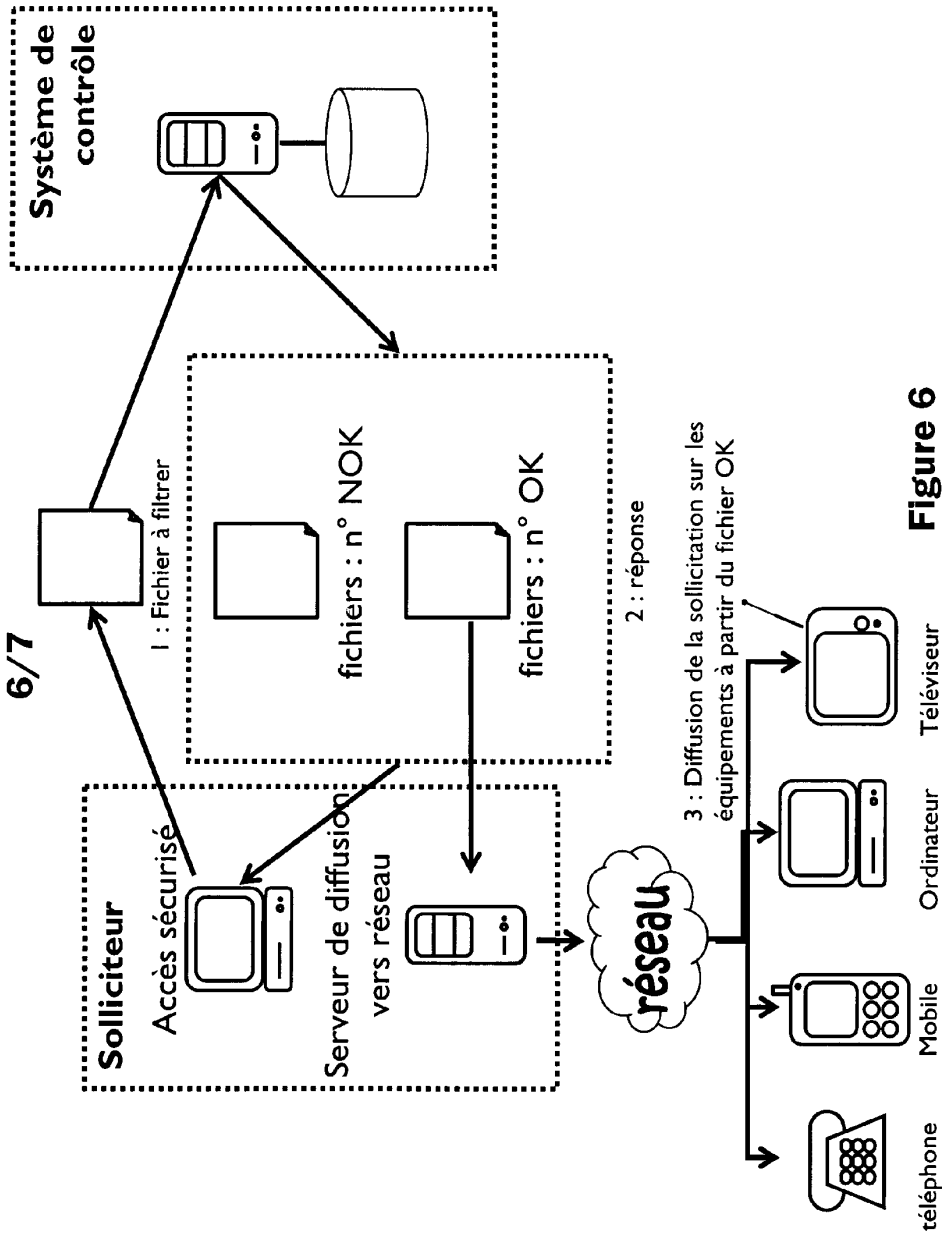

6/7
Système de contrôle
1 : Fichier à filtrer
fichiers : n° NOK
fichiers : n° OK
2 : réponse
Solliciteur
Accès sécurisé
Serveur de diffusion vers réseau
réseau
3 : Diffusion de la sollicitation sur les équipements à partir du fichier OK
téléphone
Mobile
Ordinateur
Téléviseur

Figure 6

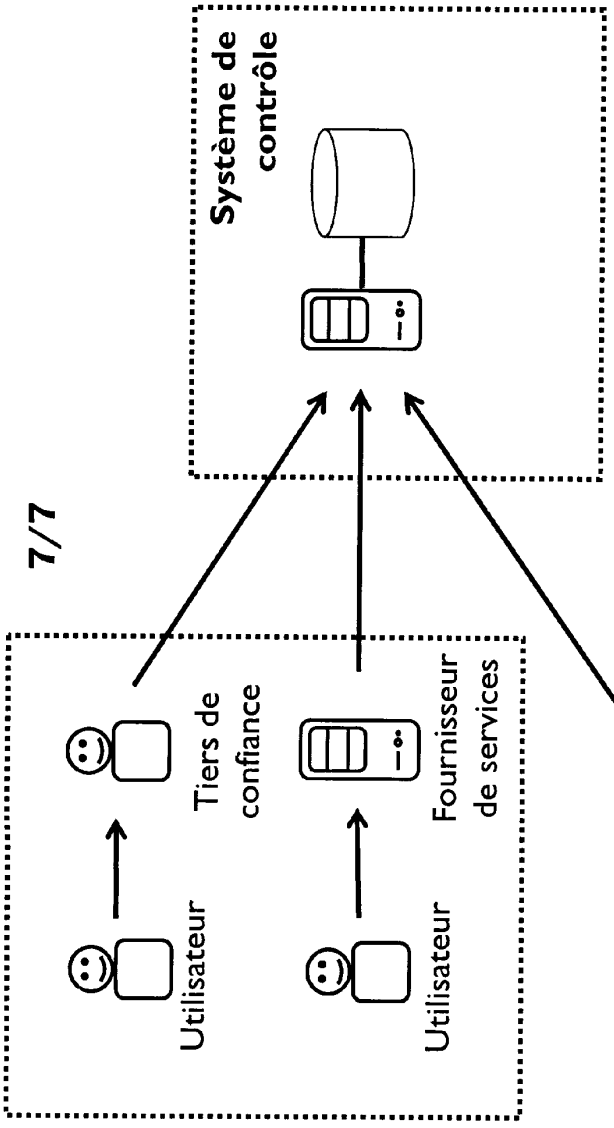

7/7
Système de contrôle
Tiers de confiance
Fournisseur de services
Utilisateur
Utilisateur
Utilisateur

Figure 7

RÉPUBLIQUE FRANÇAISE

2893731

INPI
INSTITUT NATIONAL DE LA PROPRIETE INDUSTRIELLE

RAPPORT DE RECHERCHE PRÉLIMINAIRE

établi sur la base des dernières revendications déposées avant le commencement de la recherche

N° d'enregistrement national

FA 673063
FR 0511885

DOCUMENTS CONSIDÉRÉS COMME PERTINENTS		Revendication(s) concernée(s)	Classement attribué à l'invention par l'INPI
Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes		
X	US 2003/191971 A1 (KLENSIN JOHN C ET AL) 9 octobre 2003 (2003-10-09) * abrégé * * alinéa [0026] - alinéa [0029]; figure 1 * * alinéa [0032] - alinéa [0034]; figure 2 * * alinéa [0038] - alinéa [0042]; figure 4 * -----	1-9	G06F17/30 G06F1/00 G06F21/00
X	EP 1 318 468 A (WEBSENSE INC) 11 juin 2003 (2003-06-11) * abrégé * * alinéas [0005], [0006] * * alinéas [0025], [0026]; figures 1,2 * -----	1-9	
A	EP 0 927 921 A (CASIO COMPUTER CO., LTD) 7 juillet 1999 (1999-07-07) * abrégé * * alinéa [0045] - alinéa [0049]; figures 5,6A,6B,6c,16,19-21 * -----	1-9	
			DOMAINES TECHNIQUES RECHERCHÉS (IPC) G06F

1

Date d'achèvement de la recherche	Examinateur
16 août 2006	Barieux, M

CATÉGORIE DES DOCUMENTS CITÉS

X : particulièrement pertinent à lui seul
Y : particulièrement pertinent en combinaison avec un autre document de la même catégorie
A : arrière-plan technologique
O : divulgation non-écrite
P : document intercalaire

T : théorie ou principe à la base de l'invention
E : document de brevet bénéficiant d'une date antérieure à la date de dépôt et qui n'a été publié qu'à cette date de dépôt ou qu'à une date postérieure.
D : cité dans la demande
L : cité pour d'autres raisons

& : membre de la même famille, document correspondant

EPO FORM 1503 12.99 (P04C14)

ANNEXE AU RAPPORT DE RECHERCHE PRÉLIMINAIRE
RELATIF A LA DEMANDE DE BREVET FRANÇAIS NO. FR 0511885 FA 673063

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche préliminaire visé ci-dessus.
Les dits membres sont contenus au fichier informatique de l'Office européen des brevets à la date du 16-08-2006
Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office européen des brevets, ni de l'Administration française

Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
US 2003191971 A1	09-10-2003	US 6564327 B1	13-05-2003
EP 1318468 A	11-06-2003	CA 2413057 A1	07-06-2003
		JP 2003233623 A	22-08-2003
		US 2003110168 A1	12-06-2003
EP 0927921 A	07-07-1999	JP 11194974 A	21-07-1999
		US 6275825 B1	14-08-2001

EPO FORM P0465

Pour tout renseignement concernant cette annexe : voir Journal Officiel de l'Office européen des brevets, No.12/82

Automatic Translation of D1 (FR2893731)

METHOD AND SYSTEM FOR CONTROLLING ACCESS TO MULTIMEDIA CONTENT AND
FILTER MESSAGE CALLING
BACKGROUND With the advent of the video phone for mobile, all multimedia content is now available on peer-to-peer fashion, that is to say directly from the publisher â user without passing through a multimedia portal.
Passing through a gate used to control access to content, the portal while acting as a gateway control.
Other technical systems used to control â broadcast content streams â provided these flows pass through a single point in the network.
These systems slow down the flow of data during transmission.
These methods and systems for controlling access to multimedia content are not suitable â environment without focal point where the contents are decentralized, where each user can attach content directly without going through a central point that could serve as a control.
In addition, many prompts are sent to the users connect to multimedia content.
Today no control is performed to verify that the request does not match â intrusive and appropriate content to the user.
The present invention proposes to address these two issues â, access to multimedia content and filtering prompts control.
SUMMARY The present invention is a method and a system concerning the access to multimedia and filtering prompts content control.
The constitutive system of the invention will be hereinafter called the system or control system.
The term includes multimedia texts, sounds, images and video.
The system comprises a computerized database containing all or part of the technical user IDs.
For example, without this list limits the scope of the invention: mobile phone numbers, landline number, IP address. Each ID is a level of access authorization â content type.
At each access attempt â multimedia content, multimedia content servers send a query to the system that returns the authorization or denial of access to content.
This content access control will among other things, but is not exclusive or limiting the scope of the invention to provide a parental control, prohibitions contained less than 18 years and can be accessed by minors.
In addition, the control system will filter files solicitation user IDs that do not wish to be contacted or those for which the uploaded content is inappropriate.
DESCRIPTION OF FIGURES Figure 1 Figure 1 shows the logical organization of data control system.
At the root is the technical network identifier: mobile phone number, fixed phone number, IP address alias technical, but are not limit the scope of the invention.
In this technical ID is bound ^ an age corresponding to the age of the owner of the ID. ^ Approval for solicitation, or not allowing the user to send solicitations on its equipment via its identifier ^ clearances for different types of content.
Although this list is not exhaustive, content types are: erotic Content, Content with gambling, violent contents.
Clearances to the content of the type YES / NO or a graduated scale.
Eg 0-5, 0 corresponding to a total ban and 5 full authorization.
Figure 2 Figure 2 describes the scenario access to multimedia content.
(1) The user makes a call or a request to the content server to access multimedia content.
(2) The content server sends the technical identifier of the client to the access control system.
(3) The system returns to the content server permit or ban the type of content requested.
(4) The content server delivers the content to the end user or the transaction or the call if the user is not allowed.
In (3) the system can return an answer type YES / NO or details of authorizations 20 identifier required for this type of content or details of the authorizations required for identifying all types of content.
Figure 3 Figure 3 shows the flowchart access to multimedia content.
The flowchart starts with a call or transaction to the service content.
The content server application system 25 controls the authorization for this type of content.
The response of the control system is analyzed.
If the answer is positive (left branch of the diagram), the content is delivered and then the call or transaction ends.
If the response of the control system is negative (right branch of the diagram), the call or transaction terminates without delivery of multimedia content.
April 30 Figure 4 shows the flowchart of the filtering process of a file load.
This treatment can transform a raw technical credentials file into two files: one containing the identifiers that can be called (OK file) for that type of content or authorization of solicitation, the other containing the identifiers that can not be approached (NOK file).
The flowchart starts with the first line of the file, if the end of file is reached, the processing stops.
35 The first check on the authorization of solicitation.
If the attribute is NOT solicitation in -3 - the system identifier is placed in the file NOK. Then the authorization identifier for the type of content and the desired level is required in the control system.
If the identifier is authorized for the type of content and the desired level, the identifier is included in the file identifiers can be asked (OK File), if it is part of the identifiers can not be requested file (NOK).
The next line is then treated if the treatment has not reached the end of the file.
The treatment is the same in the case of a filter with only solicitation without associated content.

In this case the test identifying authorized for this type of content is always positive.
Figure 5 Figure 5 shows the functional view of the use of the control system.
All equipment can access the multimedia content are shown on the left of the figure, but are not limit the scope of the invention: telephone, mobile phone, TV, computer, smartphone.
These devices access to multimedia content on the content servers via their respective networks: Internet, second-generation cellular network (GSM) cellular network of third generation (3G), Public Switched Telephone Network (RTQ, Digital TV network (FN), etc.., but are not limit the scope of the invention.
The content server requests authorization to access such content to the control system via a secure computer network.
The system returns control to the content server access authorization or denial of access.
Based on this response, the server delivers the multimedia content in a positive case completes the transaction or call in a negative case.
Figure 6 Figure 6 shows the functional view of the invention used for filtering a file load.
By a secure computer access, Solicitor submits to the control system a file containing a set of technical credentials, the type of content and the level of the content.
These identifiers are compared à those stored in the database of the control system: each identifier for which the solicitation is based attribute â Non NOK will be placed in a file. Then each identifier for which the stress field is á YES but the permission level content is below the required level will be placed in the file NOK. Finally all other identifiers, that is, those with â à solicitation YES attribute and whose permission level is at or above the level submitted will be placed in the file OK. At the end of treatment, the control system returns à transmitter two files: NOK ^ A file whose credentials can not be asked for the type of content and the required level OK ^ A file whose credentials can be requested for content type and the required level Solicitor does not process the file NOK and diffuse à all file identifiers OK message 25 30 35 -4 - which corresponds to the type of content and the required level.
This type of treatment can occur without associated content type to filter user IDs that do not want to be asked regardless of any type of content.
Figure 7 Figure 7 shows the declaration of the desired users to the types of content access level.
Each user to declare their service provider or operator, the level of access to the types of content they wish for such equipment.
The service provider will transmit the request to the control system of automated manner and a regular and appropriate frequency to provide maximum security to users.
For users with operator or service provider is not connected to the control system, direct access or via a trusted third party with access to the system will be available.
This access can do this, but are not limit the scope of the invention, a website, SMS. This access allows the user to report directly or indirectly to the system without going through the service provider.
DETAILED DESCRIPTION The system consists of a computerized database containing all or part of the technical credentials of the user equipment: call mobile numbers, landline number, IP address, but are not limit the scope of the invention.
The database contains the control system (Figure 1) connected to the 20 identified several technical attributes: ^ Age: the age of the user of the equipment corresponding to the technical identifier ^ Solicitation: the desire or not the user to be requested by messages.
For example: email, SMS, MMS, voice calls, but are not limit the scope of the invention.
^ Several types of content: erotic Content, Content with gambling, violent contents, but are not limit the scope of the invention.
Clearances to the content of the type YES / NO or a graduated scale.
Eg 0-5, 0 corresponding to a total ban and 5 full authorization for the type of content viewed.
Intermediate levels allow graduate access to content.
The access to a content type level may be variable depending on the time for the same identifier.
During a call or initiating a transaction to a server delivering multimedia content, the content server (2) sends a request to the control system.
This query can be of two kinds: ^ Application Profile technical identifier: in this case the system returns control to the content server data identifying the technical age, and / or permission level for -5 - all or part of the content types.
The content server then determines based on the response and the requested content if the user can access the content.
^ Application for access à a content type such authorization level: in this case the control system returns a field containing either 'YES' or 'NO substantiating the authorization or denial of access to 5 content.
If permission to access the media (Figure 3) content, the content server then delivers multimedia content à user.
In case of refusal of access, the server completes the transaction or the call without delivering multimedia content.
The content server may hold a copy of the requests sent and responses to not re-issue the request to the system 10 when the user re-name or re-initialize a transaction shortly after the first.
This temporary basis will be purged regularly to receive updates á day control system.
A group of content servers may send requests to the system in one and the same stream.
The control system works with all devices using a network of communication or transmission of data that assign a unique identifier to identify the equipment or 15 user (Figure 5), â know, without this list limit the scope of the invention: Switched Telephone Network (PSTN), Internet Network, Mobile Network second generation (GSM), Cellular Network third generation (3G), Digital Television Network (TN).
These facilities are made in relation to the content server either directly or indirectly via a portal.
The content server accessed by the user then makes a request for authorization to access control system 20 via a secure computer network.

This secure computer network ensures confidential transmission of information between the two systems.
The control system is powered by three non-exclusive ways.
^ For service providers (Figure 7), although the list limits the scope of the invention: Telephone Operators, Mobile Operators, Chio operators Operators, 25 channel digital television or â toll Providers Internet, Mobile Virtual Operators (Mobile Virtual Network Operator or MVNO), virtual network operators, Marketing Company Services (SCS).
Service providers to offer â holder or the user of the equipment one day put à control system.
^ By the users themselves via a specific interface, but are not limit the scope of the invention 30: Internet website, WAP site, SMS â addressed a specific number.
In this case, the control system is developed directly à days.
^ By a trusted third party to verify that the applicant is the owner or user, via a specific interface.
This update à system update includes technical identifier, possibly authorization or not 35 solicitation, the age of the user and / or the authorization level for different types of content.
October 15 -6 - The invention makes it to solicitors not to solicit users: ^ do not want ù solicitation attribute NO ^ are not authorized to view the content that the publisher wants to seek Solicitor submits to the system control file containing the list of identifiers be 5 wishes to apply it, the type of content and the level of this content (Figure 6).
This file is transmitted securely to the system access control.
The access control system then scans the file (Figure 4) and place in a file NOK: ^ identifiers whose solicitation attribute is NO ^ identifiers whose solicitation attribute is YES but the level of authorization type of content is below the level required by the publisher.
Place it in an OK ^ identifiers whose solicitation attribute is YES and the level of authorization type of content is greater than or equal to the level requested by the publisher file.
Both files are OK and NOK alois transmitted by the control system to the issuer of the request.
It does not address the NOK file but can stream content considered to identifiers present in the file OK through the various networks of service providers.
Canvassers may be, but are not limit the scope of the invention: content publishers, direct marketing agencies, publishers of video games.
20 EXAMPLE OF ESTABLISHING A SYSTEM OF PARENTAL CONTROL The following example is illustrative and does not limit the scope of the invention.
It presents a way to implement the system for parental control telephone lines.
To restrict access to erotic or pornographic content only to adults, the access control system can be implemented as follows.
The type attribute content 25 erotic content is created and it can take two values: either YES or NO.
Fixed and mobile telephone operators ask their clients what level of parental control they want on their phones and then pass control system the call numbers of their clients as well as whether to allow the owner of the line access with erotic content.
When a minor user wants to access the content of an erotic number, the content server before issuing the 30 content, sends a request to the control system by specifying the telephone number, and erotic content.
The control system consults the call number in its database and returns to the content server the phone number and the level of access to the contents of the telephone line, or in the case of a minor erotic content = NO.
The content server then ends the call by an audio message You must be over 18 years old to view our service.
Goodbye. .
35 -
EXAMPLE IMPLEMENTATION OF A FILTER SYSTEM LOADS The following example is illustrative and does not limit the scope of the invention.
It presents a way to implement the system for filtering messages erotic stimulations.
Some content publishers send MMS (Multimedia Message Service) solicitation on cell phones.
These messages contain images and sound and may be unsuitable for minors in cases of solicitation to erotic services.
Publishers services erotic content can submit the list of identifiers they intend to apply to the control system in a computer file.
The control system their returns two files: an identifiers they can solicit and file identifiers that minors should not apply.
The editor content services will then address the MMS message as identifiers that can apply, that is to say, those major may be sought.

CLAIMS
1.
System control access to multimedia content and filtering prompts characterized in that it comprises a computer database containing all the technical user IDs and their access to the types of content levels (Figure 1) and / or age, or perhaps a desire not to be solicited by mail.
2.
System according to claim 1, characterized in that the password, access permissions to the content and other system information is supplied by service providers which are attached technical credentials, and / or trusted third parties, and / or directly by the user (FIG. 7).
3.
System according to claim 1 characterized in that said content access levels are defined by a Ratio of age using technical user identifier (FIG. 1) and / or depending on the time slot.

4.
System according to claim 1, characterized in that the technical user iDs that should not or do not wish to be contacted in general or for the type of content and the level of content of solicitation message files are removed solicitations (FIGS. 4 and 6).
5.
System according to claim 1 characterized in that it is accessed by servers or groups of servers each transaction â multimedia call or a user before granting the requested content (figures 2, 3 and 5).
6.
Multimedia content server adapted to operate with a system according to one of the preceding claims characterized in that it comprises a database in which it temporarily stores the responses to the requests it has previously requested from a control system as claimed in claim 1.
7.
A method of access control to multimedia content characterized in that it comprises the steps of 25 (Figure 5): (a) call request or a user client to a content server to access the multimedia content. (B) sending by said content server identifier of a technical system to a customer access control according to claim 1. 30 (c) Referral by said control system to a content server or closing the type of content requested. (D) Provision of content to the client or end of transaction or customer call if the user is not allowed.
8.
A method of controlling access to multimedia content wherein in step (c) the control system 35 according to claim 1 returns a response of YES / NO type or details of permissions-9-identifying the requested for this type of content, or even the details of the authorization identifier required for all types of content.
9.
Filtering process prompts characterized in that it comprises the following steps (Figure 6): (a) Constitution of a file containing a â N â seek technical credentials with a solicitor (b) Sending the file technical identifiers filtering system according to claim 1 (c) Referral by said filtering system file containing the technical credentials with a field of type YES / NO or authorizing the solicitation of any authorizations required for the identifier this type of content, or even the details of the authorization identifier required for all types of content. (D) sending, by the solicitor, solicitation messages to authorized identifiers.
10.
Filtering process prompts wherein in step (c) the filtering system of claim 1 returns two separate files: the identifiers that can be requested and the file identifiers that can not be approached .
These files may contain the associate. each identifying details of the authorizations required for identifying this type of content, or even the details of the authorization identifier required for all types of content.

Electronic Patent Application Fee Transmittal	
Application Number:	12604678
Filing Date:	23-Oct-2009
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Filer:	David Dewey Wier/Kathleen McInnish
Attorney Docket Number:	0136-US-U2
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	16149068
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Kathleen McInnish
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	25-JUN-2013
Filing Date:	23-OCT-2009
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Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	3172
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
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Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	136USU2_SB08.pdf	76497 3826b83fab0ab8a30ca04c2d3901a037ae20c623	no	6
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Other Reference-Patent/App/Search documents	EP098265275_ExRpt_3May13_136EP01.pdf	638309 d1c85cbd807f843767a892ce16c01575a46753b8	no	7
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	EP098265291_ExRpt_3May13_136EP02.pdf	672140 673557bb96e6fcc4d5a4b699adc65b0891a59036	no	8
Warnings:					
Information:					
5	Foreign Reference	D1_FR2893731A1.pdf	709145 c10b3eae06383d2f6eb9854882c0d8c4d9e7cf90	no	23
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	30404 446560a9b8ff300c6fcf52850cc7347294a84eba	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2162394		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	12/604,678	Confirmation No.	:	9034
First Applicant	:	MALONEY, Ian	Art Unit	:	2425
Filed	:	October 23, 2009	Examiner	:	Kieu Oanh T. Bui
Title	:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK			
Docket No.	:	0136-US-U2			

Submitted Via EFS-Web

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. §§ 1.56, 1.97, AND 1.98

Sir:

The Examiner is respectfully requested to consider the patents, patent applications, publications, or other information cataloged on the enclosed Form (e.g., PTO-1449, PTO-892, PTO/SB/08, etc.) during examination of the above-identified patent application. The order of presentation of the references should not be construed as an indication of importance. These references are submitted for the Examiner's consideration and are submitted pursuant to an Applicant's duty of disclosure under 37 C.F.R. § 1.56.

Copies of all of the cited documents:

☐ are enclosed unless otherwise indicated on the enclosed Form PTO/SB/08a.

☐ have been previously furnished to the Office in prior application No. _____, filed _____, which the present application relies upon for an earlier effective filing date under 35 U.S.C. § 120. Therefore, no copies of the cited documents are included herewith pursuant to 37 C.F.R. § 1.98(d); MPEP § 609(III)(A)(2).

☒ are enclosed unless they are U.S. patents or U.S. patent application publications pursuant to 37 C.F.R. § 1.98(a).

I
BASIS

This information disclosure statement is filed pursuant to

☐ 37 C.F.R. § 1.97(b).
This information disclosure statement is filed either (1) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d); (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; (3) before the mailing date of a first Office action on the merits; (4) concurrently with the filing of a request for continued examination under 37 C.F.R. § 1.114; or (5) before the mailing of a first Office action after the filing of a request for continued examination under 37 C.F.R. § 1.114, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☒ 37 C.F.R. § 1.97(c).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of any of (1) a final action under 37 C.F.R. § 1.113; (2) a notice of allowance under 37 C.F.R. § 1.311; or (3) an action that otherwise closes prosecution in the application.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c), or a statement under 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).
This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c) since a:

☐ final action under 37 C.F.R. § 1.113

☐ notice of allowance under 37 C.F.R. § 1.311

was mailed to the Applicant on _____.

Accordingly, this information disclosure statement requires the fee set forth in 37 C.F.R. § 1.17(p) to consider an information disclosure statement under 37 C.F.R. § 1.97(d), and a statement under 37 C.F.R. § 1.97(e).

If this statement crosses in the mail with an Office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record. To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

II
FEES

Any required fee is being paid as indicated below:

☐ No fee is due.

☒ The $180 fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) or (d) is due.

☒ This fee is paid by credit card.

☐ Please charge the required fee to Deposit Account No. 505063.

☒ The Commissioner is hereby authorized to charge any additional required fees or credit any overpayments associated with this information disclosure statement to the account.

III

CERTIFICATION

Pursuant to 37 C.F.R. § 1.97(e), I state as follows:

☒ No statement is necessary.

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(1).

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to my knowledge after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this information disclosure statement. 37 C.F.R. § 1.97(e)(2).

Pursuant to 37 C.F.R. § 1.704(d), I state as follows:

☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

IV
FOREIGN LANGUAGE REFERENCES

Pursuant to 37 C.F.R. § 1.98(a)(3)(i), any information disclosure statement filed under 37 C.F.R. § 1.97 shall include a concise explanation of the relevance, as it is presently understood by the individual designated in § 1.56(c) most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language. The concise explanation may be either separate from the specification or incorporated therein. In compliance with the rules, the Applicant states as follows:

☐ No concise explanation is required since all cited references are in English.

☐ A concise explanation of the relevance of one or more foreign language references is attached.

☐ According to the procedural policy adopted by the PTO with regard to disclosure requirements, the Applicant is satisfying the disclosure requirement pursuant to MPEP § 609.04(a)(III) by submitting herewith the following:

- ☐ English language versions of any non-English language documents.
- ☐ English language versions of one or more search reports or other actions by one or more foreign patent offices in one or more counterpart foreign applications, which indicate the degree of relevance found by the foreign office(s).
- ☐ Pursuant to 37 C.F.R. § 1.98(a)(3)(ii), a copy of a translation is not submitted herewith because a written English-language translation of a non-English-language document, or portion thereof, is not within the possession, custody, or control of, or is readily available to any individual designated in § 1.56(c).

The Applicant has not analyzed these documents and, therefore, declines to comment on their relevance at this time.

☐ One or more English language abstracts for the non-English language references are also enclosed.

V
REMARKS

It is respectfully requested that:

(1) The Examiner sign the enclosed Form to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application; and

(2) The citations for the cited information be printed on any patent that issues from this application.

The submission of this information disclosure statement by the Applicant shall not be construed as a representation that a search has been performed or that no other material information under 37 C.F.R. § 1.56 exists. See 37 C.F.R. § 1.97(g).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, material to the patentability of one or more of the pending claims in this application pursuant to 37 C.F.R. § 1.56(b), unless specifically designated by the Applicant as such. See 37 C.F.R. § 1.97(h).

The submission of this information disclosure statement by the Applicant shall not be construed as an admission that any information cited or referred to herein is, or is considered to be, or even qualifies as "prior art" under 35 U.S.C. § 102 with respect to this invention, unless specifically designated by the Applicant as such.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his or her own conclusion regarding the relevance of the cited information.

VI
CONCLUSION

The Examiner is encouraged to contact the undersigned attorney to discuss any questions concerning this information disclosure statement or any of the information cited or referred to herein.

Respectfully submitted,

Date: June 25, 2013

/JCS/

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Docket No.: 0136-US-U2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Ian Maloney

Application No.: 12/604,678 | Confirmation No.: 9034

Filed: 23 October 2009 | Art Unit: 2425

For: USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK | Examiner: Kieu Oahn T. Bui

RESPONSE

Via EFS-Web
MS Amendment
Commissioner for Patents
P.O. Box 1450`
Alexandria, VA 22313-1450

Dear Commissioner:

INTRODUCTORY COMMENTS

In response to the Office Action dated 13 March 2013, Applicant respectfully requests that the Examiner reconsider the above-identified U.S. patent application in view of the amendments and comments set forth below:

Request for an Extension of Time is made on page 2 of this paper.

Amendments to the Claims, if any, are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 10 of this paper.

EXTENSION OF TIME

Applicant hereby petitions for a **ONE-month** extension of time and is electronically submitting the required fee with this response. The Commissioner is authorized to deduct any additional fees from or credit any overpayment to the undersigned's account no. 50-5063.

AMENDMENTS TO THE CLAIMS

1. (Original) A computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the content publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

performing at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream.

2. (Original) The computer-implemented method as in claim 1, wherein receiving a request from the end user comprises:

receiving metadata from the end user;

processing the metadata to identify a content publisher associated with the end user; and

determining whether the content publisher associated with the video stream is the same as the content publisher associated with the end user.

3. (Currently Amended) The computer-implemented method as in claim 2, [[3,]] wherein the metadata is at least one of a token and a cookie.

4. (Original) The computer-implemented method as in claim 1 further comprising:

processing proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted;

based on the processing of the proximity parameters, determining that the end user is not authorized to receive the video stream; and

restricting delivery of the video stream to the end user.

5. (Original) The computer-implemented method as in claim 4, wherein determining that the end user is not authorized to receive the video stream comprises:

given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

6. (Original) The computer-implemented method of claim 4, wherein restricting delivery of the video stream to the end user is in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user.

7. (Original) The computer-implemented method of claim 4, wherein restricting delivery of the video stream to the end user is in accordance with subscription parameters of the content publisher for a group of end users, the subscription parameters including at least one of a time restriction and a geographic restriction, and wherein the end user is a member of the group of end users to which the subscription parameters apply.

8. (Original) The computer-implemented method as in claim 4, wherein restricting delivery of the video stream comprises:

terminating the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

9. (Original) The computer-implemented method as in claim 1, wherein processing the reply from the subscription database comprises detecting that the end user is not a subscriber of the content publisher, the method further comprising:

in a subscriber verification table, storing an entry indicating that the end user is not an authorized subscriber of the content publisher, and

wherein transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream comprises:

specifying in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

10. (Original) The computer-implemented method as in claim 1, wherein processing the reply from the subscription database comprises detecting that the end user is a subscriber of the content publisher, the method further comprising:

in a subscriber verification table, storing an entry indicating that the end user is an authorized subscriber of the content publisher.

11. (Original) The computer-implemented method of claim 10 further comprising:

receiving a second request from a second end user for delivery of the video stream to the second end user;

processing the second request to determine that the second end user is authorized to receive delivery of the video stream; and

initiating delivery of the video stream to the second user.

12. (Original) The computer-implemented method of claim 11, wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream comprises:

determining that the second end user is the same as the end user; and

in response to querying the subscriber verification table, determining that the second end user is an authorized subscriber of the content publisher.

13. (Original) The computer-implemented method of claim 11, wherein processing the second request to determine that the second end user is authorized to receive delivery of the video stream includes analyzing at least one of a token and a cookie, wherein the at least one of a token and a cookie is associated with the second request received from the second end user.

14. (Original) The computer-implemented method of claim 10 further comprising:

in the subscriber verification table, storing session information associated with the delivery of the video stream to the end user, wherein the session information is stored in accordance with a relative time at which the request from the end user was received.

15. (Original) A computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the client publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream;

if the end user is determined to have authorization to receive delivery of the video stream, creating an entry in a subscriber verification table specifying that the end user is an authorized

subscriber of the content publisher, wherein the entry further specifies session information associated with delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received; and

initiating delivery of the video stream to the end user.

16. (Original) A system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the system comprising:

a network;

a subscription database accessible via the network;

a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network;

wherein the content server is configured to query the subscription database associated with the content publisher;

wherein the content server is further configured to process a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

wherein the content server is configured to perform at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream.

17. (Original) The system as in claim 16 further comprising:

proximity parameters associated with the end user, wherein the proximity parameters specify a geographic location of the end user to where video content is transmitted;

wherein the content server is configured to process the proximity parameters to determine whether the end user is authorized to receive the video stream; and

wherein a determination that the end user is not authorized to receive the video stream comprises:

given a relative time associated with the receipt of the request from the end user, determining whether the video stream should be blacked out for at least a time period associated with the relative time in relation to the geographic location of the end user.

18. (Original) The system as in claim 17 further comprising:

wherein the content server is configured to restrict delivery of the video stream to the end user in accordance with black out rules associated with the content publisher, the black out rules having associated time restrictions and geographic restrictions prescribed by the content publisher for the end user; and

based on the black out rules, the content server is further configured to terminate the delivery of the video stream to the end user if delivery of the video stream to the end user has already been initiated.

19. (Original) The system as in claim 16 further comprising:

a subscriber verification table;

if the end user is determined to be an authorized subscriber of the content publisher, the content server is configured to store an entry in the subscriber verification table indicating that the end user is an authorized subscriber of the content publisher, wherein the entry further includes session information associated with the delivery of the video stream to the end user, the session information being stored in accordance with a relative time at which the request from the end user was received.

20. (Original) The system as in claim 16 further comprising:

a subscriber verification table;

if the end user is determined not to be an authorized subscriber of the content publisher, the content server is configured to store an entry in the subscriber verification table indicating that the end user is not an authorized subscriber of the content publisher, and

wherein the content server is configured to specify in the notification that the end user is not an authorized subscriber of the content publisher from which the end user had requested delivery of the video stream.

REMARKS

Applicant hereby traverses the current rejections, and requests reconsideration and withdrawal in light of the remarks contained herein. Claims 1-20 are pending in this application.

Rejection Under 35 U.S.C. § 103

Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over King *et al.*, U.S. Patent 6,477,707 B1 (hereinafter King) in view of Turner U.S. Application 2011/0197237 A1 (hereinafter Turner), and further in view of Ash *et al.*, U.S. Patent 7,647,418 B2 (hereinafter Ash).

To establish prima facie obviousness of a claimed invention, two basic criteria must be met. First, all the claim elements must be shown by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Second, there must be some rationale or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. In other words, there should be an explicit analysis regarding whether there was an apparent reason to combine the known elements in the fashion claimed in the Application at issue. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). Applicant asserts that the rejection does not satisfy the either the first criteria or the second criteria.

Lack of Rationale

The Office Action does not present a *prima facie* case of obviousness. The Office Action has rejected claims 1-20 in view of the combination of King, Turner, and Ash. However, the rejection, as presented, is devoid of any discussion of the required rationale for using Turner in the combination. The rationale cited in the Office Action discusses combining King and Ash, but does not discuss Turner in any manner.

No valid rationale has been presented for combining King, Turner, and Ash. Therefore, the rejection of claims 1-20 should be withdrawn.

Lack of Elements: Independent Claim 1

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner and Ash, which the Office Action alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 1 defines a computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher. The method includes receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action relies upon King as teaching these elements. However, King does not teach these elements. The Office Action relies upon the text at column 1, lines 45-50 and column 2, lines 3-7. However, Applicant notes that these sections discuss a distributed broadcast system for processing, scheduling, and broadcasting a wide variety of media objects, and an end-user that is equipped to receive the transmission and provide the end-user with portions of the broadcast that the end-user is authorized to receive. Nothing in these sections teaches receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action does not rely on Turner as teaching these elements, but does state that Turner teaches "the same technique". The Office Action cites paragraph [0138] of Turner for support. Applicant respectfully disagrees. Paragraph [0138] cites earlier paragraphs for operation ("as provided above"). Turner appears to operate by authenticating a player first, and then displaying choices to the player, see paragraphs [0010], [0047], and [0056], which indicates that authenticated players send requests. Thus, Turner appears to operate in a different manner than that of the claims.

The Office Action does not rely upon Ash as teaching these elements, but does state that "Ash teaches the exact same technique". The Office Action cites Figure 3, the text at column 3, lines 37-62, and the text at column 8, lines 18-41 of Ash for support. Applicant respectfully disagrees. The cited text at column 3 is discussing Figure 1, which depicts a non-real time system for measuring streaming media performance. A user terminal creates a subscription in a

web server, which is saved in a database. The database holds one or more subscriptions. The subscription information is requested by and sent to data collocation agents. The cited text at column 8 is discussing Figure 3, which depicts a real time system for measuring streaming media performance. This section discussing having data collection agents connected to a media server. The user terminal provides real time configuration information to a subscription database. Thus, Ash appears to operate in a different manner than that of the claims.

Thus, the combination of King, Turner, and Ash does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 1 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Independent Claim 15

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner and Ash, which the Office Action alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 15 defines a computer-implemented method for authorizing delivery of a video stream to an end user, the video stream being provided by a content source associated with a content publisher. The method includes receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action relies upon King as teaching these elements. However, King does not teach these elements. The Office Action does not provide an element-by-element analysis for this claim, and relies upon the rejections of claims 1-14. The Office Action appears to rely upon the text at column 1, lines 45-50 and column 2, lines 3-7. However, Applicant notes that these sections discuss a distributed broadcast system for processing, scheduling, and broadcasting a wide variety of media objects, and an end-user that is equipped to receive the transmission and provide the end-user with portions of the broadcast that the end-user is authorized to receive. Nothing in these sections teaches receiving a request from the end user for delivery of the video stream to the end user across a network.

The Office Action does not rely on Turner as teaching these elements, but does state that Turner teaches "the same technique". The Office Action cites paragraph [0138] for support. Applicant respectfully disagrees. Paragraph [0138] cites earlier paragraphs for operation ("as provided above"). Turner appears to operate by authenticating a player first, and then displaying choices to the player, see paragraphs [0010], [0047], and [0056], which indicates that authenticated players send requests. Thus, Turner appears to operate in a different manner than that of the claims.

The Office Action does not rely upon Ash as teaching these elements, but does state that "Ash teaches the exact same technique". The Office Action cites Figure 3, the text at column 3, lines 37-62, and the text at column 8, lines 18-41 of Ash for support. Applicant respectfully disagrees. The cited text at column 3 is discussing Figure 1, which depicts a non-real time system for measuring streaming media performance. A user terminal creates a subscription in a web server, which is saved in a database. The database holds one or more subscriptions. The subscription information is requested by and sent to data collocation agents. The cited text at column 8 is discussing Figure 3, which depicts a real time system for measuring streaming media performance. This section discussing having data collection agents connected to a media server. The user terminal provides real time configuration information to a subscription database. Thus, Ash appears to operate in a different manner than that of the claims.

Thus, the combination of King and Turner does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 15 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Independent Claim 16

The Office Action admits that King does not teach querying a subscription database as defined in the claims. The Office Action attempts to cure this deficiency by introducing Turner and Ash, which the Office Action alleges to teach having such elements. However, this combination, as presented, does not teach or suggest all elements of the claimed invention.

Claim 16 defines a system configured to authorize delivery of a video stream to an end user, wherein the video stream is associated with a content publisher. The system includes a

content server configured to receive a request from the end user for delivery of the video stream to the end user across the network.

The Office Action relies upon King as teaching these elements. However, King does not teach these elements. The Office Action does not provide an element-by-element analysis for this claim, and relies upon the rejections of claims 1-14. The Office Action appears to rely upon the text at column 1, lines 45-50 and column 2, lines 3-7. However, Applicant notes that these sections discuss a distributed broadcast system for processing, scheduling, and broadcasting a wide variety of media objects, and an end-user that is equipped to receive the transmission and provide the end-user with portions of the broadcast that the end-user is authorized to receive. Nothing in these sections teaches a content server configured to receive a request from the end user for delivery of the video stream to the end user across the network.

The Office Action does not rely on Turner as teaching these elements, but does state that Turner teaches "the same technique". The Office Action cites paragraph [0138] for support. Applicant respectfully disagrees. Paragraph [0138] cites earlier paragraphs for operation ("as provided above"). Turner appears to operate by authenticating a player first, and then displaying choices to the player, see paragraphs [0010], [0047], and [0056], which indicates that authenticated players send requests. Thus, Turner appears to operate in a different manner than that of the claims.

The Office Action does not rely upon Ash as teaching these elements, but does state that "Ash teaches the exact same technique". The Office Action cites Figure 3, the text at column 3, lines 37-62, and the text at column 8, lines 18-41 of Ash for support. Applicant respectfully disagrees. The cited text at column 3 is discussing Figure 1, which depicts a non-real time system for measuring streaming media performance. A user terminal creates a subscription in a web server, which is saved in a database. The database holds one or more subscriptions. The subscription information is requested by and sent to data collocation agents. The cited text at column 8 is discussing Figure 3, which depicts a real time system for measuring streaming media performance. This section discussing having data collection agents connected to a media server. The user terminal provides real time configuration information to a subscription database. Thus, Ash appears to operate in a different manner than that of the claims.

Thus, the combination of King, Turner, and Ash does not teach all of the claimed elements. Therefore, the Applicant respectfully asserts that for the above reasons claim 16 is patentable over the 35 U.S.C. § 103(a) rejection of record.

Lack of Elements: Dependent Claims 2-14 and 17-20

Claims 2-14 and 17-20 depend from base claims 1 and 16, respectively, and thus inherit all elements of respective base claim. Claims 2-14 and 17-20 set forth features and elements not recited by the combination of King, Turner, and Ash. Thus, the Applicant respectfully asserts that for the above reasons claims 2-14 and 17-20 are patentable over the 35 U.S.C. § 103(a) rejection of record.

Conclusion

In view of the above, Applicant believes the pending application is in condition for allowance.

Applicant respectfully requests that the Examiner call the below listed attorney if the Examiner believes that such a discussion would be helpful in resolving any remaining problems.

Applicant believes no additional fee is due with this response. However, if a fee is due, please charge Deposit Account No. 50-5063 from which the undersigned is authorized to draw. Similarly, please credit any overage amount to the same account.

Respectfully submitted,

Date: 15 July 2013

By:_____/JCS/_____
Jonathan C. Siekmann
Registration No. 58,259
Attorney for Level 3 Communications, LLC
Phone 720-888-2052

Electronic Patent Application Fee Transmittal

Application Number:	12604678
Filing Date:	23-Oct-2009
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0136-US-U2

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	200	200

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**200**

Electronic Acknowledgement Receipt	
EFS ID:	16318230
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	15-JUL-2013
Filing Date:	23-OCT-2009
Time Stamp:	16:22:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$200
RAM confirmation Number	3720
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)	
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)	
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		0136_US_U2_Response_NFOA.pdf	70166 7c2a891b5f126ef3ef8eb0f688ef80f75788f4a8	yes	15

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Extension of Time	2	2
	Claims	3	9
	Applicant Arguments/Remarks Made in an Amendment	10	15

Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30573 4de683083214a73c1ad1bee263a9261e43d2184a	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	100739		

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/604,678	Filing Date 10/23/2009	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	07/15/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $80 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/PAULA MCCRAY STANLEY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

83579 7590 10/17/2013
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
BUI, KIEU OANH T	
ART UNIT	PAPER NUMBER
2425	

DATE MAILED: 10/17/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	10/23/2009	Ian Maloney	0136-US-U2	9034

TITLE OF INVENTION: USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	01/17/2014

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

83579 7590 10/17/2013
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

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

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	10/23/2009	Ian Maloney	0136-US-U2	9034

TITLE OF INVENTION: USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	01/17/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
BUI, KIEU OANH T	2425	725-087000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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

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

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

4a. The following fee(s) are submitted:

❑ Issue Fee

❑ Publication Fee (No small entity discount permitted)

❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❑ A check is enclosed.

❑ Payment by credit card. Form PTO-2038 is attached.

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	10/23/2009	Ian Maloney	0136-US-U2	9034

83579 7590 10/17/2013

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

EXAMINER	
BUI, KIEU OANH T	
ART UNIT	**PAPER NUMBER**
2425	

DATE MAILED: 10/17/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 550 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 550 day(s).

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

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

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

Privacy Act Statement

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

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

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

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

(Addendum to PTOL-85)

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

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

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

Notice of Allowability	Application No. 12/604,678	Applicant(s) MALONEY, IAN	
	Examiner KIEU OANH T. BUI	Art Unit 2425	AIA (First Inventor to File) Status No

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

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

1. ☒ This communication is responsive to *the amendment filed on 07/15/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-20*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

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

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/KIEU OANH T BUI/
Primary Examiner
Art Unit: 2425

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-20 are allowed.

2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the prior art of record fails to teach or suggest each and every feature of the present invention for "a computer-implemented method for authorizing delivery of a video stream to an end user, wherein the video stream is associated with a content publisher, the method comprising:

receiving a request from the end user for delivery of the video stream to the end user across a network;

querying a subscription database associated with the content publisher;

in response, processing a reply from the subscription database to determine whether the end user has authorization to receive delivery of the video stream; and

performing at least one of:

transmitting a notification to the end user indicating that the end user is not authorized to receive delivery of the video stream based on the processing of the reply from the subscription database; and

initiating delivery of the video stream to the end user based on the processing of the reply from the subscription database, wherein the reply from the subscription database indicates the end user is authorized to receive delivery of the video stream" as claimed and similarly as in claims 15 and 16.

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

Conclusion

3. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to PTO New Central Fax number:

(571) 273-8300, (for Technology Center 2400 only)

Hand deliveries must be made to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIEU OANH BUI whose telephone number is (571)272-7291. The examiner can normally be reached on MON - FRI from 8:30 AM -6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRIAN PENDLETON can be reached on (571) 272-7527. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/KIEU-OANH BUI/
Primary Examiner, Art Unit 2425
September 28, 2013

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	31402	"725"/.ccls.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 16:59
S2	20035	S1 and (server or database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 16:59
S3	13542	S2 and (video and stream$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:00
S4	2	S3 and (query$3 near5 (subscript$3 adj database))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:01
S5	28	S3 and (subscript$3 adj database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:22
S6	18	S5 and author$5	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:22
S7	4	S6 and metadata	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:23
S8	3	S7 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:26
S9	3	S7 and (content and "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:50
S10	2	S9 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:52
S11	246206	video and stream$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:52
S12	337	S11 and (subscript$3 adj database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:52
S13	221	S12 and author$5	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S14	104	S13 and metadata	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S15	98	S14 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S16	71	S15 and (token cookie)	US-PGPUB; USPAT; EPO;	OR	ON	2012/08/23 17:53

			JPO			
S17	58	S16 and (content and "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:53
S18	58	S17 and (geographic location)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:54
S19	3	S18 and ((geographic location) near5 "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:54
S20	58	S18 and ((geographic location) near5 ("end user" user))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:54
S21	58	S20 and rule	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:55
S22	2	S21 and (time adj restriction)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:55
S23	2	S21 and "black out"	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:56
S24	58	S21 and (black$4 blank)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:57
S25	58	S24 and (parameter attribute)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:58
S26	58	S25 and (notification alert message)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:58
S27	58	S26 and publisher	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 17:59
S28	2	S27 and (authoriz$5 near5 table)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:00
S29	2	S27 and (verification near5 table)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:00
S30	15	S6 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:04
S31	5	S30 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:04
S32	2	S6 and (black$4 "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:22
S33	2	S6 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:22
S34	2	S16 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:22
S35	2	S5 and (black$1out "black out")	US-PGPUB; USPAT; EPO;	OR	ON	2012/08/23 18:23

			JPO			
S36	188	S3 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:23
S37	51	S36 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:23
S38	16	S37 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:24
S39	16	S38 and (parameter attribute)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:24
S40	10	S39 and ((geographic location) near5 ("end user" user))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:24
S41	0	S40 and (subcript$3 near3 service)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:26
S42	0	S40 and subcript$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:26
S43	3	S40 and subscript$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/08/23 18:26
S44	35486	"725"/.ccls.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S45	23341	S44 and (server or database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S46	15903	S45 and (video and stream$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S47	30	S46 and (subscript$3 adj database)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S48	19	S47 and author$5	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S49	4	S48 and metadata	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S50	3	S49 and (content and "end user")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S51	223	S46 and (black$1out "black out")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S52	68	S51 and (query query$3)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S53	17	S52 and (token cookie)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S54	17	S53 and (parameter attribute)	US-PGPUB; USPAT; EPO;	OR	ON	2013/09/29 22:59

			JPO			
S55	11	S54 and ((geographic location) near5 ("end user" user))	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S56	3	S55 and subscript$3	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 22:59
S57	4	S50 or S56	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 23:00
S58	2	S57 and ((query query$3) near8 "subscription database")	US-PGPUB; USPAT; EPO; JPO	OR	ON	2013/09/29 23:01

9/ 30/ 2013 4:05:04 PM
C:\ Users\ kbui1\ Documents\ EAST\ Workspaces\ 12604678.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12604678	MALONEY, IAN
	Examiner	Art Unit
	KIEU OANH T BUI	2425

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
725	87, 91, 93	08/23/2012	KB
Updated search above		09/29/2013	KB

SEARCH NOTES		
Search Notes	Date	Examiner
EAST: Class 725 combined with text searched	08/23/2012	KB
Updated search above	09/29/2013	KB

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
725	87, 91, 93 combined with text searched	09/29/2013	KB

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	**Art Unit**
	KIEU OANH T BUI	2425

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

NONE (Assistant Examiner) (Date)		**Total Claims Allowed:** 20	
/KIEU OANH T BUI/ Primary Examiner.Art Unit 2425 (Primary Examiner)	09/29/2013 (Date)	O.G. Print Claim(s) 16	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No. 20130929

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12604678	MALONEY, IAN
	Examiner	**Art Unit**
	KIEU OANH T BUI	2425

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
725	87	H	0	4	N	7 / 173 (2011.01.01)					
CROSS REFERENCE(S)											
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)										
725	91	93									

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/KIEU OANH T BUI/ Primary Examiner.Art Unit 2425 (Primary Examiner)	09/29/2013 (Date)	O.G. Print Claim(s) 16	O.G. Print Figure 1

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	12604678	MALONEY, IAN
	Examiner	**Art Unit**
	KIEU OANH T BUI	2425

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

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17												
	2		18												
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	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/KIEU OANH T BUI/ Primary Examiner.Art Unit 2425 (Primary Examiner)	09/29/2013 (Date)	O.G. Print Claim(s) 16	O.G. Print Figure 1

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	1	of	6	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20010029610	Oct 11, 2001	Corvin, Johnny B., et al.	
		20010047298	Nov 29, 2001	Moore, S. S., et al.	
		20010054181	Dec 20, 2001	Corvin, Johnny B.	
		20020073424	Jun 13, 2002	Ward, III, Thomas E., et al.	
		20020124255	Sep 5, 2002	Reichardt, M. S., et al.	
		20030005445	Jan 2, 2003	Schein, Steven M., et al.	
		20030056219	Mar 20, 2003	Reichardt, M. S., et al.	
		20030110495	Jun 12, 2003	Bennington, Gerald E., et al.	
		20030110499	Jun 12, 2003	Knudson, Edward B., et al.	
		20030115599	Jun 19, 2003	Bennington, Gerald E., et al.	
		20030115602	Jun 19, 2003	Knee, Robert A., et al.	
		20030163813	Aug 28, 2003	Klosterman, Brian L., et al.	
		20030164858	Sep 4, 2003	Klosterman, Brian L., et al.	
		20030188310	Oct 2, 2003	Klosterman, Brian L., et al.	
		20030188311	Oct 2, 2003	Yuen, Henry C., et al.	
		20030196201	Oct 16, 2003	Schein, Steven M., et al.	
		20030204847	Oct 30, 2003	Ellis, Michael D., et al.	
		20030208756	Nov 6, 2003	Macrae, Douglas et al.	
		20040010806	Jan 15, 2004	Yuen, Henry C., et al.	
		20040045025	Mar 4, 2004	Ward, III, Thomas E., et al.	
		20040107437	Jun 3, 2004	Reichardt, M. S., et al.	
		20040168189	Aug 26, 2004	Reynolds, Steven J., et al.	
		20040194138	Sep 30, 2004	Boylan, III, Peter C., et al.	
		20040261098	Dec 23, 2004	Macrae, Douglas B., et al.	
		20050010949	Jan 13, 2005	Ward, Thomas E., et al.	
		20050028201	Feb 3, 2005	Klosterman, Brian L., et al.	
		20050125823	Jun 9, 2005	McCoy, Robert H., et al.	
		20050149964	Jul 7, 2005	Thomas, William L., et al.	
		20050155056	Jul 14, 2005	Knee, Robert A., et al.	
		20050216936	Sep 29, 2005	Knudson, Edward B., et al.	
		20050251824	Nov 10, 2005	Thomas, William L., et al.	
		20060156336	Jul 13, 2006	Knudson, Edward B., et al.	
		20060212894	Sep 21, 2006	Knudson, Edward B., et al.	
		20060277574	Dec 7, 2006	Schein, Steven M., et al.	

EXAMINER /Kieu Oanh Bui/ (09/30/2013) **DATE CONSIDERED**

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Application Number	12/604,678
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First Named Inventor	Ian Maloney
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Examiner Name	Kieu Oanh T. Bui

Sheet	2	of	6	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		20060288366	Dec 21, 2006	Boylan, III, Peter C., et al.	
		20070016926	Jan 18, 2007	Ward, III, Thomas E., et al.	
		20070033613	Feb 8, 2007	Ward, III, Thomas E., et al.	
		20070107010	May 10, 2007	Jolna, Stacy et al.	
		20070179950	Aug 2, 2007	Kester, Harold et al.	
		20080263056	Oct 23, 2008	Murray, Thomas J., et al.	
		4977455	Dec 11, 1990	Young, Patrick	
		5151789	Sep 29, 1992	Young, Patrick	
		5253066	Oct 12, 1993	Vogel, Peter S.	
		5307173	Apr 26, 1994	Yuen, Henry C., et al.	
		5335079	Aug 2, 1994	Yuen, Henry C., et al.	
		5353121	Oct 4, 1994	Young, Patrick et al.	
		5382983	Jan 17, 1995	Kwoh, Daniel S., et al.	
		5457776	Oct 10, 1995	Wong, Harvey H., et al.	
		5479266	Dec 26, 1995	Young, Patrick et al.	
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		5499103	Mar 12, 1996	Mankovitz, Roy J.	
		5512963	Apr 30, 1996	Mankovitz, Roy J.	
		5515173	May 7, 1996	Mankovitz, Roy J., et al.	
		5532732	Jul 2, 1996	Yuen, Henry C., et al.	
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		5541738	Jul 30, 1996	Mankovitz, Roy J.	
		5550576	Aug 27, 1996	Klosterman, Brian L.	
		5553123	Sep 3, 1996	Chan, Philip W., et al.	
		5559550	Sep 24, 1996	Mankovitz, Roy J.	
		5600711	Feb 4, 1997	Yuen, Henry C.	
		5619274	Apr 8, 1997	Roop, John H., et al.	
		5640484	Jun 17, 1997	Mankovitz, Roy J.	
		5654886	Aug 5, 1997	Zereski, Jr, Donald P., et al.	
		5684525	Nov 4, 1997	Klosterman, Brian L.	
		5701383	Dec 23, 1997	Russo, James et al.	
		5706145	Jan 6, 1998	Hindman, Carl L., et al.	
		5727060	Mar 10, 1998	Young, Patrick	
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Sheet	3	of	6	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		5734786	Mar 31, 1998	Mankovitz, Roy J.	
		5742762	Apr 21, 1998	Scholl, Thomas H., et al.	
		5745909	Apr 28, 1998	Perlman, Stephen G., et al.	
		5748188	May 5, 1998	Hu, Yih-Shiuan et al.	
		5790198	Aug 4, 1998	Roop, John H., et al.	
		5801787	Sep 1, 1998	Schein, Steven M., et al.	
		5805815	Sep 8, 1998	Hill, William C.	
		5808608	Sep 15, 1998	Young, Patrick et al.	
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		5812205	Sep 22, 1998	Milnes, Kenneth A., et al.	
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		5870150	Feb 9, 1999	Yuen, Henry C.	
		5883661	Mar 16, 1999	Hoarty, W. L.	
		5886746	Mar 23, 1999	Yuen, Henry C., et al.	
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		5915026	Jun 22, 1999	Mankovitz, Roy J.	
		5918014	Jun 29, 1999	Robinson, Gary B.	
		5923362	Jul 13, 1999	Klosterman, Brian L.	
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		5949954	Sep 7, 1999	Young, Patrick et al.	
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		6028599	Feb 22, 2000	Yuen, Henry C., et al.	
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		6052145	Apr 18, 2000	Macrae, Douglas B., et al.	

EXAMINER /Kieu Oanh Bui/ (09/30/2013) **DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)
` EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

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Sheet	4	of	6	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		6072983	Jun 6, 2000	Klosterman, Brian L.	
		6075551	Jun 13, 2000	Berezowski, David M., et al.	
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EXAMINER /Kieu Oanh Bui/ (09/30/2013) **DATE CONSIDERED**

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known	
Application Number	12/604,678
Filing Date	Oct 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	5	of	6	Attorney Docket No: 0136-US-U2

US PATENT DOCUMENTS

Examiner Initial *	Cite No	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear
		6549719	Apr 15, 2003	Mankovitz, Roy J.	
		6564379	May 13, 2003	Knudson, Edward B., et al.	
		6567606	May 20, 2003	Milnes, Kenneth A., et al.	
		6588013	Jul 1, 2003	Lumley, Daniel I., et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or RelevantFigures Appear	T[2]
		FR-2893731	May 25, 2007	Bertrand, Issard		

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No [1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		European Extended Search Report, dated May 3, 2013, European Appl. No. 09826529.1, Dkt. No. 0136-EP-02, 8 pgs.	

EXAMINER /Kieu Oanh Bui/ (09/30/2013) **DATE CONSIDERED**

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PTO/SB/08a (01-08)
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Art Unit	2425
Examiner Name	Kieu Oanh T. Bui

Sheet	6	of	6	Attorney Docket No: 0136-US-U2

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	**Cite No [1]**	**Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.**	**T[2]**
		European Extended Search Report, mailed May 3, 2013, European Appl. No. 09826527.5, Dkt No. 0136-EP-01, 7 pgs.	

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PART B - FEE(S) TRANSMITTAL

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

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

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83579 7590 10/17/2013
LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

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

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N/A: via EFS-Web	(Depositor's name)
	(Signature)
	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	10/23/2009	Ian Maloney	0136-US-U2	9034

TITLE OF INVENTION: USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	01/17/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
BUI, KIEU OANH T	2425	725-087000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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

(A) NAME OF ASSIGNEE: LEVEL 3 COMMUNICATIONS, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): 1025 Eldorado Blvd. Broomfield, CO 80021

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

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5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature /JCS/ Date October 17, 2013

Typed or printed name Jonathan C. Siekmann Registration No. 58,259

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Applicant : Ian Maloney	
Appln. No. : 12/604,678	Confirmation No: 9034
Filed : October 23, 2009	Group Art Unit: 2425
Title : USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK	Examiner: Kieu Oahn T. BUI
	Docket No. 0136-US-U2

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Via EFS-Web

Dear Sir:

Applicant acknowledges the Notice of Allowability in the present application by the Examiner with appreciation. Applicant notes that the reasons for allowance set forth in the Notice of Allowability are not the only reasons that the claims are allowable. As the Examiner's reasons for allowance are not exhaustive, such reasons for allowance do not establish an estoppel against Applicant with regard to the scope of any claim in the present application or any related applications, including without limitation any continuation applications claiming priority to the present application.

If there are any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: October 17, 2013

/JCS/

Jonathan C. Siekmann, Reg. No. 58,259
Level 3 Communications, LLC
1025 Eldorado Blvd.
Broomfield, Colorado 80021
Tel: 720-888-2140
Fax: 720-888-5619

Electronic Patent Application Fee Transmittal	
Application Number:	12604678
Filing Date:	23-Oct-2009
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Filer:	David Dewey Wier/Jonathan Siekmann
Attorney Docket Number:	0136-US-U2
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	1780	1780
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**2080**

Electronic Acknowledgement Receipt	
EFS ID:	17157213
Application Number:	12604678
International Application Number:	
Confirmation Number:	9034
Title of Invention:	USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK
First Named Inventor/Applicant Name:	Ian Maloney
Customer Number:	83579
Filer:	David Dewey Wier/Jonathan Siekmann
Filer Authorized By:	David Dewey Wier
Attorney Docket Number:	0136-US-U2
Receipt Date:	17-OCT-2013
Filing Date:	23-OCT-2009
Time Stamp:	16:23:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2080
RAM confirmation Number	3523
Deposit Account	505063
Authorized User	SIEKMANN, JONATHAN
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1	Issue Fee Payment (PTO-85B)	0136_US_U2_IssueFeeTransmittal.pdf	122772 39b8d6e32f2eff1bc7346d0d5b80c7f8ed6a2e90	no	2
Warnings:					
Information:					
2	Post Allowance Communication - Incoming	0136_US_U2_CSRA.pdf	17784 666e0eae1653a35473abd2077f7e629ad25b006d	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32308 de6551f9f2acd962299971934ea5d558aba6ab8e	no	2
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 20070233846	10/2007	Farber	
		US- 20070233705	10/2007	Farber	
		US- 20070233884	10/2007	Farber	
		US- 20070233706	10/2007	Farber	
		US- 20080215755	09/2008	Farber	
		US- 20080140800	06/2008	Farber	
		US- 20080104268	05/2008	Farber	
		US- 20080215735	09/2008	Farber	
		US- 20080215750	09/2008	Farber	
		US- 20040139097	07/2004	Farber	
		US- 20050114296	05/2005	Farber	
		US- 20080071855	03/2008	Farber	
		US- 20060015574	01/2006	Seed	
		US- 20080071859	03/2008	Seed	
		US- 20080065724	03/2008	Seed	
		US-			
		US-			
		US-			
		US-			

Change(s) applied to document, /J.M.R./ 10/18/2013

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 4

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First Named Inventor	Ian Maloney
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Examiner Name	Andrew Y. Koenig
Attorney Docket Number	0136-US-U2

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		US- 6,763,377	07/2004	Belknap	
		US- 6,963,910	11/2005	Belknap	
		US- 7,117,259	10/2006	Rohwer	
		US- 6,263,313	07/2001	Milsted	
		US- 7,103,564	09/2006	Ehnebuske	
		US- 7,188,085	03/2007	Pelletier	
		US- 6,049,831	04/2000	Gardell	
		US- 6,859,791	02/2005	Spagna	
		US- 6,185,598	02/2001	Farber	
		US- 6,654,807	11/2003	Farber	
		US- 7,054,935	05/2006	Farber	
		US- 5,978,791	11/1999	Farber	
		US- 6,415,280	07/2002	Farber	
		US- 6,928,442	08/2005	Farber	
		US- 20100027974	02/2010	Ansari	
		US- 20090282159	11/2009	Wang	
		US- 20090259611	10/2009	Wang	
		US- 20050198334	09/2005	Farber	
		US- 20060218265	09/2006	Farber	

Change(s) applied to document, /J.M.R./ 10/18/2013

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 4

Complete if Known	
Application Number	12/604,678
Filing Date	October 23, 2009
First Named Inventor	Ian Maloney
Art Unit	~~2423~~ 2425
Examiner Name	~~Andrew Y. Koenig~~ K.BUI
Attorney Docket Number	0136-US-U2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6,226,618	05/2001	Downs	
		US- 6,398,245	06/2002	Gruse	
		US- 6,418,421	07/2002	Hurtado	
		US- 6,587,837	07/2003	Spagna	
		US- 7,110,984	09/2006	Spagna	
		US- 7,206,748	04/2007	Gruse	
		US- 6,490,580	12/2002	Dey	
		US- 7,039,633	05/2006	Dey	
		US- 6,493,707	12/2002	Dey	
		US- 6,965,890	11/2005	Dey	
		US- 6,405,188	06/2002	Schwartz	
		US- 7,162,468	01/2007	Schwartz	
		US- 6,311,182	10/2001	Colbath	
		US- 5,996,025	11/1999	Day	
		US- 6,189,039	02/2001	Harvey	
		US- 6,195,680	02/2001	Goldszmidt	
		US- 6,272,566	08/2001	Craft	
		US- 6,460,082	10/2002	Lumelsky	
		US- 6,463,508	10/2002	Wolf	

Change(s) applied to document, /J.M.R./ 10/18/2013

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Kieu Oanh Bui/ (08/23/2012)	Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KB/ (08/23/2012)

USER AUTHENTICATION IN A CONTENT DELIVERY NETWORK

RELATED APPLICATIONS

[001] This application claims the benefit of commonly owned U.S. Provisional Application No. 61/113941 (Attorney Docket No. 0136-US-P1), filed November 12, 2008, entitled "Content Delivery Management and Administration", which is incorporated by reference in its entirety for all purposes. This application is related to concurrently-filed and commonly owned U.S. Non-Provisional Application No. 12/604,518 (Attorney Docket No. 0136-US-U1), filed October 23, 2009, entitled "Dynamic Processing of Streamed Content," which is incorporated by reference in its entirety for all purposes.

Change(s) applied to document, /J.M.R./ 10/18/2013

TECHNICAL FIELD

[002] Embodiments presently disclosed generally relate to network communications. More specifically, embodiments herein relate to distributing and serving various media and content resources across a content delivery network.

BACKGROUND OF THE INVENTION

[003] The Internet has enabled a proliferation of information to become available to end users across a myriad of different heterogeneous networks. Users of the Internet enjoy the ability to quickly access various types of multimedia (e.g., audio, video, games, etc.) for viewing and playback on their devices (e.g., PCs, laptops, mobile phones, etc.). Various streaming protocols and procedures are used to deliver multimedia in a real-time, or near-real time fashion, such that a user may interact with the media (e.g., watch a video) while the media is simultaneously being distributed over one or more networks.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12604678
	Filing Date	2009-10-23
	First Named Inventor	Ian Maoloney
	Art Unit	2423
	Examiner Name	Andrew Y. Koenig
	Attorney Docket Number	0136-US-U2

	6	20050235307	A1	2005-10-20	Relan, Sandeep et al.	
	7	20060277576	A1	2006-12-07	Acharya, Swarup et al.	
	8	20080263602	A1	2008-10-23	Murray, Thomas J. et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
Change(s) applied to document. /D.H.P./ 10/23/2013	1	1020040084932	A KR		2004-10-06	Fujitsu Limited		☐
	2	1020040084932	A KR		2004-10-06	Fujitsu Limited	Abstract	☒

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report from WIPO, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing ISR 15 June 2010, 3 pages.	☐
	2	Written Opinion, International Application No. PCT/US2009/061880, International Filing Date 23 October 2009. Date of mailing Written Opinion 15 June 2010, 5 pages.	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KB/ (08/23/2012)

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12604678
Filing Date	2009-10-23
First Named Inventor	Ian Maoloney
Art Unit	~~2423~~ 2425
Examiner Name	~~Andrew T. Koenig~~ K.BUI
Attorney Docket Number	0136-US-U2

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050021202	A1	2005-01-27	Russell, Richard et al.	
	2	20060015892	A1	2006-01-19	Hirt, Walter et al.	
	3	20080104624	A1	2008-05-01	Narasimhan, Nitya et al.	
	4	20030063752	A1	2003-04-03	Medvinsky, Alexander et al.	Change(s) applied to document, /C.C./ 10/25/2013
	5	~~20040205810~~ 20040205811	A1	2004-10-14	Grandy, Leslie L. et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /KB/ (08/23/2012)

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/604,678	11/26/2013	8595778	0136-US-U2	9034

83579 7590 11/06/2013

LEVEL 3 COMMUNICATIONS, LLC
Attn: Patent Docketing
1025 Eldorado Blvd.
Broomfield, CO 80021

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 949 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Ian Maloney, Dublin, IRELAND;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 **Director of the U.S. Patent and Trademark Office** **P.O. Box 1450** **Alexandria, VA 22313-1450**	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Central District of California, Los Angeles Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:24-cv-3951	5/10/2024	for the Central District of California, Los Angeles Division

PLAINTIFF	DEFENDANT
Sandpiper CDN, LLC	Google LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,478,903	7/2/2013	Sandpiper CDN, LLC
2	8,595,778	11/26/2013	Sandpiper CDN, LLC
3	8,645,517	2/4/2014	Sandpiper CDN, LLC
4	8,719,886	5/6/2014	Sandpiper CDN, LLC
5	9,021,112	4/28/2015	Sandpiper CDN, LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☑ Other Pleading		
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,924,573	2/16/2021	Sandpiper CDN, LLC
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**