U.S. PTO
12/283355
09/11/2008

17119 U.S. PTO
091108

PTO/SB/05 (06-07)
Approved for use through 06/30/2007. OMB 0651-0032
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UTILITY PATENT APPLICATION TRANSMITTAL

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

Attorney Docket No.	10004-2000113
First Inventor	Jonathan S. STEUER
Title	MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD
Express Mail Label No.	EH282938724US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☑ **Fee Transmittal Form** (e.g., PTO/SB/17)
   (Submit an original and a duplicate for fee processing)
2. ☑ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification** [*Total Pages* 25]
   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* 7]
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 3.pages
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

ADDRESS TO:

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

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
    5 pages
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.: 11/139,330

Prior application information: *Examiner* P. J. Graham *Art Unit:* 2623

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 51417 ***OR*** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature		Date	September 10, 2008
Name (Print/Type)	Michael Mauriel	Registration No. (Attorney/Agent)	44,226

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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EH282938724US

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IPR2024-01053
U.S. Patent No. 8,296,791

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FEE TRANSMITTAL
For FY 2008

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 515.00

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Jonathan S. STEUER
Examiner Name	Not Yet Assigned
Art Unit	Not Yet Assigned
Attorney Docket No.	10004-2000113

METHOD OF PAYMENT (check all that apply)

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

☑ Deposit Account Deposit Account Number: 50-4242 Deposit Account Name: Mauriel Kapouytian & Treffert LLP

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

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☑ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☑ Credit any overpayments

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	FILING FEES Small Entity Fee ($)	SEARCH FEES Fee ($)	SEARCH FEES Small Entity Fee ($)	EXAMINATION FEES Fee ($)	EXAMINATION FEES Small Entity Fee ($)	Fees Paid ($)
Utility	310	155	510	255	210	105	515.00
Design	210	105	100	50	130	65	
Plant	210	105	310	155	160	80	
Reissue	310	155	510	255	620	310	
Provisional	210	105	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	210	105
Multiple dependent claims	370	185

Total Claims		Extra Claims		Fee ($)		Fee Paid ($)
4	- 20 or HP =	0	x	25	=	0.00

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

Indep. Claims		Extra Claims		Fee ($)		Fee Paid ($)
1	- 3 or HP =	0	x	105	=	0.00

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims Fee ($)	Fee Paid ($)
185	0.00

3. APPLICATION SIZE FEE

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4. OTHER FEE(S)

Fees Paid ($)

Non-English Specification, $130 fee (no small entity discount) _____

Other (e.g., late filing surcharge): _____ _____

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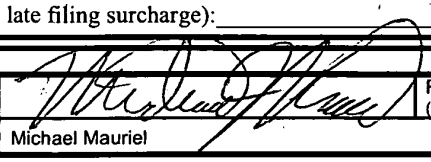
Signature		Registration No. (Attorney/Agent) 44,226	Telephone 212-529-5131
Name (Print/Type)	Michael Mauriel		Date September 11, 2008

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Examiner Name	Not Yet Assigned
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Non-English Specification, $130 fee (no small entity discount)	
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SUBMITTED BY

Signature	[signature]	Registration No. (Attorney/Agent) 44,226	Telephone 212-529-5131
Name (Print/Type)	Michael Mauriel		Date September 11, 2008

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Application Data Sheet

Application Information

Application Type::	Regular
Subject Matter::	Divisional
Suggested Group Art Unit::	Not Yet Assigned
CD-ROM or CD-R?::	None
Sequence submission?::	None
Computer Readable Form (CRF)?::	No
Title::	MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD
Attorney Docket Number::	10004-2000113
Request for Early Publication?::	No
Request for Non-Publication?::	No
Drawing Sheets::	7
Small Entity?::	Yes
Petition included?::	No
Secrecy Order in Parent Appl.?::	No

Applicant Information

Applicant Authority Type::	Inventor
Primary Citizenship Country::	United States
Status::	Full Capacity
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Family Name::	STEUER
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State or Province of mailing address::	NY

Postal or Zip Code of mailing address::	10003

Applicant Authority Type::	Inventor
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State or Province of Residence::	CA
Country of Residence::	US
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City of mailing address::	Fremont
State or Province of mailing address::	CA
Postal or Zip Code of mailing address::	94539

Correspondence Information

Customer No.::	51417

Representative Information

Customer No.::	51417

Domestic Priority Information

Application No.:	Relationship:	Priority Application No.:	Priority Filing Date:
This Application	Claims Benefit Under 35 U.S.C. 119(e) to	60/574,836	05/27/2004
This Application	Divisional of	11/139,330	05/26/2005

Foreign Priority Information

Assignee Information

Assignee name::	Anonymous Media, LLC
Street of mailing address::	72 E. 3rd St., Suite 1B
City of mailing address::	New York
State or Province of mailing address::	NY
Postal or Zip Code of mailing address::	10003

Media Usage Monitoring and Measurement System and Method

INVENTORS

Jonathan S. Steuer and Christopher W. Otto

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a divisional of U.S. Application No. 11/139,330, filed May 26, 2005, which also claims the benefit of U.S. Provisional Application No. 60/574,836, filed May 27, 2004, both hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] Traditional media measurement systems have focused on directly monitoring channels being utilized by audience members. However, as media consumption patterns have become more complex, channel-centric media measurement is inadequate for many purposes. It may be desirable to track usage of particular media content independent of channel. Furthermore, although "channel" identification in a traditional media measurement system may sometimes be limited to radio or television broadcast station, it is increasingly desirable to track usage of media across several types of media delivery vehicles including radio, television, CD, DVD, computer download, portable media players (e.g. MP3 players, iPod), and other vehicles. Furthermore, with respect to tracking consumption of advertisements, it may be inadequate to simply track channel tuning, because, for example, an audience member may mute a broadcast during commercial periods. Thus simply identifying a broadcast channel does not adequately track whether the audience member listened to a particular advertisement.

[0003] Some media measurement systems have used codes to "tag" and track particular content. However, such systems are limited in that they can only track content that has been properly encoded.

[0004] With the development of more robust content recognition technologies, some content recognition systems have recently been deployed which do not rely

on codes. For example, Philips, Shazam Entertainment, and others have marketed systems for identifying songs played into a mobile phone. Although such systems can be efficiently deployed in the context of song recognition, deploying such systems in the context of media measurement systems poses particular challenges. Continuous searching against a large database of media content can be computationally intensive. Furthermore, such systems, while increasingly robust, still return some erroneous results, particularly in high-noise environments.

[0005] At the same time, the media measurement context provides opportunities to utilize data exogenous to a particular audio or video data sample. Such opportunities have thus far been insufficiently exploited for the purpose of efficiently applying existing content recognition technologies in the media measurement context. Thus, an improved media measurement system and method is needed.

SUMMARY OF THE INVENTION

[0006] Some embodiments of the present invention provide a media measurement system and method that enhances recognition (e.g. in terms of accuracy or efficiency) of the content of a media sample by analyzing information exogenous to the sample. Some embodiments of the present invention provide a media measurement system and method that utilizes audience data to enhance content identifications. Some embodiments analyze media player log data to enhance content identification. Other embodiments of the present invention analyze sample sequence data to enhance content identifications. Other embodiments analyze sequence data to enhance content identification and/or to establish channel identification. Yet other embodiments provide a system and method in which sample construction and selection parameters are adjusted based upon identification results. Yet other embodiments provide a method in which play-altering activity of an audience member is deduced from content offset values of identifications corresponding to captured samples. Yet other embodiments provide a monitoring and measurement system in which a media monitoring device is adapted to receive a wireless or non-wireless audio signal from a media player, the audio signal also being received wirelessly by headphones of a user of the monitoring device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The novel features of the invention are set forth in the appended claims. However, for purpose of explanation, several aspects of particular embodiments of the invention are described by reference to the following figures.

[0008] **Figure 1** illustrates an exemplary media usage monitoring and measurement system in accordance with aspects of an embodiment of the present invention.

[0009] **Figure 2** illustrates a media measurement method in accordance with aspects of an embodiment of the present invention.

[0010] **Figure 3** illustrates a process for using and generating information such as that illustrated in **Figure 4** and **Figure 5** and **Figure 3** illustrates an embodiment consistent with aspects of the present invention.

[0011] **Figure 4** illustrates a raw play stream generated by a process such as step 207 of **Figure 2**; a clean play stream and clean play list generated by a scrubbing step such as step 209 of **Figure 2** or steps 301, 302, or 305 of **Figure 3**; and channel data associated with two channels.

[0012] **Figure 5** illustrates a clean play stream, clean play list, channel data, and a clean play list showing deduced play-altering actions. The illustrated data may be generated by systems and methods in accordance with an embodiment of the present invention such as, for example, system 100 of **Figure 1** method 200 of **Figure 2**, and method 300 of **Figure 3**.

[0013] **Figure 6** illustrates timeline structure for data samples generated by system and methods such as module 121 of **Figure 1** and steps 201 and 206 of **Figure 2**.

[0014] **Figure 7** shows an example of a computer system that may be used to execute instruction code contained in a computer program product, the computer

program product being in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

[0015] The following description is presented to enable any person skilled in the art to make and use the invention, and is provided in the context of particular applications and their requirements. Various modifications to the exemplary embodiments will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles and features disclosed herein.

[0016] **Figure 1** illustrates an exemplary media usage monitoring and measurement system 1000. System 1000 includes media measurement system 100 and monitoring devices 101 in accordance with aspects of an embodiment of the present invention.

[0017] As illustrated, monitoring device 101a includes a microphone 105, a media player port 102, a headphone port 103, and a data upload port 104. A monitored audience member wears monitor 101a during a monitoring period. When the audience member is consuming media from media player 170a without the use of headphones 160a (i.e. if media player 170a has a speaker), monitor 101 captures audio energy acoustically through microphone 105. However, when the audience member desires to use headphones 160a to receive media content from media player 170a (e.g. an MP3 player, iPod, CD player, DVD player, television, radio, computer, or other media player) he or she can plug headphones 160a into headphone port 103 and plug media player 170a into media player port 102. In that case, monitor 101a captures audio energy through media player port 102. Microphone 105 includes a microphone and associated microphone port. However, in alternatives, a monitor may simply have a microphone port into which a microphone may be plugged or linked via wireless connection. Thus the term "microphone port" will herein refer to any electronics capable of receiving

energy captured through a microphone, whether or not a microphone is built into the monitoring device itself.

[0018] As another example, headphones 160b are adapted to receive a content signal 171 via wireless transmission 171 from media player 170b. Monitor 101b is adapted to receive the same content signal 171 from media player 170b. In some embodiments, a syncing process allows monitor 101b to adapt along with headphones 160b and media player 170b to changes in signal 171 so that monitor 101b continues to receive the same signal as headphones 160b. In some embodiments, syncing may be accomplished via a wireless and/or automatic process, such as providing a monitor that responsively changes tuning based on tuning changes between the media player and the headphones.

[0019] Audio data captured by monitors 101, along with associated monitor data (e.g. device ID) (collectively, "audio data /monitor data" 144) may be uploaded to system 100 through upload port 104, directly, via memory device transfer (e.g. flash memory card, floppy disk, CD, etc.) or through a network such as network 150. The audio data uploaded from a monitor 101 may be raw audio data, or may be audio data that has undergone one of a variety of levels of processing prior to upload. For example, the uploaded audio data may include parameters useable to calculate audio signatures (sometimes referred to as audio fingerprints) and landmarks or other values useful in the content recognition process. Alternatively, the audio data may comprise pre-calculated signatures, landmarks, or other data useful for content recognition. On the other hand, in some embodiments, the uploaded audio data may simply represent a raw signal corresponding to audio energy received at monitor 101.

[0020] System 100 is adapted to receive some audience data 143 externally. For example, audience data collected by systems and associated monitors other than those of system 1000 may be utilized by system 100; data based on externally collected and/or externally analyzed demographic, psychographic, or other audience related data might also be received as part of external audience data portion 143. Other audience data may be generated internally by audience data processing module 123 alone or in combination with measurement analysis module 129 and/or other system components.

[0021] Also, system 100 is adapted to receive media player log data 146. Media player log data 146 may be generated by a media player such as media player 170a or 170b and sent to system 100 through direct connection, memory device transfer or via network 150. Also, a third party might collect such log data which then may be made available through direct connection, memory device transfer, or via network 150. Media player log data 146 includes data logging content played on the media player from which the log data was generated. Although log data 146 does not necessarily reflect what content was actually heard, to the extent the media player generating the log data is used primarily by the audience member associated with the corresponding monitor 101, it can provide a useful basis for initial testing of captured content as will be described further below.

[0022] System 100 is also adapted to receive known content 141 and content meta data 142. Content 141 may include media files associated with a known piece of media content (e.g. a song, movie, commercial, television show, video game, etc.). However, it will be understood by those skilled in the art that "content" in the sense of the known content 141 received by system 100 may, in some embodiments, simply refer to data about signals representing the content and does not necessarily refer to a stored version of the media content itself; e.g. "content" may be stored signatures and landmarks derivable from a song's audio, but not necessarily an audio file useable to play the song itself. On the other hand, in other embodiments, a system such as system 100 may be adapted to receive a useable audio file and then derive data from that file such as signatures, fingerprints, landmarks, etc. that may be readily searched during the content recognition process. Content meta data 142 includes various data relating to content 141. For example, a portion of content 141 might include a particular song as recorded by a particular artist. Corresponding content meta data 142 for that song might include the various albums or other collections in which that song appears; various radio broadcasts (including station and broadcast times) playing the song; movies, advertisements or video games including the song; other songs that have sampled the song; and various other related information. In the context of a television program, meta data also might include, for example, segment identifications and corresponding time lengths. By distinguishing content data

from content meta data in this manner, it is possible to store content data for a single content ID only once, and then add various pieces of meta data as appropriate. For example, a TV program, or program segment, might initially have meta data relating to particular broadcasts. However, at a later date, meta data might be added relating to, for example, a DVD version of the program, without needing to store the program content itself more than once.

[0023] Turning to the details of system 100, audio data and monitor data (e.g. device ID) is received at sample control processing module 121. Module 121 provides monitor data, portions of which might be audience data, to processing module 123. Module 121 also divides the audio data into samples and determines which samples should be submitted for further content recognition testing. In alternative embodiments, the audio data may already have been divided into samples prior to receipt by system 100 (e.g. at monitor 101). In such alternatives, a module such as module 121 might either use the provided divisions or combine the data and then re-divide it into samples as determined by the system. Module 121 may be used either to submit a sample to initial test and filtered search module 122 or to content recognition system 124.

[0024] Initial test and filtered search module 122 conducts one or more initial identification attempts. Several different types of initial identification attempts might be performed. Module 122 may test a captured sample against content associated with the most recently identified content. As another possible initial test, module 122 may test the sample against content identified from a media player log file. Another initial identification test may be carried out in a variety of ways. For example, filtered search module 122 might use audience data from audience data processing module 123 to form parameters and then pass those parameters to content recognition system 124 which then uses the parameters to conduct a filtered search of its content. Alternatively, module 122 might be adapted to utilize an instance of content recognition system 124 that includes content pre-selected based upon relevant audience data. Some examples of relevant audience data that may be used either to form search parameters or to construct targeted content include:

- age, gender, and other demographic information about the audience member (using the corresponding monitoring device) along with media consumption patterns of other persons sharing similar demographic characteristics

- media consumption patterns of the audience member based on questionnaire input or based on past content identifications associated with that audience member

- media consumption patterns of other audience members who have consumed other media content that has also previously been consumed by the audience member using the corresponding monitoring device

- location of the audience member (alone and/or relative to other audience members)

Of course, the above are just some examples of audience data that may be utilized by system 100.

[0025] After completing the initial identification attempt, filtered search module 122 passes the identification result to ID result module 125. If an identification has been made, the result is passed to play stream generator 126 and to sample control processing module 121. If no identification has been made, then content recognition system 124 performs a search using a larger portion of its content to identify the data sample. The result is passed to ID result module 125 which in turn passes the result to play stream generator 126 and to sample control module 121. Content recognition system 124 is adapted to implement one or more known content recognition methods that identify content by extracting parameters from a media signal and applying an algorithm to those parameters to search for a content match. Those skilled in the art will recognize that many such methods and algorithms exist. One such example is described in U.S. patent application 09/839,476 entitled "System and Methods for Recognizing Sound and Music Signals in High Noise and Distortion" by Wang et al. and published June 27, 2002 with publication number US2002/0083060. Aspects of other such examples are described in the following published PCT applications by Konin-

Klijke Philips Electronics N.V.: "Fingerprinting Multimedia Contents" (WO2004/044820, published May 27, 2004), "Fingerprint Extraction" (WO2004/030341 published April 8, 2004), and "Improvements in and Relating to Fingerprint Searching" (WO2004/040475 published May 13, 2004). Such distinct methods and algorithms may have varying degrees of efficiency, accuracy, and applicability to certain types of content (or different settings of a particular algorithm might have different efficiency depending on content type). Thus, in some embodiments, a system such as system 100 may intelligently select among multiple such algorithms (or multiple settings of a single algorithm) based on expected content characteristics. For example, algorithm A might be faster and more accurate at identifying silence than algorithm B, and thus a system such as system 100 of **Figure 1** having a corresponding subsystem for content recognition (such as system 124) might achieve enhanced performance by submitting a sample for processing by algorithm A rather than algorithm B if recent identification results indicate silence. Other differences corresponding to content types (e.g. speaking audio versus music audio) might also be exploited based on prior content identification results to select a most efficient recognition algorithm from a plurality of algorithms. In such an alternative, if the algorithms required different audio data parameters, a monitor might send two sets of parameters for each sample corresponding to each algorithm and then the system would select between the two sets as needed. Alternatively, the two sets of parameters might be calculated by the system based on raw audio data received from a monitoring device.

[0026] Play stream generator 126 generates a raw play stream relating a sequence of samples to content identification results (for an example of a portion of a raw play stream, see **Figure 3** and accompanying text). The raw play stream is then processed by play stream scrubber 127 which analyzes the sequence of sample identification results utilizing sequence data processing module 128. Based on analysis of sequence data and, where appropriate, analysis of audience data via interaction with audience data module 123, play stream scrubber 127 generates a clean play stream and clean play list (see **Figure 3** and accompanying text) which can then be used by measurement analysis module 129. Results of the media measurement analysis can be obtained via report generator 130.

[0027] In alternative embodiments, many of the system components and corresponding functions performed within a system such as system 100 might instead be implemented on the monitoring devices such as monitoring device 101. For example, many of the functions performed by sample control processing module 121 might instead be performed at a monitoring device. To cite but one example in more detail, if a monitoring device maintains an ongoing reciprocal connection to obtain sample identification results of a media measurement system, then the monitoring device can select which samples to send to the system for recognition analysis. The monitoring device might then also adjust parameters such as sample resolution, the length of a sample time window, and the recognition algorithm selected. This is just one example of how the illustrated embodiment might be modified to shift system components from a central system to a monitoring device. Many other such variations will be apparent to those skilled in the art.

[0028] Also, it will be understood that although **Figure 1** illustrates a particular exemplary division and relationship between "modules," the division illustrated may be readily modified without departing from the spirit and scope of the present invention. For example, in various implementations, the illustrated modules may be combined into larger modules or the functions performed may be distributed across several modules. The term "module" and the associated illustrated division of system components is chosen for purposes of ease of description only and does not limit how particular systems consistent with the present invention might be constructed.

[0029] **Figure 2** illustrates a media measurement method 200 in accordance with aspects of an embodiment of the present invention. One or more elements of method 200 may be carried out, for example, by system 100 of **Figure 1** or other similar systems. At step 201, method 200 receives audio data from a monitoring device. Step 201 caches a series of samples and determines the sample resolution with which samples are submitted for content identification. In particular, as described further below (see **Figure 4** and accompanying text), sample resolution refers to how many samples in a given sequence of samples are processed for

content identification. Step 201 also determines length, or "time window" of each sample.

[0030] At step 210, characteristics of the audio data are analyzed to attempt to identify the source of transmission or storage of the media played by an individual based on audio characteristics of that signal. For example, the process attempts to recognize particular types of encoding or compression, or identifies sound associated with screen refresh on a television or computer monitor, or recognizes compression or frequency range of FM or AM radio, or CD or DVD. If the storage or transmission medium is identified, the results of step 210 can be added to a play list and / or utilized in step 211 to identify channel (see below for further description of step 211).

[0031] At step 202, identification of a sample in a series of samples is attempted via initial test methods. In particular, step 202 determines whether the audio data in the tested sample matches data associated with the content ID corresponding to the most recently identified sample. Step 202 may also or instead test the sample against content IDs obtained using data from a media player log file associated with the audience member using the corresponding media monitor. Step 203 determines whether successful identification occurred at step 202. If yes, then the identification result is provided to step 206 and 207. If no, then step 204 searches for a content match against targeted content selected based at least in part upon additional audience data. Step 205 determines whether step 204 obtained an identification. If yes, then the identification result is provided to steps 206 and 207. If no, then step 208 searches for a content match against a larger portion of the content. With respect to steps 202, 204, and 208, there are two possible results: an identification has been made or no identification has been made. No identification at steps 202 and 204 leads to the further identification attempt at step 208. Whatever the result is at step 208 (identification or no identification) that result is passed to steps 207 and 206.

[0032] At step 206, an identification result is used to adjust sampling control and selection parameters for one or more subsequent samples. Parameters that might be adjusted include resolution, backtrack selection, sample time window, or recognition algorithm selected. For example, if a sample has been identified

successfully, and the identification indicates a match with the prior sample, the sampling resolution might be decreased from 1/5 to 1/10, meaning that, in a sequence of samples, nine samples rather than four are skipped before selecting the next sample to analyze for identification. As another example, if an identification result does not match the result of the prior sample identified, then step 206 might initiate a back track analysis and select an intervening sample that has not yet been analyzed. Step 201 would then pass the sample selected from backtracking to step 202 for attempted identification. As another example, resolution might be increased when recent identification results suggest an extended period of silence or absence of known content.

[0033] As yet another example, once media content for a limited series of samples has been identified, the time window size for each sample might be decreased from, for example, 5 seconds to 3 seconds. This would mean that samples submitted for attempted identification would be shorter in length. This can create efficiencies because once the content is identified, the process needs only to detect a change in content, and this can, in some cases, be accomplished utilizing a smaller amount of audio data, thereby preserving system resources.

[0034] Adjustment of sampling parameters is described further below in the context of **Figure 5** and accompanying text.

[0035] Continuing with the description of **Figure 2**, step 207 generates a raw play stream indicating a series of samples and corresponding identification results. Step 209 scrubs the raw play stream based upon sample sequence data (described further below in the context of **Figures 3-4** and accompanying text) and based upon audience data. The resulting clean play stream may be converted to a play list listing the content captured and indicating the order in which it was captured. Step 209 attempts to identify the channel by searching known channel data to find an apparent content sequence match to the play list. If the storage or transmission medium of the captured sample has been identified at step 210, that information may be made available for step 211 and allows step 211 to use that information to filter its search of channel data (e.g., only search channel data including CD channels, or only including radio broadcast channels, etc.). If step 211 successfully identifies the channel, information such as content sequence data for

the identified channel may be used by step 212 to further scrub or rescrub the play stream, particularly with respect to any apparently incorrect content identifications that could not be corrected based upon sample sequence data as utilized in step 209.

[0036] **Figure 3** illustrates a process 300 for using and generating information such as that illustrated in **Figure 4** and **Figure 5**. Some of the functions accomplished by process 300 are similar to functions accomplished by steps 207, 209, 211, and 212 of **Figure 2**. Process 300 illustrates a more detailed example of an embodiment consistent with aspects of the present invention.

[0037] Referring to process 300, depending on available information, either a play stream is made available to step 301 or a play list is made available to step 302. Step 301 prepares a play stream for further processing necessary for channel matching by scrubbing (i.e. reviewing for missing or incorrect data) the play stream using non-channel data. Step 302 prepares a play list for further processing necessary for channel matching by scrubbing (i.e. reviewing for missing or incorrect data) the play list using non-channel data. With respect to steps 301 and 302, the non-channel data selected might be selected particularly for the purpose of better preparing the play stream or play list for a channel matching process. Step 303 receives either a raw (i.e. " not scrubbed") play stream or play list directly or receives a scrubbed play stream or play list from step 301 or 302. If necessary, step 303 converts received data to a format useful in matching to a channel (e.g. converts a play stream to a play list where a play list format is useful for channel matching, or converts a play stream or play list to a mathematical representation that is useful for channel matching).

[0038] Step 304 attempts to match the play stream or play list (or corresponding data format representing the play stream or play list) against known channel data to identify a channel (e.g., an album, samples of an album presented for marketing—e.g. on a web page—, radio broadcast, television broadcast, theater version of a movie, DVD version of a movie, etc.) associated with the elements of the play list or play stream. Step 306 determines whether a channel match was achieved. If yes, then step 305 uses channel data and non-channel data to scrub or further scrub the play stream or play list for purposes of creating a

clean play list. If the play list or play stream has already been scrubbed with non-channel data in either step 301 and 302, then the play stream or play list may not need to be further scrubbed with non-channel data at step 305. In that case, step 305 just uses channel data to further scrub the play stream or play list. However, it is possible that scrubbing the play list or play stream with non-channel data for purposes of creating data useful for channel matching will be somewhat different than doing so for purposes of creating a clean play list, thus non-channel data is referenced again in the illustration of claim 305.

[0039] If step 306 determines that a channel match was not achieved at step 304, then step 307 scrubs the play stream or play list with non-channel data to create a clean play list. Step 309 determines whether including deduced user actions on the clean play list is desired. If yes, then step 308 creates a clean play list including deduced user actions. If no, then step 310 creates the clean play list without including deduced user actions.

[0040] **Figure 4** illustrates Raw Play Stream 410 generated by a process such as step 207 of **Figure 2**; Clean Play Stream 450 and Clean Play List 490 generated by a scrubbing step such as step 209 of **Figure 2** or steps 301, 302, or 305 of **Figure 3**; Channel Data 470 and Channel Data 490. Referring to **Figure 4**, Raw Play Stream 410 itemizes a sequence of analyzed samples and relates that sequence to corresponding identification results in the content ID column. The content ID result indicates either a reference corresponding to a particular piece of content or indicates that no identification was made. The example in **Figure 4** assumes that no user play-altering activities took place and this example does not rely on content offset data in scrubbing the raw play stream to obtain a clean play list. However, note that in other examples, such as that of **Figure 5**, sample sequence data ("ssd") includes content offset data. For purposes of presenting and analyzing sample sequence data as described herein, the times in list 410 may be relative to an arbitrary value (e.g. "t_0") rather than representing an absolute time; however, in many instances, a log time will in fact indicate the actual time the sample started to be captured.

[0041] Sample sequence data may be used to "scrub" Raw Play Stream 410. By analyzing the sequence of data on Raw Play Stream, it is possible to locate and

correct any identifications that are likely to be incorrect or to supply missing identifications where the system has not otherwise been able to provide an identification.

[0042] Sample sequence data can be used to derive portions of Clean Play Stream 450 from raw play list 410 in the following manner: Referring to Raw Play Stream 410, the content IDs associated with samples 1, 3, 4, 6, and 7 all indicate the same media content referenced as "song51." The content ID value associate with sample 2 indicates that no content has yet been successfully associated with that sample and the content ID value associated with sample 5 indicates "movie81." Given this pattern of sample sequence data, it is reasonable to assume that the person using the corresponding monitor listened to song51 through the time period associated with the audio data of samples 1-7, and thus, the "scrubbed" version of the play stream, i.e. Clean Play Stream 450, indicates song51 for each of samples 1-7.

[0043] Information about the sequence of content in a play stream can be used to generate a play list and identify a channel, and the identified channel data can also potentially be used to help further "scrub" a play stream. For example, the sequence of consumed content represented on Play Stream 450 is searched against known channel data (e.g. particular CD albums, broadcasts, or other particular storage or transmission media carrying a particular sequence of content). In this example, simplified for illustrative purposes, known channel data includes channel data 470, associated with channel ID "radio 35," and channel data 480, associated with channel ID "album12." Referring to channel data 470, each row relates a content ID to a start time and end time. In this example, start and end times are referenced with respect to an arbitrary start time value "C(0)." For some channels (e.g. CDs, DVDs, video games) only such arbitrary reference times will be available. For other channels (e.g. broadcasts, concerts, etc.), absolute time might be both available and useful. However, for the purpose of the analysis illustrated in this example, times that are relative only and not necessarily absolute are sufficient.

[0044] With respect to further "scrubbing" the Raw Play Stream 410, in this example, channel data may be used to correct the apparent misidentification of

sample 29. Note that the sample sequence data alone in this example does not provide a clear basis for correcting sample 29. Sample 28 is identified as "ad49," sample 29 as "song81," and sample 30 as "song 35." However, given the sequence "song21, ad49, and song35" is associated with a known sequence of the radio broadcast referenced as "radio 35," there is a basis in channel data 470 for believing that the proper content ID for sample 29 is "song35" rather than "song81." Thus, Clean Play Stream 450 indicates a change relative to Raw Play Stream 410 with respect to the content ID for sample 29. Note that a clean play stream and clean play list are not necessarily generated sequentially. For example, to the extent a channel identification and associated channel data are necessary to "scrub" a raw play stream, portions of a clean play list may be determined as part of obtaining data necessary to make channel selection. In the present example, "radio 35" is identified based on a particular content sequence, and that information helps populate Clean Play Stream 450 with a corrected content ID value for sample 29 relative to the sample 29 content ID value on Raw Play Stream 410.

[0045] Audience data may also be used in the "scrubbing" process. For example, if "song81" is radically different from the user's known consumption habits and "song35" is within the user's known consumption habits, another basis might be provided for suspecting that "song35" rather than "song81" is the correct content ID for sample 29 of Play Stream 410.

[0046] It will be understood by those skilled in the art that in the context of data sets that might, in alternative examples, make up a "raw play stream," "a clean play stream," or a "clean play list," the particular organization, division, and content of the data may vary considerably from that illustrated in **Figure 4** (as well as that illustrated in **Figure 5** below) without departing from the spirit and scope of the present invention. To cite but one example, such play streams and/or play lists might include several data fields in addition to those illustrated. Moreover, the illustrated data sets might not be collected in the same table but, depending upon database architecture, might be spread out in different tables and/or relational structures. Furthermore, the data sets similar to those illustrated might not be stored at all in a database but rather might be generated on the fly

and then discarded as mere intermediate steps to generating a particular report that the system is asked to produce. These and other variations will be readily apparent to those skilled in the art. The examples shown are chosen primarily for usefulness in illustrating aspects of a particular embodiment. While they are useful in illustrating certain underlying principles of certain aspects of the present invention, they should not be considered, in and of themselves, to limit the scope of the invention.

[0047] **Figure 5** illustrates Clean Play Stream 510, Clean Play List 560, Channel Data 570, and Clean Play List 590 showing deduced play-altering actions. The illustrated data may be generated by systems and methods in accordance with an embodiment of the present invention such as, for example, system 100 of **Figure 1** method 200 of **Figure 2**, and method 300 of **Figure 3**. Aside from the traditional time shifting activity of, for example, recording a television broadcast and playing it at a later time, various play-altering activities may be undertaken by an audience member. For example a media player may be paused, reversed, fast forwarded, and some media players have modes in which skipping back or forward in played content can occur almost instantly, including within the smallest time division useful for a particular data set (e.g., less than five seconds, less than one second, etc.). Generally, these activities of manipulating the pace and order in which media is consumed will be referenced as audience play-altering actions or activities. These activities may be deduced, for example, during scrubbing step 209 of **Figure 2**, or, as illustrated more expressly, during step 308 of **Figure 3**.

[0048] Continuing with the description of **Figure 5**, Play Stream 510 presents a series of log times, content IDs, and content offsets. In the illustrated example, times given in the log time column begins with t_0 and ends with t_0+19. Each log time indicates a time at which capture of the analyzed sample began, where t_0 simply represents a beginning time for samples on Play Stream 510. Each content ID indicates an identifier of the content that has been identified as corresponding to the captured sample. In the example illustrated, "TV program 27" refers to a TV program segment and "TV program 28" refers to another program segment of the same program. "Ad23" and "ad25," on the other hand, refer to separate

advertisements. Each content offset value represents a time offset from the beginning of a particular piece of content. For example, row 8 of Play Stream 510 corresponds to a sample whose beginning is located 9 time units from the beginning of TV program 27, thus the content offset is referenced as (0)+9.

[0049] Play List 560 contains a row for each internally continuous media consumption event. The start log time and end log time for each such event are listed in each row. If an entire piece of content (e.g. a TV program segment, or an entire TV ad) is listened to without interruption, that would correspond to a row of Play List 560. On the other hand, if the data from Play Stream 510 suggests a discontinuity within consumption of a particular piece of content, such discontinuities form boundaries between consumption events that form rows of List 560. The meaning of these concepts may be clarified by discussing further details of the illustrated example.

[0050] Discontinuities in consumption of the identified media may be identified by comparing the progression of sample log times to progression of corresponding content offset times in Play Stream 510. For example, referring to rows 7 and 8 of play stream 510, log times progress from t_0+6 to t_0+7; however, the corresponding content offsets progress, with respect to the start of TV program 27, from (0)+3 to (0)+9. Had the media consumption from one sample to the next been continuous, one would expect that the second offset value (in row 8) would have been (0)+4 rather than (0)+9. Therefore, a boundary between media consumption events can be deduced. Thus, rows 3 and 4 of List 560 indicate two consumption events with respect to the same piece of media content (TV program 27). By contrast, row 1 and row 2 of Play Stream 510 are, on Play List 560, collapsed into a single row (row 1) because the content offset progression from row 1 to row 2 of Play Stream 510 suggests continuous consumption of the same piece of media content.

[0051] Referring to Play List 560, the "end log time" of one event also defines the "start log time" of the next event. In other examples, particularly if continuous time is not assumed, a play list might be constructed using start log times that are different than the end log time of the previous consumption event.

[0052] Referring to Clean Play List With Deduced Actions 590, it can be seen that a play list can be constructed that supplements the information in Play List 560 with information about the apparent actions of the audience member. Rows 2, 4, 6, 8, and 11 of List 590 include such information about deduced actions.

[0053] To the extent such play-altering actions occur within the same piece of content, audience member actions may be deduced without content sequence data for a particular channel. For example, referring to rows 2, 3, 4, 5, and 6, of Play Stream 510, the content offset values of rows 2 and 6 indicate advancing for one time unit within TV program 27 while no content ID (or corresponding offset value) is available for rows 3-5. From this information, and the fact that log times of rows 3-5 together correspond to progression through three time units, it is reasonable to deduce that the audience member paused a media player for three time units from log time t_0+2 to log time t_0+5. That deduced action is recorded in row 2 of Play List 590.

[0054] On the other hand, in other contexts, it may be necessary to refer to content sequence data for a particular channel to be sufficiently confident in deducing the details of an audience member's play-altering activity. For example, referring to Play Stream 510, data in rows 15-17 indicate one or more consumption discontinuities in which a play-altering action appears to have crossed a content boundary. Row 15 indicates consumption of the beginning of ad23; row 16 indicates no identified content, and row 17 indicates consumption of ad24 from a point two time units after the beginning of that ad. From this information alone, it is difficult or impossible to determine how much play-altering activity occurred and whether any content pieces were skipped altogether. However, content sequence data for an identified channel may be used to supplement the information gap. Data 570 lists content sequence data for a channel identified as "TV C4." "TV C4" may be identified during a method portion such as step 211 of process 200 of **Figure 2** as previously described. Channel data may be searched that includes the content identified in Play Stream 510 or Play List 560. A channel whose content sequence matches or closely matches content on such a stream or play list may be identified as the channel that delivered the consumed content. In this case, Play Stream 510 and Play List 560

include content associated with the following IDs: TV program 27, ad23, ad25, and TV program 28. Because channel data for "TV C4" indicates a sequence of: TV program 27, ad23, ad24, ad25, and TV program 28, for purposes of this example, it can reasonably be assumed that the media depicted on Stream 510, List 560, and List 590 was originally delivered to the relevant media player by channel "TV C4." In real world contexts, however, it is quite possible that more data would have to be obtained (e.g. a matching more entries on a play list entries against a longer series of content sequence data of a channel) in order to be reasonably confident that the channel has been correctly identified. The amount of data matched in the illustrated example has been chosen primarily for ease of illustration.

[0055] Sequence Data 570 for channel TV C4 indicates that ad23 as broadcast lasted three time units (see row 2), ad25 as broadcast lasted three time units (see row 4), and between ad23 and ad25, another ad, ad24, was broadcast and lasted three time units. From this information, and the information in either Play Stream 510 or Play list 560, it can be deduced that the audience member heard the very beginning of ad23, but then fast forwarded seven time units (during the span of 1 time unit based on the log time data) to just past the beginning of ad25. This deduced action is recorded in row 11 of List 590.

[0056] It should be noted that, to the extent actions take less than a single time unit, rows may be added to List 590 relative to List 560 to record such actions. For example, referring to row 4 of List 590, because no log time elapsed between the end of the event in row 3 and the beginning of the event in row 5, row 4 has been added showing the "skip forward 5 units." That the user "skipped" forward rather than "fast" forwarded can be deduced from the fact that while there is no content ID gap between rows 3 and 4 of List 560, there is a gap in the content offset times for those rows. Thus, though the log times and content ID alone suggest continuous consumption, the gap in offset times suggests a "skip" forward that took the same or less time than the length of a single time unit.

[0057] Those skilled in the art will recognize that the method aspects just described in the context of generating and using Stream 510, List 560, Data 570, and List With Deduced Actions 590 reflect just one example of how play-altering

actions might be deduced using systems and methods consistent with those of the present invention. To cite but one example, rather than explicitly generate a play list, mathematical representations of play stream data and content sequence data may be used to identify discontinuities and deduce play-altering activities. To cite but one other example, play-altering might be deduced from a pre-generated play list including content offset data without needing to analyzing play stream data from which the play list was generated.

[0058] **Figure 6** illustrates timeline structure for data samples generated by system and methods such as module 121 of **Figure 1** and steps 201 and 206 of **Figure 2**.

[0059] As illustrated, sample set 600 reflects a division of audio data into sixteen samples, three of which are selected for analysis. The samples selected for recognition analysis are referenced generally as the "n_0^{th}," n_1^{th}," and "n_2^{th}" samples. Samples between the selected samples are not separately numbered, but are marked off between vertical lines along the horizontal length of timelines structure 600 as illustrated. Each sample has a sample time window length "i." Furthermore, the sample set has varying "resolutions" including r_0=1/5 between the n_0^{th} and n_1^{th} samples and r_1=1/10 between the n_1^{th} and the n_2^{th} samples. In other words, "resolution" here refers to the portion of samples being selected during a period of time. In the present example, a process portion such as steps 201 and 206 of process 200 of **Figure 2** has, based on the identification results of the n_0^{th} and n_1^{th} samples, adjusted the resolution from 1/5 to 1/10. This could occur, for example, as previously described, because the n_0^{th} and n_1^{th} samples match the same content ID and process 200 determines that the likelihood that the next selected sample using a resolution of 1/5 would also match justifies decreasing the resolution to 1/10 so that the next sample selected for analysis is the n_2^{th}. However, if the n_2^{th} sample does not match the n_1^{th} sample, then process 200 can make a backtrack decision and go back in the series of samples to select, for example, the $(n_1 +6)^{th}$ sample for content recognition analysis in order to pinpoint more closely where in the play stream the content change occurred. The order in which samples are selected for analysis in this example is illustrated by arrows 1, 2, and 3 in **Figure 6**.

[0060] Although not illustrated in **Figure 6**, as previously described, steps 201 and 206 of method 200 can also determine based on identification results the time window length can be adjusted. In the context of Figure 6, this would correspond to changing the value of "i," the time window length of a particular sample.

[0061] **Figure 7** shows an example of a computer system 700 that may be used to execute instruction code contained in a computer program product 760 in accordance with an embodiment of the present invention. Computer program product 760 comprises executable code in an electronically readable medium that may instruct one or more computers such as computer system 700 to perform processing that implements the system 100 of **Figure 1** and/or accomplishes the exemplary method 200 of **Figures 2**. The electronically readable medium may be any medium that either stores or carries electronic signals (including signals referred to as electrical signals and signals referred to as electromagnetic signals) and may be accessed locally or remotely, for example via a network connection. The executable instruction code in an electronically readable medium directs the illustrated computer system 700 to carry out various exemplary tasks described herein. The executable code for directing the carrying out of tasks described herein would be typically realized in software. However, it will be appreciated by those skilled in the art, that computers might utilize code realized in hardware to perform many or all of the identified tasks without departing from the present invention. Those skilled in the art will understand that many variations on executable code may be found that implement exemplary methods within the spirit and the scope of the present invention.

[0062] The code or a copy of the code contained in computer program product 760 may be stored in memory 710 for execution by processor 720. Computer system 700 also includes I/O subsystem 730 and peripheral devices 740. I/O subsystem 730, peripheral devices 740, processor 720, and memory 710 are coupled via bus 750.

[0063] Those skilled in the art will appreciate computer system 700 illustrates just one example of a system in which a computer program product in accordance with an embodiment of the present invention may be implemented. To cite but one example of an alternative embodiment, execution of instructions contained in

a computer program product in accordance with an embodiment of the present invention may be distributed over multiple computers, such as, for example, over the computers of a distributed computing network.

[0064] Although particular embodiments have been described in detail and certain variants have been noted, various other modifications to the embodiments described herein may be made without departing from the spirit and scope of the present invention. Thus, the invention is limited only by the appended claims.

CLAIMS

What is claimed is:

1. A media measurement method comprising:

generating a raw play stream of content identification results corresponding to a sequence of submitted data samples; and

utilizing sample sequence data including content offset data to deduce play-altering actions of a monitored audience member.

2. The method of claim 1 further comprising:

generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member.

3. The method of claim 1 further comprising:

utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member.

4. The media measurement method of claim 1 wherein a clean play list is generated including deduced play-altering actions.

ABSTRACT OF THE DISCLOSURE

Media monitoring and measurement systems and methods are disclosed. Some embodiments of the present invention provide a media measurement system and method that utilizes audience data to enhance content identifications. Some embodiments analyze media player log data to enhance content identification. Other embodiments of the present invention analyze sample sequence data to enhance content identifications. Other embodiments analyze sequence data to enhance content identification and/or to establish channel identification. Yet other embodiments provide a system and method in which sample construction and selection parameters are adjusted based upon identification results. Yet other embodiments provide a method in which play-altering activity of an audience member is deduced from content offset values of identifications corresponding to captured samples. Yet other embodiments provide a monitoring and measurement system in which a media monitoring device is adapted to receive a wireless or non-wireless audio signal from a media player, the audio signal also being received wirelessly by headphones of a user of the monitoring device.

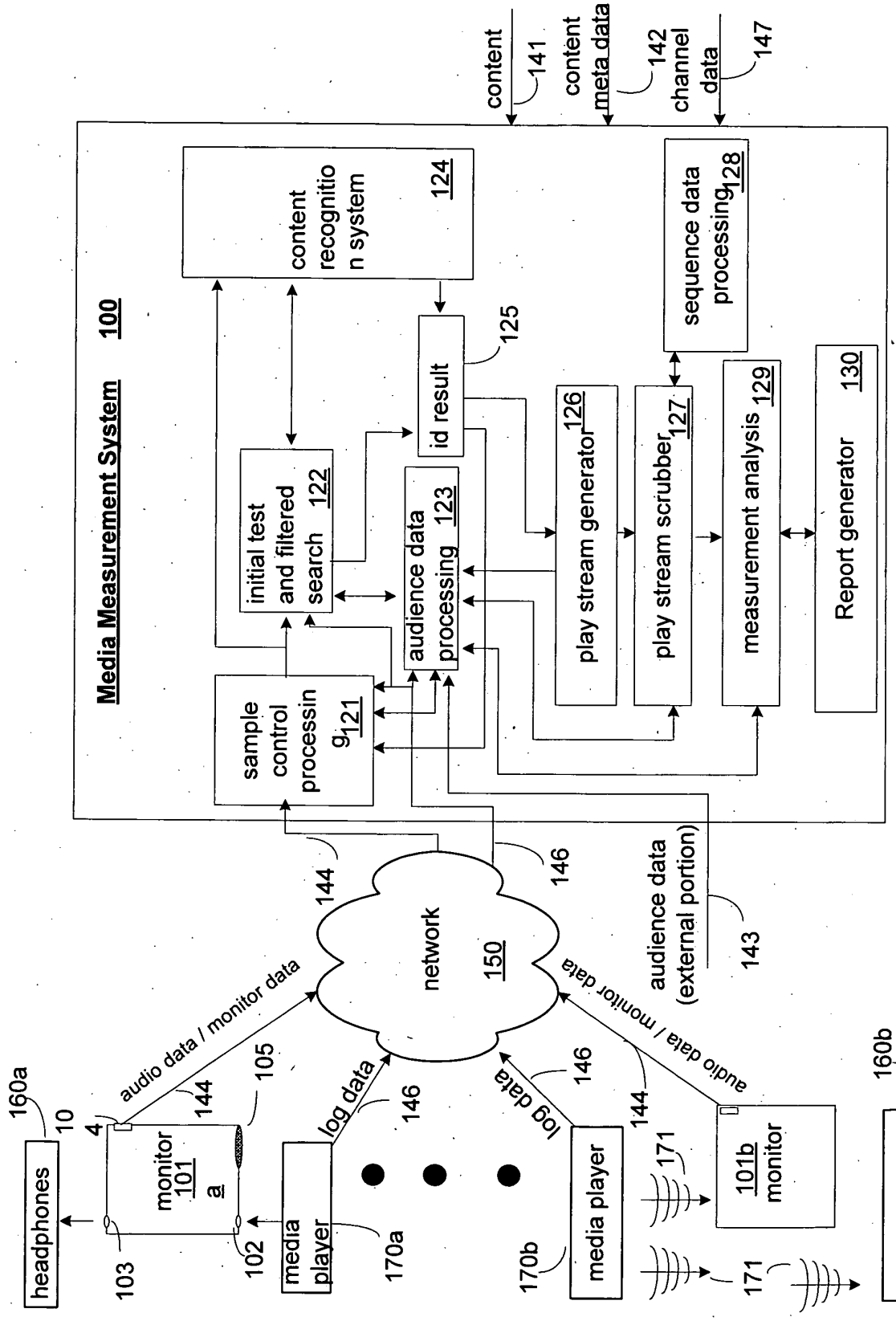
Media Measurement System 100
content
141
content meta data
142
channel data
147
content recognition system 124
sequence data processing 128
id result
125
initial test and filtered search 122
audience data processing 123
play stream generator 126
play stream scrubber 127
measurement analysis 129
Report generator 130
sample control processing 121
144
146
network 150
audience data (external portion)
143
audio data / monitor data
log data
headphones
160a
10
4
monitor 101 a
105
103
102
media player
170a
170b
101b monitor
171
headphones
160b
1000

FIG. 1

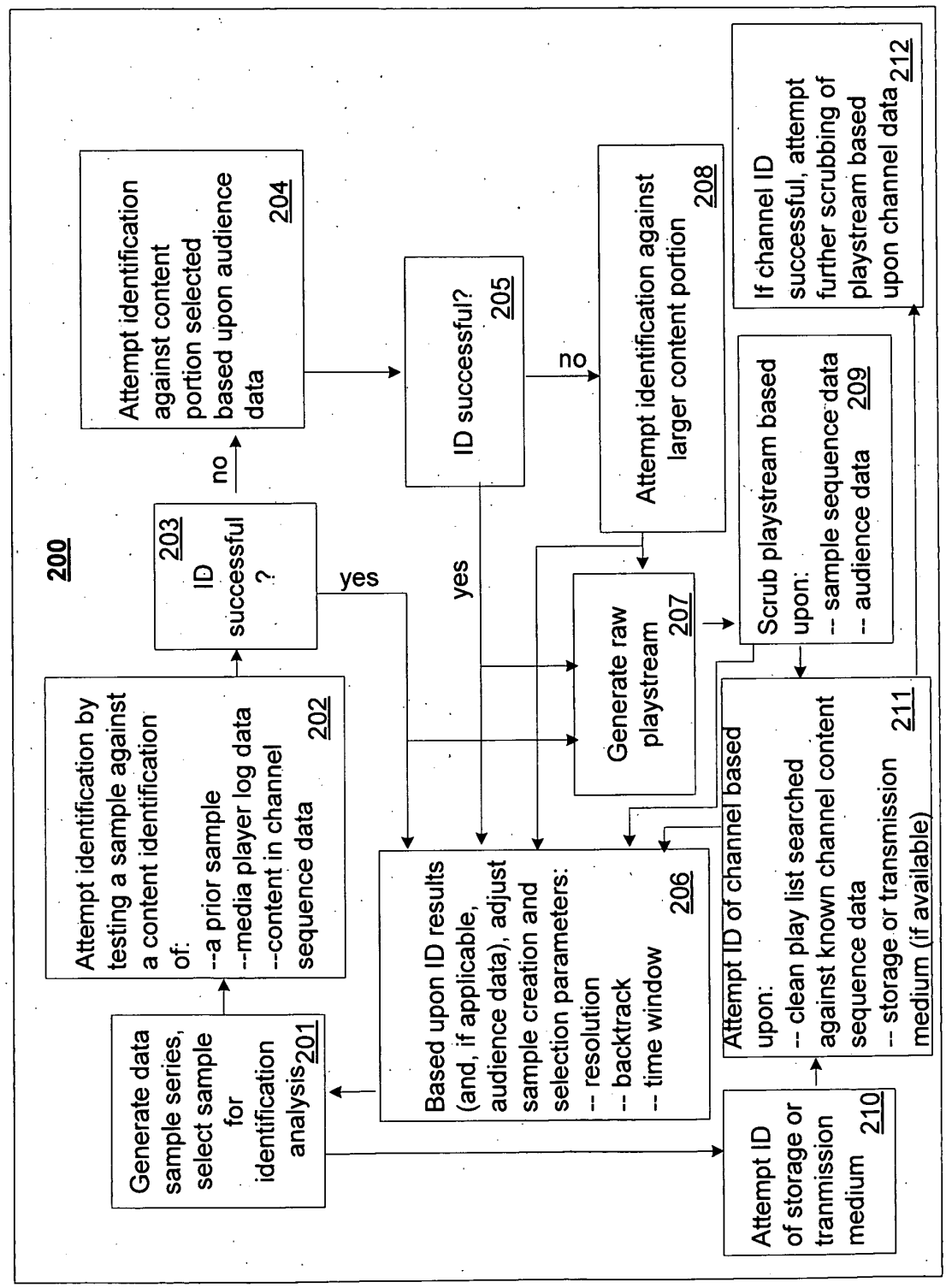
200
Generate data sample series, select sample for identification analysis 201
Attempt identification by testing a sample against a content identification of:
--a prior sample
--media player log data
--content in channel sequence data 202
203 ID successful ?
yes
no
Attempt identification against content portion selected based upon audience data 204
ID successful? 205
yes
no
Attempt identification against larger content portion 208
Based upon ID results (and, if applicable, audience data), adjust sample creation and selection parameters:
-- resolution
-- backtrack
-- time window 206
Generate raw playstream 207
Scrub playstream based upon:
-- sample sequence data
-- audience data 209
Attempt ID of storage or tranmission medium 210
Attempt ID of channel based upon:
-- clean play list searched against known channel content sequence data
-- storage or transmission medium (if available) 211
If channel ID successful, attempt further scrubbing of playstream based upon channel data 212

FIG. 2

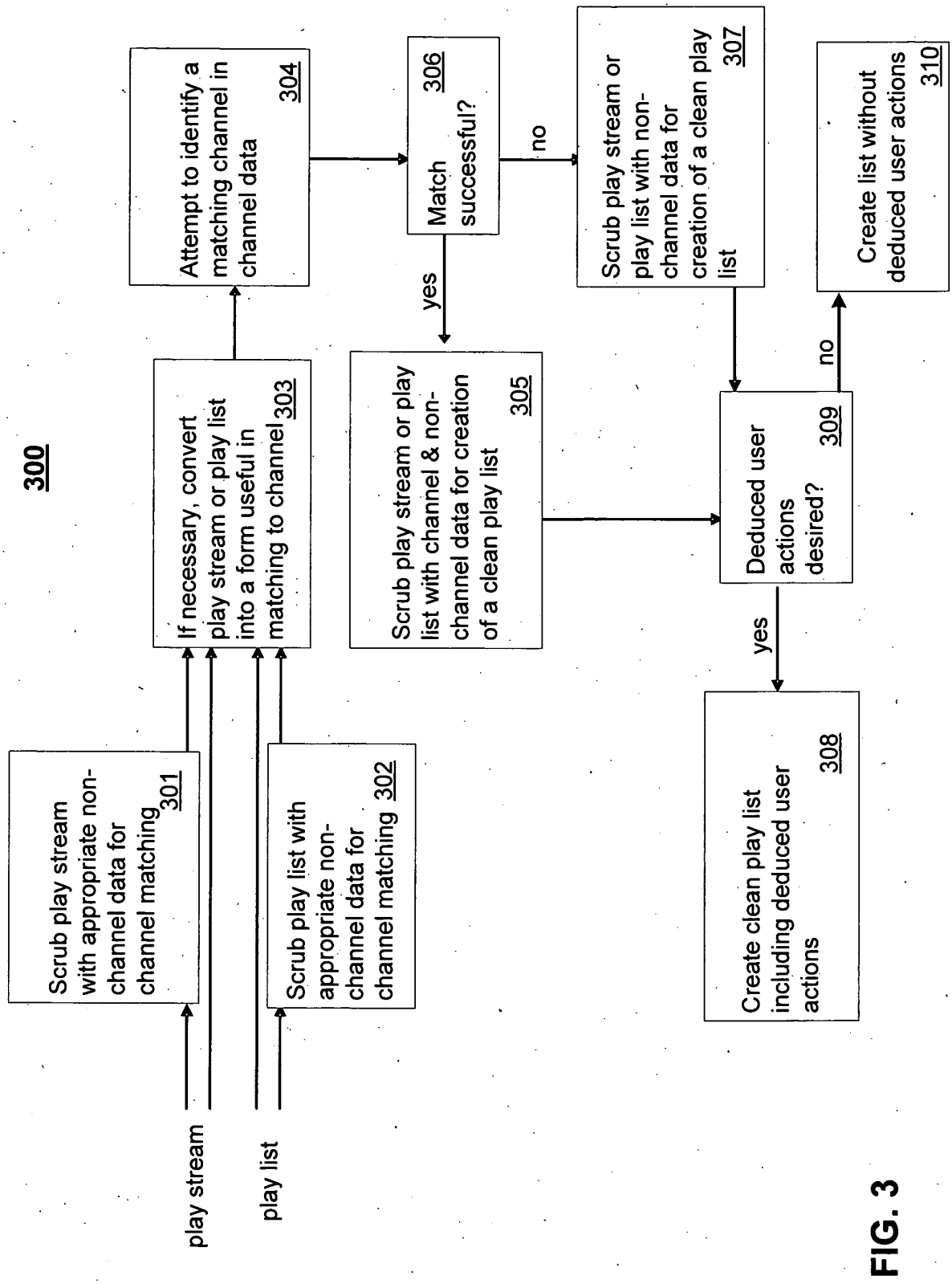
300
play stream
play list
Scrub play stream with appropriate non-channel data for channel matching 301
Scrub play list with appropriate non-channel data for channel matching 302
If necessary, convert play stream or play list into a form useful in matching to channel 303
Attempt to identify a matching channel in channel data 304
Match successful? 306
yes
no
Scrub play stream or play list with channel & non-channel data for creation of a clean play list 305
Scrub play stream or play list with non-channel data for creation of a clean play list 307
Deduced user actions desired? 309
yes
no
Create clean play list including deduced user actions 308
Create list without deduced user actions 310

FIG. 3

410

Raw Play Stream

row	log time	content ID
1	t_0	song 51
2	t_0+1	none
3	t_0 +2	song51
4	t_0+3	song51
5	t_0+4	movie 81
6	t_0+5	song51
7	t_0+6	song51
8	t_0+7	song72
9	t_0+8	song72
10	t_0+9	none
11	t_0+10	song72
12	t_0+11	song72
13	t_0+12	song72
14	t_0+13	song65
15	t_0+14	song65
16	t_0+15	TVprgm58
17	t_0+16	song65
18	t_0+17	song65
19	t_0+18	song65
20	t_0+19	song65
21	t_0+20	song21
22	t_0+21	song21
23	t_0+22	song21
24	t_0+23	song21
25	t_0+24	song21
26	t_0+25	song21
27	t_0+26	ad49
28	t_0+27	ad49
29	t_0+28	song81
30	t_0+29	song35

ssd

450

Clean Play Stream

row	log time	content ID
1	t_0	song 51
2	t_0+1	song51
3	t_0 +2	song51
4	t_0+3	song51
5	t_0+4	song51
6	t_0+5	song51
7	t_0+6	song51
8	t_0+7	song72
9	t_0+8	song72
10	t_0+9	song72
11	t_0+10	song72
12	t_0+11	song72
13	t_0+12	song72
14	t_0+13	song65
15	t_0+14	song65
16	t_0+15	song65
17	t_0+16	song65
18	t_0+17	song65
19	t_0+18	song65
20	t_0+19	song65
21	t_0+20	song21
22	t_0+21	song21
23	t_0+22	song21
24	t_0+23	song21
25	t_0+24	song21
26	t_0+25	song21
27	t_0+26	ad49
28	t_0+27	ad49
29	t_0+28	song35
30	t_0+29	song35

ssd = "sample sequence data"

470

Channel Data for "radio 35"

row	start time	end time	content ID
1	C(0)	C(0)+6	song21
2	C(0)+6	C(0)+8	ad49
3	C(0)+8	C(0)+13	song35

480

Channel Data for "album 12"

row	start time	end time	content ID
1	C(0)	C(0)+7	song51
2	C(0)+7	C(0)+13	song72
3	C(0)+13	C(0)+23	song65
4	C(0)+23	C(0)+30	song29

490

Clean Play List

row	start log time	end log time	content ID	Channel ID
1	t_0	t_0+7	song51	album12
2	t_0+7	t_0+13	song71	album12
3	t_0+13	t_0+20	song65	album12
4	t_0+20	t_0+26	song21	radio35
5	t_0+26	t_0+28	ad49	radio35
6	t_0+28	t_0+30	song34	radio35

FIG. 4

510

Clean Playstream

row	log time	content ID	content offset
1	t_0	TVprgm 27	(0)
2	t_0+1	TVprgm 27	(0)+1
3	t_0+2	none	n/a
4	t_0+3	none	n/a
5	t_0+4	none	n/a
6	t_0+5	TVprgm 27	(0)+2
7	t_0+6	TVprgm 27	(0)+3
8	t_0+7	TVprgm27	(0)+9
9	t_0+8	TVprgm27	(0)+10
10	t_0+9	TVprgm27	(0)+9
11	t_0+10	TVprgm27	(0)+10
12	t_0+11	none	n/a
13	t_0+12	TVprgrm27	(0)+29
14	t_0+13	TVprgrm27	(0)+30
15	t_0+14	ad23	(0)
16	t_0+15	none	n/a
17	t_0+16	ad25	(0)+2
18	t_0+17	TVprgm28	(0)
19	t_0+18	TVprgm28	(0)+1
20	t_0+19	TVprgrm28	(0)+2

560

Clean Play List

row	start log time	end log time	content ID	content offset
1	t_0	t_0+2	TVprgrm27	(0)
2	t_0+2	t_0+5	none	n/a
3	t_0+5	t_0+7	TVprgrm27	(0)+2
4	t_0+7	t_0+9	TVprgrm27	(0)+9
5	t_0+9	t_0+11	TVprgrm27	(0)+9
6	t_0+11	t_0+12	none	n/a
7	t_0+12	t_0+14	TVprgrm27	(0)+29
8	t_0+14	t_0+15	ad23	(0)
9	t_0+15	t_0+16	none	n/a
10	t_0+16	t_0+17	ad25	(0)+2
11	t_0+17	t_0+20	TVprgrm28	(0)

570

Channel Data for TV C4

row	start time	end time	content ID
1	C(0)	C(0)+31	TVprgrm27
2	C(0)+31	C(0)+34	ad23
3	C(0)+34	C(0)+37	ad24
4	C(0)+37	C(0)+40	ad25
5	C(0)+40	C(0)+50	TVprgrm28

590

Clean Play List with Deduced Actions

row	log time	end log time	content ID and <deduced action>	content offset
1	t_0	t_0+2	TVprgrm27	(0)
2	t_0+2	t_0+5	<pause for 3 units>	n/a
3	t_0+5	t_0+7	TVprgrm27	(0)+2
4	t_0+7	t_0+7	<skip frwrd 5 units>	n/a
5	t_0+7	t_0+9	TVprgrm27	(0)+9
6	t_0+9	t_0+9	<skip bckwrd 2 units>	n/a
7	t_0+9	t_0+11	TVprgrm27	(0)+9
8	t_0+11	t_0+12	<fast frwrd 18 units>	n/a
9	t_0+12	t_0+14	TVprgrm27	(0)+29
10	t_0+14	t_0+15	ad23	(0)
11	t_0+15	t_0+16	<fast frwrd 7 units>	n/a
12	t_0+16	t_0+17	ad25	(0)+2
13	t_0+17	t_0+20	TVprgrm28	(0)

FIG. 5

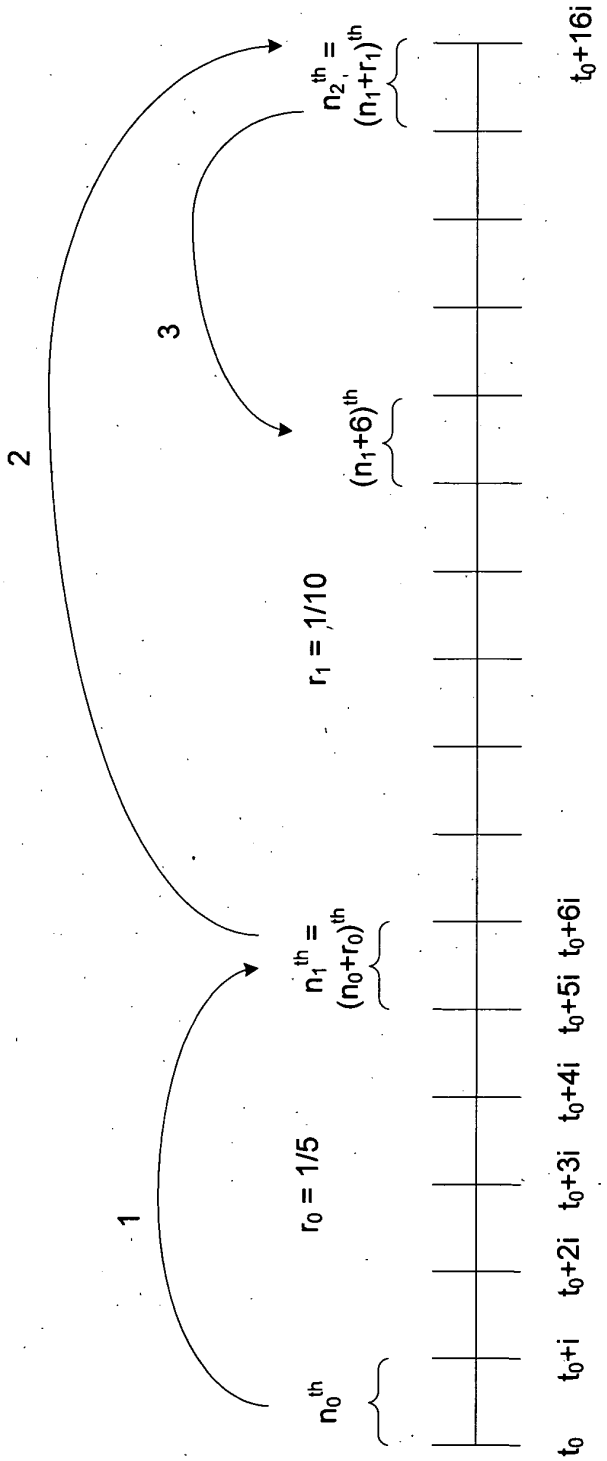
1
2
3
$r_0 = 1/5$
$r_1 = 1/10$
n_0^{th}
$n_1^{th} = (n_0+r_0)^{th}$
$n_2^{th} = (n_1+r_1)^{th}$
$(n_1+6)^{th}$
t_0
t_0+i
t_0+2i
t_0+3i
t_0+4i
t_0+5i
t_0+6i
t_0+16i
600

FIG. 6

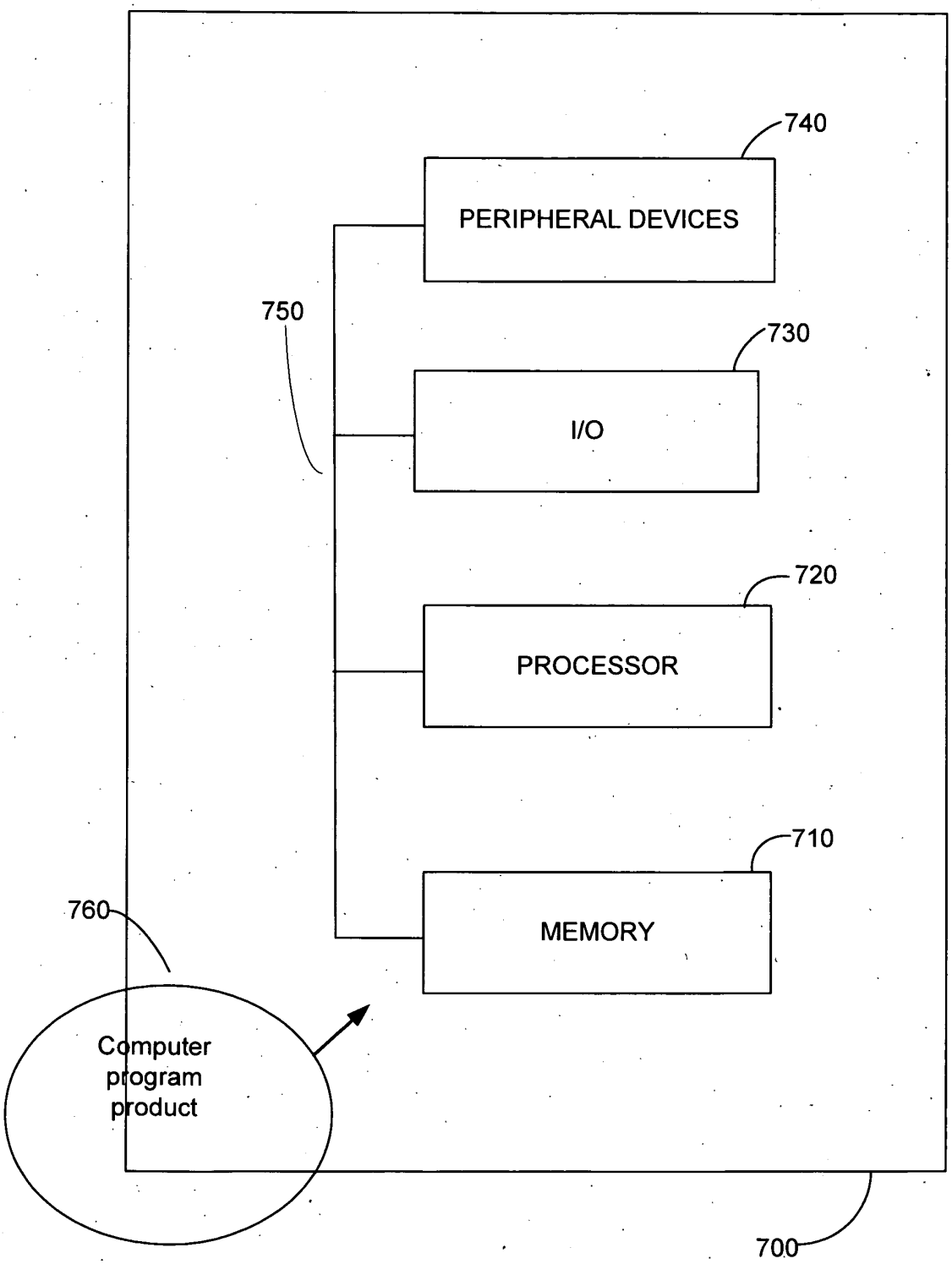
740
PERIPHERAL DEVICES
750
730
I/O
720
PROCESSOR
710
MEMORY
760
Computer program product
700

FIG. 7

COPY

Customer Number: 51417
Attorney Docket No. 1004-2000100

COMBINED DECLARATION FOR A PATENT APPLICATION
AND POWER OF ATTORNEY

As the below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

the specification of which:

(check one) [ ] is attached hereto.
[X] was filed as U.S. application Ser. No. **11/139,330** on **May 26, 2005**
and was amended on _____
(if applicable)

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 do not know and do not believe that the invention was ever patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application.

I do not know and do not believe that the invention was in public use or on sale in the United States of America more than one year prior to this application.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 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 filed by me on the same subject having a filing date before that of the application on which priority is claimed:

			Priority Claimed
NONE			[ ] [ ]
(Number)	(Country)	(Day/Month/Year filed)	Yes No

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

60/574,836	**May 27, 2004**	**Pending (as of May 26, 2005)**
(Application Serial No.)	(Filing Date)	(Status: pending/expired)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States Patent application(s), or under § 365(c) of any PCT international applications designating the United States listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or international application(s) 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 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

None		
(Application Serial No.)	(Filing Date)	(Status: patented/pending/abandoned)

I hereby appoint the following Attorneys and/or agents to prosecute this application and any continuation or divisional applications based hereon, and to transact all business in the Patent and Trademark Office connected therewith:

The undersigned hereby authorizes the U.S. attorney(s) or agent(s) named herein to accept and follow instructions from the assignee, if any, of the undersigned as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney(s) or agent(s) and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney(s) or agent(s) named herein will be so notified by the undersigned.

As a named inventor, I hereby appoint the registered practitioner(s) identified by Customer No. 51417 to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, whose firm name, mailing address, telephone number, and facsimile number for this application are:

MAURIEL PATENT PRACTICE
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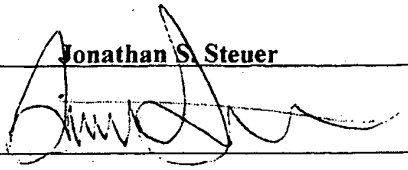
Direct telephone calls to:	Michael Mauriel telephone: (212) 529-5131 telecopier: (212) 529-5132

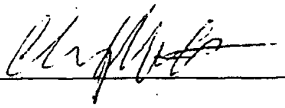
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made in the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, §1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of first inventor **Jonathan S. Steuer**

First inventor's signature  July 26, 2005
date

Residence **New York, NY (USA)**
Citizenship **USA**
Post Office Address **72 E. 3rd St., #2B, New York, NY 10003-0206**

Full name of second inventor **Christopher W. Otto**

Second inventor's signature  July 26, 2005
date

Residence **Fremont, CA (USA)**
Citizenship **USA**
Post Office Address **68802 Lyra St., Fremont, CA 94539**

PATENT
Docket No. 10004-2000113

CERTIFICATE OF DEPOSIT VIA EXPRESS MAIL DELIVERY

Date of Deposit: September 11, 2008

I hereby certify that this correspondence is being deposited via Express Mail Label No. EH282938724US to the United States Patent and Trademark Office on the date indicated below and is addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Victoria A. Wilson

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Jonathan S. STEUER et al.

Serial No.: Not Yet Assigned

Filing Date: Concurrently Herewith

For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

Examiner: Not Yet Assigned

Group Art Unit: Not Yet Assigned

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A and B. The Examiner is requested to make these documents of record. To the extent required, copies of references have already been provided in the prosecution of related US Application No. 11/139,330.

This Information Disclosure Statement is submitted:

☒ **With the application; accordingly, no fee or separate requirements are required.**

☐ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

- ☐ A fee is required. A check in the amount of * is enclosed.
- ☐ A fee is required. Accordingly, a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly; no fee is believed to be due.

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a check in the amount of * is enclosed.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A and B, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to **Deposit Account No. 50-4242**, referencing docket no. **10004-2000113**.

Dated: September 10, 2008

Respectfully submitted,

By: _____
Michael Mauriel
Reg. No. 44,226

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PTO/SB/08A (09-06)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Jonathan S. STEUER
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	10004-2000113

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- 3,919,479	11-11-1975	Moon et al.	
		US- 4,677,466	06-30-1987	Lert et al.	
		US- 4,697,209	09-29-1987	Kiewit et al.	
		US- 5,594,934	01-14-1997	Lu et al.	
		US- 5,945,988	08-31-1999	Williams et al.	
		US- 6,513,161 B2	01-28-2003	Wheeler et al.	
		US- 6,990,453 B2	06-27-2002	Wang	
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		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

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]
		WO 2004/040475 A2	05-13-2004	Koninklijke Philips N.V.	All	
		WO 03/091990 A1	11-06-2003	Shazam Entertainment, LTD	All	
		WO 02/27600 A2	04-04-2002	Shazam Entertainment, LTD	All	

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] 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.

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PTO/SB/08B (09-06)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Jonathan S. STEUER
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	10004-2000113

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]
		Arbitron, "The Portable People Meter System," www.arbitron.com/protable_people_meters/ppm_system.htm, downloaded on April 25, 2005.	
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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.

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PATENT APPLICATION SERIAL NO._____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

09/15/2008 LTRUONG 00000008 12283355

01 FC:2011	155.00	OP
02 FC:2111	255.00	OP
03 FC:2311	105.00	OP

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002- 489-267/69033

PTO/SB/06 (10-07)
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PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number: 12.283355

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	$155		N/A	$310
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	$255		N/A	$510
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	$105		N/A	$210
TOTAL CLAIMS (37 CFR 1.16(i))	4 minus 20 =	* 0	X $25 =		OR	X $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	* 0	X $105 =			X $210 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $260 ($130 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).		$130			$260	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			$185			$370	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	515		TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $25 =		OR	X $50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $105 =		OR	X $210 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					$185		OR	$370	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $25 =		OR	X $50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $105 =		OR	X $210 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					$185		OR	$370	
					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.

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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
12/283,355	09/11/2008	2623	515	10004-2000113	4	1

CONFIRMATION NO. 6876

51417
Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

FILING RECEIPT

OC00000032403114

Date Mailed: 10/07/2008

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)

Jonathan S. Steuer, New York, NY;
Christopher W. Otto, Fremont, CA;

Assignment For Published Patent Application

Anonymous Media, LLC, New York, NY

Power of Attorney: The patent practitioners associated with Customer Number 51417

Domestic Priority data as claimed by applicant

This application is a DIV of 11/139,330 05/26/2005
which claims benefit of 60/574,836 05/27/2004

Foreign Applications

If Required, Foreign Filing License Granted: 10/02/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/283,355**

Projected Publication Date: 01/15/2009

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **

Title

Media usage monitoring and measurement system and method

Preliminary Class

725

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113

CONFIRMATION NO. 6876

51417
Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

PUBLICATION NOTICE

OC000000034078653

Title: Media usage monitoring and measurement system and method

Publication No.US-2009-0019466-A1
Publication Date:01/15/2009

NOTICE OF PUBLICATION OF APPLICATION

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

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	10004-2000113

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
	A	US- 5,758,257	05-26-1998	Herz et al.	
		US-			
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EFS ID:	6776258
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	08-JAN-2010
Filing Date:	11-SEP-2008
Time Stamp:	15:03:02
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	100042000113IDS.pdf	178103 cece22d5b0c7dd21fe918f9da606bc6714644646	no	3

Warnings:	
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2	Information Disclosure Statement (IDS) Filed (SB/08)	100042000113SB08A.pdf	129207 4d69760f258f0cbe0f1565db89ed3bb352d3791e	no	1

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New Applications Under 35 U.S.C. 111
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National Stage of an International Application under 35 U.S.C. 371
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PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Jonathan S. STEUER et al.

Serial No.: 12/283,355

Filing Date: September 11, 2008

For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

Examiner: Andrew Y. Koenig

Group Art Unit: 2423

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98

Mail Stop Amendment
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Dear Sir:

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This Information Disclosure Statement is submitted:

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☒ **Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.**

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

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- ☐ A fee is required. .
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Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. **50-4242**, referencing docket no. 10004-2000113.

Dated: January 8, 2010

Respectfully submitted,

By: _____

Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
Telephone: (212) 529-5131
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PTO/SB/08a (07-09)
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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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2423
Examiner Name	Andrew Y. Koenig
Attorney Docket Number	10004-2000113

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
	A	US- 5,758,257	05-26-1998	Herz et al.	
		US-			
		US-			
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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		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.

Electronic Acknowledgement Receipt

EFS ID:	6776261
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	08-JAN-2010
Filing Date:	11-SEP-2008
Time Stamp:	15:03:03
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	100042000113IDS.pdf	178103 cece22d5b0c7dd21fe918f9da606bc6714644646	no	3

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Filed (SB/08)	100042000113SB08A.pdf	129207 4d69760f258f0cbe0f1565db89ed3bb352d3791e	no	1

Warnings:	
Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	307310

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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.

PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:	Examiner: Andrew Y. Koenig
Jonathan S. STEUER et al.	Group Art Unit: 2423
Serial No.: 12/283,355	
Filing Date: September 11, 2008	
For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A. The Examiner is requested to make this document of record.

This Information Disclosure Statement is submitted:

☐ With the application; accordingly, no fee or separate requirements are required.

☒ **Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.**

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

- ☐ A fee is required. A check in the amount of * is enclosed.
- ☐ A fee is required. .
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly; no fee is believed to be due.

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a check in the amount of * is enclosed.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

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Dated: January 8, 2010

Respectfully submitted,

By: _____

Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
Telephone: (212) 529-5131
Facsimile: (212) 529-5132

PTO/SB/08a (07-09)
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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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Chenea Smith
Attorney Docket Number	10004-2000113

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
	1	US- 7444353	10-28-2008	Chen et al.	
		US-			
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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		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.

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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:	8454570
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	20-SEP-2010
Filing Date:	11-SEP-2008
Time Stamp:	16:07:18
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		100042000113SIDS2.pdf	364716 ed8ff5ff6b40b88e70d14f0a181e32b0d899f93d	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	4
	Information Disclosure Statement (IDS) Filed (SB/08)	5	5
Warnings:			
Information:			
	Total Files Size (in bytes):	364716	

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New International Application Filed with the USPTO as a Receiving Office
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PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:	Examiner: Chenea Smith
Jonathan S. Steuer et al.	Group Art Unit: 2421
Serial No.: 12/283,355	
Filing Date: September 11, 2008	
For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A. The Examiner is requested to make this document of record.

This Information Disclosure Statement is submitted:

☐ With the application OR This Information Disclosure Statement is submitted before the mailing of a first Office action after the filing of a Request for Continued Examination under § 1.114 (filed concurrently herewith) in accordance with § 1.97(b)(4); accordingly, no fee or separate requirements are required .

☒ **Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.**

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

- ☐ The fee set forth in 37 CFR 1.17p is paid herewith.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.
  - ☐ 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.
  - ☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

- ☐ The fee set forth in 37 C.F.R. § 1.17p is paid herewith and a Certification under 37 C.F.R. § 1.97(e) is provided below:
  - ☐ 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.

☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A, indicating that the information has been considered and made of record herein.

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Dated: September 16, 2010

Respectfully submitted,

By: _____
Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
Telephone: (212) 529-5131
Facsimile: (212) 529-5132

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.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

51417 7590 09/28/2010

Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

EXAMINER	
SMITH, CHENEA	
ART UNIT	**PAPER NUMBER**
2421	

MAIL DATE	DELIVERY MODE
09/28/2010	PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	12/283,355	STEUER ET AL.	
	Examiner	Art Unit	
	CHENEA P. SMITH	2421	

-- 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 *11 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ 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

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 September 2008* 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).

11)☐ 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

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) ☐ 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

Claim Rejections - 35 USC § 103

1. 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.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolessar et al. (US7483975, hereinafter Kolessar) in view of Wang et al. (US20020083060, hereinafter Wang) and Hansen et al. (US20020038456, hereinafter Hansen).

Regarding claim 1, Kolessar discloses a media measurement method (see Kolessar, Figs. 1 and 2) comprising:

utilizing sample sequence data (see Kolessar, col 9, lines 35-54 and col 11, lines 9-20) including content offset data (see Kolessar, col 9, line 48 and incorporated-by-reference patent US5512933 to Wheatley, col 2, lines 22-28, col 3, lines 9-19 and col 5, lines 47-55) to deduce play-altering actions of a monitored audience member (see Kolessar, col 16, lines 4-33).

Kolessar does not specifically disclose generating a raw play stream of content identification results corresponding to a sequence of submitted data samples.

In an analogous art relating to a system for identifying media, Wang discloses content identification results (see Wang, [0105], lines 1-18) corresponding to a sequence of submitted data samples (see Wang, [0090], lines 1-3).

It would have been obvious for a person having ordinary skill in the art at the time of the invention to modify Kolessar's system to include the limitations as taught by Wang for the advantage of providing an improved system for gathering media usage information on identified media that may be recognized in real time, recognized when mixed together with other recordings in a single stream, and recognized when subjected to high levels of noise and distortion.

Kolessar in view of Wang does not specifically disclose generating a raw play stream of results.

In an analogous art relating to a system for providing media to a user, Hansen discloses generating a raw play stream of results (See Hansen, [0027], lines 2-6).

It would have been obvious for a person having ordinary skill in the art at the time of the invention to modify the system of Kolessar in view of Wang to include the limitations as taught by Hansen for the advantage of providing an improved system for gathering media usage information on identified media in which the results of the identification are provided in an economically viable and continuous manner (see Hansen, [0009]).

Regarding claim 2, Kolessar in view of Wang and Hansen discloses generating a play list (see Kolessar, Fig. 10 and col 18, lines 30-32 and lines 47-57) including content offset data as part of deducing media play-altering actions of a monitored audience member (Kolessar discloses a table, i.e., playlist of data that is collected. This collected data reasonably includes the

position, i.e., content offset – data, as described in incorporated-by-reference patent to Wheatley. Wheatley discloses that his collection data stores the time and dates only intermittently, and that therefore, the specific time and date of any sample is thus obtained from its position in the interval concerned {see Wheatley, col 5, lines 47-55}. The position data, i.e., content offset data, must then be included in the generated table in order for the specific times to be obtained).

Regarding claim 3, Kolessar in view of Wang and Hansen discloses utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member (see Kolessar, col 9, lines 35-54, col 11, lines 9-20 and col 16, lines 4-33, and Fig. 10).

Regarding claim 4, Kolessar in view of Wang and Hansen discloses wherein a clean play list is generated (Wang discloses that a candidate list is compiled first {see Wang, [0082], lines 1-4}, and then the candidate list is further analyzed to produce final results {see Wang, [0082], lines 1-12 and [0084], lines 1-2}, and only then presented to the user, which therefore reasonably teaches a clean play list, see Wang, [0105], lines 1-18) including deduced play-altering actions (see Kolessar, Fig. 10).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHENEA P. SMITH whose telephone number is (571)272-9524. The examiner can normally be reached on Monday through Friday, 7:30 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. 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.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2421

/Chenea P. Smith/
Examiner, Art Unit 2421

Notice of References Cited	Application/Control No. 12/283,355	Applicant(s)/Patent Under Reexamination STEUER ET AL.	
	Examiner CHENEA P. SMITH	Art Unit 2421	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,483,975	01-2009	Kolessar et al.	709/224
*	B	US-2002/0083060	06-2002	Wang et al.	707/10
*	C	US-2002/0038456	03-2002	Hansen et al.	725/46
*	D	US-5,512,933	04-1996	Wheatley et al.	725/19
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	V	
	W	
	X	

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	**Art Unit**
	CHENEA P SMITH	2421

✓	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	09/10/2010								
	1	✓								
	2	✓								
	3	✓								
	4	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	Art Unit
	CHENEA P SMITH	2421

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
EAST search results included	9/10/2010 10:13:57 AM	CS
Invenor search included - see search results printout	9/10/2010 10:13:59 AM	CS
725/$$ - text search only, see search results printout	9/10/2010 10:14:01 AM	CS

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

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S2	90	(concatenat$3 with (clip$5 sample$1 video media music audio)) with (recogni $7 with (clip$5 sample$1 video media music audio))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:38
S3	44	S1 and S2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:38
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S5	4	S3 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:38
S6	5372	recogni$7 with (audio video$1 music media clip $5 sampl$4) with sequenc $3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:40
S7	3153	S1 and S6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:40

S8	44	S4 and S7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:41
S9	47	recogni$7 with sequenc$3 with song$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:42
S10	16	S1 and S9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:42
S11	0	S10 and playlist$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:42
S12	302	(determin$5 with (forward $3 skip$4 paus$3 rewind $3) with (clip$5))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:45
S13	131	S1 and S12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:45
S14	7	S4 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:45
S15	0	S6 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:46
S16	27976	(identif$8 recogni$7) with (audio video$1 music media clip$5 sampl$4) with sequenc$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:46

S17	5	S16 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:46
S18	2	S13 and ((media audienc $2) with (measur$4 monitor$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:49
S19	10	S12 and S16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:49
S20	5	S1 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:49
S21	58535	((media audienc$2) with (measur$4 monitor$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:50
S22	1305	S16 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:50
S23	0	S22 and S12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:50
S24	71161	(monitor$3 measur$3) with (forward$3 skip$4 paus$3 rewind$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:51
S25	146	S22 and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:51

S26	84	S1 and S25	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 08:51
S27	2	"7483975".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 09:03
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S29	36	S28 and (length$1 location $1)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 09:04
S30	36	S28 and (length$1 location $1 position$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 09:04
S31	11	S28 and ((length$1 location$1 position$3) with (clip$4 stream$1 sample$1))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 09:05
S32	2	S28 and ((length$1 location$1 position$3) near2 (clip$4 stream$1 sample$1))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 09:05
S33	2	"7444353".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 09:46

S34	0	S33 and playlist$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 09:46
S35	16128	(display$3 with (list$4 table$1) with results)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 09:58
S36	5	(media near measur$6) with ((multiple plural$3 sequenc$3) near2 sample $1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:23
S37	0	S1 and S36	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:23
S38	22	(media near measur$6) with ((multiple plural$3 sequenc$3) with sample $1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:23
S39	10	S1 and S38	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:23
S40	22	(media near (moniotr$3 measur$6)) with ((multiple plural$3 sequenc$3) with sample$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:24
S41	10	S1 and S40	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:24
S42	0	S41 not S39	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:24

S43	229	(media with (moniotr$3 measur$6)) with ((multiple plural$3 sequenc$3) with sample$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:24
S44	108	S1 and S43	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:24
S45	98	S44 not S40	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:24
S46	19	S45 and (video$1 audio music song$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:25
S47	4538	(display$3 near2 (list$4 table$1) near2 results)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:28
S48	60283	(identif$8 recogni$7) near2 (video$1 media audio music song$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:29
S49	23099	(identif$8 recogni$7) near2 (audio music song $1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:29
S50	88	S47 and S49	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:29
S51	32	S1 and S50	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:29

S52	1613	(monitor$3 measur$6) with (media video$1 music song$1 audio) with (use usage)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:30
S53	0	S51 and S52	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:30
S54	406	S48 and S52	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:30
S55	1	S47 and S54	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:30
S56	177	S1 and S54	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:30
S57	41	S56 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:31
S58	81	S56 and ((multiple plural $3 sequenc$3) with (sample$1 clip$5 segment $1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:33
S59	3	S56 and (concatenat$3 with (result$1 clip$5 segment$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:35
S60	0	S56 and (concatenat$3 with (result$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:36

S61	2	S56 and (concatenat$3 with (result$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:36
S62	10	S52 and (concatenat$3 with (result$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:37
S63	7	S62 and S1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:38
S64	41	S56 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) with result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:41
S65	22	S56 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) near2 result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:41
S66	69667	(identif$8 recogni$7) with (multiple$1 plural$3 sequenc$3) with (clip$5 segemtn$1 portion$1 sample$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:43
S67	38443	S1 and S66	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:43
S68	1929	S67 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) near2 result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:44
S69	16	S68 and S4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:44

S70	1905	S67 and ((concatenat$3 combin$3 combination$1 multiplex$3) near2 result $1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 10:44
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S72	576	S70 and (music song$1 video$1 audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:05
S73	83384	(identif$8 recogni$7) with (multiple$1 plural$3 sequenc$3) with (clip$5 segment$1 portion$1 sample$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:07
S74	46329	S1 and S73	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:07
S75	2399	S74 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) near2 result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:08
S76	767	S75 and (music song$1 video$1 audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:10
S77	36	S76 and (display$3 with results$3 with (playlist$1 (play near list$1) list$1 table$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:10
S78	208	S74 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) near2 result$1 with (clip$5 segemtn$1 portion$1 sample$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:14

S79	263	S74 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) near2 result$1 with (clip$5 segment$1 portion$1 sample$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:14
S80	0	S74 and ((concatenat$3 combin$3 combination$1 multiplex$3 encapsulat$3) near2 result$1 with (clip$5 segment$1 portion$1 sample$1) with (music song$1 audio$1 video$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:15
S81	2	S4 and S79	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:15

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EAST Search History

EAST Search History (Prior Art)

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S6	21918	(identif$8 with (media content$1 music video$1 audio) with (segment$1 portion$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 16:22
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S8	26	S7 and (raw near stream $1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 16:22
S9	6	S7 and (scrub$4 with raw)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 16:23
S10	43	S7 and (scrub$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 16:23
S11	293	(identif$8 with (media content$1 music video$1 audio) with (segment$1 portion$1)) with measur$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 16:25
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S14	7	S12 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 16:25

S15	51	(identif$8 near2 (segment $1 portion$1 clip$5)) with (location$1 near2 stream $1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:06
S16	9	S1 and S15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:07
S17	70	(identif$8 near2 (media audio video$1 content$1 music)) with (location$1 with (segment$3 portion $1 clip$5) with stream$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:10
S18	36	S1 and S17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:10
S19	14	shazam.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:20
S20	8	S1 and S19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:20
S21	96047	(identif$8 near2 (media content$1 music video$1 audio))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:28
S22	44901	S1 and S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:28
S23	2431	S13 and S22	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:29

S24	5113	(captur$3 with identif$8 with (media content$1 music video$1 audio))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:29
S25	1872	S1 and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:29
S26	153	S25 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:30
S27	53	S26 and ((clip$5 portion$1 segment$1) with (location $1 position$3 temporal))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:32
S28	12	(predict$3 with (user$1 near action$1) with (media video$1 music))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:42
S29	9	S1 and S28	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:43
S30	186	(determin$6 predict$4) with (commercial$1 ad ads advertis$6) with based with (skip$4 forward $3 mut$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:44
S31	54	S1 and S30	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:44
S33	11	S13 and S31	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:45

S34	2364	(determin$6 predict$4) with (commercial$1 ad ads advertis$6 segment$1 portion$1 clip$5 media video$1 selection$1 music audio) with based with (skip$4 forward$3 mut$3 paus$3 (user$1 near2 action$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:50
S35	952	S1 and S34	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:51
S36	41	S35 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:51
S37	30	S36 not S33	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 17:51
S38	6	((JONATHAN) near2 (STEUER)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/09 22:41
S39	15	((CHRISTOPHER) near2 (OTTO)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/09 22:41
S40	15	S38 S39	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 22:41
S41	948	(content$1 near offset$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 23:03
S42	28664179	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 23:03

S43	25131	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 23:03
S44	13441	S42 and S43	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 23:04
S45	7	S41 and S44	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/09 23:04
S46	1	"7483975".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/10 09:08
S47	6	("20030005430" "5612729" "4739398" "3919479" "4697209" "5512933").pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/10 09:33
S48	5	S47 and (length$1 duration $1)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/10 09:33
S49	4	("5828325" "6175627" "6154484" "5945932").pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/10 09:40
S50	4	S49 and (length$1 duration $1)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/10 09:40
S51	28664179	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:24
S52	52	((audio music media video $1) near sample$1) with result$3 with sequenc$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:24
S53	31	S52 and S51	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:25
S54	399	((audio music media video $1) near sample$1) with recogni$7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:28

S55	210	S51 and S54	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:29
S56	25131	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:29
S57	3	S55 and S56	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:29
S58	7685	(identif$8 recogn$8) with (sampl$3) with (media content$1 music video$1 audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:31
S59	4045	S51 and S58	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:31
S60	112	S56 and S59	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:31
S61	35	("20020010919" | "20020010919" | "20020059577" | "20020072982" | "20020072982" | "20020083060" | "20020161741" | "20040122679" | "20060059277" | "3919479" | "4677466" | "4697209" | "5594934" | "5758257" | "5778137" | "5945988" | "6513161" | "6990453" | "7444353").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:34

S62	10	S61 and (sequenc$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:34
S63	12	S61 and (samples)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 10:37
S64	7179	concatenat$3 with (clip$5 sample$1 result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 11:06
S65	61	S58 and S64	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 11:06
S66	23	S51 and S65	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/10 11:06

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SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/283,355	09/11/2008	725	2421	10004-2000113

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**** CONTINUING DATA ***************************

This application is a DIV of 11/139,330 05/26/2005
which claims benefit of 60/574,836 05/27/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
10/02/2008

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged /CHENEA SMITH/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NY	7	4	1

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TITLE

Media usage monitoring and measurement system and method

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515	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	552	((identif$8 recogni$7) with (multiple$1 plural$3 sequenc$3) with (clip$5 segment$1 portion$1 sample$1)) same ((concatenat$3 combin$3 combination$1 multiplex $3) with result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:28
L2	28664233	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:28
L3	243	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:28
L4	25131	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:28
L5	57	3 and (song$1 music audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:29
L6	26	3 and (song$1 music)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:29
L7	25055	((concatenat$3 combin$3 combination$1 multiplex $3) with result$1 with (clip $5 segment$1 portion$1 sample$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:30
L8	319	((concatenat$3 combin$3 combination$1 multiplex $3) with result$1 with (clip $5 segment$1 portion$1 sample$1)) with (song$1 music$1 video$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:30

L9	181	2 and 8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:31
L10	1160	(automatic$4 with (identif $8 recogni$6 deliver$3) with (music song$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:33
L11	0	9 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:33
L12	24568	((identif$8 recogni$6 deliver$3) with (music song $1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:33
L13	1160	10 and 12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:33
L14	4	9 and 12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:33
L15	939	(playlist$1 with result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:35
L16	31	10 and 15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:35
L17	0	1 and 16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:35
L18	9	2 and 16	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:36
L19	116684	(list$3 with result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:38

L20	51575	(list$4 near2 result$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:38
L21	615	20 and (recogniz$6 with (music song$1 audio))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:39
L22	256	2 and 21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:39
L23	25131	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:39
L24	8	22 and 23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:39
L25	2	"7483975".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 11:41
L26	37	("20020054750" | "20020178447" | "20030005430" | "20030149975" | "20040101271" | "20040101272" | "3919479" | "4230990" | "4450551" | "4644509" | "4677466" | "4697209" | "4739398" | "4843562" | "4876736" | "4918730" | "4930011" | "4955070" | "5319735" | "5450490" | "5481294" | "5512933" | "5574962" | "5579124" | "5581800" | "5612729" | "5764763" | "5787334" | "5828325" | "5945932" | "6154484" | "6175627" | "6845360" | "6862355" | "6871180" | "6958710" | "7174151").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:42
L27	25	26 and list$4	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:42

L28	17	26 and (list$4 not listen$1)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:43
L29	7	26 and (list$4 not listen$2)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:43
L30	17	("20020010919" | "20020010919" | "20020059577" | "20020072982" | "20020072982" | "20020083060" | "20020161741" | "20040122679" | "20060059277" | "3919479" | "4677466" | "4697209" | "5594934" | "5758257" | "5778137" | "5945988" | "6513161" | "6990453" | "7444353"). PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:45
L31	3	(26 30) and ((play near list $1) playlist$1)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:46
L32	1	"5512933".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 11:46
L33	1	"7483975".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:05
L34	1561	scrub$4 near2 result$1	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:16
L35	21	34 and (music song$1)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:16
L36	15	2 and 35	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:17
L37	179	(scrub$4 with clean$3 with (audio music song$1 media video$1))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:18
L38	91	2 and 37	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:18
L39	14	("20020010919" | "20020059577" | "20020072982" | "20020161741" | "20040122679" | "20060059277" | "3919479" | "4677466" | "4697209" | "5594934" | "5758257" | "5945988" | "6513161" | "6990453"). PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:20
L40	51	26 30 39	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:20
L41	0	wo-2004/040475-$.did.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:20
L42	0	wo-04/040475-$.did.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/09/13 12:20

L43	0	wo-04/040475-$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L44	0	wo-2004/040475-$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L45	2	wo-2004040475-$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L46	0	wo-2003091990-$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L47	1	wo-03091990-$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L48	1	wo-0207600-$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L49	4	45 47 48	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L50	55	40 49	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L51	11	50 and (scrub$4 raw clean $3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:21
L52	2	50 and (scrub$4 clean$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:22
L53	14	(clean$3 near2 ((play near list$4) playlist$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:23

L54	0	2 and 53	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:23
L55	26	(clean$3 with ((play near list$4) playlist$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:23
L56	8	55 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:23
L57	304854	(fix$3 updat$3) with result $3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:24
L58	6	50 and 57	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:25
L59	0	50 and scrub$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:25
L60	0	50 and scrub$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:26
L61	33	audio near2 scrub$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:26
L62	13	2 and 61	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:26
L63	1	12/283355.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:27
L64	7	(clean near play$3 near list $4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:28

L65	3	(clean near play$3 near list $4).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:28
L66	2	"20020083060".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:38
L67	1	66 and (single near stream)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:38
L68	46	(concatenat$3 with result $3 with media)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:56
L69	22	2 and 68	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:56
L70	2	69 and (playlist$1 (play near list$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:56
L71	2608	(concatenat$3 with (media video$1 music song$1 audio))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:57
L72	1400	2 and 71	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:58
L73	132	4 and 72	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 12:58
L74	402	(concatenat$3 near2 (video $1 song$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:01
L75	205	2 and 74	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:01

L76	2	(concatenat$3 near2 (video $1 song$1)) with single near stream	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:02
L77	103	(concatenat$3 near2 (video $1 song$1)) with stream	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:02
L78	24	77 and 23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:02
L79	42	77 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:02
L80	20	(concatenat$3 near2 (song $1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:07
L81	7	2 and 80	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:07
L82	1206	(concatenat$3 near3 stream)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:08
L83	752	2 and 82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:08
L84	53	4 and 83	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:08
L85	2	"20020038456".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:13
L86	1	85 and (stor$3 with microchannel$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:14

L87	2	"20020083060".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:14
L88	2	"7444353".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:21
L89	0	88 and stream	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:21
L90	482	(transmi$5 deliver$3) with (result$1) with (multiple$1 plural$3 sequenc$3) with (clip$5 segment$1 portion $1 media video$1 audio music song$1) with (combine$1 combination$1 concatenat$3 single multiplex$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:25
L91	240	90 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:25
L92	0	91 and ((play near list$4) palylist$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:26
L93	10	91 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:26
L94	695	(transmi$5 deliver$3) with (results) with (clip$5 segment$1 portion$1 media video$1 audio music song$1) with (combine$1 combination$1 concatenat $3 single multiplex$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:28
L95	204	(transmi$5 deliver$3) with (results) with (video$1 audio music song$1) with (combine$1 combination$1 concatenat$3 single multiplex$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:28

L96	95	95 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:28
L97	146	(transmi$5 deliver$3) with (results) with (video$1 audio music song$1) with (combine$1 combination$1 concatenat$3 multiplex$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:29
L98	58	2 and 97	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:30
L99	12	("20020062250" | "20080141307" | "20080222012" | "6985934" | "7302696").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:34
L100	138	("20010029501" | "20010056469" | "20020023018" | "20020023132" | "20020029179" | "20020034255" | "20020038299" | "20020056119" | "20020062250" | "20020063732" | "20020073026" | "20020077839" | "20020091538" | "20020091725" | "20020099654" | "20020129089" | "20020169797" | "20020175917" | "20030061114" | "20030182371" | "20030200145" | "20030214529" | "20040019648" | "20040226048" | "20050144302" | "20050240433" | "20050240596" | "20050256780" | "20050256941" | "20060168064" | "20070112676" | "20070189708" | "20070204064" | "20070282819" | "20080092193" | "20080098301" | "20080141307" |	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:34

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L101	0	1 and 99	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:35
L102	1	11/999523.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:35
L103	3785	(aggregat$3 with (video$1 music song$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:35
L104	796	(aggregat$3 near2 (video $1 music song$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:35
L105	249	2 and 104	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:35
L106	47	4 and 105	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:36
L107	1	85 and (stor$4 with clip$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/09/13 13:37

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Sheet 1 of 2

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Jonathan S. STEUER
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	10004-2000113

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- 3,919,479	11-11-1975	Moon et al.	
		US- 4,677,466	06-30-1987	Lert et al.	
		US- 4,697,209	09-29-1987	Kiewit et al.	
		US- 5,594,934	01-14-1997	Lu et al.	
		US- 5,945,988	08-31-1999	Williams et al.	
		US- 6,513,161 B2	01-28-2003	Wheeler et al.	
		US- 6,990,453 B2	06-27-2002	Wang	
		US- 2002/0010919 A1	01-24-2002	Lu et al.	
		US- 2002/0059577 A1	05-16-2002	Lu et al.	
		US- 2002/0072982A1	06-13-2002	Barton et al.	
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		US- 2004/0122679 A1	06-24-2004	Neuhauser et al.	
		US- 2006/0059277 A1	03-16-2006	Zito et al.	
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FOREIGN PATENT DOCUMENTS

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		WO 2004/040475 A2	05-13-2004	Koninklijke Philips N.V.	All	
		WO 03/091990 A1	11-06-2003	Shazam Entertainment, LTD	All	
		WO 02/27600 A2	04-04-2002	Shazam Entertainment, LTD	All	

Examiner Signature	/Chenea Smith/	Date Considered	09/09/2010

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Sheet 2 of 2

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Jonathan S. STEUER
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	10004-2000113

NON PATENT LITERATURE DOCUMENTS

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		Arbitron, "The Portable People Meter System," www.arbitron.com/protable_people_meters/ppm_system.htm, downloaded on April 25, 2005.	
		HEDGES, M. "New measurement devices raise new questions. Will we ever know who's listening?" www.followthemedia.com/number/devices01082004.htm, August 1, 2004.	
		Gertner, J. "Watching What You Watch," New York Times Magazine, April 10, 2005.	
		GFK AG, "Gfk unveils its multi-talented new MediaWatch," press release, June 14, 2004.	
		Nielsen Media Research, "Active/Passive Metering begins July 2004," August 6, 2003.	
		Nielsen Media Research, "Summary Report of the Active/Passive (A/P) Meter Regional Test," November 11, 2002.	
		Philips Research, "Audio Fingerprinting for automatic music recognition," brochure, www.content.identification.philips.com, downloaded March 9, 2005	
		PINTO, A. "Mediawatch meters a complex mix of media, passively," www.Indiantelevision.com/headlines/y2k5/feb/feb177.htm, February 19, 2005.	

Examiner Signature	/Chenea Smith/	Date Considered	09/09/2010

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Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	~~2423~~ 2421
Examiner Name	~~Andrew Y. Koenig~~ Chenea Smith
Attorney Docket Number	10004-2000113

U. S. PATENT DOCUMENTS

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/C.S./	A	US- 5,758,257	05-26-1998	Herz et al.	
		US-			
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/C.S./	1	US- 7444353	10-28-2008	Chen et al.	
		US-			
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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	/Chenea Smith/	Date Considered	09/23/2010

*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.

PTO/SB/08a (07-09)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Chenea Smith
Attorney Docket Number	10004-2000113

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
	1	US- 5,095,382	03-10-1992	Abe, Kesasku	
	2	US- 2004/0224638	11-11-2004	Fadell et al.	
		US-			
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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		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.

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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:	9034523
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	14-DEC-2010
Filing Date:	11-SEP-2008
Time Stamp:	17:37:16
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		100042000113SIDS.pdf	409965 05e7db9d2fa21492e2d60ac4fff841268182 55a7	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	4
	Information Disclosure Statement (IDS) Filed (SB/08)	5	5
Warnings:			
Information:			
	Total Files Size (in bytes):	409965	

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

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

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

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

PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:	Examiner: Chenea Smith
Jonathan S. Steuer et al.	Group Art Unit: 2421
Serial No.: 12/283,355	
Filing Date: September 11, 2008	
For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A. The Examiner is requested to make this document of record.

This Information Disclosure Statement is submitted:

☐ With the application OR This Information Disclosure Statement is submitted before the mailing of a first Office action after the filing of a Request for Continued Examination under § 1.114 (filed concurrently herewith) in accordance with § 1.97(b)(4); accordingly, no fee or separate requirements are required .

☐ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

☒ **After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.**

☐ The fee set forth in 37 CFR 1.17p is paid herewith.

☒ **A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.**

☐ 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.

☒ **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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.**

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

☐ The fee set forth in 37 C.F.R. § 1.17p is paid herewith and a Certification under 37 C.F.R. § 1.97(e) is provided below:

☐ 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.

☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to **Deposit Account No. 50-4242**, referencing docket no. **10004-2000113**.

Dated: December 14, 2010

Respectfully submitted,

By: _____

Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
Telephone: (212) 529-5131
Facsimile: (212) 529-5132

PTO/SB/80 (11-08)
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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☑ Practitioners associated with the Customer Number: 51417

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:
Anonymous Media Research, LLC
72 E. 3rd St., Suite 1B, NY, NY 10003

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	1 DEC 2010
Name	Jonathan S. Steuer	Telephone	866 295 2662
Title	MANAGER & CEO		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

PTO/SB/96 (07-09)
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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.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Jonathan S. Steuer et al.

Application No./Patent No.: 12/283,355 Filed/Issue Date: September 11, 2008

Titled: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

Anonymous Media Research, LLC , a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made) the patent application/patent identified above, by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Jonathan S. Steuer and Christopher W. Otto To: Anonymous Media, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 016861, Frame 0088, or for which a copy thereof is attached.

2. From: Anonymous Media, LLC To: Anonymous Media Research, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature — December 16, 2010 (Date)

Michael Mauriel, Reg. No. 44,226 (Printed or Typed Name) — Attorney for Applicants (Title)

This collection of information is required by 37 CFR 3.73(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.**

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

COPY

ASSIGNMENT

THIS ASSIGNMENT, by Anonymous Media LLC, a limited liability company organized under the laws of Delaware and having its registered office at 72 East 3rd Street, Apartment 2B, New York, NY 10003-0206 (hereinafter referred to as the "assignor") witnesseth:

WHEREAS, said assignor is the owner, by prior assignment from the inventors, of certain patent applications for Letters Patent for a Media Usage Monitoring and Measurement System, including at least the following applications:

COUNTRY	APPLICATION NUMBER	FILING DATE
US	11/139,330	May 26, 2005
US	12/283,353	September 11, 2008
US	12/283,354	September 11, 2008
US	12/283,332	September 11, 2008
US	12/283,355	September 11, 2008
US	12/283,333	September 11, 2008
US	12/954,604	November 24, 2010
PCT	PCT/US05/18934	May 27, 2005
EP	05755114.5	May 27, 2005
AU	2005251196	May 27, 2005

(collectively, "The Patent Applications").

WHEREAS, Anonymous Media Research LLC, a limited liability company organized under the laws of Delawarea and having a place of business at 72 East 3rd Street, Apartment 2B, New York, NY 10003-0206 (hereinafter referred to as the "assignee") is desirous of confirming its acquisition of the entire right, title and interest in and to The Patent Applications, and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon:

NOW, THEREFORE, in consideration of One Dollar ($1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, said assignor has sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto said assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to The Patent Applications for Letters Patent, and any and all Letters Patent or Patents in the United States of America and all foreign countries which may be granted therefor and thereon, and in and to any and all divisions, continuations and continuations-in-part of said application, or reissues or extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by said assignee, for its own use and the use of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted, as fully and entirely as the same would has been held and enjoyed by the assignor, had this sale and assignment not been made.

AND for the same consideration, said assignor hereby covenant and agree to and with said assignee its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, said assignor are the sole and lawful owners of the entire right, title and interest in and to said inventions and the application for Letters Patent above-mentioned, and that the same are unencumbered and that said assignor have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

AND for the same consideration, said assignor hereby covenant and agree to and with said assignee, its successors, legal representatives and assigns, that said assignor will, whenever counsel of said assignee, or the counsel of its successors, legal representatives and assigns, shall advise that any proceeding in connection with said inventions, or said application for Letters Patent, or any proceeding in connection with Letters Patent for said inventions in any country, including interference proceedings, is lawful and desirable, or that any division, continuation or continuation in part of any application for Letters Patent or any reissue or extension of any Letters Patent, to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of Letters Patent for said inventions, without charge to said assignee, its successors, legal representatives and assigns, but at the cost and expense of said assignee, its successors, legal representatives and assigns.

AND said assignor hereby request the Commissioner of Patents to issue said Letters Patent of the United States to said assignee as the assignee of said inventions and the Letters Patent to be issued thereon for the sole use of said assignee, its successors, legal representatives and assigns.

Assignor has caused this Patent Assignment to be duly executed by a duly authorized representative on its behalf:

ANONYMOUS MEDIA, LLC

By: _____ Date: 1 DEC 2010

Jonathan Steuer, Manager

Electronic Acknowledgement Receipt

EFS ID:	9067052
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	17-DEC-2010
Filing Date:	11-SEP-2008
Time Stamp:	18:14:02
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	Power of Attorney	1000420001POA.pdf	163821 5ad6f0573adc8f0e42a698a4fa67eb92ce2add12	no	1

Warnings:	
Information:	

2	Assignee showing of ownership per 37 CFR 3.73(b).	100042000113Statement373b.pdf	343196 db97de925deef0c5a8c87b44c05bc41a11b47573	no	3

Warnings:	
Information:	
Total Files Size (in bytes):	507017

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

51417 7590 01/31/2011

Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

EXAMINER	
SMITH, CHENEA	
ART UNIT	**PAPER NUMBER**
2421	

MAIL DATE	DELIVERY MODE
01/31/2011	PAPER

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.

Interview Summary	Application No.	Applicant(s)	
	12/283,355	STEUER ET AL.	
	Examiner	Art Unit	
	CHENEA P. SMITH	2421	

All participants (applicant, applicant's representative, PTO personnel):

(1) *CHENEA P. SMITH*. (3) *Michael Mauriel*.

(2) *Mike Van Handel*. (4) *Jonathan Steuer*.

Date of Interview: *1/20/2011*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Kolessar (of record)*.

Agreement with respect to the claims f)☐ was reached. g)☐ was not reached. h)☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Discussed proposed amendments to the claim to clarify the link between the raw playstream and the sequence of submitted data samples, amendments to clarify that the identification is of an audible portion of conent and not an entire channel, and also amendments to clarify where the raw playstream comes from. Proposed amendments appear to overcome the art rejection of record. Further search and consideration is required* .

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Michael Van Handel/ Primary Examiner, Art Unit 2424	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Attorney Docket No.: 10004-2000113
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Jonathan S. Steuer

Application No.: 12/283,355 Group Art Unit: 2421

Filing Date: September 11, 2008 Examiner: Smith, Chenea

Title: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

AMENDMENT UNDER 37 CFR § 1.111

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

Dear Sir:

This is in response to the Office Action dated September 28, 2010 (Paper No. 20100910) for which a response was due on December 28, 2010. Filed herewith is a Petition and fee for a two month extension of time, thereby extending the deadline for response to February 28, 2011. Accordingly, this response is timely filed. Reconsideration and allowance of the pending claims, as amended, in light of the remarks presented herein are respectfully requested.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 4 of this paper.

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows, where additions are underlined and deletions are indicated by ~~strikethrough~~ or enclosed in [[double brackets]]:

Claim 1 (Currently Amended): A media measurement method comprising:

generating a ~~raw~~ play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured from audible content at a monitoring device associated with a monitored audience member; and

utilizing sample sequence data ~~including~~ and content offset data to deduce play-altering actions of ~~a~~ the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results.

Claim 2 (Original): The method of claim 1 further comprising:

generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member.

Claim 3 (Original): The method of claim 1 further comprising:

utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member.

Claim 4 (Original): The media measurement method of claim 1 wherein a clean play list is generated including deduced play-altering actions.

Claim 5 (New): The media measurement method of claim 1 wherein the play stream is a raw play stream.

Claim 6 (New): The media measurement method of claim 1 wherein the play stream is a clean play stream.

REMARKS

Claims 1-4 were pending in the present application. By virtue of this response, no claims have been cancelled and claims 5 and 6 have been added. Therefore, claims 1-6 are pending and are currently under consideration. Of those, claim 1 has been amended.

Telephone Interview of January 20, 2011

The Examiner and the Supervisory Examiner conducted a telephone interview with the first named inventor and Applicants' attorney on Thursday, January 20, 2011. Applicants thank the Examiner and the Supervisory Examiner for taking the time to discuss this case.

The Examiner's Interview Summary mailed on January 31, 2011 (Paper 20110124) indicates that amendments were discussed to claim 1 to clarify (1) "the link between the raw playstream and the sequence of submitted data samples," (2) "that the identification is of an audible portion of con[t]ent and not an entire channel," and (3) "where the raw playstream comes from." The Interview Summary also indicates that: "Proposed amendments appear to overcome the art rejection of record." Applicants agree with most of the Examiner's Interview Summary. However, Applicants wish to clarify that, with respect to item (1), Applicants believe the issue raised in the interview was the link between the play stream in the first claim step and "sample sequence data" in the second claim step. Also, although the Interview Summary indicates "N/A" with respect whether an agreement was reached, Applicants understood that, at least with respect to the "art rejection of record," an agreement was reached that the proposed amendments would overcome the rejection.

Rejections under 35 U.S.C. § 103

Claims 1-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,483,975 to Kolessar et al. ("Kolessar") in view of U.S. publication number US20020083060 by Wang et al. ("Wang"), and U.S. publication number US2002003856 by Hansen et al. ("Hansen").

Amended claim 1 recites "generating a ~~raw~~ play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured from audible content at a monitoring device associated with a monitored audience member; and utilizing sample sequence data ~~including~~ and content offset data to deduce play-altering actions of ~~a~~ the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results." (Deleted language shown in strikethrough and added language underlined).

Applicants respectfully submit that this language addresses all three of the concerns raised in the interview as enumerated above. With respect to issue (1), the added language clarifies that "sample sequence data" corresponds to "a sequence of the content identification results." With respect to issues (2) and (3), the added language clarifies where the play stream comes from and that the "audio data samples" are "captured from audible content at a monitoring device." (Emphasis added).

Applicants have further amended claim 1 to recite "play stream" rather than "raw play stream." Applicants respectfully submit that the word "raw" was not relied on to distinguish the cited references and that the Applicants' disclosure shows examples utilizing sample sequence data associated with "raw play streams" and "clean play streams" for various purposes. Therefore, Applicants have removed the word "raw" from claim 1 so that claim 1 simply references a "play stream" and Applicants have added new claims 5 and 6 to more clearly define specific claims to generating "raw" and "clean" play streams.

Applicants respectfully that in light of the amendment to claim 1, that claim is now allowable over the cited references as agreed to in the interview. Because claims 2-6 all depend from claim 1, those claims are now allowable for at least the same reasons.

Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new matter has been added. Entry of the above-mentioned amendments is respectfully requested.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conversation would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees which may be required by this paper to **Deposit Account No. 50-4242**, referencing docket no. **10004-2000113**.

Dated: February 28, 2011

Respectfully submitted,

By _____
Michael Mauriel
Registration No.: 44,226
Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, New York 10028
(212) 529-5131
Attorney(s) for Applicant

Electronic Patent Application Fee Transmittal

Application Number:	12283355
Filing Date:	11-Sep-2008
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Filer:	Michael John Mauriel/Victoria Wilson
Attorney Docket Number:	10004-2000113

Filed as Small 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	2252	1	245	245

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**245**

Electronic Acknowledgement Receipt

EFS ID:	9551177
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	28-FEB-2011
Filing Date:	11-SEP-2008
Time Stamp:	16:55:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Electronic Funds Transfer
Payment was successfully received in RAM	$245
RAM confirmation Number	5079
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Extension of Time	100042000113PetitionExtTime.pdf	22127 5966b7599c83c5e3cee2a23e84452d826f6e553c	no	1
Warnings:					
Information:					
2		100042000113RespOA.pdf	46913 196264f5cf10cc232e7ae733e26d2a662ef09a9c	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	3
	Applicant Arguments/Remarks Made in an Amendment	4	6

Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29539 63ae6b59275d3a0289fe58aa28f2ceb6d11a75f3	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	98579		

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/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT 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.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) 10004-2000113
Application Number 12/283,355	Filed September 11, 2008
For MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	
Art Unit 2421	Examiner Smith, Chenea

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$130	$65	$
☑	Two months (37 CFR 1.17(a)(2))	$490	$245	$ 245.00
☐	Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☑ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-4242.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

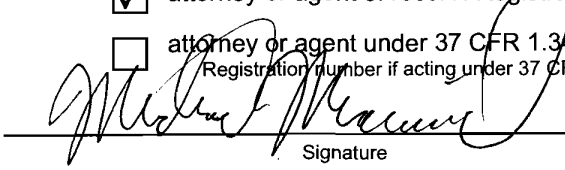
I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 44,226

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____



Signature — February 28, 2011 (Date)

Michael Mauriel (Typed or printed name) — 212-529-5131 (Telephone Number)

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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.

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	Filing Date	☐ To be Mailed
12/283,355	09/11/2008	

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

AMENDMENT	02/28/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 5	Minus	** 20	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $110 =	0	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	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) 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:
/SHEILA CHAPMAN/

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.

PTO/SB/08a (07-09)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2426
Examiner Name	Smith, Chenea P.
Attorney Docket Number	10004-2000113

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
	1	US- 5,437,050	07-25-1995	Lamb et al.	
	2	US- 2003/0009469	01-09-2003	Platt et al.	
	3	US- 2004/0001161	01-01-2004	Herley, Cormac	
	4	US- 2005/0086682	04-21-2005	Burges et al.	
	5	US- 2007/0143777	06-21-2007	Wang, Avery Li-Chun	
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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		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.

Electronic Acknowledgement Receipt

EFS ID:	9790397
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	01-APR-2011
Filing Date:	11-SEP-2008
Time Stamp:	13:13:56
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		100042000113SIDS4.pdf	53401 c73fe2e2eac111cefdfdba433d6f59590d823dfa	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	4
	Information Disclosure Statement (IDS) Filed (SB/08)	5	5
Warnings:			
Information:			
	Total Files Size (in bytes):	53401	

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

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

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

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

PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:	Examiner: Smith, Chenea P.
Jonathan S. Steuer et al.	Group Art Unit: 2421
Serial No.: 12/283,355	
Filing Date: September 11, 2008	
For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A. The Examiner is requested to make this document of record.

This Information Disclosure Statement is submitted:

☐ With the application OR This Information Disclosure Statement is submitted before the mailing of a first Office action after the filing of a Request for Continued Examination under § 1.114 (filed concurrently herewith) in accordance with § 1.97(b)(4); accordingly, no fee or separate requirements are required .

☐ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

☒ **After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.**

☐ The fee set forth in 37 CFR 1.17p is paid herewith.

☒ **A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.**

☐ 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.

☒ **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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.**

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

☐ The fee set forth in 37 C.F.R. § 1.17p is paid herewith and a Certification under 37 C.F.R. § 1.97(e) is provided below:

☐ 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.

☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to **Deposit Account No. 50-4242**, referencing docket no. **10004-2000113**.

Dated: March 31, 2011

Respectfully submitted,

By: _____
Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

51417 7590 05/12/2011

Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

EXAMINER	
SMITH, CHENEA	
ART UNIT	**PAPER NUMBER**
2421	

MAIL DATE	DELIVERY MODE
05/12/2011	PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	12/283,355	STEUER ET AL.	
	Examiner	Art Unit	
	CHENEA P. SMITH	2421	

-- 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 *01 April 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ 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

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ 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).

11)☐ 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

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) ☐ 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

Response to Amendment

1. This office action is in response to communications filed 4/1/2011. Claim 1 is amended. Claims 5-6 are new. Claims 1-6 are pending in this action.

Response to Arguments

2. Applicant's arguments filed 4/1/2011 have been fully considered but they are not persuasive.

In response to Applicants' arguments on page 4 regarding the telephone interview of 1/20/2011, as well as subsequent arguments on page 5, lines 21-22 that, "*Applicants respectfully [submit] that in light of the amendment to claim 1, that claim is now allowable over the cited references*", the Examiner respectfully disagrees, and notes that initially, the proposed amendments appeared to overcome the art rejection of record. However, given further consideration of the Kolessar reference, it is believed by the Examiner that both the "the submitted data samples corresponding to audio data samples captured from audible content at a monitoring device associated with a monitored audience member", and the "the sample sequence data corresponding to a sequence of the content identification results" limitations are both met by Kolessar. Kolessar teaches a system that gathers data concerning usage of media data received by a user. Kolessar teaches that the media data to which the user may be exposed may be television data, radio data, personal audio

player data, audio data, video data, personal video player data, etc. (see Kolessar, col 7, lines 33-41), and that the monitoring device obtains a representation of the media data, or a portion thereof (see Kolessar, col 8, lines 55-60 and lines 66-67, and col 9, lines 3-6). Kolessar also teaches that while an indication of a measured channel is shown, the indication may also be of program to which the user was exposed (see Kolessar, col 18, lines 47-52). This, then, reasonably reads on the limitation of "the submitted data samples corresponding to audio data samples captured from audible content at a monitoring device associated with a monitored audience member", as claimed. Kolessar also teaches that a lack of the reproduction of an audio signal may be determined by examining the measurement data pertaining to three consecutive time periods, wherein during the first and third time periods, the indication data is provided, but during the second time period, the indication is not provided. For example, for three consecutive time periods, it may be determined that the submitted samples are three consecutive portions of a particular program (see Kolessar, col 18, lines 47-52 and Fig. 10), where the first and third samples produce an indication code, but where the second sample does not produce the indication code, then it may be determined that a specific portion of the program was muted by the user for a certain amount of time. Kolessar's measurement data of three consecutive time periods may also be used to deduce other play-altering actions (see Kolessar, col 7, lines 30-32), such as changing a channel/switching to a different program (see Kolessar, col 19, lines 64-65). For example, for three consecutive time periods, it may be determined that that the first two submitted samples correspond to two consecutive portions of a program, and the third corresponds to a different program (see Kolessar, Fig. 10), thereby indicating that a user switched programs/changed channels. This, then, reasonably reads on the "sample sequence"

limitation, with "the sample sequence data corresponding to a sequence of the content identification results", as claimed.

3. The Applicants should please also note that the Examiner believes that the combination of Kolessar in view of Hansen and Wang also teaches the limitations of newly added claims 5 and 6 (please see the rejection below).

Claim Rejections - 35 USC § 103

4. 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.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolessar et al. (of record) in view of Wang (of record) and Hansen (of record).

Regarding claim 1, Kolessar discloses a media measurement method (see Kolessar, Figs. 1 and 2) comprising:

submitted data samples corresponding to audio data samples captured from audible content at a monitoring device associated with a monitored audience member (see Kolessar, col 7, lines 33-41, col 8, lines 55-60 and lines 66-67, col 9, lines 3-6 and col 18, lines 47-52),

utilizing sample sequence data and content offset data (content offset data limitation, see Kolessar, col 9, line 48 and incorporated-by-reference patent US5512933 to Wheatley, col 2, lines 22-28, col 3, lines 9-19 and col 5, lines 47-55) to deduce play-altering actions of a monitored audience member, the sample sequence data corresponding to a sequence of the content identification results (Kolessar teaches that a lack of the reproduction of an audio signal may be determined by examining the measurement data pertaining to three consecutive time periods, wherein during the first and third time periods, the indication data is provided, but during the second time period, the indication is not provided. For example, for three consecutive time periods, it may be determined that the submitted samples are three consecutive portions of a particular program {see Kolessar, col 18, lines 47-52 and Fig. 10}, where the first and third samples produce an indication code, but where the second sample does not produce the indication code, then it may be determined that a specific portion of the program was muted by the user for a certain amount of time. Kolessar's measurement data of three consecutive time periods may also be used to deduce other play-altering actions {see Kolessar, col 7, lines 30-32}, such as changing a channel/switching to a different program {see Kolessar, col 19, lines 64-65}. For example, for three consecutive time periods, it may be determined that that the first two submitted samples correspond to two consecutive portions of a program, and the third corresponds to a different program {see Kolessar, Fig. 10}, thereby indicating that a user switched programs/changed channels. Therefore, the limitation as claimed is reasonably met).

Kolessar does not specifically disclose generating a play stream of content identification results corresponding to a sequence of submitted data samples.

In an analogous art relating to a system for identifying media, Wang discloses content identification results (see Wang, [0105], lines 1-18) corresponding to a sequence of submitted data samples (see Wang, [0090], lines 1-3).

It would have been obvious for a person having ordinary skill in the art at the time of the invention to modify Kolessar's system to include the limitations as taught by Wang for the advantage of providing an improved system for gathering media usage information on identified media that may be recognized in real time, recognized when mixed together with other recordings in a single stream, and recognized when subjected to high levels of noise and distortion.

Kolessar in view of Wang does not specifically disclose generating a play stream of results.

In an analogous art relating to a system for providing media to a user, Hansen discloses generating a play stream of results (see Hansen, [0027], lines 2-6).

It would have been obvious for a person having ordinary skill in the art at the time of the invention to modify the system of Kolessar in view of Wang to include the limitations as taught by Hansen for the advantage of providing an improved system for gathering media usage information on identified media in which the results of the identification are provided in an economically viable and continuous manner (see Hansen, [0009]).

Regarding claim 2, Kolessar in view of Wang and Hansen discloses generating a play list (see Kolessar, Fig. 10 and col 18, lines 30-32 and lines 47-57) including content offset data as part of deducing media play-altering actions of a monitored audience member (Kolessar discloses a table, i.e., playlist of data that is collected. This collected data reasonably includes the

position, i.e., content offset – data, as described in incorporated-by-reference patent to Wheatley. Wheatley discloses that his collection data stores the time and dates only intermittently, and that therefore, the specific time and date of any sample is thus obtained from its position in the interval concerned {see Wheatley, col 5, lines 47-55}. The position data, i.e., content offset data, must then be included in the generated table in order for the specific times to be obtained).

Regarding claim 3, Kolessar in view of Wang and Hansen discloses utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member (see Kolessar, col 9, lines 35-54, col 11, lines 9-20 and col 16, lines 4-33, and Fig. 10).

Regarding claim 4, Kolessar in view of Wang and Hansen discloses wherein a clean play list is generated (Wang discloses that a candidate list is compiled first {see Wang, [0082], lines 1-4}, and then the candidate list is further analyzed to produce final results {see Wang, [0082], lines 1-12 and [0084], lines 1-2}, and only then presented to the user, which therefore reasonably teaches a clean play list, see Wang, [0105], lines 1-18) including deduced play-altering actions (see Kolessar, Fig. 10).

Regarding claim 5, Kolessar in view of Wang and Hansen discloses wherein the play stream is a raw play stream (Wang discloses that a candidate list of results is compiled first {see Wang, [0082], lines 1-4}, and then the candidate list is further analyzed to produce final results {see Wang, [0082], lines 1-12 and [0084], lines 1-2}. Wang's first compiled candidate list, in combination with Hansen's play stream of results, then, reasonably teaches the limitation as claimed.).

Regarding claim 6, Kolessar in view of Wang and Hansen discloses wherein the play stream is a clean play stream (Wang discloses that a candidate list of results is compiled first {see Wang, [0082], lines 1-4}, and then the candidate list is further analyzed to produce final results {see Wang, [0082], lines 1-12 and [0084], lines 1-2}. Wang's final compiled candidate list, in combination with Hansen's play stream of results, then, reasonably teaches the limitation as claimed.).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHENEA P. SMITH whose telephone number is (571)272-9524. The examiner can normally be reached on 8:00 am - 4:00 pm, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. 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.

/William Trost/
Supervisory Patent Examiner, Art Unit 2421

/CHENEA P SMITH/
Examiner, Art Unit 2421

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	**Art Unit**
	CHENEA P SMITH	2421

✓	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	09/10/2010	05/06/2011							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5		✓							
	6		✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	Art Unit
	CHENEA P SMITH	2421

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Updated EAST search results included	5/6/2011 2:49:43 PM	CS
Updated Invenor search included - see search results printout	5/6/2011 2:49:45 PM	CS
725/$$, 455/$$- text search only, see search results printout	5/6/2011 2:49:46 PM	CS

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	((deduce$1 deducing) near2 (channel$1 source $1 data information station)) with (clip$4 sampl $3) near sequenc$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:35
L2	2	((deduce$1 deducing) near2 (channel$1 source $1 data information station)) with ((clip$4 sampl$3) near sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:35
L3	4	((deduce$1 deducing) with (channel$1 source$1 data information station)) with ((clip$4 sampl$3) near sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:35
L4	14765210	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:36
L5	42	((deduce$1 deducing) with (channel$1 source$1 data information station)) with ((clip$4 sampl$3) with sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:36
L6	26	4 and 5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:36
L7	3228	((deduce$1 deducing infer $4 determin$6) with (data information)) with ((clip$4 sampl$3) with sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:38
L8	1729	4 and 7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:38
L9	802	8 and (video$1 media music audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39

L10	27294	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
L11	176739	"455".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
L12	5	9 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
L13	5	8 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:40
L14	27	("20020010919" | "20020038456" | "20020059577" | "20020072982" | "20020083060" | "20020161741" | "20030009469" | "20040001161" | "20040122679" | "20040224638" | "20050086682" | "20060059277" | "20070143777" | "3919479" | "4677466" | "4697209" | "5095382" | "5437050" | "5512933" | "5594934" | "5758257" | "5945988" | "6513161" | "6990453" | "7444353" | "7483975").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:46
L15	4952	(deduce$1 deducing infer $4 determin$6) with ((trick $3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:28
L16	1569	(deduce$1 deducing infer $4 determin$6) near2 ((trick$3 near play$3) (time near shift$3) (time $1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:28

L17	21	(deduce$1 deducing infer $4) near2 ((trick$3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:28
L18	13	4 and 17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:28
L19	83	(deduce$1 deducing infer $4) with ((trick$3 near play $3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
L20	13745	4 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
L21	0	19 and 20	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
L22	4952	(deduce$1 deducing infer $4 determin$6) with ((trick $3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
L23	1569	(deduce$1 deducing infer $4 determin$6) near2 ((trick$3 near play$3) (time near shift$3) (time $1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
L24	14	20 and 23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
L25	6	((JONATHAN) near2 (STEUER)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/06 14:45
L26	10	((CHRISTOPHER) near2 (OTTO)).INV.	US-PGPUB	OR	OFF	2011/05/06 14:45
L27	15	((CHRISTOPHER) near2 (OTTO)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/06 14:45

L28	23563	"2627"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:46
L29	15	26 27	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:46

5/6/2011 2:47:31 PM
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PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2426
Examiner Name	Smith, Chenea P.
Attorney Docket Number	10004-2000113

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
	1	US- 5,437,050	07-25-1995	Lamb et al.	
	2	US- 2003/0009469	01-09-2003	Platt et al.	
	3	US- 2004/0001161	01-01-2004	Herley, Cormac	
	4	US- 2005/0086682	04-21-2005	Burges et al.	
	5	US- 2007/0143777	06-21-2007	Wang, Avery Li-Chun	
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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	/Chenea Smith/	Date Considered	05/06/2011

*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. /C.S./

Receipt date: 12/14/2010

12283355 - GAU: 2421

PTO/SB/08a (07-09)
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 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Chenea Smith
Attorney Docket Number	10004-2000113

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
	1	US- 5,095,382	03-10-1992	Abe, Kesasku	
	2	US- 2004/0224638	11-11-2004	Fadell et al.	
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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	/Chenea Smith/	Date Considered	05/06/2011

*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. /C.S./

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

51417 7590 07/13/2011

Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

EXAMINER	
SMITH, CHENEA	
ART UNIT	PAPER NUMBER
2421	
MAIL DATE	DELIVERY MODE
07/13/2011	PAPER

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.

Interview Summary	Application No.	Applicant(s)	
	12/283,355	STEUER ET AL.	
	Examiner	Art Unit	
	CHENEA SMITH	2421	

All participants (applicant, applicant's representative, PTO personnel):

(1) *CHENEA SMITH*.

(2) *Jason Salce*.

(3) *Mike Mauriel*.

(4) *Chris Otto, Jonathan Steuer*.

Date of Interview: *28 June 2011*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Kolessar (of record)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Jason P Salce/ Primary Examiner, Art Unit 2421	6/29/2011

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Disccussed the Examiner's application of the references to the claims, including the Examiner's addressing of the "content offset" limitation in the rejection. Discussed Applicants' interpretation of "audio data samples captured from audible content". Discussed the Applicants' definition of "content offset data", and possible proposed amendments to the claims to clarify the "content offset data" limitation in effort to overcome the art rejection of record. An agreement was not reached .

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Doc description: Request for Continued Examination (RCE)

Approved for use through 07/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	12/283,355	Filing Date	2008-09-11	Docket Number (if applicable)	10004-2000113	Art Unit	2421
First Named Inventor	Jonathan S. Steuer			Examiner Name	Smith, Chanea P.		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504242

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

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.

Signature of Registered U.S. Patent Practitioner			
Signature		Date (YYYY-MM-DD)	2011-09-12
Name	Michael Mauriel	Registration Number	44226

This collection of information is required by 37 CFR 1.114. 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.

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

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARMENT 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.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2009 *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) 10004-2000113
Application Number 12/283,355	Filed September 11, 2008
For MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	
Art Unit 2421	Examiner Smith, Chenea P.

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☑	One month (37 CFR 1.17(a)(1))	$130	$65	$ 65.00
☐	Two months (37 CFR 1.17(a)(2))	$490	$245	$
☐	Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☑ Applicant claims small entity status. See 37 CFR 1.27

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-4242.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

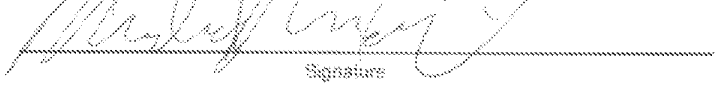
I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 44,226

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____



Signature — September 12, 2011 (Date)

Michael Mauriel — Typed or printed name

212-529-5131 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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.**

Attorney Docket No.: 10004-2000113
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Jonathan S. Steuer

Application No.: 12/283,355 Group Art Unit: 2421

Filing Date: September 11, 2008 Examiner: Smith, Chenea

Title: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

RESPONSE UNDER 37 CFR § 1.114

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

This is in response to the Office Action dated May 12, 2011 (Paper No. 20110506) for which a response was due on August 12, 2011. A petition and fee for a one month extension of time are included herewith. Accordingly, this response is timely filed. A Request for Continued Examination is also submitted herewith. Reconsideration and allowance of the pending claims in light of the remarks presented herein are respectfully requested.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows, where additions are underlined and deletions are indicated by ~~strikethrough~~ or enclosed in [[double brackets]]:

Claim 1 (Currently Amended): A media measurement method comprising:

using one or more computers to ~~generating~~ generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured ~~from audible content~~ at a monitoring device associated with a monitored audience member; and

utilizing sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein utilizing comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

Claim 2 (Original): The method of claim 1 further comprising:

generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member.

Claim 3 (Original): The method of claim 1 further comprising:

utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member.

Claim 4 (Original): The media measurement method of claim 1 wherein a clean play list is generated including deduced play-altering actions.

Claim 5 (Previously Presented): The media measurement method of claim 1 wherein the play stream is a raw play stream.

Claim 6 (Previously Presented): The media measurement method of claim 1 wherein the play stream is a clean play stream.

Claim 7 (New): The method of claim 1 wherein utilizing further comprises determining if one or more discontinuities exist in the progression of content offsets.

Claim 8 (New): The method of claim 1 wherein the content offset data is derived from a comparison conducted by a computerized content identification system comparing the submitted data samples against known content such that content offset data is obtainable without using time codes accompanying the captured audio data samples.

Claim 9 (New): A media measurement method comprising:

using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member; and

utilizing sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream.

Claim 10 (New): The method of claim 9 wherein play-altering actions include at least one of fast forwarding, rewinding, and pausing a media stream.

Claim 11 (New): The method of claim 9 wherein play-altering actions include at least one of skipping forward and skipping backward in a media stream.

REMARKS

Claims 1-6 were pending in the present application. By virtue of this response, no claims have been cancelled and claims 7-11 have been added. Therefore, claims 1-11 are pending and are currently under consideration. Of those, claim 1 has been amended in this response.

Telephone Interview of June 28, 2011

The Examiner and the Supervisory Examiner conducted a telephone interview with the Applicants and Applicants' attorney on June 28, 2011. Applicants thank the Examiner and the Supervisory Examiner for taking the time to discuss this case. The interpretation of "audible content" was discussed as well as potential clarification of "content offset data" in the claim.

Rejections under 35 U.S.C. § 103

Despite the understanding that had been reached in the prior telephone interview of January 20, 2011, claims 1-6 were rejected in the May 12th Office Action using the same references that the Applicants had been led to believe would be overcome by the amendments and remarks filed on April 1, 2011. Specifically, claims 1-6 were again rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,483,975 to Kolessar et al. ("Kolessar") in view of U.S. publication number US20020083060 by Wang et al. ("Wang"), and U.S. publication number US2002003856 by Hansen et al. ("Hansen").

As discussed during the June 28th telephone interview, Applicants respectfully submit that Kolessar does not teach using content offset data to deduce play altering actions. However, consistent with the June 28th telephone interview, Applicants have added limitations to claim 1 to more clearly define content offset data and to further recite how that data is utilized to deduce play altering actions. Specifically, amended claim 1 now further recites: "the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein utilizing comprises, for a particular plurality of submitted data samples and corresponding content

identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results." Applicants note that this added language finds support in **Figure 5** and the accompanying text of the specification originally filed in this case.

Applicants respectfully submit that Kolessar neither teaches nor suggests the invention of amended claim 1. With respect to "muting," Kolessar simply relies on an increase in an "error detection rate." See, e.g., Kolessar col. 20, lines 6-11. With respect to "recording," Kolessar does compare an "actual time" to a "time code" in the data but does not compare a progression of actual times to a progression of time codes. See, e.g., Kolessar col. 20, lines 21-22. With respect to changing channels, Kolessar simply looks at whether a channel identification data associated with one sample is different from channel identification data associated with another sample, but nowhere suggests determining channel changing activity by comparing a progression of log times to a progression of content offsets.

Applicants respectfully submit that, in light of the amendment to claim 1, that claim is now allowable over the cited references. Because claims 2-8 all depend from claim 1, those claims are now allowable for at least the same reasons.

Claim 9 is a newly added independent claim. The wording of new claim 9 is similar in many respects to the original wording of claim 1. However, claim 9 further limits "play-altering actions" and recites: "wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream." Applicants note that this limitation is supported at paragraph **[0047]** of the originally filed version of the specification in this application. Applicants respectfully submit that none of the references of record teach using content offset data to deduce "play-altering actions" "wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream" as claimed. For example, the only user actions in Kolessar are muting, recording for later playback, and channel changing. Kolessar contains no teaching of using content offset data to deduce user actions which alter the pace or sequence of a media stream such as, for example, speeding up, slowing down, pausing, rewinding, or fast forwarding a media stream or skipping ahead and/or back in a media stream. Therefore, for at least this reason, Applicants respectfully

submit that new claim 9 is allowable over the art of record. New claims 10 and 11 depend from claim 9 and are allowable for at least the same reason.

Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new matter has been added. Entry of the above-mentioned amendments is respectfully requested.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conversation would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees which may be required by this paper to **Deposit Account No. 50-4242**, referencing docket no. **10004-2000113**.

Dated: September 12, 2011

Respectfully submitted,

By: /Michael Mauriel/ Reg. No. 44,226

Michael Mauriel
Registration No.: 44,226
Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
(212) 529-5131
Attorney(s) for Applicant

Electronic Patent Application Fee Transmittal

Application Number:	12283355
Filing Date:	11-Sep-2008
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Filer:	Michael John Mauriel/JAMIE LEATH
Attorney Docket Number:	10004-2000113

Filed as Small 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	2251	1	65	65

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	405	405
		Total in USD ($)		**470**

Electronic Acknowledgement Receipt

EFS ID:	10930746
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/JAMIE LEATH
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	12-SEP-2011
Filing Date:	11-SEP-2008
Time Stamp:	19:20:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Electronic Funds Transfer
Payment was successfully received in RAM	$470
RAM confirmation Number	6921
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		10004-2000113_RCE_TR_AND_EXT_TIME.pdf	1097350 dcd8553fa00abdfc41d9b0ac5e573c8ce477f275	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Request for Continued Examination (RCE)	1	2
	Extension of Time	3	3

Warnings:

The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing

Information:

2		10004-2000113_Amendment_wRCE_resp_to_Frej_mailed_5-12-11.pdf	75755 b789082531106cddcedb156db55177a0fd4aee1b	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	7

Warnings:

Information:

3	Fee Worksheet (SB06)	fee-info.pdf	31559 a310c6ab1dcf12e7faaac1f904e93fd3067035c1	no	2

Warnings:

Information:

Total Files Size (in bytes):	1204664

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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.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/283,355	09/11/2008	

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

AMENDMENT 09/12/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 11	Minus	** 20	= 0	X $26 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $110 =	0	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	0	OR	TOTAL ADD'L FEE	

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	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:
/JEFFERY L. OLSEN/

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.

PTO/SB/08a (07-09)
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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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Smith, Chenea P.
Attorney Docket Number	10004-2000113

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-			
		US-			
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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]
	1	WO 2005/006768 A1	01-20-2005	Lee et al.		
	2	WO 2005/036877 A1	04-21-2005	Deng, Kevin		

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] 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.**

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Electronic Acknowledgement Receipt

EFS ID:	11185142
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	13-OCT-2011
Filing Date:	11-SEP-2008
Time Stamp:	20:29:58
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		100042000113SIDS6.pdf	71656 955100ebfeecf52769c0268694fa62ec5088a361	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	4
	Information Disclosure Statement (IDS) Form (SB08)	5	5
Warnings:			
Information:			
	Total Files Size (in bytes):	71656	

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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.

PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:	Examiner: Smith, Chenea P.
Jonathan S. Steuer et al.	Group Art Unit: 2421
Serial No.: 12/283,355	
Filing Date: September 11, 2008	
For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A. The Examiner is requested to make these documents of record.

This Information Disclosure Statement is submitted:

☒ **This Information Disclosure Statement is submitted before the mailing of a first Office action after the filing of a Request for Continued Examination under § 1.114 in accordance with § 1.97(b)(4); accordingly, no fee or separate requirements are required.**

☐ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

- ☐ The fee set forth in 37 CFR 1.17p is paid herewith.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.
  - ☐ 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.
  - ☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

☐ The fee set forth in 37 C.F.R. § 1.17p is paid herewith and a Certification under 37 C.F.R. § 1.97(e) is provided below:

☐ 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.

☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to **Deposit Account No. 50-4242**, referencing docket no. **10004-2000113**.

Dated: October 10, 2011

Respectfully submitted,

By: _____
Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
Telephone: (212) 529-5131
Facsimile: (212) 529-5132

PTO/SB/08a (07-09)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Smith, Chenea
Attorney Docket Number	10004-2000113

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
	1	US- 5,436,653	07-1995	Ellis et al.	
	2	US- 2004/0001161	01-2004	Herley, Cormac	
	3	US- 2002/0072982	06-2002	Barton et al.	
	4	US- 2008/0154401 A1	06-2008	Wang, Avery Li-Chun	
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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]
	5	WO 2005036877 A1	04-2005	Deng, Kevin		
	6	WO 2005006768 A1	01-2005	Lee et al.		

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] 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.**

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

(19) World Intellectual Property Organization
International Bureau

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(21) International Application Number:
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12 September 2003 (12.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: **NIELSEN MEDIA RESEARCH, INC.** [US/US]; 150 N. Martingale Road, Schaumburg, IL 60173 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **DENG, Kevin** [US/US]; 2106 Gull Lane, Safety Harbor, FL 34695 (US).

(74) Agent: **HANELY, Mark, G.**; GROSSMAN & FLIGHT, LLC, 20 N. Wacker Drive, Chicago, IL 60606 (US).

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

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

Published:
— *with international search report*
— *with amended claims and statement*

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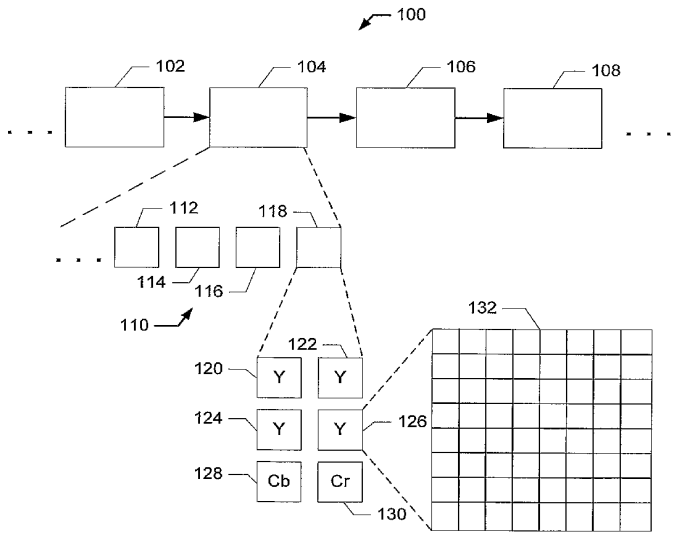
(54) Title: DIGITAL VIDEO SIGNATURE APPARATUS AND METHODS FOR USE WITH VIDEO PROGRAM IDENTIFICATION SYSTEMS



(57) Abstract: Digital video signature apparatus and methods for use with video program identification systems are disclosed. The disclosed apparatus and methods identify a video program using a sequence of signatures (100). Each of the signatures includes a set of centroids corresponding to one of a plurality of frames of the video program. The apparatus and methods compare the sequence of signatures to a set of reference sequences of signatures and identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

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DIGITAL VIDEO SIGNATURE APPARATUS AND METHODS FOR USE WITH VIDEO PROGRAM IDENTIFICATION SYSTEMS

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates generally to identifying digital video information and, more specifically, to digital video signature apparatus and methods for use with video program identification systems.

BACKGROUND

[0002] Systems that identify video images and/or sequences of video images (e.g., television commercials or programs) being broadcast and/or viewed on an output device (e.g., a television or video monitor) are often used to verify that certain audio and/or video content or programs (e.g., television programs, advertisements, etc.) have been broadcast in particular geographic regions at particular times. Of course, such video identification system may additionally or alternatively be used to facilitate the analysis of viewing behaviors of selected groups of viewers. Some video identification systems identify programs by extracting audio and/or video information associated with a program currently being broadcast and/or viewed and processing that extracted information to generate audio and/or video signatures. Typically, the audio and/or video signatures are digital sequences or codes that, at a given instant of time, are substantially unique to each portion of audio/video content or program. In this manner, an unidentified video program can be reliably identified by finding a matching signature within a database or library containing the signatures of known available programs. When a matching signature is found, the previously unidentified audio/video content (e.g., television program, advertisement, etc.) is identified as the

one of the known available programs corresponding to the matching database signature.

[0003] Video signatures may be generated for analog and/or digital video programs. Some known video signature generation techniques for use with digital video program information process some or all of the uncompressed image data for one or more video frames to generate one or more signatures for the video program associated with the video frames. However, using uncompressed video data to generate signature information usually requires expensive high-speed signature generation hardware or circuitry, or software/processor-based signature generation techniques that result in relatively slow signature generation rates. For some applications, such as, for example, television audience viewing behavior analysis or other program verification or identification systems that use data acquisition and signature generation devices, high speed hardware-based video signature generation systems are cost prohibitive. In addition, many software-based signature generation systems are too slow and may miss important verification and/or viewing information such as, for example, relatively short television commercials or the like.

[0004] In some software-based systems, the speed at which video signatures are generated may be increased by using less video information (e.g., fewer frames, smaller portions of each frame, etc.) to generate the signature information. However, the use of less information usually results in a signature that is less likely to uniquely represent the associated video content, thereby resulting in an increased false match rate (i.e., incorrectly identifying a video program) and an increased failure to find a match when a match exists (i.e., the failure to identify a known video program).

[0005] Still further, the video signature generation systems used with many video program identification systems are not independent of image format or encoder

operation. For example, changing the display aspect ratio (e.g., from 4:3 to 16:9) for a video program may significantly change the video signature information generated therefrom. As a result, while these known systems may be able to reliably identify a group of known images/frames and, thus, known programs when formatted for a 4:3 aspect ratio display, these same systems may fail to identify any of those known programs when formatted using a different aspect ratio. Similarly, many of these known systems are also sensitive to video program frame rate (e.g., the number of frames per second that compose a video program). For example, while many known systems may be able to reliably identify video programs that are composed of frames or images that are to be displayed at a rate of thirty frames per second, those same systems may be unable to identify those same programs when composed of more or fewer frames or images per second.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] Fig. 1 depicts an example sequence of compressed digital video images or frames that may be associated with a digital television program.

[0007] Fig. 2 is a block diagram of an example system that may employ the example digital video signature generation apparatus and methods described herein to identify video programs.

[0008] Fig. 3 is a more detailed block diagram of an example manner in which the data acquisition unit shown in Fig. 2 may be implemented.

[0009] Fig. 4 is an example processor-based system that executes software or instructions stored on a machine readable medium to implement the example data acquisition unit shown in Fig. 2 with the blocks shown in Fig. 3.

[0010] Fig. 5 is flow diagram depicting one manner in which the processor-based system shown in Fig. 4 may be programmed to implement the example data acquisition unit shown in Fig. 3.

[0011] Fig. 6 is an example of an image or frame for which a signature can be generated using a center of mass or centroid calculation.

[0012] Fig. 7 depicts an example image or frame in which image components are distributed in a non-uniform manner.

[0013] Fig. 8 depicts an example image in which a centroid is located within a shape boundary.

[0014] Figs. 9 and 10 depict example images or frames in which centroids are not located within the boundary of the shapes therein.

[0015] Figs. 11 and 12 are example images or frames that contain relatively symmetric distributions of a particular image component.

[0016] Fig. 13 depicts an example frame or image that contains three identical elliptical shapes composed of the same image component.

[0017] Figs. 14 and 15 depict an example method that may be implemented by the system shown in Fig. 2 to identify video programs.

DETAILED DESCRIPTION

[0018] The example video signature methods and apparatus disclosed herein can be used to generate signature information for a sequence of images or frames composed of compressed digital video information. The generated signature information may subsequently be compared to reference signature information to identify a video program from which the sequence of images or frames originated. However, before discussing the example video signature apparatus and methods in

detail, a brief discussion relating to digital video signal compression is provided below.

[0019] The following discussion is based primarily on the Moving Pictures Expert Group (MPEG) video compression standard. The MPEG standard is one particularly well-known digital video compression standard that may be used in conjunction with the example signature generation methods and apparatus described herein. However, MPEG video compression techniques are only one particular manner in which digital video information may be compressed prior to its use with the example signature generation methods and apparatus disclosed herein. Those having ordinary skill in the art will appreciate that the example video signature apparatus and methods disclosed herein may be similarly applied in conjunction with other digital video compression schemes.

[0020] In general, video compression schemes operate based on the assumption that video sequences or programs typically contain a relatively large amount of temporally and/or spatially redundant information. Temporal redundancy occurs between successive frames or images making up a video sequence because there are relatively few changes to the color and brightness of large portions of the successive images or frames making up the video sequence. On the other hand, spatial redundancy occurs within a given video frame or image because adjacent pixels or areas within an image or frame are often of the same or similar color and intensity or brightness. Thus, by eliminating temporally and spatially redundant video information from a video program prior to its transmission, the amount of bandwidth required to transmit the video program can be reduced dramatically.

[0021] The data reduction achieved by a compression scheme is commonly expressed as a compression ratio. Compression ratios are usually calculated by

dividing the amount of video data making up an original sequence of video images by the amount of compressed data used to transmit that video data. Compression ratios of between about 8:1 and about 30:1 are commonly achieved using an MPEG-based video compression scheme.

[0022] Video compression schemes also typically eliminate certain types and amounts of video information that are not necessarily redundant and which may be eliminated without being perceptibly noticeable or offensive to the human eye. For example, the human eye is significantly more sensitive to variations in brightness than variations in color or hue. As a result, as described below, video compression schemes often reduce the amount of digital information pertaining to color or hue without adversely impacting the perceived quality of an image extracted from compressed image information. In addition, the human eye has greater difficulty perceiving rapid variation of brightness and/or color, shade or hue across an image (i.e., the higher frequency components that compose an image). As a result, as described below, video compression schemes can zero-out and/or eliminate the transmission or processing of the higher frequency components of an image without adversely impacting the perceived quality of the image.

[0023] Fig. 1 depicts an example sequence 100 of digital video images or frames 102, 104, 106 and 108 that may be associated with a digital television program or the like. The images or frames 102-108 may make up a group of pictures (GOP) for purposes of MPEG encoding (i.e., compression) to be transmitted, stored or otherwise conveyed for use by an MPEG decoder associated with an output device (e.g., a television, video monitor, computer screen, etc.)

[0024] Initially, each of the images or frames 102-108 is composed of uncompressed digital information representing display pixels arranged in a plurality

of rows and columns to be displayed on an output device in a particular format at a particular rate. For example, each of the frames 102-108 may contain sufficient pixel information to display images or frames on a raster scan-based display having 480 rows or lines of 720 pixels (i.e., columns) at a rate of 30 frames per second. Of course, many other display formats and rates could be used instead.

[0025] The amount of digital data required to represent each pixel within each of the frames or images 102-108 depends on the color model used to create the images 102-108. For example, in the case where the well-known Red, Green, Blue (RGB) color model is used, eight bits are used to represent the amount of each image or color component used for each pixel. Thus, for a digital image generated using the RGB color model, a total of twenty-four bits of data are required to represent each pixel.

[0026] During the MPEG compression processes, each of the images or frames 102-108 is ultimately sub-divided into a sequence of macro blocks, each of which is composed of 16x16 pixels (i.e., sixteen rows of sixteen pixels). The resulting sequences of macro blocks are maintained in a raster scan order. By way of example, the image or frame 104 is sub-divided into a sequence of macro blocks 110 that is composed of at least macro blocks 112, 114, 116 and 118, each of which includes RGB data for 16x16 or 256 pixels.

[0027] The MPEG compression process converts the RGB data (i.e., the twenty-four bits of information) for each pixel within the macro blocks 112-118 into the well-known YUV color model. In general, the YUV color model represents each pixel using a luminance value denoted as Y and two chrominance values denoted as Cr and Cb. However, because the human eye is significantly less sensitive to color changes, the MPEG compression process decimates the chrominance information for each of the macro blocks via a horizontal and vertical (i.e., row and column) sub-sampling

process. In particular, the decimation process averages the chrominance information (i.e., the Cr and Cb values) for groups of four pixels arranged in two rows and two columns, discards the individual chrominance values making up the averages and retains the average values. In this manner, the MPEG compression process compresses the chrominance information required to display an image by a factor of four without adversely affecting the perceptible quality of the image when displayed to a human.

[0028] By way of example, following the color model conversion and chrominance decimation processes, the macro block 118 includes four 8x8 luminance blocks 120, 122, 124 and 126 and two 8x8 chrominance blocks 128 and 130, together representing the color and intensity of the group of 16x16 pixels associated with the macro block 118. Each of the blocks 120-130 is composed of eight rows and eight columns of eight bit values (i.e., bytes). For example, the luminance block 126 is composed of a grid 132 where each of the squares of the grid 132 represents an eight bit luminance value associated with a particular pixel within the macro block 118. Of course, because the chrominance information has been decimated as described above, each of the eight bit values within the 8x8 chrominance blocks 128 and 130 represents the average color information for a group of four pixels associated with the macro block 118.

[0029] After converting the color model and decimating the chrominance information, the MPEG compression scheme processes the images or frames 102-108, which are now represented using the decimated YUV data, to eliminate or reduce temporal redundancy. The MPEG compression scheme uses motion-compensated inter-frame prediction to reduce the amount of data required to regenerate a sequence of video frames. In general, the MPEG compression scheme periodically generates

reference frames (known as Intra-frames or I-frames) that are essentially still video images that can be regenerated (i.e., displayed) without reference to any other frames or images. A series of video frames preceding and/or following a reference frame or I-frame are either Predictive-frames (commonly known as P-frames) or Bidirectionally predictive-frames (commonly known as B-frames). P-frames contain motion vectors and error information relating the P-frame to an I-frame or to a preceding P-frame, while B-frames contain motion vectors and error information relating to preceding and/or subsequent I-frames or P-frames. Because substantial portions (e.g., a background) of a video image typically do not change significantly (or at all) from one frame to the next (i.e., there is a significant amount of temporal redundancy), the amount of information needed to represent each P-frame and B-frame can be significantly less than the amount of information needed to represent an I-frame.

[0030] During an MPEG compression process, each of the frames or images 102-108 making up the video sequence 100 are designated by the MPEG encoder as one of an I-frame, a P-frame or a B-frame. The relatively complex manner in which the MPEG compression process designates frames as I-frames, P-frames and B-frames is well-known in the art and is not described in further detail herein. However, for purposes of understanding the example video signature generation apparatus and methods disclosed herein, it should be recognized that the creation of P-frames and B-frames occurs on a block-by-block basis (i.e., one macro block at a time). As a result, if during the MPEG compression process it is recognized that predicting a particular macro block within a P-frame or a B-frame will not improve compression, that particular macro block will be intra-coded (i.e., not predicted but, rather, fully

described using actual luminance and chrominance data that can be directly converted for display purposes).

[0031] Once the MPEG compression process has reduced or eliminated temporally redundant inter-frame information by converting a sequence of video images into a sequence of I-frames, P-frames and B-frames, the MPEG compression scheme processes these frames to remove spatial redundancy. The MPEG compression scheme recognizes that within a given 16x16 pixel macro block there is typically a repeatable pattern of pixel information and/or the pixel information does not vary significantly (e.g., perceptibly) across the macro block.

[0032] To eliminate the spatially redundant information, the MPEG compression scheme uses a discrete cosine transform (DCT) to convert each of the 8x8 blocks making up the macro blocks of the I-frames, P-frames and B-frames from the spatial domain into the frequency domain. In the spatial domain, each square (i.e., byte) within an 8x8 block corresponds to a physical pixel location, whereas in the frequency domain, each square within the 8x8 block produced by the DCT conversion corresponds to a frequency of a cosine waveform. Because there is typically very little variation in intensity and color across a 16x16 pixel macro block, most macro blocks can be represented in the frequency domain using a direct current (DC) component (i.e., a zero frequency component or offset) and few, if any, low frequency components. As is well known, the DCT of an 8x8 block of spatial pixel information (e.g., an 8x8 block of luminance information where each square within the block represents an eight bit value associated with a physical pixel location) results in an 8x8 block of frequency domain information, where each square contains an amplitude coefficient for a cosine waveform of a particular frequency. The upper left corner of the frequency domain block is a DC value (e.g., the average luminance for the 8x8

spatial domain block), and the horizontal frequency increases moving across rows to the right of the upper left corner and the vertical frequency increases moving down columns. As described in greater detail below, the upper left corner of the frequency domain block (i.e., the DC coefficient value) also represents the value associated with the pixel in the upper left corner of the block in the spatial domain. However, frequency coefficients within the frequency domain block other than the DC coefficient do not correspond identically to pixel values in the spatial domain. Thus, in general, if spatial or pixel value information is needed for a given block, a conversion of the frequency domain block to spatial domain is required.

[0033] In practice, performing a DCT and quantization on each of the 8x8 blocks results in frequency domain blocks having relatively few coefficient values near the upper left corner of the 8x8 frequency domain blocks and a relatively large number of zero value or same value coefficients in the majority of the squares making up the remainders of the blocks. By using a run-length encoding scheme and not individually transmitting the coefficients having the same value (e.g., coefficients having a value of zero), the MPEG compression process can substantially reduce the amount of data needed to reconstitute the compressed image without perceptibly degrading the image quality.

[0034] To illustrate the manner in which spatially redundant information can be eliminated, consider an 8x8 block of pixel luminance information such as, for example, the block 126 of Fig. 1. If the luminance is constant (e.g., a digital value of 128) across the block 126, each of the luminance values associated with the 64 squares making up the grid 132 will contain the value 128. Performing a DCT on such an 8x8 block will result in an 8x8 block in which the upper left corner square contains the DC value 128 and all other squares or frequency domain coefficients are

equal to zero. Thus, in the frequency domain, only a single value needs to be used (and transmitted) to represent the luminance values for all of the pixels associated with the original 8x8 spatial domain block. In other words, 63 eight bit luminance values do not have to be transmitted and processed by an MPEG decoder. Instead, using a run-length encoding scheme, a single value (i.e., 128) may be transmitted and a run length of 63, (indicating 63 zeros), may be transmitted to the MPEG decoder.

[0035] In general, the MPEG compression process achieves relatively high compression ratios by employing techniques such as, for example, frequency coefficient quantization (e.g., reducing the number of bits needed or allocated for each frequency domain coefficient), and zigzag sequence coding in conjunction with run-length encoding to eliminate the individual transmission of coefficients having the same value. However, such techniques are well-known in the art and, thus, are not discussed further herein.

[0036] Fig. 2 is a block diagram of an example system 200 that may employ the example digital video signature generation apparatus and methods described herein to identify video programs. The system 200 includes a demodulator 202 that receives a digital program data stream 204. The digital program data stream 204 may be a multi-program data stream that is broadcast via any desired method. For example, the digital program data stream 204 may be a multi-program digital television data stream that is broadcast using any desired combination of wireless communication links such as, for example, satellite communication links, cellular communication links, or other wireless terrestrial communication links. Alternatively or additionally, the digital program data stream 204 may be transmitted via any desired combination of hardwired communication paths including cables, phone lines, etc.

[0037] For purposes of the following discussion, the example digital program data stream 204 is assumed to include one or more digital video programs that have been compressed and formatted according to the MPEG standard as described by way of example in connection with Fig. 1. The MPEG packets making up the video frame or image information for each of the digital video programs may be encapsulated using any desired transport protocol.

[0038] The demodulator 202 may extract a base band signal containing a multi-program digital data stream and a transport circuit for reconstructing data packets associated with a desired program from the digital program data stream 204. When the demodulator 202 is tuned to a particular channel, it reconstructs the MPEG data packets from the digital program data stream 204 that corresponds to the selected program.

[0039] The system 200 also includes a data acquisition unit 206 that is coupled to the demodulator 202. The data acquisition unit 206 selects compressed digital video information 208 (e.g., MPEG I-frames, P-frames and B-frames) associated with a video program currently output by the demodulator 202. As described in greater detail below, the data acquisition unit 206 selects frames or images from the compressed digital video information 208 that are substantially intra-coded (i.e., frames or images containing a substantial percentage of intra-coded macro blocks) and generates signature information for the video program based on those substantially intra-coded frames or images. More specifically, the data acquisition unit 206 extracts scaled image information (e.g., by extracting the DC coefficient information) from the selected substantially intra-coded frequency domain blocks and uses the scaled image information to calculate center of mass or centroid information for each of the brightness and color components for each of a series of the

substantially intra-coded images or frames. Each of the images or frames may also be recursively sub-divided into a plurality of sub-regions or areas and center of mass information may be similarly generated for each of the sub-regions or areas. In any event, each substantially intra-coded frame or image can be substantially uniquely represented by a signature composed of a plurality of centers of mass or centroid values associated with the components (e.g., colors, brightness, etc.) of the overall image or frame and any defined sub-regions or areas of the image or frame.

[0040] The data acquisition unit 206 is communicatively coupled to a central processing unit 210 via a communication link 212. The communication link 212 may be implemented using any desired combination of hardwired and wireless communication links and any desired combination of communication protocols or schemes. For example, the communication link 212 may be implemented as a local area network, or any other network, and/or may include the use of phone lines, a packet switched network such as, for example, the Internet, or any other types of communication links.

[0041] The central processing unit 210 also includes a non-volatile memory or mass storage device 214. The memory or mass storage device 214 may be implemented using, for example, a disk drive that stores digital information using a magnetic or optical media. Additionally or alternatively, the memory or mass storage device 214 may be implemented using an electrically erasable programmable read only memory (EEPROM) or the like. Although not shown in Fig. 2, additional data acquisition units similar or identical to the data acquisition unit 206 may be communicatively coupled to the central processing unit 210.

[0042] The data acquisition unit 206 sends signatures generated (as generally set forth above) in connection with a sequence of video images or frames associated with

a currently selected video program to the central processing unit 210 via the communication link 212. The central processing unit 210 is configured to compare the sequence of signatures received from the data acquisition unit 206 to a plurality of known or reference signatures that are associated with known video programs and which are stored within a data structure (e.g., a table) within the non-volatile memory 214. In the event that the central processing unit 210 determines that a signature sequence received from the data acquisition unit 206 matches or substantially matches a reference signature sequence associated with a known video program, the central processing unit 210 identifies the video program selected by the demodulator 202.

[0043] The demodulator 202 and the data acquisition unit 206 may be located within a private home or other residence or, alternatively, may be located within a business facility or any other structure. Preferably, the system 200 is located so that the broadcast signals that are to be consumed and/or verified can be easily detected and received. Of course, other such decoders and data acquisition units (none of which are shown) may be similarly located within other locations and communicatively coupled to the central processing unit 210 via the communication link 212 and/or via other communication links (none of which are shown). In this manner, statistically significant viewing behavior and/or program verification information for a designated population of persons or geographic area may be ascertained by the central processing unit 210.

[0044] The system 200 may further include a central facility 216 that communicates with the central processing unit 210 via a communication link 218, which may be implemented using a wide area network including phone lines, wireless communications and/or any other desired communication media and/or protocols. The link 218 may be implemented using a wide area network including phone lines,

wireless communications and/or any other desired communication media and/or protocols. The central facility 216 may process signature information and/or other program-related information received from the central processing unit 210 and/or other processing units (none of which are shown). For example, in the event that the central processing unit 210 fails to identify a program, video clip, etc., using signature information, that signature information and the associated video clip may be conveyed to the central facility 216 via the link 218. At the central facility 216 the signature information may be compared to signatures stored within a library of signatures within (or at least accessible to) the central facility 216. Such a signature library may be complied by receiving signature information from a variety of sources such as, for example, other central processing units (not shown) and/or data acquisition units (not shown). Additionally or alternatively, if the signature information received by the central facility 216 does not match any of the signature information already present in the library accessible to or within the central facility 216, the program, video clip, etc. associated with the signature information is viewed and identified by a human operator. The human operator may then add a signature for that program, video clip, etc. to the signature library.

[0045] While the data acquisition unit 206 is shown in Fig. 2 as a separate structure, the functions of the data acquisition unit 206 may instead be integrated within the demodulator 202 or the central data processing unit 210. Alternatively, the functions of the data acquisition unit 206 could be distributed between the demodulator 202, the central processing unit 210 and/or other similar or identical units within or at least accessible by the system 200.

[0046] Fig. 3 is a more detailed block diagram of an example manner in which the data acquisition unit 206 shown in Fig. 2 may be implemented. As shown in Fig. 3,

the example data acquisition unit 206 includes a frame scanner 300 that receives the compressed digital video information 208, which contains frequency domain image information, and scans the individual images or frames (i.e., I-frames, P-frames, B-frames, etc.) therein to determine, for each image or frame, whether that image or frame contains a sufficient quantity of intra-coded macro blocks for subsequent processing by the remaining functional blocks of the data acquisition unit 206. As described in greater detail in connection with Fig. 4 below, the frame scanner 300 selects frames or images having a relatively high percentage of intra-coded macro blocks to enable the data acquisition unit 206 to generate signature information for those selected images or frames using a relatively small amount of processor time (i.e., processing cost or overhead). As noted above, in contrast to predictive macro blocks (e.g., P-blocks and B-blocks) intra-coded macro blocks may be converted to image information without having to perform complex time consuming calculations involving macro block information from future or subsequent frames or images. Accordingly, by selecting images or frames having a relatively high percentage of intra-coded blocks, the data acquisition unit 206 can generate signatures rapidly and with minimal error for those selected images or frames using only the intra-coded blocks. Ignoring the non-intra-coded blocks does not significantly affect the signature for an image or frame that is composed of a relatively large percentage of intra-coded macro blocks. I-frames are always sufficiently intra-coded and P-frames and B-frames may be sufficiently intra-coded depending on the amount of intra-coded macro blocks that are used to generate these frames.

[0047] Frames having a sufficient percentage of intra-coded macro blocks are passed to an intra-coded block extractor 302. The intra-coded block extractor 302 extracts intra-coded macro blocks from a selected frame or image, which may be an I-

frame or a predictive frame (e.g., P-frame or B-frame) having a relatively high percentage of intra-coded macro blocks.

[0048] A scaled image extractor 304 receives the intra-coded blocks extracted from a selected frame or image and extracts a downscaled image, for example, by extracting DC coefficients (i.e., the upper left corner values) from the intra-coded blocks. As noted above, when conveyed using the MPEG compression process, the macro blocks making up an image or frame are passed through a DCT conversion and quantization that provides spatially compressed frequency domain macro block information. Of course, a downscaled image may be formed using other combinations of frequency coefficients. For example, the DC coefficients and coefficients associated with one or more other frequency components, such as coefficients in the upper left corner of macro blocks, may be extracted. However, in contrast to a case where only DC coefficients are extracted, the scaled image extractor 304 generates the downscaled image by converting the frequency domain blocks to spatial domain pixel information. Thus, in general, the scaled image extractor 304 extracts downscaled images by extracting a subset of the frequency coefficients available in each intra-coded frame provided by the intra-coded block extractor 302, thereby substantially reducing the amount of information that has to be processed to generate signature information, and convert that frequency domain information to spatial domain pixel information. Of course, in the case where only DC coefficients are extracted, the conversion of frequency domain information to spatial domain information is not necessary (and may be eliminated) because the DC coefficients in the frequency domain also correspond to pixel values (i.e., the upper left pixels in blocks) in the spatial domain. In any event, the scaled image extractor 304 extracts the downscaled image information (e.g., the average luminance and chrominance

values in the case where DC coefficients are extracted) from the intra-coded macro blocks and passes those downscaled images to a padding remover 306. The number of frequency coefficients used to form the downscaled image may be based on the resolution of the image being downscaled. In particular, high resolution images may be downscaled using only DC coefficients, whereas, lower resolution images may require the extraction of a plurality of frequency coefficients from each frequency domain block to form the downscaled image. In general, the higher the resolution the image being downscaled, the fewer the number of frequency coefficients that are required to form a downscaled image suitable for signature generation purposes.

[0049] The padding remover 306 removes coefficients that are associated with padded image or frame areas. As is known, digital video images or frames may be padded (i.e., filled with known video information) to completely fill the display area of a video frame or image. In this manner, border areas of a displayed image or frame for which image information may not exist, can be filled with a consistent color and/or intensity to provide a visually acceptable border. For example, display areas for which image information is not available may be filled with a dark or gray border as opposed to allowing noise or other random video information to be displayed in these display areas. In particular, if a 4:3 aspect ratio image is to be displayed without resizing or zooming on a 16:9 aspect ratio output unit, padding is added to the image so that the left and right sides of the displayed image are flanked by solid colored borders or bands. In any event, such padding is not a part of the original image and is typically a function of the particular encoder.

[0050] After padding has been removed from the downscaled image information, the scaled image information is provided to a signature generator 308. As described in greater detail below, the signature generator 308 uses the extracted scaled image

information to generate image signatures based on the centers of mass or centroids of the various color and brightness components of an overall image and sub-images or areas defined within that overall image. In this manner, each image can be described by a signature composed of a set of centroid coordinates that is substantially uniquely characteristic of the distribution of color and brightness within that image. Further, a series of such signatures associated with a series or sequence of video frames or images can be used to uniquely represent and/or identify a video program from which the video frames or images were extracted.

[0051] Signature information 310, which is a sequence of signatures of frames or images associated with and uniquely representative of a selected video program, is conveyed to, for example, the central processing unit 210 (Fig. 2). As described in greater detail below, the central processing unit 210 is configured to compare the received signature information 310 to reference signature information (e.g., sets of signature sequences representative of known video programs) to determine the identity of a video program currently selected by the demodulator 202 (Fig. 2).

[0052] Fig. 4 is an example processor-based system 400 that executes software or firmware instructions stored on a machine readable medium to implement the data acquisition unit 206 (Fig. 2). The example processor-based system 400 includes a processor 402, which may be any suitable microprocessor such as, for example, a processor from the Intel Pentium® family of microprocessors. The processor 402 may be communicatively coupled to a non-volatile memory 404 and a volatile memory 406. The non-volatile memory 404 may be implemented using, for example, electrically erasable programmable read only memory (EEPROM), read only memory (ROM), etc. The volatile memory 406 may be implemented using, for example, static random access memory (SRAM), dynamic random access memory (DRAM), etc.

The processor 402 may also be coupled to a mass storage device 408, which may be implemented using, for example, a disk drive that stores digital information using a magnetic or optical media.

[0053] The processor 402 can retrieve and execute machine readable instructions or software programs that are stored on one or more of the memories 404 and 406 and/or the mass storage device 408 to perform the functions of the data acquisition unit 206 (Fig. 2) and, in particular, the functions of the blocks 300-308 shown in Fig. 3.

[0054] The processor 402 is also in communication with an input/output (I/O) unit 410, that enables the system 400 to communicate with, for example, the demodulator 202 (Fig. 2) and/or the central processing unit 210 (Fig. 2). The I/O unit 410 may include circuitry for performing network communication functions (e.g., Ethernet communication functions), phone line communication functions (e.g., modem functions), peripheral device communication functions (e.g., universal serial bus communications, parallel port communications, etc.) to enable the system 400 to communicate with one or more input devices such as, for example, a mouse, keyboard, etc. and/or one or more output devices such as, for example, a video display, a printer, etc.

[0055] Fig. 5 is flow diagram depicting one manner in which the processor-based system 400 shown in Fig. 4 may be programmed to implement the example data acquisition unit 206 (Fig. 2). However, persons of ordinary skill in the art will appreciate that the blocks 300-308 (Fig. 3) of the example data acquisition unit 206 (Fig. 2) may be implemented using any desired combination of hardware and software. For example, the data acquisition unit 206 may include one or more application specific integrated circuits, microprocessors executing machine readable

instructions, digital logic components, analog circuitry, etc. configured to operate as blocks 300-308.

[0056] The data acquisition unit 206 (Fig. 2) receives a compressed digital video frame or image from the demodulator 202 (block 500). As described above, the compressed video frames or images received by the data acquisition unit 208 are compressed using the well-known MPEG standard. However, any other compression standards or techniques yielding scaled image information (e.g., downscaled images) for the frames or images could be used instead.

[0057] The received compressed digital video frame or image is scanned to determine the number or percentage of intra-coded macro blocks of which the frame or image is composed (block 502). The processor 402 then determines if the frame or image includes a sufficiently high percentage of intra-coded macro blocks (block 504). The percentage constituting a sufficient percentage may vary depending on the particular application. For example, if a very low program identification failure rate is acceptable, it may be desirable to generate signatures only for entirely intra-coded frames (I-frames or other frames that contain 100% intra-coded blocks) to maximize the amount of image information that can be used to generate the signature information for the frames or images. On the other hand, if a higher program identification failure rate is acceptable, frames having a lesser percentage of intra-coded blocks may be sufficiently intra-coded.

[0058] If a scanned frame is not sufficiently intra-coded (block 504), the processor 402 awaits another frame or image at block 500. On the other hand, if it is determined at block 504 that a scanned image or frame is sufficiently intra-coded, the processor 402 extracts the downscaled image information (e.g., the values of the DC coefficients) from the frequency domain macro blocks making up the image or frame

(block 506). The extraction of the downscaled image at block 506 may also include a conversion to spatial domain pixel information in the case where frequency domain coefficients other than just the DC coefficient values are extracted from each frequency domain block.

[0059] The processor 402 then removes image information or image areas associated with padding such as, for example, borders or other image portions inserted to enable an image that may not properly fill a display area to be displayed in an unobjectionable manner (block 508). In this manner, the processor 402 can generate signature information for the frame or image in a manner that does not include any video information that is not part of the original image.

[0060] The information representative of the image (i.e., the downscaled image containing selected pixel information), from which padding has been removed, may optionally be weighted (block 510). The processor 402 may weight the downscaled image information (e.g., by multiplying each of the pixel values by a number ranging from zero to one) to improve the robustness of the signature generation process. For example, the processor 402 may weight the pixel values associated with the center portions of an image or frame more heavily (e.g., using a multiplier closer to one) than those portions of the image or frame that are closer to the periphery of the image or frame. Weighting the central portion of an image more heavily than the peripheral portions of an image may significantly reduce or eliminate signature generation errors that may otherwise result in the event an image has been cropped at its periphery from its original form. In other words, cropping a portion of an image that is given little, if any, weight during the signature generation process will have little, if any, effect on the accuracy of the signature generation process.

[0061] The processor 402 then generates the signature information using the downscaled information from those frames or images that are sufficiently intra-coded (block 512). As described above, certain image areas may be removed prior to the signature generation process (block 512) such as, for example, those areas associated with padding (block 508). In addition, some or all of any remaining areas may be weighted (block 510) prior to the signature generation process (block 512).

[0062] Following the generation of a signature for a selected frame or image, the processor 402 may locally store the signature on the mass storage device 408 and/or the volatile memory 406 (block 514). The processor 402 may then send signatures and downscaled image information as it is generated (block 512) and stored (block 514) or, alternatively, periodically in sets or groups of signatures, to the central processing unit 212 (block 516) for matching analysis and program identification. After generating each signature (block 512) and any storing and sending activities (blocks 514 and 516), the processor 402 waits for another image or frame (block 500).

[0063] An example signature generation process that may be used to implement block 512 of Fig. 5 is discussed below in connection with Figs. 6-13. In general, the data acquisition unit 206 (Fig. 2) generates video signatures by calculating the centroids or centers of mass for each of the image color components (e.g., Red, Green, Blue, Yellow, etc.) and brightness components (e.g., Black/White). In particular, each center of mass or centroid is calculated using a downscaled image (e.g., a subset of the frequency coefficients and, thus, a subset of spatial domain pixel values) extracted from each of the frequency domain macro blocks making up an image or frame. Of course, as noted above, certain areas may be eliminated if associated with padding and/or may be weighted to reduce or eliminate the effects of image cropping.

[0064] The center of mass calculations or centroid calculations sum the moments of the downscaled image pixel values. In particular, to calculate the horizontal (e.g., x-axis) position within the frame or image for an image component center of mass or centroid, the value for each pixel is multiplied by its column number within its associated image or frame, the individual moments are summed, and the sum is divided by a maximum column moment value to provide a normalized horizontal position for the center of mass or centroid for that image component. Similarly, to calculate the vertical (e.g., y-axis) position within the frame or image for the center of mass or centroid, the value for each pixel is multiplied by its row number within the frame, the individual moments are summed, and the sum is divided by a maximum row moment value to provide a normalized vertical position for the center of mass or centroid for that image component. Mathematically, the normalized horizontal and vertical positions of the centroid for an image component (i.e., a particular color or brightness) "I" can be expressed as a percentage using Equations 1 and 2 below. In Equations 1 and 2, the value "C" is the total number of columns (e.g., the number of pixels per line) within the image or frame for which the signature is being calculated, the value "R" is the total number of rows (e.g., lines), and the values I[r][c] are the values for the pixel at row "r" and column "c" for component "I" (e.g., Red, Green, Blue, Yellow, brightness, etc.).

[0065] Equation 1 $$centroid_x = \frac{100 \sum_{r=0}^{R-1} \sum_{c=0}^{c=C-1} c * I[r][c]}{C \sum_{r=0}^{R-1} \sum_{c=0}^{C-1} I[r][c]}$$

[0066] Equation 2 $$centroid_y = \frac{100 \sum_{r=0}^{R-1} \sum_{c=0}^{c=C-1} r * I[r][c]}{R \sum_{r=0}^{R-1} \sum_{c=0}^{C-1} I[r][c]}$$

[0067] Of course, as noted above, images or frames may be weighted to eliminate or reduce the effects of cropping and the like. As a result, the values I[r][c] (i.e., the downscaled image pixel values) may be different from the original image or frame. In addition, the above centroid or center of mass calculations are normalized. Using normalized centroid information to generate signatures for images or frames or sequences of signatures for a video sequence can reduce or eliminate the effects of image scaling, shifting, etc.

[0068] Fig. 6 is an example of an image or frame 600 for which a signature can be calculated using the method described above in connection with Equations 1 and 2. To clearly illustrate the manner in which signature information is generated using Equations 1 and 2, the image or frame 600 includes four circles 602, 604, 606 and 608, each of which is a pure color within a particular color model. For example, the circles 602-608 may be red, green, blue and yellow, respectively. In addition, to keep the example simple, the colored circles 602-608 are of equal and uniform brightness.

[0069] Using Equations 1 and 2 above to generate the normalized horizontal and vertical coordinates for the centroids or centers of mass for each of the colors and brightness components of the image 600 results in the set of coordinate pairs (X_1, Y_1), (X_1, Y_3), (X_2, Y_2), (X_3, Y_1), and (X_3, Y_3). The pair (X_1, Y_1) is the centroid of the color component associated with the circle 608, (X_1, Y_3) is the centroid of the color component associated with the circle 606, (X_2, Y_2) is the centroid of the brightness associated with the image 600, (X_3, Y_1) is the centroid of the color component associated with the circle 602, and (X_3, Y_3) is centroid of the color component associated with the circle 604.

[0070] The set of normalized coordinate pairs for the centroids or centers of mass of the various color and brightness components that combine to compose the image or

frame 600 are substantially uniquely representative of the image 600. For instance, moving only the circle 602 horizontally toward the right of the image 600 will significantly affect the horizontal component of the centroid for the circle 602 (e.g., the value X_3 will move accordingly).

[0071] The set of normalized coordinate pairs for the image 600 can be used in several manners to define a signature for the image 600. For example, the signature for the image 600 may be defined as a collection or set of the centroid coordinate pairs for each component color and/or brightness making up an image. In particular, a signature "S" for an image could be defined as S = (Red_x, Red_y, $Green_x$, $Green_y$, $Blue_x$, $Blue_y$, $Yellow_x$, $Yellow_y$, $Brightness_x$, $Brightness_y$), where Red_x is the horizontal position of the centroid for the color red, Red_y is the vertical position of the centroid for the color red, etc. Accordingly, the signature for the example image 600 calculated using such a collection or set is S = (X_3, Y_1, X_3, Y_3, X_1, Y_3, X_1, Y_1, X_2, Y_2).

[0072] Alternatively, a signature based on the normalized coordinates of the color and brightness image components can be formed using relative position information between two or more of the image components. For example, a signature can be formed using vectors or relative movement or location information for several image components based on the absolute normalized coordinates for one image component. In the case of the example image 600, if the absolute coordinates for the centroid of the color component red are used (i.e., X_3, Y_1), the positions of the remaining components (i.e., green, blue, yellow and brightness) are described relative to red and one another and follow a path 610 within the image 600. Thus, the position of the centroid for the green component can be defined relative to the red component, the position of the centroid for the blue component relative to the green component, the

position of the centroid for the yellow component relative to the blue component and the position of the brightness component relative to the yellow component. Such a signature may be expressed mathematically as shown in Equation 3 below.

[0073] Equation 3 $S = (\Delta X_g, \Delta Y_g, \Delta X_b, \Delta Y_b, \Delta X_y, \Delta Y_y, \Delta X_{bght}, \Delta Y_{bght})$

[0074] The delta X and Y values represent horizontal and vertical displacements from the horizontal and vertical positions of the preceding centroid within the set of centroid positions making up the signature "S." Thus, the values ΔX_g and ΔY_g represent the difference between the coordinates for the centroid of the green component and the red component (i.e., $\Delta X_g = X_3 - X_3 = 0$ and $\Delta Y_g = Y_3 - Y_1$), the values ΔX_b and ΔY_b represent the difference between the coordinates for the centroid of the blue component and the green component (i.e., $\Delta X_b = X_1 - X_3$ and $\Delta Y_b = Y_3 - Y_3 = 0$), etc.

[0075] As shown in Equation 3 above, the absolute coordinates for the position of the centroid of the red component are not included to provide a signature that is not sensitive to shifting or movement of an entire image within the frame 600. For example, when using a signature generation technique based on relative centroid positions (such as that provided by Equation 3 above), a displacement of all four of the circles 602-608 by the same horizontal and vertical distances within the frame 600 will not affect the signature generated (i.e., the relative centroid coordinates or positions will not change). Alternatively or additionally, the positions of one or more of the signature components signature may be generated based on the position of the image component centroid with respect to a predetermined or fixed reference point.

[0076] While the example image 600 of Fig. 6 is described as being based on a color model having red, green, blue, yellow and brightness components, other color

models and, thus, image components could be used instead. For example, many well-known color models including, for example, RGB, HIS, YUV, YCrCb, CIELAB and the like may be used in conjunction with the example methods and apparatus disclosed herein.

[0077] Further, image information may be received by the data acquisition unit 206 (Fig. 2) in a form based on one color model and converted to another color model to facilitate and/or improve the signature generation process. For example, the data acquisition unit 206 may receive MPEG image information from the demodulator 202. As described above, MPEG images or frames are formed using a YUV or YCrCb color model. During signature generation (block 512 of Fig. 5), the data acquisition unit 206 may convert the luminance and chrominance information provided by the YCrCb or YUV models to provide color information for red, green, blue, yellow and brightness components. Because the relationships between the different color models are well known, a detailed description of such a conversion process is not provided herein.

[0078] While the above examples and, particularly, Equations 1 and 2, depict the use of normalized centroid coordinates, non-normalized centroid information may be used as well. However, as described below, the use of non-normalized centroid information may result in increased sensitivity to image scaling and the like, which may result in a higher probability of failing to identify or falsely identifying an image or sequence of images (e.g., a video program).

[0079] For purposes of clarity, the distribution of components (e.g., colors, brightness, etc.) within the frame or image 600 is greatly simplified. Namely, the color components composing the frame 600 are represented as non-overlapping, symmetrically distributed circles. Of course, most images or frames making up a

video program are composed of a significantly more complex distribution of color and brightness components than the simplified case shown in Fig. 6.

[0080] Fig. 7 depicts an example image or frame 700 in which three image components (e.g., three colors of a color model) are distributed in a more complex non-uniform manner. For clarity, the image 700 is shown as three component layers 702, 704 and 706 in which each image component is distributed in a non-uniform manner. For instance, the layer 702 may be a red layer, the layer 704 may be a green layer and the layer 706 may be a blue layer having respective centroids or centers of mass (X_1, Y_1), (X_2, Y_2) and (X_3, Y_3). One having ordinary skill in the art will readily appreciate that the signature generation technique described above in connection with Fig. 6 and Equations 1, 2 and 3 may similarly be applied to images having more complex component distributions such as the image 700 of Fig. 7.

[0081] While the signature generation technique described in connection with Fig. 6 above provides substantially unique sets of normalized component centroids (i.e., horizontal and vertical coordinate pairs), certain component distributions may result in significantly reduced signature uniqueness. For example, Fig. 8 depicts a frame or image 800 having a circle 802 of a pure color component (e.g., red, green, blue, etc.) The circle 802 has a centroid 804 located at the "+" at the center of the circle 802. Fig. 9 depicts an example frame or image 900 having two circles 902 and 904 of a pure color component the same as that composing the circle 802 of the image 800. A centroid 906 for this color component of the image 900 is located at the "+." Fig. 10 depicts another example frame or image 1000 having a ring-shaped object 1002 composed of the same color component as that composing the circles 802, 902 and 904 of Figs. 8 and 9. A centroid 1004 for this color component of the image 1000 is identically positioned within the image 1000 as the centroids 804 and 906 are

positioned within the images 800 and 900. Thus, in this instance, the centroids for a particular color component for three substantially different distributions of that color component are all identically positioned within their respective images or frames and, thus, cannot be used to uniquely distinguish between the images 800, 900 and 1000.

[0082] Another difficultly that can arise when attempting to generate unique signatures for video images occurs with images having substantially symmetric component distributions. Figs. 11 and 12 are example frames or images 1100 and 1200 that contain relatively symmetric distributions of a particular component. In particular, the frame 1100 contains three identical elliptical shapes 1102, 1104 and 1106, each of which is composed of a single component (e.g., a single color component). Using Equations 1 and 2 above, the center of mass or centroid of the component distribution shown in Fig. 11 is located at (X_1, Y_1), which is designated within the image 1100 using a "+" sign at reference numeral 1108.

[0083] Fig. 12 also contains three elliptical shapes 1202, 1204 and 1206 that are composed of the same component and are of the same shape and size as the shapes 1102, 1104 and 1106 of Fig. 11. Although the shapes 1202, 1204 and 1206 are distributed within the image or frame 1200 in a substantially different manner than the shapes 1102, 1104 and 1106 are distributed within the frame 1100, using Equations 1 and 2 above to generate a centroid for the component distribution within the frame 1200 yields a centroid location 1208 that is identical to the centroid location 1108 of the component distribution of Fig. 11 (i.e., X_1, Y_1).

[0084] Those having ordinary skill in the art will, of course, recognize that in practice, most images (e.g., color images) include more than one component (e.g., red, green, blue, etc.). As a result, even if the centroid for one of the image components fails to be uniquely associated with that image, the remaining components may,

nevertheless, provide a set of centroids that is substantially unique for purposes of identifying that image. However, signatures composed of fewer substantially unique component centroids (i.e., the set of centroid locations is less unique) can significantly decrease the reliability of image identifications (e.g., misidentifications may occur) based on those sets of centroids.

[0085] As described in greater detail in connection with Fig. 13 below, a signature for a frame or image can be made more unique by sub-dividing the image or frame into a plurality or regions or areas, calculating the component centroids for these sub-divided regions or areas and forming a signature for the frame or image including component centroids for the overall image and the component centroids for the sub-divided regions or areas. Thus, a signature generated in this manner is less sensitive to the aforementioned problems discussed in connection with Figs. 8-12 above.

[0086] Fig. 13 depicts an example frame or image 1300 that contains three identical elliptical shapes 1302, 1304 and 1306, all of which are composed of the same component (e.g., a single color). As depicted by the dashed lines, the image 1300 has been sub-divided into four quadrants labeled Q0, Q1, Q2 and Q4. The centroid for the overall image 1300 is located at the "+" designated by the reference numeral 1306 and the centroids for the quadrants Q0, Q1, Q2 and Q3 are designated by the "+" signs designated by respective reference numerals 1308, 1310, 1312 and 1314, respectively.

[0087] Thus, when an image is partitioned or sub-divided into four sub-images, regions or areas, each image component (e.g., a color or brightness component) may be represented using five centroids (i.e., five horizontal and vertical coordinate pairs or ten values), one of which corresponds to the overall image and the remaining four of which correspond to the four sub-images or regions. For an image containing red,

green, blue, yellow and brightness components, set containing a total of twenty-five centroids (i.e., twenty five horizontal and vertical coordinate pairs or fifty values) may be used to form a signature for the image or frame. An example of such a signature can be represented as depicted in Table 4 below.

	RED	GREEN	BLUE	YELLOW	BRIGHTNESS
OVERALL IMAGE	X_1, Y_1	X_2, Y_2	X_3, Y_3	X_4, Y_4	X_5, Y_5
Q0	X_6, Y_6	X_7, Y_7	X_8, Y_8	X_9, Y_9	X_{10}, Y_{10}
Q1	X_{11}, Y_{11}	X_{12}, Y_{12}	X_{13}, Y_{13}	X_{14}, Y_{14}	X_{15}, Y_{15}
Q2	X_{16}, Y_{16}	X_{17}, Y_{17}	X_{18}, Y_{18}	X_{19}, Y_{19}	X_{20}, Y_{20}
Q3	X_{21}, Y_{21}	X_{22}, Y_{22}	X_{23}, Y_{23}	X_{24}, Y_{24}	X_{25}, Y_{25}

TABLE 4

[0088] Of course, more or fewer image components may be used if desired. Additionally, fewer or more partitions, sub-images or regions or areas may be used. For example, sub-regions may be further sub-divided in a recursive manner to achieve any desired level of signature uniqueness. In other words, a greater number of sub-images or sub-divided areas may be defined within an image or frame to generate a signature having a greater amount of distinguishing information. Further, the sub-image areas or regions do not have to be identically shaped and sized. For example, relatively smaller sub-divisions or sub-images may be used within the central region of an overall image and relatively larger sub-divisions may be used within the peripheral regions of an image. Still further, while the signature generation example given in connection with Fig. 13 uses normalized non-relative centroid coordinates or locations, relative centroid locations as discussed above may be used instead.

[0089] The above-described signature generation techniques employing sub-images or regions within images or frames to increase signature uniqueness can be used to improve the reliability of an image identification process, particularly in cases where there is a significant amount of symmetry among images being identified. However, there are still further problems that may be encountered for certain types of images or frames. For example, images having a relatively constant distribution of components across the entire image tend to produce centroids that are located within the center of the frame or image, regardless of the color, hue and/or brightness of the image.

[0090] Centroids calculated for frames or images having a constant value that is substantially greater than zero will all be relatively stable and centered within the images. Thus, an entirely medium gray image and an entirely dark gray image will both result in centroids that are centered within the image, thereby making it impossible to distinguish these two images on the basis of their image component centroids. In general, these types of images contain little, if any, information and may, for example, be perceived as blank images.

[0091] For frames or images having a constant value that is near to zero, video signal noise may cause the centroid to vary from frame to frame, even if the images are perceptually identical (e.g., all the images are blank). In such a case, calculating the centroid based on Equations 1 and 2 above yields unstable results (i.e., signature values) that may significantly reduce the reliability with which the video programming associated with these images can be identified.

[0092] An alternative signature generation technique may be employed for the images or frames that contain relatively constant information (e.g., the distribution of one or more image components is relatively uniform within the frames or images),

such as those described above. In particular, if during execution of the example method shown in Fig. 5 it is determined that the majority of spatial domain values (e.g., the downscaled image) are all about the same value, block 512 may generate the signature for the frame or image being processed using such an alternative signature generation technique. One such alternative signature generation technique may be based on calculating component coordinates using Equation 4 below.

[0093] Equation 4 $X = -100$

[0094] Equation 5 $Y = 100 * K / K_{max}$

[0095] The values X and Y are the representative horizontal and vertical coordinates of a substituted or pseudo-centroid, the value "K" is an estimated constant value such as, for example, a trend or average pixel value(s) for a component of the image being processed, and the value K_{max} is a maximum possible average pixel value for the component. As noted above, Equation 4 does not provide an actual geometric centroid but, rather, a pair of coordinates that can be used to serve the function of a substantially unique coordinate pair for a relatively blank or uniform image. Thus, using Equation 4 to calculate representative coordinates for one image entirely filled with medium gray and another image entirely filled with dark gray will yield different pseudo-centroids or coordinate pairs that enable substantially unique signatures for these images to be formed.

[0096] Yet another difficulty in generating substantially unique signatures occurs for images that are composed primarily of dark foreground (e.g., dark text) on a substantially white background. In these cases, the relatively high (and constant) background values associated with the white portions of the image have a much

greater effect on the center of mass or centroid than the relatively low foreground values associated with the darker foreground.

[0097] As a result, signatures formed using centroids for these kinds of images will typically not be sufficiently unique to identify differences between, for example, an image containing one text block in a given location and another image containing a different text block in the same or a different location. In these cases, the image values may be inverted (i.e., the image may be inverted so that the foreground (e.g., textual information) is relatively light and the background is relatively dark) so that the foreground has a much more significant effect on the centroid of the image. The pixel values associated with the inverted image are then used to generate the centroid(s) and, thus, the signature for the image(s). However, when using Equations 1 and 2 described above to calculated the centroid values, the centroid values may be negated (i.e., multiplied by -1) to indicated that the centroid values correspond to an inverted image.

[0098] As discussed above, the data acquisition unit 206 (Fig. 2) receives video frames or images (e.g., compressed video or MPEG frames) from the demodulator 202 (Fig. 2) and generates signatures and downscaled images for some or all of these received frames or images using, for example, the methods described above. As described in greater detail in connection with Figs. 14 and 15 below, the central processing unit 210 (Fig. 2) is configured to compare sequences of signatures received from the data acquisition unit 206 (Fig. 2) to reference sequences of signatures associated with known video programs (e.g., television commercials, television shows, etc.) to identify one or more selected programs and forward the unidentified video clip to the central facility 216.

[0099] Initially, the central processing unit 210 (Fig. 2) receives signature information from the data acquisition unit 206 (Fig. 2) (block 1400). The central processing unit 210 then determines whether the received signature information is the start or beginning of a sequence (block 1402). If the received signature information is the start of a sequence at block 1402, the central processing unit 210 selects one or more reference signature sequences from a database or library of signature sequences (block 1404), which may be stored within the memory or mass storage device 214 (Fig. 2), and appends the selected signature sequences to a dynamic accumulation table or intermediate results table. On the other hand, if the central processing unit 210 determines at block 1402 that the received signature information is not the start of a sequence, then control is passed to block 1406.

[00100] The reference signatures accumulated at block 1404 (candidate signature sequences) are to be compared to the sequence of signatures currently being received (suspect signature sequence) to determine if an exact or substantial match exists and, if such a match exists, identify the video program associated with the suspect signature sequence. In general, signature sequences may be represented as $[S_A][S_B][S_C][S_D]\ldots$, where S_A is a first signature (e.g., a set of image component centroids generated as set forth above) for a frame or image, S_B is another signature (e.g., another set of image component centroids) associated with a subsequent frame or image, etc. Accordingly, one useful manner of selecting candidate or reference signature sequences (block 1404) in a case where the initial signature received at block 1400 is S_A is to select all signature sequences from the database or library of known signature sequences that include the signature S_A within a predetermined number of signatures from the beginning of the sequence. For example, the signature sequences listed below in Table 2, if in the database or library, may be selected at

block 1404 and appended to the accumulation or intermediate results table. As can be recognized from Table 2 below, the selected signature sequences do not necessarily begin with the signature S_A but, instead, include the signature S_A. From the example group of selected signature sequences shown in Table 2, only signature sequences including the signature S_A within the first three signatures may have, for example, been selected.

Sequence #	REFERENCE SIGNATURE SEQUENCES
1	$[S_A][S_F][S_K][S_N][S_Z]$
2	$[S_A][S_H][S_L][S_N][S_V]$
3	$[S_A][S_F][S_K][S_P][S_Q]$
4	$[S_A][S_F][S_G][S_P][S_J]$
5	$[S_X][S_A][S_F][S_G][S_N]$
6	$[S_X][S_Y][S_A][S_G][S_N]$

TABLE 2

[00101] Following the comparison at block 1406, the central processing unit 210 updates match results for each of the reference signature sequences (block 1408) in the accumulation or intermediate results table. In general, the match results track, for each reference sequence of signatures, if the individual signatures within a sequence of signatures generated by the data acquisition unit 206 (Fig. 2) match corresponding signatures within the reference sequences of signatures. Thus, the match results can be represented within a table in which each row of the table corresponds to a different reference signature sequence and each column of the table corresponds to a relative temporal position within the sequence. Table 3 below is an example table that represents the match results after having received the signatures S_A and S_F. The value

"1" indicates a match occurred at block 1406, the value "0" indicates a match did not occur and "X" indicates a position within the sequence that has not yet been tested (i.e., compared to a signature received from the data acquisition unit 206).

Sequence #	MATCH RESULTS				
1	1	1	X	X	X
2	1	0	X	X	X
3	1	1	X	X	X
4	1	1	X	X	X
5	0	1	1	X	X
6	0	0	1	0	0

TABLE 3

[00102] The processing unit 210 then eliminates non-matching reference signature sequences from the accumulation or intermediate results table (e.g., from Table 2). For example, sequence number two may be eliminated for having at least one non-matching signature. However, in some cases it may be desirable to only eliminate sequences having two non-matching signatures or a greater number of non-matching signatures. For this example, only sequences having three or more non-matching signatures are eliminated at block 1410. As a result, only signature sequence six is eliminated following the receipt and processing of the second signature S_F.

[00103] Continuing with the above example, following the receipt of the signature S_F, each of the remaining signature sequences has at least two untested positions. As a result, the processing unit 210 will loop through blocks 1400-1420 at least two additional times. If the signatures S_G and S_N are received as third and fourth signatures, respectively, no additional comparisons will be required at block 1406

after receiving the signature S_N (i.e., there are no untested sequence positions at that point). Thus, the state of the match results for the above example is as depicted in Table 4 below.

Sequence #	MATCH RESULTS				
1	1	1	0	0	0
2	1	0	0	0	0
3	1	1	0	0	0
4	1	1	1	0	0
5	0	1	1	1	1
6	0	0	1	0	0

TABLE 4

[00104] As can be seen from Table 4 above, signature sequences one, two, three and six have been eliminated following the receipt of the signature S_N because these sequences contained at least three non-matching signatures upon receipt of the signature S_N.

[00105] The central processing unit 210 examines the match results to determine if there is a matching sequence (block 1414). In the case of the above example, signature sequence five is an identical match and, thus, is a matching sequence. However, in some cases the processing unit 210 may consider a substantial match (i.e., a non-identical match) sufficient. For example, the processing unit 210 may consider three out of four matches for a signature sequence to be a matching sequence. Additionally or alternatively, the central processing unit 210 may consider the reference signature sequence having the greatest number of matching signatures to be a matching sequence, regardless of the percentage of matching signatures. Still

further, if two or more reference signature sequences result in the same percentage or number of matches, the central processing unit 210 may, based on historical information, identify the matching reference sequence of signatures as that sequence that occurs most frequently (i.e., the most probable sequence of signatures). More generally, the number or percentage of matching signatures required to satisfy a matching condition depends on what level of inaccurate video program identification is acceptable for a particular application. In other words, if a relatively low level of inaccurate video program identification is acceptable, then a lower percentage or number of matching signatures may be acceptable to satisfy a match condition. On the other hand, if a relatively high level of inaccurate video program identification is acceptable, then a higher percentage or number of matching signatures may be acceptable to satisfy a match condition.

[00106] In any event, if the central processing unit 210 determines that a signature sequence match has been found at block 1414, the central processing unit 210 then identifies the video sequence or program associated with the matching reference signature sequence (block 1416). Any desired data structures and/or database search techniques may be used. For example, once a matching sequence of signatures has been identified, the sequence number or identifier associated with the matching sequence of signatures may be used to access (e.g., via an indexing or lookup method) textual information associated with the audio and/or video program corresponding to that identifier or sequence number. Alternatively, a set of tables organized in a linked tree-like data structure may be used. In particular, each of the tables may be indexed using centroids or coordinate pairs (e.g., horizontal and vertical coordinates). In this manner, a first coordinate pair or centroid associated with a signature is used to index to a link to a subsequent table. The next coordinate pair of the signature is then used

to index within the subsequent table to another table. This process continues until all coordinate pairs associated with all of the signatures within a signature sequence have been exhausted at a final table. The last coordinate pair is then used to index to textual information (e.g., in the form of metadata) describing the video program associated with the sequence of signatures information (i.e., sequence of centroids or coordinate pairs used to index through the linked tables). A searchable tree-like data structure such as that described above provides a relatively short search time. In the case where the video programs being identified are television commercials a relatively faster search technique may be highly advantageous because a relatively large number of commercials (e.g., 1,000,000 or more) may be contained within the database to be searched.

[00107] If, on the other hand, at block 1414 the processing unit 210 determines that a matching sequence cannot be found, the processing unit 210 determines if a manual identification is required or desired (block 1417). If, at block 1414, a manual identification is required, a human operator may intervene and manually identify the video program (block 1418). For example, the human operator may view the video sequence to determine the identity of the sequence. If the video program identified by the human operator at block 1418 was previously not contained within the database, the sequence may be added to the database.

[00108] On the other hand, if the video program was already stored in the database but was associated with a different sequence, the operator may update the reference information to include possible signature sequences for that video program. In some cases, multiple signature sequences may be needed to represent a single video program that can be conveyed to the demodulator 202 using somewhat different encoding at a broadcast station (not shown). An efficient manner to store and search

multiple signature sequences for a single video program is to represent the sequence of signature positions for which multiple signatures are possible using a logical OR data structure. For example, a reference sequence of signatures may be expressed as $[S_A][S_B|S_N][S_G][S_F|S_K]$, where the "|" means OR. Thus, continuing the example, the signature sequences $[S_A][S_B][S_G][S_F]$, $[S_A][S_N][S_G][S_K]$, $[S_A][S_B][S_G][S_K]$ and $[S_A][S_N][S_G][S_F]$ are all matches to the reference sequence of signatures and, thus, are all associated with the same video program. Storing reference signature information using the above-described OR-based data structure can significantly reduce the amount of memory needed to maintain a library of reference signatures and can substantially reduce the amount of time needed to search such a library of reference signatures for matching signatures. The activities associated with blocks 1418 and 1420 may be performed at, for example, the central facility 216 (Fig. 2).

[00109] While the example method described in connection with Figs. 14 and 15 is described as being executed within the central processing unit 210, some or all of the functions associated with the example method may be performed within the data acquisition unit 206 or any other device associated with the system 200 shown in Fig. 2.

[00110] Although certain methods, apparatus and articles of manufacture have been described herein, the scope of coverage of this patent is not limited thereto. To the contrary, this patent covers all methods, apparatus and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

What is claimed is:

1. A method of generating a video signature, comprising:

receiving compressed video information;

extracting frequency coefficient information from the compressed video information;

calculating image component centroid information based on the extracted frequency coefficient information; and

generating the video signature using the image component centroid information.

2. A method as defined in claim 1, further comprising converting the frequency coefficient information to spatial domain information and using the spatial domain information to calculated the image component centroid information.

3. A method as defined in claim 1, wherein the compressed video information includes at least one MPEG frame.

4. A method as defined in claim 1, wherein the compressed video information includes at least one substantially intra-coded frame.

5. A method as defined in claim 1, wherein frequency coefficient information includes DC coefficients extracted from macro blocks composing at least a portion of the compressed video information.

6. A method as defined in claim 1, wherein the image component centroid information includes normalized centroid data.

7. A method as defined in claim 1, wherein the image component centroid information includes centroid information associated with a plurality of image components.

8. A method as defined in claim 7, wherein the plurality of image components includes image components associated with a color model.

9. A method as defined in claim 1, wherein generating the video signature using the image component centroid information includes generating a set of image component centroids associated with a plurality of image components.

10. A method as defined in claim 1, wherein generating the video signature using the image component centroid information includes generating a set of image component centroids associated with a plurality of areas within an image associated with the compressed video information.

11. A method as defined in claim 1, further comprising inverting at least some of the compressed image information in response to a determination that the at least some of the compressed image information corresponds to relatively dark foreground information on a relatively light background.

12. A method as defined in claim 1, further comprising determining that at least a portion of the compressed video information is substantially uniform and generating the video signature using a constant associated with an image component value instead of the image centroid information.

13. A method as defined in claim 12, wherein the constant is one of an average and a trend value associated with a plurality of images.

14. A method as defined in claim 1, further comprising weighting the extracted frequency coefficient information prior to generating the video signature.

15. A system for generating a video signature, comprising:

a memory; and

a processor coupled to the memory and programmed to:

receive compressed video information;

extract frequency coefficient information from the compressed video information;

calculate image component centroid information based on the extracted frequency coefficient information; and

generate the video signature using the image component centroid information.

16. A system as defined in claim 15, wherein the processor is programmed to convert the frequency coefficient information to spatial domain information and to calculate the image component centroid information using the spatial domain information.

17. A system as defined in claim 15, wherein the compressed video information includes at least one MPEG frame.

18. A system as defined in claim 15, wherein the compressed video information includes at least one substantially intra-coded frame.

19. A system as defined in claim 15, wherein frequency coefficient information includes DC coefficients extracted from macro blocks composing at least a portion of the compressed video information.

20. A system as defined in claim 15, wherein the image component centroid information includes normalized centroid data.

21. A system as defined in claim 15, wherein the image component centroid information includes centroid information associated with a plurality of image components.

22. A system as defined in claim 21, wherein the plurality of image components includes image components associated with a color model.

23. A system as defined in claim 15, wherein the processor is programmed to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of image components.

24. A system as defined in claim 15, wherein the processor is programmed to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of areas within an image associated with the compressed video information.

25. A system as defined in claim 15, wherein the processor is programmed to invert at least some of the compressed image information in response to a determination that the at least some of the compressed image information corresponds to relatively dark foreground information on a relatively light background.

26. A system as defined in claim 15, wherein the processor is programmed to determine that at least a portion of the compressed video information is substantially uniform and generate the video signature using a constant associated with an image component value instead of the image centroid information.

27. A system as defined in claim 26, wherein the constant is one of an average and a trend value associated with a plurality of images.

28. A system as defined in claim 15, wherein the processor is programmed to weight the extracted frequency coefficient information prior to generating the video signature.

29. A computer readable medium having instructions stored thereon that, when executed, cause a machine to:

receive compressed video information;

extract frequency coefficient information from the compressed video information;

calculate image component centroid information based on the extracted frequency coefficient information; and

generate a video signature using the image component centroid information.

30. A computer readable medium having instructions stored thereon that, when executed, cause the machine to convert the frequency coefficient information to spatial domain information and to calculate the image component centroid information based on the spatial domain information.

31. A computer readable medium as defined in claim 29, wherein the compressed video information includes at least one MPEG frame.

32. A computer readable medium as defined in claim 29, wherein the compressed video information includes at least one substantially intra-coded frame.

33. A computer readable medium as defined in claim 29, wherein frequency coefficient information includes DC coefficients extracted from macro blocks composing at least a portion of the compressed video information.

34. A computer readable medium as defined in claim 29, wherein the image component centroid information includes centroid information associated with a plurality of image components.

35. A computer readable medium as defined in claim 29 having instructions stored thereon that, when executed, cause the machine to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of image components.

36. A computer readable medium as defined in claim 29 having instructions stored thereon that, when executed, cause the machine to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of areas within an image associated with the compressed video information.

37. A computer readable medium as defined in claim 29 having instructions stored thereon that, when executed, cause the machine to invert at least some of the compressed image information in response to a determination that the at least some of the compressed image information corresponds to relatively dark foreground information on a relatively light background.

38. A computer readable medium as defined in claim 29 having instructions stored thereon that, when executed, cause the machine to determine that at least a portion of the compressed video information is substantially uniform and

generate the video signature using a constant associated with an image component value instead of the image centroid information.

39. A system for generating a signature associated with a video program, the system comprising:

a frame scanner to scan a video frame associated with the video program;

an intra-coded macro block extractor to extract intra-coded macro blocks from the video frame;

a coefficient extractor to extract DC coefficients from the intra-coded macro blocks; and

a signature generator to calculate a plurality of centroids associated with video frame based on the extracted DC coefficients and to form the signature based on the plurality of centroids.

40. A system as defined in claim 39, wherein the frame scanner is adapted to selectively send substantially intra-coded video frames to the intra-coded macro block extractor.

41. A system as defined in claim 39, wherein the video program includes one of a television commercial and a television show.

42. A system as defined in claim 39, wherein the video frame is composed according to a digital video compression standard.

43. A system as defined in claim 42, wherein the digital video compression standard is the MPEG standard.

44. A system as defined in claim 39, wherein the plurality of centroids are associated with a plurality of image components.

45. A system as defined in claim 44, wherein the plurality of image components are associated with a color model.

46. A system as defined in claim 39, wherein the plurality of centroids are associated with a plurality of areas within the video frame.

47. A method of identifying a video program, comprising:

receiving a sequence of signatures, wherein each of the signatures includes a set of centroids corresponding to one of a plurality of frames of the video program;

comparing the sequence of signatures to a set of reference sequences of signatures; and

identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

48. A method as defined in claim 46, wherein each of the sets of centroids includes centroids associated with image components.

49. A method as defined in claim 48, wherein the image components are associated with a color model.

50. A method as defined in claim 46, wherein each of the sets of centroids includes centroids associated with a plurality of areas within its corresponding one of the plurality of frames.

51. A method as defined in claim 46, wherein comparing the sequence of signatures to the set of reference sequences of signatures includes comparing the sequence of signatures to each reference sequence of signatures.

52. A method as defined in claim 51, wherein comparing the sequence of signatures to each reference sequence of signatures includes sequentially comparing each signature within the sequence of signatures to each of the signatures within at least one of the reference sequences of signatures.

53. A method as defined in claim 46, wherein identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures includes identifying the video program in response to identifying a matching sequence within the set of reference sequences of signatures.

54. A method as defined in claim 46, wherein identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures includes providing textual information describing the video program.

55. A method as defined in claim 46, wherein identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures includes manually identifying the video program in response to a failure to identify a matching sequence within the set of reference sequences of signatures.

56. A method as described in claim 55, further comprising adjusting at least one reference sequence of signatures from the set of reference sequences of signatures in response to different encoding methods.

57. A method as defined in claim 46, wherein video program is one of a television commercial and a television show.

58. A system for identifying a video program, comprising:

a memory; and

a processor coupled to the memory and programmed to:

receive a sequence of signatures, wherein each of the signatures includes a set of centroids corresponding to one of a plurality of frames of the video program;

compare the sequence of signatures to a set of reference sequences of signatures; and

identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

59. A system as defined in claim 58, wherein each of the sets of centroids includes centroids associated with image components.

60. A system as defined in claim 59, wherein the image components are associated with a color model.

61. A system as defined in claim 58, wherein each of the sets of centroids includes centroids associated with a plurality of areas within its corresponding one of the plurality of frames.

62. A system as defined in claim 58, wherein the processor is programmed to compare the sequence of signatures to the set of reference sequences of signatures by comparing the sequence of signatures to each reference sequence of signatures.

63. A system as defined in claim 62, wherein the processor is programmed to compare the sequence of signatures to each reference sequence of signatures by sequentially comparing each signature within the sequence of signatures to each of the signatures within at least one of the reference sequences of signatures.

64. A system as defined in claim 58, wherein the processor is programmed to identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures by identifying the video program in response to identifying a matching sequence within the set of reference sequences of signatures.

65. A computer readable medium having instructions stored thereon that, when executed, cause a machine to:

receive a sequence of signatures, wherein each of the signatures includes a set of centroids corresponding to one of a plurality of frames of a video program;

compare the sequence of signatures to a set of reference sequences of signatures; and

identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

66. A computer readable medium as defined in claim 65, wherein each of the sets of centroids includes centroids associated with image components.

67. A computer readable medium as defined in claim 65, wherein each of the sets of centroids includes centroids associated with a plurality of areas within its corresponding one of the plurality of frames.

AMENDED CLAIMS

[received by the International Bureau on 26 March 2004 (26.03.04);
original claims 1-67 replaced by new claims 1-80]

1. A method of generating a video signature, comprising:

receiving compressed video information;

selecting a frame from the compressed video information based on a number of intra-coded macro blocks within the frame;

calculating image component centroid information based on the selected frame; and

generating the video signature using the image component centroid information.

2. A method as defined in claim 1, wherein the number of intra-coded macro blocks within the frame is a substantial portion of all macro blocks within the frame.

3. A method as defined in claim 1, further comprising extracting scaled image information from the frame and using the scaled image information to calculate the image component centroid information.

4. A method as defined in claim 3, wherein extracting the scaled image information from the frame includes extracting only intra-coded macro blocks from the frame.

5. A method as defined in claim 4, wherein extracting the scaled image information includes extracting only a portion of each of the intra-coded macro blocks.

6. A method as defined in claim 5, wherein the portion of each of the intra-coded macro blocks includes only DC coefficients.

7. A method as defined in claim 3, further comprising converting the scaled image information to spatial domain information and using the spatial domain information to calculate the image component centroid information.

8. A method as defined in claim 3, further comprising weighting the scaled image information prior to generating the video signature.

9. A method as defined in claim 1, wherein the compressed video information includes at least one MPEG frame.

10. A method as defined in claim 1, wherein the image component centroid information includes normalized centroid data.

11. A method as defined in claim 1, wherein the image component centroid information includes centroid information associated with a plurality of image components.

12. A method as defined in claim 11, wherein the plurality of image components includes image components associated with a color model.

13. A method as defined in claim 1, wherein generating the video signature using the image component centroid information includes generating a set of image component centroids associated with a plurality of image components.

14. A method as defined in claim 1, wherein generating the video signature using the image component centroid information includes generating a set of image component centroids associated with a plurality of areas within an image associated with the compressed video information.

15. A method as defined in claim 1, further comprising inverting at least some of the compressed image information in response to a determination that the at least some of the compressed image information corresponds to relatively dark foreground information on a relatively light background.

16. A method as defined in claim 1, further comprising determining that at least a portion of the compressed video information is substantially uniform and generating the video signature using a constant associated with an image component value instead of the image centroid information.

17. A method as defined in claim 16, wherein the constant is one of an average and a trend value associated with a plurality of images.

18. A system for generating a video signature, comprising:

a memory; and

a processor coupled to the memory and programmed to:

receive compressed video information;

select a frame from the compressed video information based on a number of intra-coded macro blocks within the frame;

calculate image component centroid information based on the selected frame; and

generate the video signature using the image component centroid information.

19. A system as defined in claim 18, wherein the number of intra-coded macro blocks within the frame is a substantial portion of all macro blocks within the frame.

20. A system as defined in claim 18, wherein the processor is programmed to extract scaled image information from the frame and to use the scaled image information to calculate the image component centroid information.

21. A system as defined in claim 20, wherein the processor is programmed to extract the scaled image information from the frame by extracting only intra-coded macro blocks from the frame.

22. A system as defined in claim 21, wherein the processor is programmed to extract the scaled image information by extracting only a portion of each of the intra-coded macro blocks.

23. A system as defined in claim 22, wherein the portion of each of the intra-coded macro blocks includes only DC coefficients.

24. A system as defined in claim 20, wherein the processor is programmed to convert the scaled image information to spatial domain information and to use the spatial domain information to calculate the image component centroid information.

25. A system as defined in claim 20, wherein the processor is programmed to weight the scaled image information prior to generating the video signature.

26. A system as defined in claim 18, wherein the compressed video information includes at least one MPEG frame.

27. A system as defined in claim 18, wherein the image component centroid information includes normalized centroid data.

28. A system as defined in claim 18, wherein the image component centroid information includes centroid information associated with a plurality of image components.

29. A system as defined in claim 28, wherein the plurality of image components includes image components associated with a color model.

30. A system as defined in claim 18, wherein the processor is programmed to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of image components.

31. A system as defined in claim 18, wherein the processor is programmed to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of areas within an image associated with the compressed video information.

32. A system as defined in claim 18, wherein the processor is programmed to invert at least some of the compressed image information in response to a determination that the at least some of the compressed image information corresponds to relatively dark foreground information on a relatively light background.

33. A system as defined in claim 18, wherein the processor is programmed to determine that at least a portion of the compressed video information is substantially uniform and generate the video signature using a constant associated with an image component value instead of the image centroid information.

34. A system as defined in claim 33, wherein the constant is one of an average and a trend value associated with a plurality of images.

35. A machine readable medium having instructions stored thereon that, when executed, cause a machine to:

receive compressed video information;

select a frame from the compressed video information based on a number of intra-coded macro blocks within the frame;

calculate image component centroid information based on the selected frame; and

generating a video signature using the image component centroid information.

36. A machine readable medium as defined in claim 35, wherein the number of intra-coded macro blocks within the frame is a substantial portion of all macro blocks within the frame.

37. A machine readable medium as defined in claim 35 having instructions stored thereon that, when executed, cause the machine to extract scaled image information from the frame and use the scaled image information to calculate the image component centroid information.

38. A machine readable medium as defined in claim 37 having instructions stored thereon that, when executed, cause the machine to extract the scaled image information from the frame by extracting only intra-coded macro blocks from the frame.

39. A machine readable medium as defined in claim 38 having instructions stored thereon that, when executed, cause the machine to extract the scaled image information by extracting only a portion of each of the intra-coded macro blocks.

40. A machine readable medium as defined in claim 39, wherein the portion of each of the intra-coded macro blocks includes only DC coefficients.

41. A machine readable medium as defined in claim 37 having instructions stored thereon that, when executed, cause the machine to convert the scaled image information to spatial domain information and use the spatial domain information to calculate the image component centroid information.

42. A machine readable medium as defined in claim 37 having instructions stored thereon that, when executed, cause the machine to weight the scaled image information prior to generating the video signature.

43. A machine readable medium as defined in claim 35, wherein the compressed video information includes at least one MPEG frame.

44. A machine readable medium as defined in claim 35, wherein the image component centroid information includes normalized centroid data.

45. A machine readable medium as defined in claim 35, wherein the image component centroid information includes centroid information associated with a plurality of image components.

46. A machine readable medium as defined in claim 45, wherein the plurality of image components includes image components associated with a color model.

47. A machine readable medium as defined in claim 35 having instructions stored thereon that, when executed, cause the machine to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of image components.

48. A machine readable medium as defined in claim 35 having instructions stored thereon that, when executed, cause the machine to generate the video signature using the image component centroid information by generating a set of image component centroids associated with a plurality of areas within an image associated with the compressed video information.

49. A machine readable medium as defined in claim 35 having instructions stored thereon that, when executed, cause the machine to invert at least some of the compressed image information in response to a determination that the at least some of the compressed image information corresponds to relatively dark foreground information on a relatively light background.

50. A machine readable medium as defined in claim 35 having instructions stored thereon that, when executed, cause the machine to determine that at least a portion of the compressed video information is substantially uniform and generate the video signature using a constant associated with an image component value instead of the image centroid information.

51. A machine readable medium as defined in claim 50, wherein the constant is one of an average and a trend value associated with a plurality of images.

52. A system for generating a signature associated with a video program, the system comprising:

a frame scanner to scan video frames associated with the video program, wherein the frame scanner is configured to select a video frame based on a number of intra-coded macro blocks within the video frame;

an intra-coded macro block extractor to extract intra-coded macro blocks from the video frame;

a scaled image extractor to extract a scaled image from the intra-coded macro blocks; and

a signature generator to calculate a plurality of centroids associated with video frame based on the scaled image and to form the signature based on the plurality of centroids.

53. A system as defined in claim 52, wherein the frame scanner is adapted to selectively send substantially intra-coded video frames to the intra-coded macro block extractor.

54. A system as defined in claim 52, wherein the video program includes one of a television commercial and a television show.

55. A system as defined in claim 52, wherein the video frame is composed according to a digital video compression standard.

56. A system as defined in claim 55, wherein the digital video compression standard is based on the MPEG standard.

57. A system as defined in claim 52, wherein the plurality of centroids are associated with a plurality of image components.

58. A system as defined in claim 57, wherein the plurality of image components are associated with a color model.

59. A system as defined in claim 52, wherein the plurality of centroids are associated with a plurality of areas within the video frame.

60. A method of identifying a video program, comprising:

receiving a sequence of signatures, wherein each of the signatures includes a set of centroids corresponding to one of a plurality of substantially intra-coded frames of the video program;

comparing the sequence of signatures to a set of reference sequences of signatures; and

identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

61. A method as defined in claim 60, wherein each of the sets of centroids includes centroids associated with image components.

62. A method as defined in claim 60, wherein the image components are associated with a color model.

63. A method as defined in claim 60, wherein each of the sets of centroids includes centroids associated with a plurality of areas within its corresponding one of the plurality of frames.

64. A method as defined in claim 60, wherein comparing the sequence of signatures to the set of reference sequences of signatures includes comparing the sequence of signatures to each reference sequence of signatures.

65. A method as defined in claim 64, wherein comparing the sequence of signatures to each reference sequence of signatures includes sequentially comparing each signature within the sequence of signatures to each of the signatures within at least one of the reference sequences of signatures.

66. A method as defined in claim 60, wherein identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures includes identifying the video program in response to identifying a matching sequence within the set of reference sequences of signatures.

67. A method as defined in claim 60, wherein identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures includes providing textual information describing the video program.

68. A method as defined in claim 60, wherein identifying the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures includes manually identifying the video program in response to a failure to identify a matching sequence within the set of reference sequences of signatures.

69. A method as described in claim 68, further comprising adjusting at least one reference sequence of signatures from the set of reference sequences of signatures in response to different encoding methods.

70. A method as defined in claim 60, wherein video program is one of a television commercial and a television show.

71. A system for identifying a video program, comprising:

a memory; and

a processor coupled to the memory and programmed to:

receive a sequence of signatures, wherein each of the signatures includes a set of centroids corresponding to one of a plurality of substantially intra-coded frames of the video program;

compare the sequence of signatures to a set of reference sequences of signatures; and

identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

72. A system as defined in claim 71, wherein each of the sets of centroids includes centroids associated with image components.

73. A system as defined in claim 72, wherein the image components are associated with a color model.

74. A system as defined in claim 71, wherein each of the sets of centroids includes centroids associated with a plurality of areas within its corresponding one of the plurality of frames.

75. A system as defined in claim 71, wherein the processor is programmed to compare the sequence of signatures to the set of reference sequences of signatures by comparing the sequence of signatures to each reference sequence of signatures.

AMENDED SHEET (ARTICLE 19)

76. A system as defined in claim 75, wherein the processor is programmed to compare the sequence of signatures to each reference sequence of signatures by sequentially comparing each signature within the sequence of signatures to each of the signatures within at least one of the reference sequences of signatures.

77. A system as defined in claim 71, wherein the processor is programmed to identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures by identifying the video program in response to identifying a matching sequence within the set of reference sequences of signatures.

78. A computer readable medium having instructions stored thereon that, when executed, cause a machine to:

receive a sequence of signatures, wherein each of the signatures includes a set of centroids corresponding to one of a plurality of substantially intra-coded frames of a video program;

compare the sequence of signatures to a set of reference sequences of signatures; and

identify the video program based on the comparison of the sequence of signatures to the set of reference sequences of signatures.

79. A computer readable medium as defined in claim 78, wherein each of the sets of centroids includes centroids associated with image components.

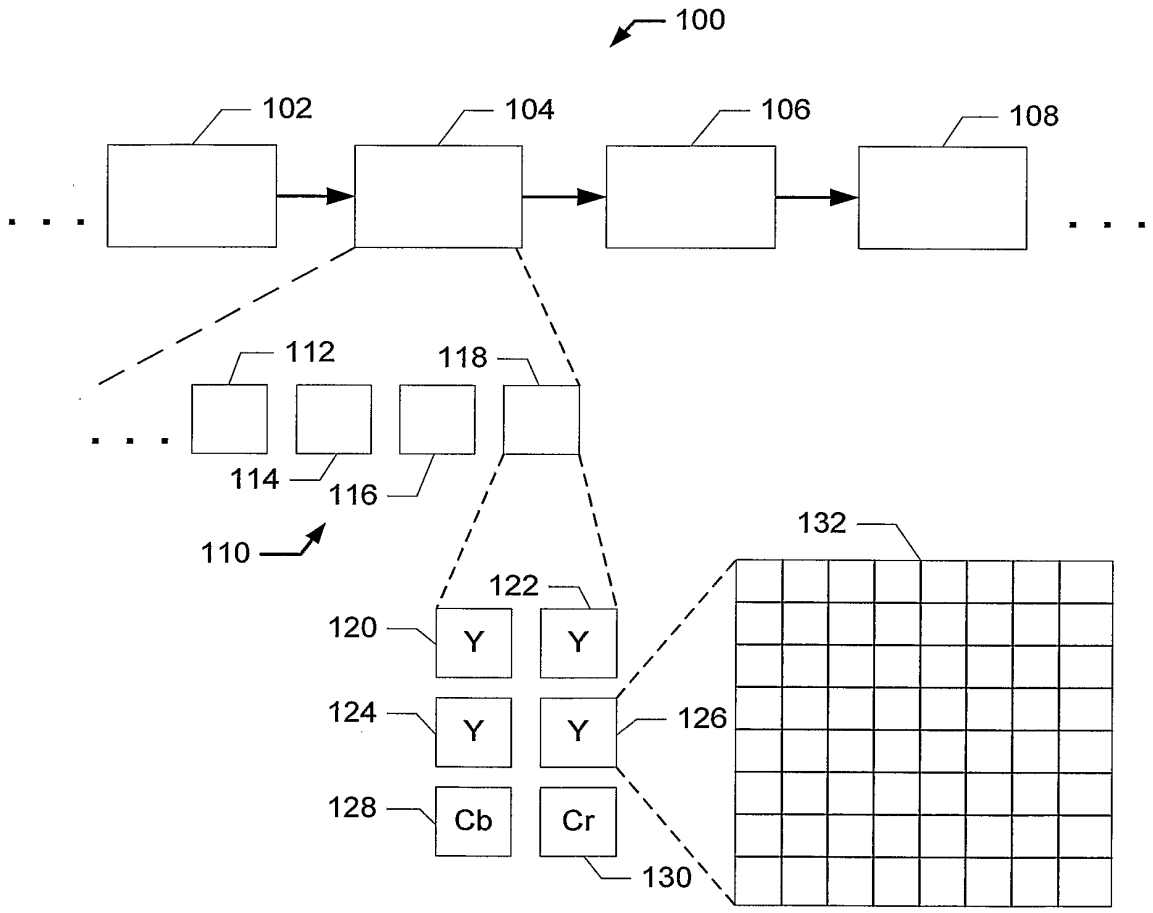
80. A computer readable medium as defined in claim 78, wherein each of the sets of centroids includes centroids associated with a plurality of areas within its corresponding one of the plurality of frames.

Statement under Article 19(1)

According to the amendments, claims 1-67 have been canceled and new claims 1-80 (pages 44-56) have been substituted therefor. In addition, a substitute abstract page with the correct new page number (page 57) is submitted herewith.

Support for these amendments may be found throughout the above-referenced international application. No new matter has been included.

Entry of the foregoing amendments is respectfully requested.


100
102
104
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118
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116
110
122
120
Y
Y
124
Y
Y
126
128
Cb
Cr
130
132

FIG. 1

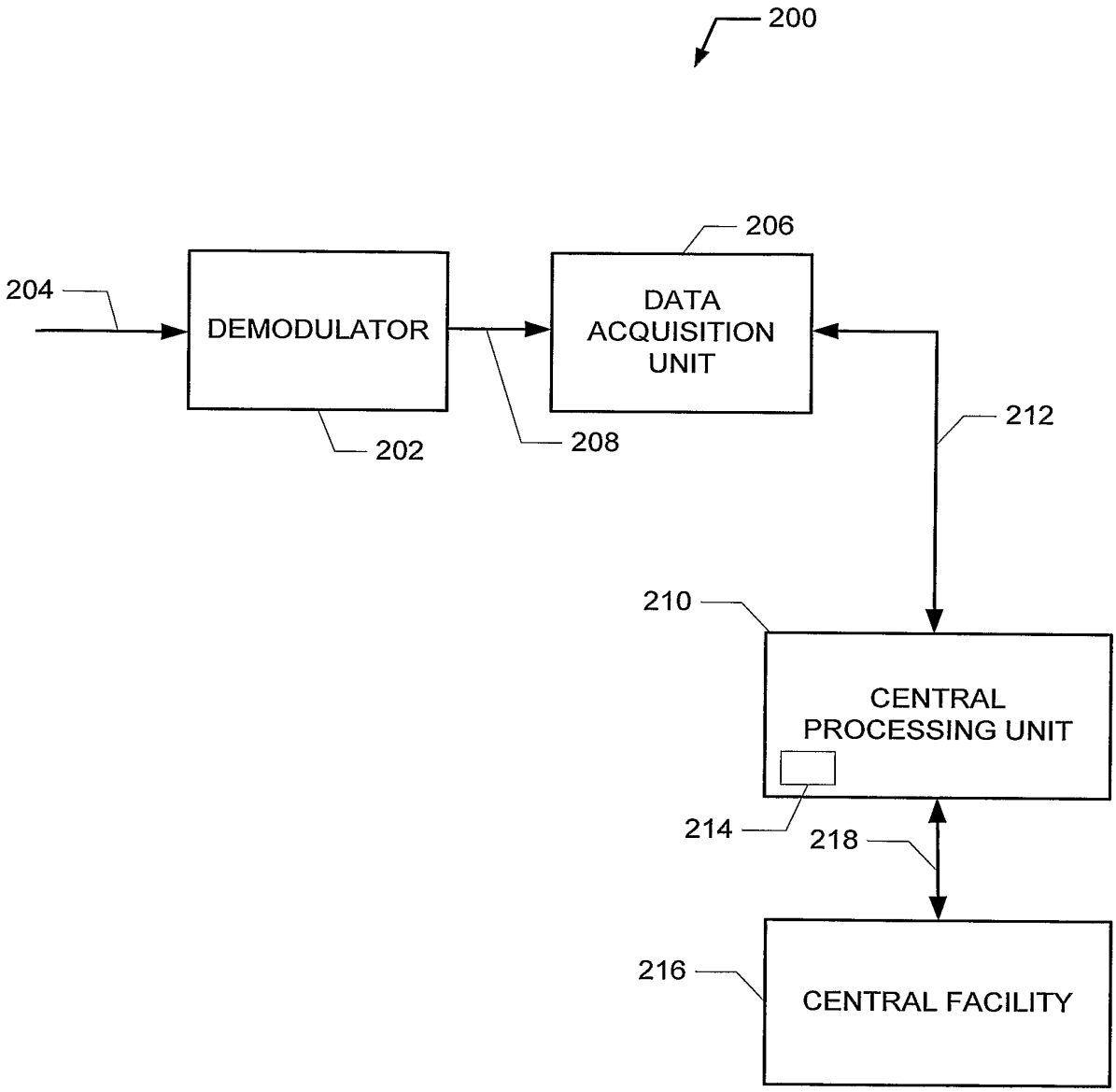
200
204
DEMODULATOR
206
DATA ACQUISITION UNIT
212
202
208
210
CENTRAL PROCESSING UNIT
214
218
216
CENTRAL FACILITY

FIG. 2

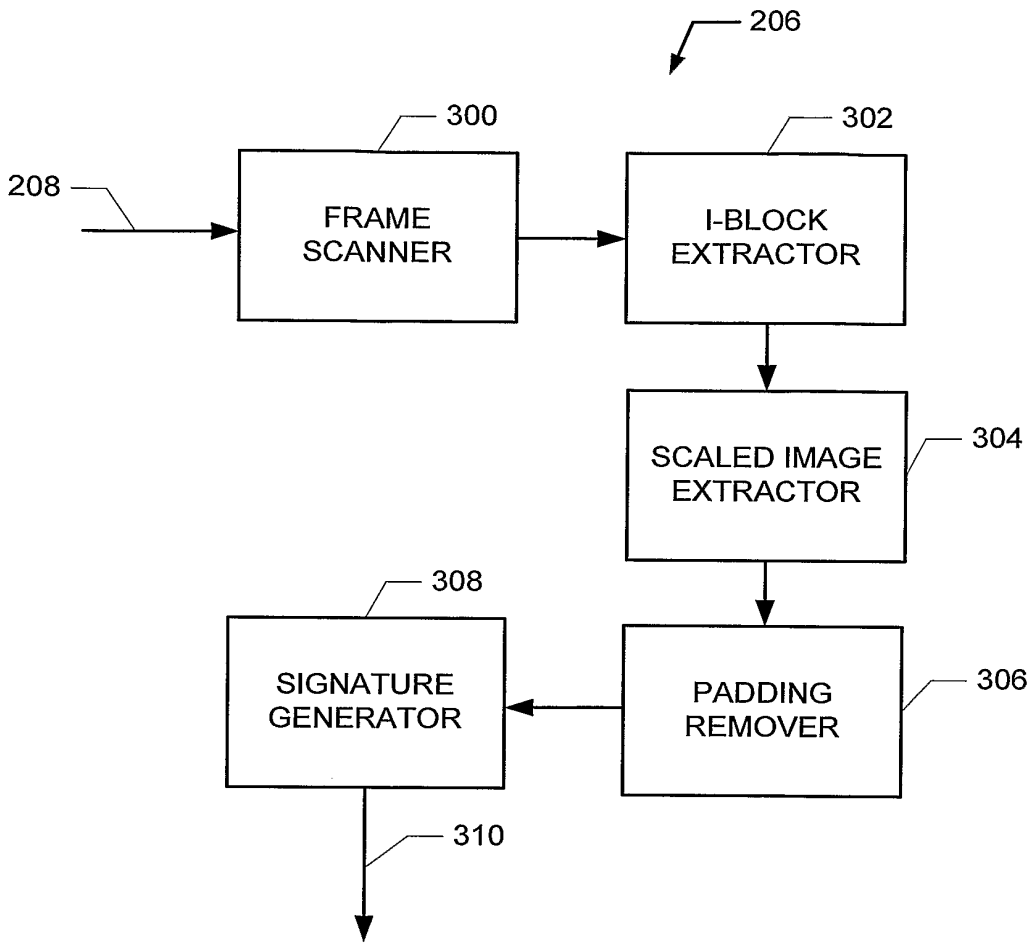
206
300
302
208
FRAME SCANNER
I-BLOCK EXTRACTOR
SCALED IMAGE EXTRACTOR
304
308
SIGNATURE GENERATOR
PADDING REMOVER
306
310

FIG. 3

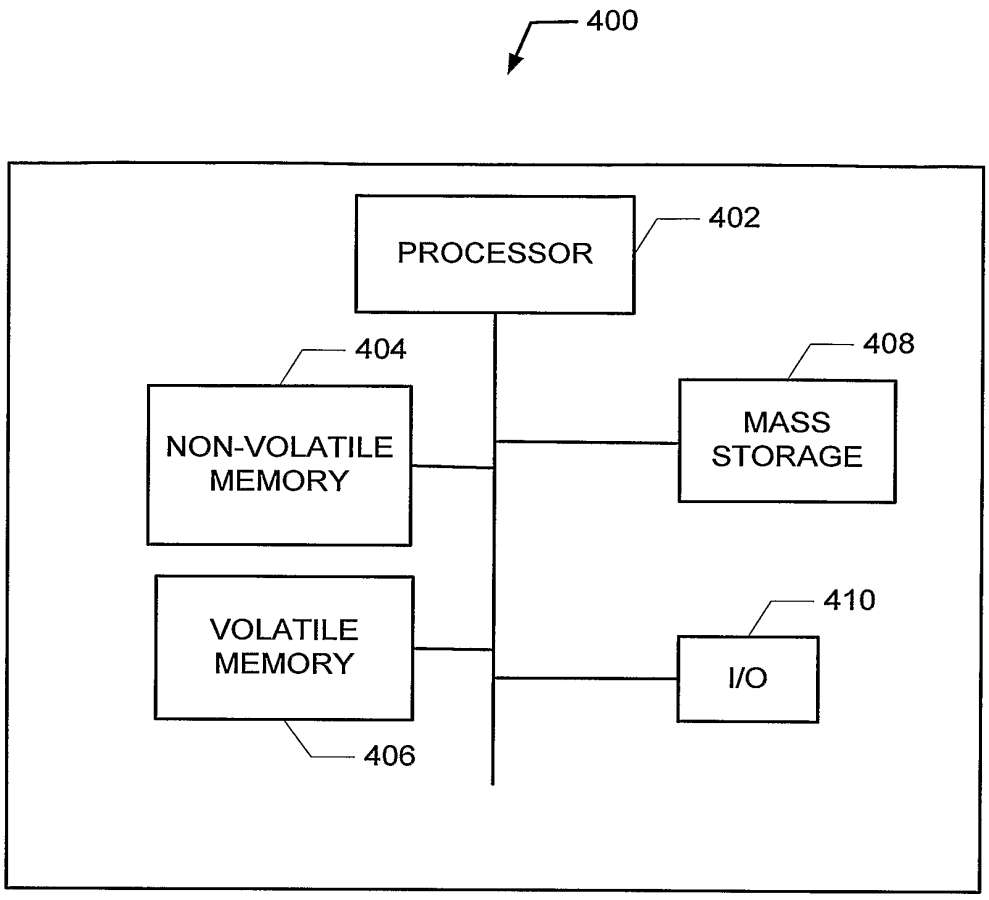
400
PROCESSOR
402
404
NON-VOLATILE MEMORY
408
MASS STORAGE
VOLATILE MEMORY
410
I/O
406

FIG. 4

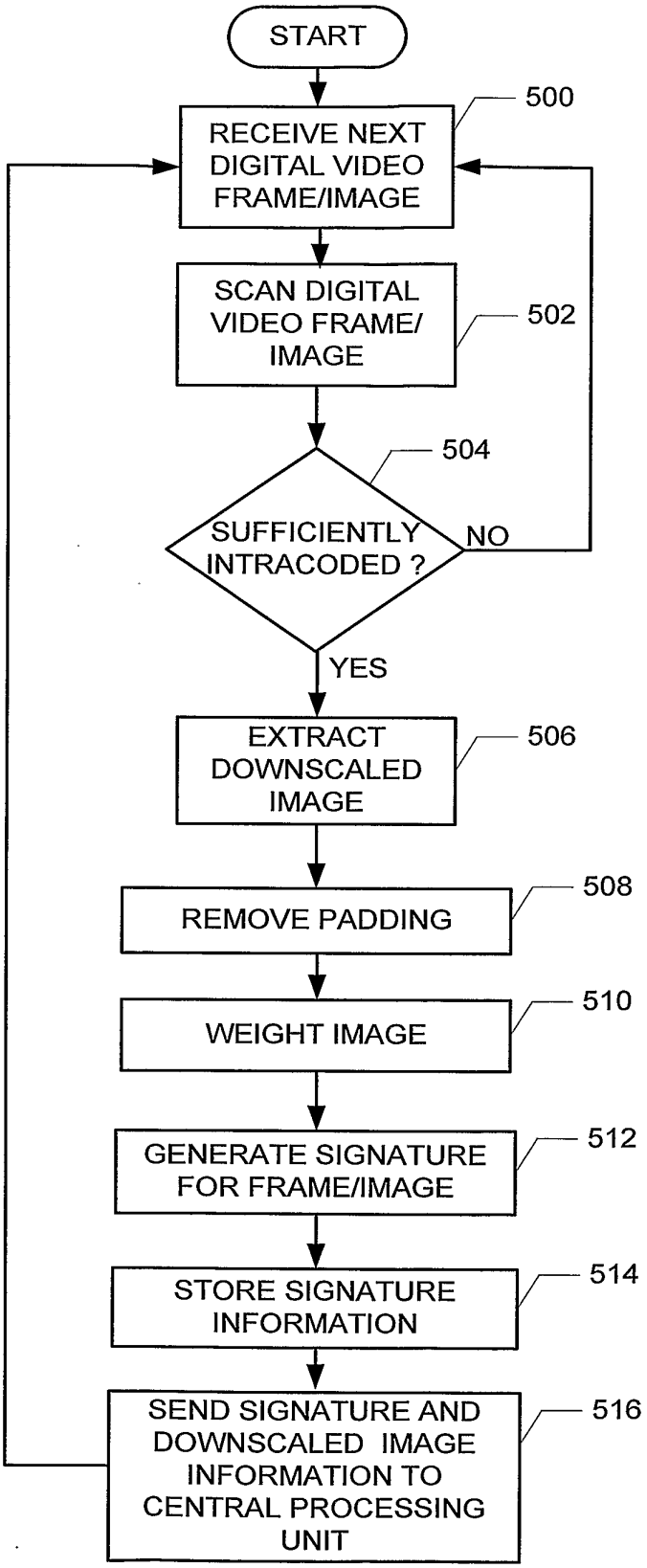
START
RECEIVE NEXT DIGITAL VIDEO FRAME/IMAGE
500
SCAN DIGITAL VIDEO FRAME/ IMAGE
502
504
SUFFICIENTLY INTRACODED ?
NO
YES
EXTRACT DOWNSCALED IMAGE
506
REMOVE PADDING
508
WEIGHT IMAGE
510
GENERATE SIGNATURE FOR FRAME/IMAGE
512
STORE SIGNATURE INFORMATION
514
SEND SIGNATURE AND DOWNSCALED IMAGE INFORMATION TO CENTRAL PROCESSING UNIT
516

FIG. 5

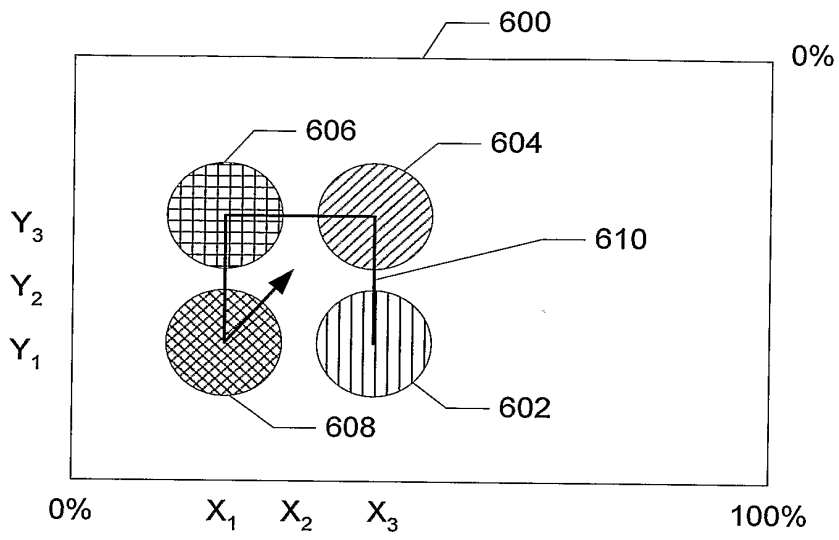

FIG. 6

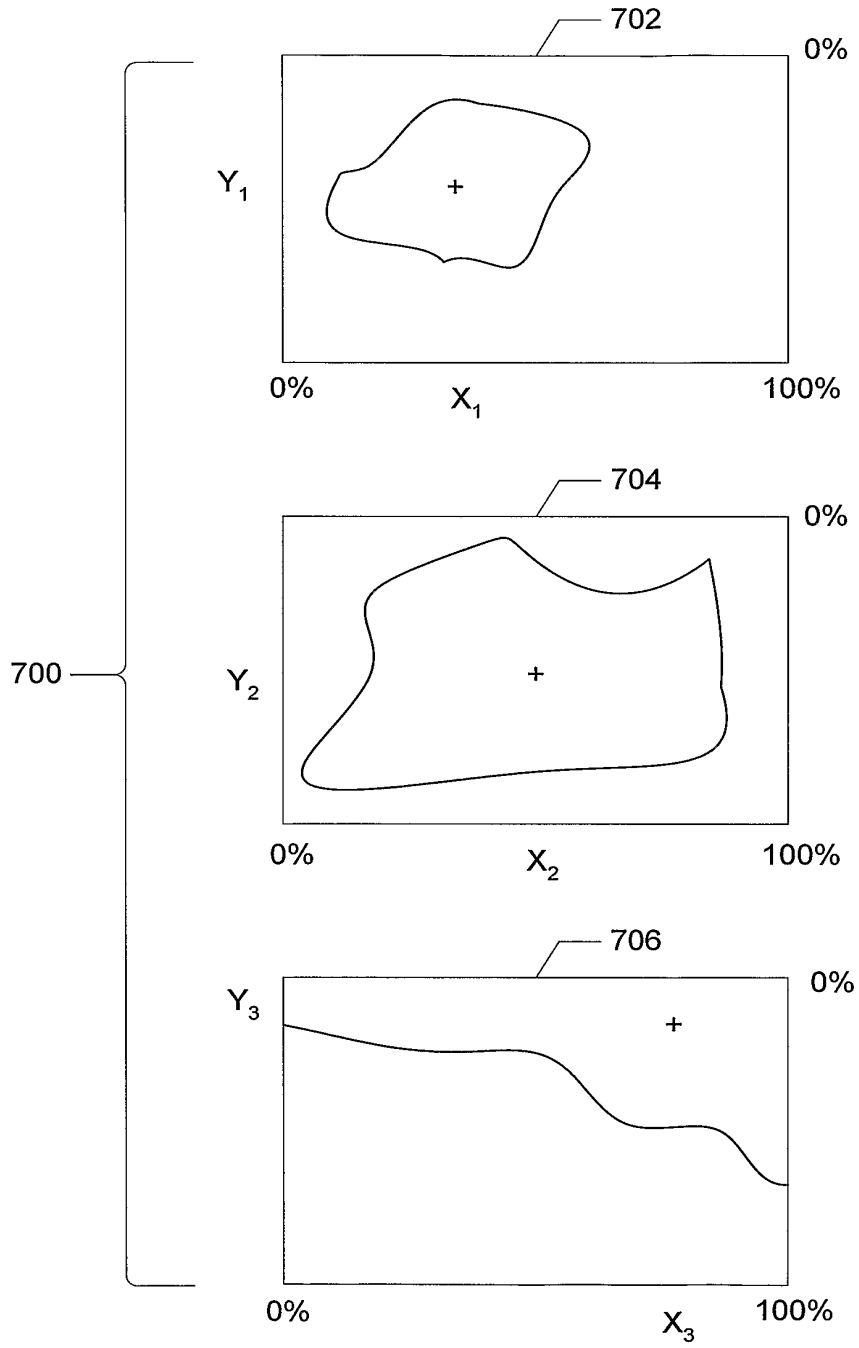

FIG. 7

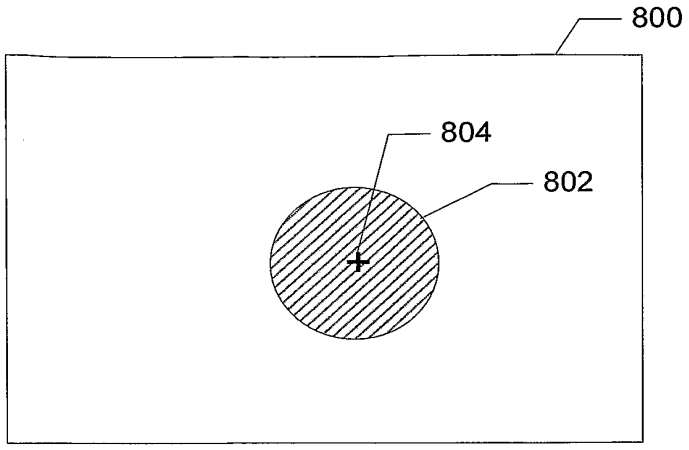

FIG. 8

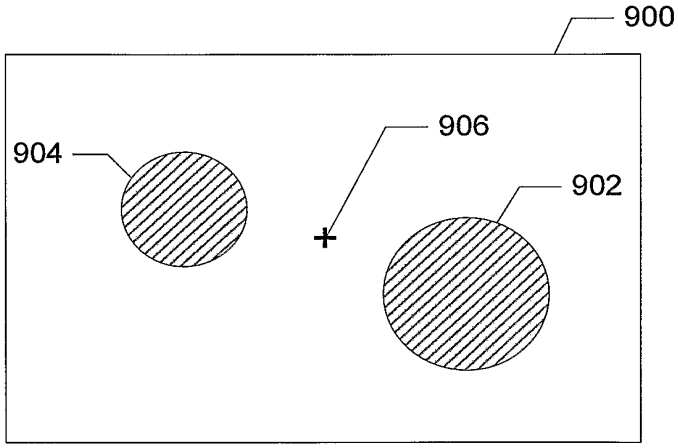

FIG. 9

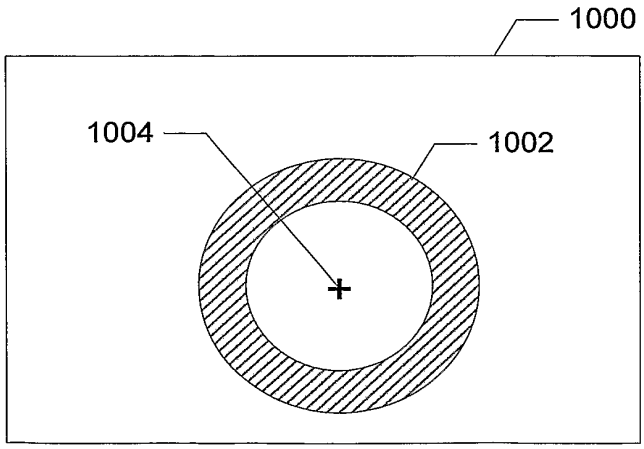

FIG. 10

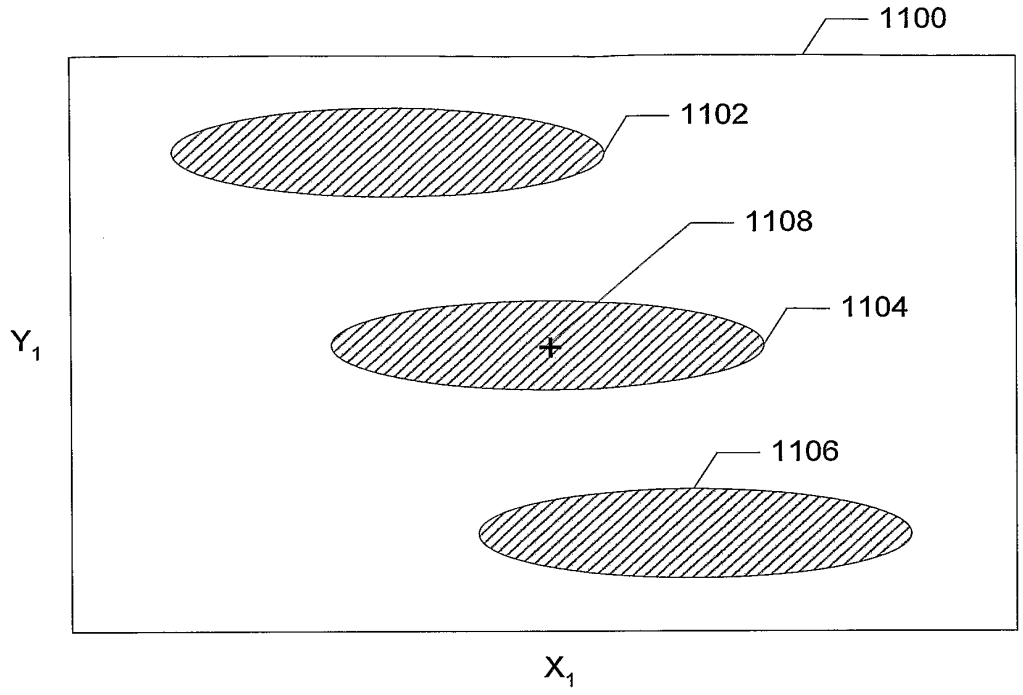

FIG. 11

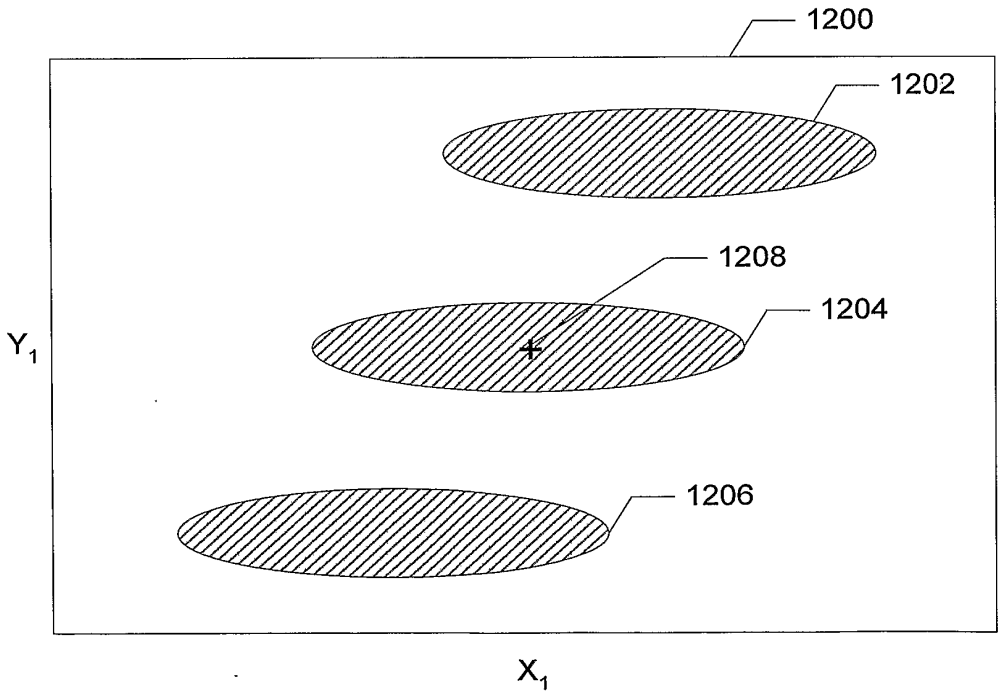

FIG. 12

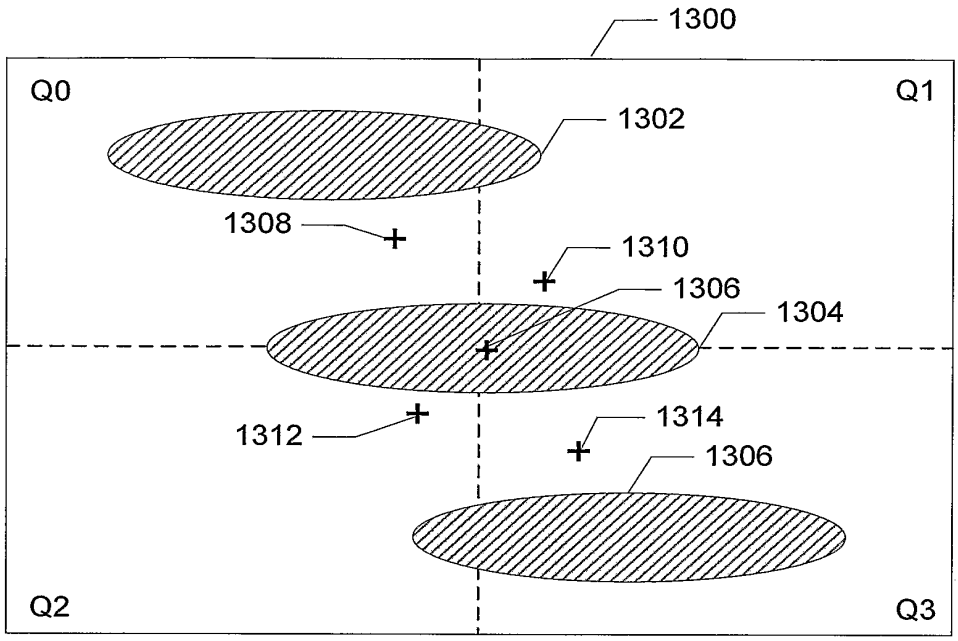

FIG. 13

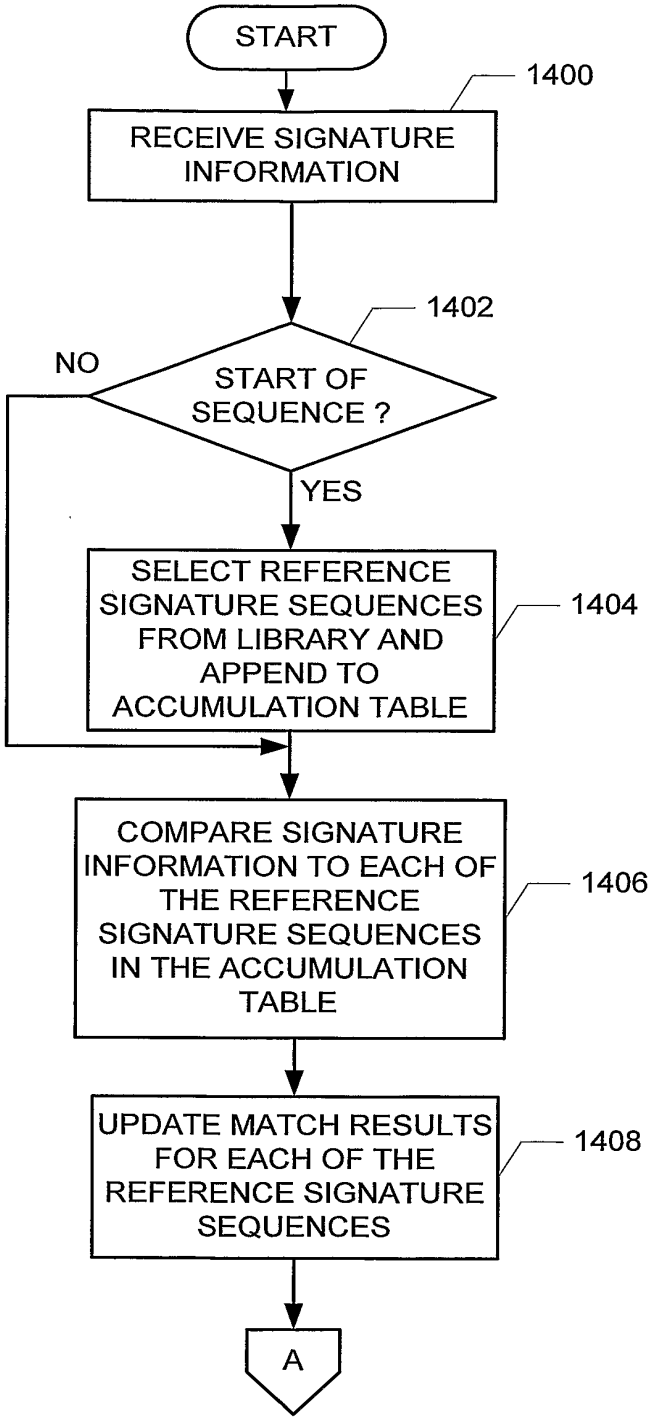
START
1400
RECEIVE SIGNATURE INFORMATION
1402
NO
START OF SEQUENCE ?
YES
SELECT REFERENCE SIGNATURE SEQUENCES FROM LIBRARY AND APPEND TO ACCUMULATION TABLE
1404
COMPARE SIGNATURE INFORMATION TO EACH OF THE REFERENCE SIGNATURE SEQUENCES IN THE ACCUMULATION TABLE
1406
UPDATE MATCH RESULTS FOR EACH OF THE REFERENCE SIGNATURE SEQUENCES
1408
A

FIG. 14

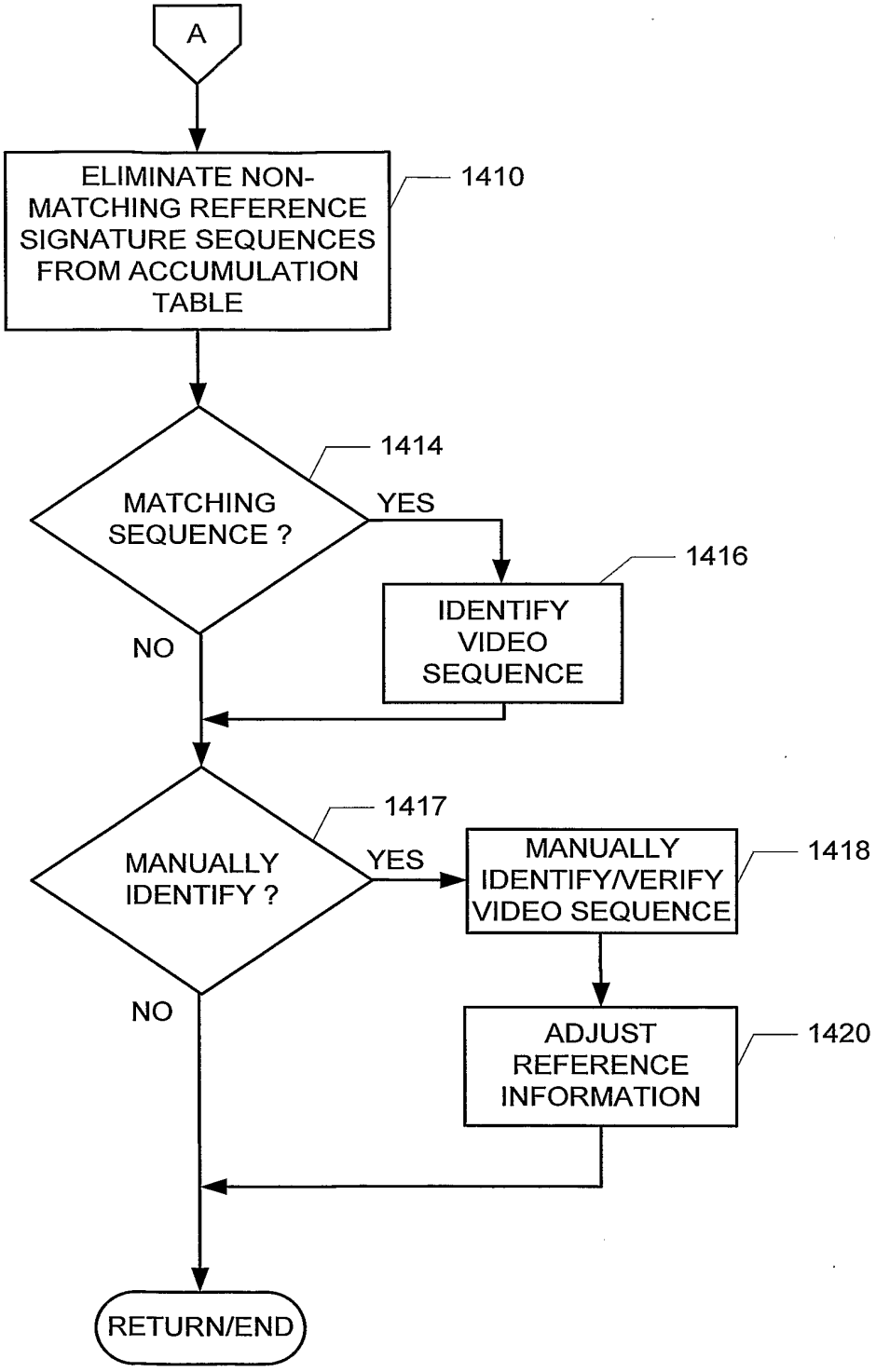
A
ELIMINATE NON-MATCHING REFERENCE SIGNATURE SEQUENCES FROM ACCUMULATION TABLE
1410
MATCHING SEQUENCE ?
1414
YES
NO
IDENTIFY VIDEO SEQUENCE
1416
MANUALLY IDENTIFY ?
1417
YES
NO
MANUALLY IDENTIFY/VERIFY VIDEO SEQUENCE
1418
ADJUST REFERENCE INFORMATION
1420
RETURN/END

FIG. 15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/29219

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04N 7/12
US CL : 375/240.26

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 375/240.26; 348/700

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,100,941 A (DIMITROVA ET AL) 08 AUGUST 2000, FIGS. 6 AND 7.	1-67
X	US 6,496,228 B1 (MCGEE ET AL) 17 DECEMBER 2002, FIGS. 2-7.	1-67

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
07 January 2004 (07.01.2004)

Date of mailing of the international search report
27 JAN 2004

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(74) Agent: **HANLEY, Mark, G.**; Grossman & Flight LLC, 20 N. Wacker Drive, Suite 4220, Chicago, IL 60606 (US).

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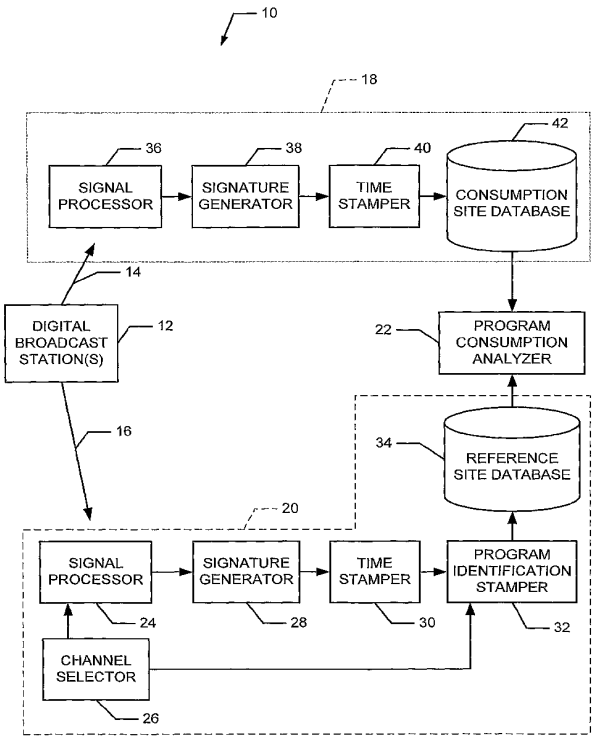
[Continued on next page]

(54) Title: SIGNATURE-BASED PROGRAM IDENTIFICATION APPARATUS AND METHODS FOR USE WITH DIGITAL BROADCAST SYSTEMS



(57) Abstract: Signature-based program identification apparatus and methods for use with digital audio and/or video systems are disclosed. The disclosed systems and methods develop signatures of digital audio and/or video content from a digital data stream at two or more sites and compare the signatures to one another to identify the content.

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

Published:
— *with international search report*

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

SIGNATURE-BASED PROGRAM IDENTIFICATION APPARATUS AND METHODS FOR USE WITH DIGITAL BROADCAST SYSTEMS

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates generally to digital broadcast systems and, more specifically, to signature-based audio/video content identification apparatus and methods for use with digital audio/video content delivery systems.

BACKGROUND

[0002] Digital audio/video content delivery and distribution systems have undergone rapid development and deployment in recent years due, at least in part, to their ability to efficiently distribute large numbers of high-fidelity video and/or audio content and programs as well as other digital services or content over a wide geographic region. For example, in the case of satellite-based digital television and wireless digital video/audio delivery systems, little, if any, land-based infrastructure (e.g., ground stations, cable lines, etc.) is needed to provide services to subscribers on a world-wide basis. As a result, such satellite-based and other wireless systems enable digital broadcasters and audio/video content providers to develop markets for their content, programs and/or services in remote and/or underdeveloped regions of the world in a cost-effective manner.

[0003] In general, regardless of whether a digital audio/video content delivery system uses one or more satellites, cable transmission lines, ground-based wireless transmission stations, the Internet or any combination thereof, such a system enables users to receive high-fidelity video and/or audio content, as well as user-interactive features or tools such as, for example, pictographic program guides, grid-based guides, etc. that enable users to plan and perform program consumption activities.

More specifically, digital audio/video content delivery systems that deliver digital television may transmit one or more high-bandwidth signals, each of which is typically composed of a stream of data or data packets having a plurality of video, audio and/or other digital programs multiplexed therein. Users or subscribers typically have a digital decoder unit which, in the case of a digital video or television system, is commonly referred to as a "set-top box." The set-top box can, based on subscriber commands, selectively de-multiplex data packets associated with a particular program from a particular data stream, decode those data packets and send a signal to a television or video monitor for viewing. Some digital televisions provide integrated or built-in set-top box functionality and, thus, do not require a separate set-top box.

[0004] Of course, as is the case with analog content providers and broadcasters, digital content providers and broadcasters (e.g., digital television, audio, etc.) desire to meter (i.e., monitor) the consumption of the programs and/or other services provided to users or subscribers to thereby generate audience program consumption behavior or patterns. Such audience consumption behavior or patterns may be used to develop program ratings information, to improve targeted marketing or advertising campaigns, to improve the types of programs and/or services and the times at which those programs and/or services are delivered, to assess the value of a particular time slot and program for purposes of determining what advertisers should pay for usage of that time slot., etc.

[0005] A metering system designed for use with an analog content delivery system, such as an analog television system, generates viewing records or other viewing information that is typically collected from a group of statistically selected households. Each of the statistically selected households has a data logging and

processing unit commonly referred to as a "home unit" or "site unit." The site unit is usually coupled to a variety of attachments that provide inputs to the site unit or that receive outputs from the site unit. For example, a frequency detector may be used to detect the local oscillator frequency of the television to identify the channel to which the television is currently tuned. Also, for example, a people counter, may be located in the viewing space of the television and in communication with the site unit, thereby enabling the site unit to actively or passively detect the identities of the persons currently viewing programs displayed on the television. In some cases, the metering system is designed to capture signature information associated with audio and/or video content that has been consumed in the household.

[0006] The site unit usually processes its inputs, including the inputs from its attachments, to produce viewing records. In general, the viewing records typically contain program identification information (i.e., information that can be used to identify a particular program, such as channel information obtained from the frequency detector and signature information) and audience information such as the numbers and/or identities of people viewing that particular program obtained from the people counter. The viewing records may be generated on a periodic basis (i.e., at fixed time intervals) or may be generated in response to a change in an input such as, for example, a change in the identities or number of persons viewing the television, a change in the channel tuning information (i.e., a channel change), etc. Of course, viewing records may contain any other information such as the identities of viewers present at the viewing time.

[0007] Often, the site unit collects a quantity of viewing records and transmits collected viewing records, usually daily, to a central office or data processing facility for further processing or analysis. The data processing facility receives viewing

records from site units located in some or all of the statistically selected households and additionally receives information from one or more reference sites. The reference sites are typically configured to capture information associated with the audio/video content broadcast to specific content distribution areas. For example, a reference site may collect signatures for all of the audio and/or video content distributed within its assigned area and then transmit the collected signatures to the data processing facility. The data processing facility analyzes the viewing records to ascertain the viewing behaviors of a particular household or group of households selected from all participating households. Additionally, the central data processing facility may generate viewing behavior statistics and other parameters indicative of viewing behavior associated with all of the participating households.

[0008] To generate viewing behavior information from viewing records, the central office or data processing facility may compare each of the signatures generated by a household unit to the signatures generated by the reference site. When a signature from the household unit matches a signature from a reference site, the identity of the content associated with matching signatures may be determined using data such as a list of content (i.e., a schedule lineup of television programming or television guide) associated with the reference site signatures and/or the time at which, and the channel from which, the signature was captured at the reference site. Such a matching process may be carried out for each of the viewing records received by the data processing facility, thereby enabling the data processing facility to reconstruct what programs were watched by all participating households and the times at which the programs were watched. Alternatively, such a matching process may be used only when other data, such as channel data or time data, is unavailable.

[0009] Signature information may be used in the foregoing manner to perform content identification because each signature is designed to uniquely correspond to the content from which it was collected. Thus, a match between two signatures indicates that the matching signatures were derived from the same content. While a variety of signature generation and capture techniques are well known in the art, such techniques are suited for use with audio/video content in an analog format.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Fig. 1 is a block diagram of an example system that uses signatures to identify digital audio/video content.

[0011] Fig. 2 is flow diagram of an example manner in which the system shown in Fig. 1 may be used to identify digital audio/video content consumed at a consumption site.

[0012] Fig. 3 is a diagrammatic view of an example data stream that may be used with the example system shown in Fig. 1.

[0013] Fig. 4 is a diagrammatic view of an example manner in which content reference signature information may be generated using an example digital data stream.

[0014] Fig. 5 depicts an example data structure that may be used to store reference signature information generated using the technique shown in Fig. 4 for a plurality of programs.

[0015] Fig. 6 is a diagrammatic view of an example manner in which sets of data stream signatures may be generated at the consumption site shown in Fig. 1.

[0016] Fig. 7 is an example data structure that may be used to store consumption site signature information generated using the technique depicted in Fig. 6.

[0017] Fig. 8 is an example digital audio/video content delivery metering system that may use the signature-based program identification apparatus and methods described herein.

DETAILED DESCRIPTION

[0018] Fig. 1 is a block diagram of an example system 10 that uses signatures to identify digital audio and/or video content. For purposes of illustration only, the system 10 is portrayed as a digital television broadcast system. However, the system may be implemented as any type of system configured to deliver audio/video content remotely and/or locally for consumption at a consumption site. The system 10 may include one or more digital broadcast stations 12 that transmit video programs, audio programs and/or other digital content or programs (e.g., television programs, advertisements, etc.) via communication paths or links 14 and 16 to at least one consumption site 18 and at least one reference site 20. The digital broadcast stations 12 may include one or more television stations, radio stations, Internet providers or any other transmission sites capable of transmitting video and/or audio content in a digital format. The communication paths or links 14, 16 may be implemented using any desired combination of wireless and hardwired links, including, for example, satellite links, cellular links, telephone lines, cable, Internet, a digital subscriber line, WiFi, Ethernet, etc. Of course, in the case where the digital broadcast stations 12 are transmitting television programs, the digital signals conveyed via the links 14, 16 contain both video and audio information and, in some cases, may also contain other information for providing a graphical program guide and/or other user-interactive features. In the case where the digital broadcast stations 12 are transmitting a plurality of programs simultaneously, the program information may be transmitted using a plurality of separately modulated signals (i.e., independent signals), using one

or more multi-program signals (i.e., signals within which multiple programs are multiplexed), or any combination thereof. For illustrative purposes only, the system 10 described herein and the examples described with respect thereto refer to broadcast content and/or broadcast programs. Broadcast content, as used herein, refers to content that is widely disseminated via any transmission method including any of the methods described above. However, the system described herein is not limited to use with systems that deliver and receive broadcast content. To the contrary, the system described herein is more generally applicable and, thus, is also suitable for use with systems that deliver and receive local content. For example, a television may be used to consume digital content supplied via a local source such as a digital video device (DVD). The system 10 described herein can be used to generate signatures and identify content delivered locally as well as content delivered via a broadcast system and can be used to generate signatures and identify content that was delivered via a broadcast system and then recorded for playback at a later time via a local device, such as a video cassette player, a digital video recorder, etc. Of course, signatures generated using content delivered via a local source can only be identified if the data processing facility has reference signatures that correspond to such locally delivered content. Signatures that correspond to locally delivered content can typically be obtained by using publicly released content that is usually consumed via a local device such as movies available on video cassette or digital versatile disks, musical recordings available on compact discs, movies and/or musical recordings downloadable via the Internet, etc.

[0019] The consumption site 18 shown in Fig. 1 is typically associated with the viewing location of a person subscribing to or otherwise enabled to access the services provided by one or more of the digital broadcast stations/services 12 although

it may also be the site of a digital television having access to a non-subscription broadcasting system/service. The consumption site 18 may be the home of an individual, a business location, including, without limit, any location, indoor or outdoor, at which content may be consumed. Although one consumption site (i.e., the consumption site 18) is shown in Fig. 1 for purposes of simplifying the following description, a plurality of other such consumption sites typically have access to the signals transmitted by the digital broadcast stations 12. Likewise, while a single reference site 20 is shown in Fig. 1, other such reference sites could be included within the system 10.

[0020] While the reference site 20 is described below as having a single signal processing channel (i.e., the ability to process content delivered via a single channel at any given time), multiple signal processing channels are typically employed. Thus, the reference site 20 is typically configured to process information associated with multiple channels and multiple content simultaneously, thereby enabling the reference site 20 to generate a library of content identification information. In light of the exemplary system 10 being described herein as a digital television broadcast system, the content delivered thereby is hereinafter referred to as television programs or programs. However, as described above, the system 10 is not limited to processing television programs to generate signatures but may instead be used to process any type of digital audio content and/or digital video content. Each of the signal processing channels may be tuned to a particular channel or program so that information associated with each of those tuned channels or programs may be processed simultaneously to develop a library of reference information (e.g., signature information) over a given time period (e.g., a rolling twenty-four hour period).

[0021] In general, the example reference site 20 shown in Fig. 1 receives signals from the digital broadcast stations 12 and selectively processes one or more broadcast program data streams contained within those signals to generate a series of reference signatures for each program data stream that is selected for processing. The reference signatures are generated by using or extracting raw binary information contained within the digital program data streams so that, within a particular time interval, each series of reference signatures is substantially uniquely characteristic of the program data stream from which the reference signature generation information was extracted. Thus, as will be described in greater detail below, the reference signature information may be used to later identify broadcast programs from which the reference signature information was derived. For example, a reference signature generated using the information contained within a known television program signal may be used to identify that television program within an unknown or unidentified signal. More specifically, if the unknown or unidentified signal contains a signature which substantially matches the reference signature information associated with a known program, it can be reliably determined that the unknown or unidentified signal contains the known program.

[0022] The consumption site 18 is located within the same broadcast region as the reference site 20 and, therefore, receives the same broadcast signals that are received at the reference site 20. The consumption site 18 generates a series of signatures in a manner similar or identical to that of the reference site 20 for the program currently being consumed (e.g., viewed, listened to, etc.) at the consumption site 18. However, as the subscriber or user at the consumption site 18 changes the currently selected program, the series of signatures generated by the consumption site 18 changes in a corresponding manner. Thus, the series of signatures generated by the consumption

site 18 may include a plurality of distinct signature sequences, each of which may correspond to a different program, and each of which may have a length corresponding to the amount of time spent consuming that program (e.g., the amount of time during which the consumption site 18 was tuned to that program).

[0023] As described in greater detail below, a program consumption analyzer 22 receives the series of signatures generated by the consumption site 18 (and other consumption sites in the event more than one consumption site is used within the system 10) and compares the signatures therein to the reference signatures generated by the reference site 20. Typically, the program consumption analyzer 22 does not receive any program identification information along with the series of signatures received from the consumption site 18 because the consumption site 18 is not typically configured to generate such information. The program consumption analyzer 22 can compare the series of signatures generated by one or more consumption sites such as, for example, the consumption site 18, to reference signatures associated with known programs to ascertain the identities of programs viewed and the times at which the programs were viewed at the consumption site 18.

[0024] Now turning in detail to the reference site 20 shown in Fig. 1, a signal processor 24 extracts data associated with a particular channel as determined by a channel selector 26. The signal processor 24 can use known techniques to demodulate, demultiplex (if a multi-program signal has been demodulated), and decode program data received via the link or communication path 16. Some or all of the data extracted by the signal processor 24 may be audio data sent in conjunction with video information such as, for example, digital television signals, advertisements, etc. Alternatively, some or all of the data extracted and processed by the signal processor 24 may be video data or information. In the case where the

signal processor 24 receives digital television signals from the digital broadcast stations 12, the channel selector 26 controls the signal processor 24 to extract data packets having a particular identifier (e.g., in the data packet header) associated with a particular broadcast channel.

[0025] Each of the broadcast stations 12 may transmit one or more digital data streams, each of which may be associated with a particular major channel. In turn, each major channel may include two or more minor channels or sub-channels, each of which may include a video data stream and one or more audio data streams. The reference site 20 retains program lineup information that supplies tuning information to the channel selector 26. For example, the lineup information may provide packet identifiers for each of the major and minor channels, video data streams, audio data streams, etc. along with program identification information (e.g., program titles or names) for each of the channels indexed over time. In this manner, the channel selector 26 can be configured using the program lineup information to cause the signal processor 24 to select video and/or audio data packets having identifiers associated with a particular major and/or minor channel. Typically, in the case where more than one signal processing channel is employed within the reference site 20, each processing channel has a channel selector configured to cause its corresponding signal processor to select data packets associated with a different channel. In that case, as noted above, the reference site 20 can be configured to generate signature information simultaneously for a plurality of channels for a predetermined period of time (e.g., a rolling twenty-four hour period).

[0026] In some example systems, one or more broadcast programs may be associated with more than one audio data stream. For example, multiple audio data streams, each of which is associated with a different language, may be associated with

a single video program. In cases where a broadcast channel or program includes a plurality of alternative audio data streams, the signal processor 24 may selectively extract or parse data packets associated with one, some or all of the available audio data streams.

[0027] The signal processor 24 sends extracted or parsed data packets associated with the currently selected channel to a signature generator 28. The signature generator 28 uses information within the extracted data to generate a series of signatures substantially uniquely characteristic of the selected program or channel data stream(s). In examples where the currently selected channel includes a plurality of alternative audio data streams, the signature generator 28 may receive data packets associated with one, some or all of those audio data streams from the signal processor 24 and generates a series of signatures for each of the data streams. As described in greater detail in connection with Figs. 2 and 3, the signature generator 28 may combine or otherwise use portions of data packets to generate signatures. In particular, the signature generator 28 may concatenate cyclical redundancy check (CRC) values associated with the data packets in a manner that generates a series of digital values (i.e., signatures) that is substantially unique to the program data stream currently being extracted by the signal processor 24.

[0028] The reference site 20 also includes a time stamper 30 and a program identification stamper 32. The time stamper 30 associates a time value with each signature value generated by the signature generator 28. The program identification stamper 32, based on the channel currently selected by the channel selector 26, uses program lineup information and the time stamp values to identify the program currently being processed by the signal processor 24. In addition, the program identification stamper 32 associates the information pertaining to the identity of the

program currently being processed with the signature information generated by the signature generator 28. Each generated reference signature is stored along with its time stamp and program identification information within a reference site database 34.

[0029] Reference signature information may be generated for multiple programs and, in some cases, multiple audio/video data streams for one or more of the multiple programs, and stored within the reference site database 34. For example, the signal processor 24 and channel selector 26 could be configured to select different programs or channels at different times for processing. In that case, the reference site database 34 contains reference signatures for different programs, where the reference signature information generated for each program was generated at a different time.

[0030] Additionally or alternatively, as noted above, the reference site 20 may be configured to provide multiple processing channels so that reference signature information can be generated for a plurality of programs simultaneously. In that case, the reference site 20 may include an additional signal processor 24, channel selector 26, signal generator 28, time stamper 30 and/or program identification stamper 32 for each additional processing channel. In the case where the reference site 20 includes multiple processing channels, each of the channel selectors 26 is typically configured to cause its corresponding signal processor 24 to extract data packets associated with a different major and/or minor broadcast channel. Also, once configured, the channel selectors 26 are typically not reconfigured and, thus, control their respective channels to extract data packets associated with a particular channel on an ongoing basis.

[0031] The consumption site 18 includes a signal processor 36, a signature generator 38, a time stamper 40 and a consumption site database 42, all of which may be similar to the signal processor 24, the signature generator 28, the time stamper 30 and the reference site database 34, respectively. However, as depicted in the example

system 10 of Fig. 1, the consumption site 18 does not have blocks similar to the program identification stamper 32 and the program selector 26. While the consumption site 18 may employ an apparatus that enables a user or subscriber to control program selection, any such program selection apparatus does not output information that can be readily used to extract and store currently selected program identification information in the consumption site database 42.

[0032] The time stampers 30 and 40 are preferably substantially synchronized so that if the signature generators 28 and 38 generate signatures at substantially the same instant of time, the time values generated by the time stampers 30 and 40 and associated with those signatures are substantially the same. However, as described in greater detail below, absolute synchronization of the time stampers 30 and 40 is not required if the program consumption analyzer 22 is configured to look for signature matches in the reference site database 34 within a window (i.e., a range) of time surrounding a suspected time at which a consumption site signature was generated.

[0033] Any or all of the signal processors 24, 36, the signature generators 28, 38, the time stampers 30, 40, the program identification stamper 32, the channel selector 26, the reference site database 34, the program consumption analyzer 22 and the consumption site database 42 may be implemented using any desired combination of hardware, firmware and/or software. For example, each of the reference site 20, the consumption site 18 and the program consumption analyzer 22 may utilize a computer system or other processor system that executes machine readable instructions or programs to implement the apparatus and methods described herein. The machine readable instructions or programs may be embodied in software stored on a tangible medium such as a CD-ROM, a floppy disk, a hard drive, a digital versatile disk (DVD), and/or a memory.

[0034] The databases 34, 42 may be implemented using any known mass storage device(s) such as, for example, magnetic and optical disk drives. In addition, the databases 34, 42 may be combined into a single or common database, which may be embodied on a single or multiple mass storage devices, accessible by the program consumption analyzer 22.

[0035] Fig. 2 is flow diagram of an example manner in which the system 10 shown in Fig. 1 may be used to identify digital broadcast programs consumed at the consumption site 18. The signal processors 24, 36 acquire data associated with a program selected for consumption by a user at the consumption site 18 (blocks 70, 71). For example, the signal processors 24, 36 may extract or parse audio and/or video data associated with a particular program from a multi-program digital television signal sent by the digital broadcast stations 12 (blocks 70, 71). The signature generators 28, 38 then generate signature information by, for example, concatenating CRCs or portions of CRCs associated with the extracted data (blocks 72 and 73). Each signature may, for example, be generated using a portion of one or more CRCs in a manner that results in a substantially unique digital value that is substantially uniquely characteristic of the extracted data and, thus the program, currently being consumed at a particular time. In general, generating a signature composed of a large number of bits increases the probability that the signature is unique to the program currently being consumed (i.e., decreases the probability that another program, if consumed at the same time, would result in the same signature). However, signatures having a large number of bits increases processing overhead and, thus, may decrease the overall processing speed and efficiency of the system 10 (Fig. 1). Each signature generated by the signature generators 28, 38 is stored along with a time stamp generated by the time stampers 30, 40 (block 74).

[0036] The program consumption analyzer 22 (Fig. 1) extracts the signature information or data (along with associated time stamps) stored within the consumption site database 42 and compares this signature information to the reference signature information stored within the reference site database 34 during a relevant time period (block 76). In particular, the program consumption analyzer 22 examines the time stamp values associated with the signatures from the consumption site database 42 that are currently being analyzed to reference signature information stored within the reference site database 34 during a relevant range of times or window of time. Due to unequal signal transmission delays between the digital broadcast stations 12 and the sites 18 and 20, the program consumption analyzer 22 may compare the signature information from the consumption site database 42 that is currently being analyzed to reference site information that was acquired over a somewhat longer amount of time (i.e., a wider or larger time window). For example, the comparison may extend several seconds prior to and following the time associated with the earliest and latest time stamps of the consumption site signature information being analyzed, thereby eliminating the need for absolute or precise synchronization between the sites 18 and 20 (e.g., the time stampers 30 and 40).

[0037] Because the user at the consumption site 18 can change the program being consumed (e.g., by changing channels), the program consumption analyzer 22 analyzes the series of signatures provided by the consumption site database 42 using sets or blocks of signatures representative of consumption activity over a relatively brief time interval such as, for example, thirty seconds. Of course, any other time interval could be used instead.

[0038] For each comparison made, the program consumption analyzer 22 determines whether a substantial match of the consumption site signature information

has been found within the reference site database 34 (block 78). If a substantial match has been found, the program consumption analyzer 22 uses the program identification information stored along with the reference signature information to identify the program that was consumed within the consumption site 18 (block 80). In the event that a match is not found, any desired non-match handling routines may be used to determine and initiate an appropriate action (block 82). For example, such non-match handling routines may include a window adjustment routine to enable adjustment of the relevant time window used by the program consumption analyzer, may display or otherwise output a closest match for final determination by, for example, a reference site operator.

[0039] Fig. 3 is a diagrammatic view of an example data stream 100 that may be used with the example system 10 shown in Fig. 1. The example data stream 100 includes a plurality of data packets 102, 104 and 106 having respective payload or data portions 108, 110 and 112, respective CRC portions 114, 115 and 116 and respective header portions 117, 118 and 119. The payload portions 108, 110 and 112 include information related to audio and/or video content that may be presented to a user via an output device. On the other hand, the CRC portions 114, 115 and 116 and header portions 117, 118 and 119 are non-payload digital information.

[0040] The data stream 100 may be compliant with any known digital transmission protocol or standard. For example, in the case where the digital broadcast stations 12 are transmitting digital television signals that are compliant with the Advanced Television Systems Committee (ATSC) standard, the data stream 100 may be a Dolby AC-3 compliant digital audio signal. By way of background, the Dolby AC-3 standard is a compressed multi-channel digital audio standard that was developed by the Dolby Corporation and that was adopted by the ATSC for use with digital

television transmissions within the United States of America. In any event, if the data stream 100 is an AC-3 compliant data stream, the data packets 102-106 are transmitted at a rate of 31.25 per second (i.e., a packet every 32 milliseconds) and the CRCs 114-116 within the data packets 102-106 are sixteen-bit values.

[0041] The digital data stream 100 may instead be compliant with other protocols or standards such as, for example, the European Digital Video Broadcast (DVB) standard, the Japanese Terrestrial Integrated Services Digital Broadcasting (ISDB-T) standard, Motion Picture Expert Group – 2 (MPEG-2) standard, MPEG-1, MPEG-3, MPEG-4 Advanced Audio Code or any other version of MPEG, or any other similar or different digital video and/or audio transmission standard or protocol. In general, any digital data stream that provides audio and/or video information that can be extracted from the data stream can be used to implement the signature-based program identification apparatus and methods described herein. Thus, any digital data stream that can be used to generate unique signatures may be used. By way of example, any digital data stream having a substantially random sequence of digital values, e.g., CRCs or any other predetermined data packet portions that are computationally related to data packet content, may be used to generate unique signatures. More specifically, predetermined data packet portions that are computed based on other portions of data packet content (e.g., CRCs) can provide sufficiently random sequences of digital values that may be used to implement the apparatus and methods described herein. It should be understood that while the sequences of digital values generated by the apparatus and methods described herein are, numerically speaking, substantially random, they are computationally deterministic with respect to the channel and program data packets from which they are derived. As a result, the sequences of digital values generated using the apparatus and methods described

herein are substantially uniquely characteristic of the content from which they are derived.

[0042] Further, it should be understood that both broadcast station characteristics and program content can contribute to the uniqueness of the digital sequences generated using the apparatus and methods described herein. Thus, in the event that a program is transmitted simultaneously (e.g., simulcast) by two or more broadcast stations, the digital sequences generated by two or more receiving stations (e.g., reference sites and consumption sites) for two or more simulcast versions of a program using the apparatus and methods described herein can, nevertheless, be different due to differences in the characteristics of the broadcasting stations. For example, it is highly improbable that two broadcast stations encoding the same program will encode (e.g., compress) the program content in precisely the same manner to generate identical digital data packets. Thus, if CRCs, or any other predetermined data packet portions that are computationally related to other data packet content, are used to form signatures for two or more versions of a simulcast program, each version of the simulcast program will yield a different, distinguishable sequence of digital values.

[0043] Fig. 4 is a diagrammatic view of an example manner in which program reference signature information may be generated using an example digital data stream 120. The example digital data stream 120 includes a plurality of data packets 122, 124, 126, 128 and 130 having respective data portions 132, 134, 136, 138 and 140, respective CRCs 141, 142, 143, 144 and 145, and respective header portions 146, 147, 148, 149 and 150. The example data stream 120 is associated with a particular type of program (e.g., a digital television program).

[0044] As depicted in the example of Fig. 4, the signature generator 28 (Fig. 1) forms signatures for selected ones of the data packets 122-130 (as opposed to all of the data packets) to reduce the amount of reference signature information generated and, thus, the amount of reference signature information to be stored in the reference site database 34. Although the example of Fig. 4 depicts signatures being generated for half the data packets (i.e., by skipping every other data packet), more or fewer data packets could be skipped (i.e., a signature may be generated for every X data packets) if desired or, alternatively, signatures could be generated for every data packet. In general, as the number of skipped data packets increases, the amount of signature information generated for the program associated with the data stream 120 decreases. However, as will been seen in connection with the following discussion, as the amount of reference signature information generated decreases, the amount of signature information generated by the consumption site 18 may have to be significantly increased to guarantee that the signature information generated at the consumption site 18 will include at least one or two reference signature matches.

[0045] The signature generator 28 generates a signature S(N) by combining portions of the CRCs 143 and 145. Such a combination may involve a concatenation of the entire CRCs 143 and 145, a concatenation of equal size or unequal size portions of the CRCs 143 and 145, a mathematical or logical operation (e.g., a summation, division, multiplication, ANDing, ORing, etc.) using the CRCs 143 and 145 (or portions thereof) as operands, or some other combining technique. One reference signature generation technique that is particularly useful in the case where the example data stream 120 is an AC-3 compliant audio data stream concatenates the CRCs of data packets that are a predetermined number of data packets apart. With this reference signature generation technique, the signature S(N) of a data packet N is

mathematically given by Equation 1 below where the value "X" is the number of data packets skipped between signature generations.

[0046] Equation 1 $S(N) = CRC(N + X) * 2^{16} + CRC(N)$

[0047] Thus, if the number of data packets skipped between signatures equals thirty-two, the generation of signatures starting with a data packet "1" according to Equation 1 above results in the generation of signatures S(1), S(33), S(65), S(96).... More generally, the use of Equation 1 as described above generates signatures S(N) using a sliding window of two CRCs that are X data packets apart. This sliding window is shown in two successive positions represented by the brackets labeled S(N) and S(N+X), respectively, of Fig. 4.

[0048] Of course, the reference signature generation technique represented diagrammatically in Fig. 4 is only one example and many other variations of the technique shown thereby may be employed with similar results. For example, the number of data packets skipped (i.e., value X) may be made greater than or less than thirty-two. Further, the number of bits in the resulting signatures may be less than or greater than thirty-two. For example, four bits of the data packet N+X may be concatenated with the full sixteen bits of the data packet N to form a twenty bit signature. Still further, bits from more than two CRCs may be used to form each signature, in which case, signatures could have more than thirty-two bits. In the case where three or more CRCs are combined, the sliding window can be envisioned as having three or more corresponding prongs. Still further, in the case where three or more CRCs are used to generate signatures, the CRCs may be evenly spaced within the data stream so that there are equal numbers of skipped data packets between each of the CRCs. Alternatively, the CRCs may be spaced in an unequal manner so that

the number of skipped data packets between one pair of CRCs used to generate a signature is greater than or less than the number of skipped data packets between another pair of CRCs used to generate that same signature.

[0049] Fig. 5 depicts an example data structure 170 that may be used to store reference signature information generated using the technique shown in Fig. 4 for a plurality of programs 172, 174 and 176. The data structure 170 shown in Fig. 5 depicts signature information for three programs (i.e., programs A, B and C) being generated substantially simultaneously. In other words, population of the data structure 170 with reference signature information requires the reference site 20 (Fig. 1) to have multiple signal processing channels that simultaneously capture or extract data packets associated with three programs. The reference signature values are stored in the data structure 170 according to the program with which they are associated (i.e., Program ID) and the times at which the data packets to which the reference signature value corresponds were acquired. In examples where reference signature information is generated using the technique described in connection with Fig. 4, the data stream 120 is an AC-3 compliant audio data stream, and the sliding window skips thirty-two packets (i.e., X=32), the times T(N), T(N+X), etc. are one second apart, and the reference signatures are generated using pairs of CRCs that are thirty-two packets (i.e., one second) apart (i.e., $S_A(N)$, $S_A(N+32)$, $S_A(N+64)$, etc.)

[0050] When comparing consumption site signature information (retrieved from the consumption site database 42 shown in Fig. 1) to reference site signature information, which may be stored in the reference site database 34 (Fig. 1) using a data structure similar or identical to the data structure 170 (Fig. 5), the program consumption analyzer 22 uses the time data (i.e., data associated with the columns T(N), T(N+X), etc.) to limit the comparison to a relevant time window. For example,

if the signature information processed by the program consumption analyzer 22 includes signatures generated at times T(N+X) and T(N+2X), the program consumption analyzer 22 may compare all of the reference signatures associated with the columns T(N+X) and T(N+2X) with the consumption site signatures currently being processed.

[0051] Although the time stampers 30, 40 are preferably substantially synchronized to maintain approximately the same absolute time, transmission delay times may result in the reference site 20 and the consumption site 18 processing data packets and generating signatures therefrom at somewhat different times. As a result, the time stamps accompanying consumption site signatures may not precisely match the time stamps associated with corresponding reference signatures (e.g., T(N), T(N+X), etc. of the data structure 170 of Fig. 5) and, in some cases, could be time shifted several seconds or more. Thus, when performing comparisons, the program consumption analyzer 22 may use a tolerance or delay error window to determine if a time stamp associated with the consumption site 18 corresponds to a time stamp associated with the reference site 20, but for a difference in data extraction time and/or transmission delay time. For example, if a time stamp associated with a consumption site signature is an absolute time T, the program consumption analyzer 22 may look for signature matches within the reference site database 34 (within, for example, a data structure similar or identical to the database 170 of Fig. 5) over a time window of $T-W_1$ to $T+W_2$, where W_1 may be, for example, three seconds and W_2 may be, for example, five seconds. Of course, other values for W_1 and W_2, including equal values, could be used instead.

[0052] Before discussing additional example techniques for generating consumption site signatures, it should be recognized that to enable exact matching of

signatures between the reference site 20 and the consumption site 18, individual signatures are generated in a consistent manner at the reference site 20 and the consumption site 18. Thus, for example, if the reference site 20 generates signatures by concatenating pairs of CRCs that are thirty-two data packets apart, then the individual signatures generated at the consumption site 18 are also generated by concatenating pairs of CRCs that are thirty-two data packets apart.

[0053] Although the techniques used at the consumption site 18 and the reference site 20 for generating individual signatures are consistent or the same, the sets of signatures generated by the consumption site 18 and the reference site 20 do not necessarily have to be the same. In other words, the consumption site 18 may generate sets of signatures that include signatures associated with data packets for which the reference site 20 has not generated signatures. Likewise, the reference site 20 may generate signatures for data packets for which the consumption site 18 has not generated signatures. Of course, the sets of data packets for which signatures are generated by the consumption and reference sites 18 and 20 have to overlap sufficiently (i.e., a sufficient number of matching signatures) to enable the program consumption analyzer 22 to reliably identify programs consumed at the consumption site 18 based on the reference signature data.

[0054] Fig. 6 is a diagrammatic view of an example manner in which sets of signatures associated with a program data stream may be generated by the consumption site 18 shown in Fig. 1. In general, the technique depicted in Fig. 6 repeatedly generates signatures for blocks or sets of consecutive data packets 200 and 202 separated by a delay 204. Each of the signatures within the sets 200 and 202 is generated in the same manner as individual signatures generated at the reference site 20. For example, in the case where the reference signatures are generated using the

technique depicted in Fig. 4, each of the signatures within the sets of signatures 200 and 202 is generated using pairs of CRCs that are thirty-two packets apart.

[0055] In addition, each of the sets of signatures 200 and 202 is of a size and, thus, extends over a time period, that guarantees that at least one reference signature corresponding to a data packet for which a signature was generated by the consumption site 18 and included in the set would have been generated by the reference site 20 during the same time period. As indicated above, the sets of signatures 200 and 202 are composed of signatures for consecutive data packets (i.e., no data packets are skipped within a set). Thus, in a case where the reference site 20 generates signatures using the technique depicted in Fig. 4 using pairs of CRCs that are thirty-two packets apart and skipping thirty-two packets between signatures, the sets 200 and 202 include at least thirty-two consecutive signatures, which requires the acquisition of sixty-four consecutive data packet CRCs. In this manner, each of the sets 200 and 202 could include at least one signature corresponding to a reference signature.

[0056] The duration of the delay 204 may be selected to correspond to the nature of program consumption behavior (e.g., channel changing behavior of users). For example, the delay 204 may be selected to be about thirty seconds or any other desired amount of time that enables the signature information gathered at the consumption site 18 to accurately depict the program consumption activities at the consumption site 18. Further, the delay 204 may also be selected to minimize, in view of the accuracy needed in connection with identifying program consumption activities, the amount of data extraction (e.g., CRC extraction), signature generation, signature data storage and comparison activity performed. In general, as the duration of the delay 204 increases, the accuracy (i.e., the resolution) with which program

consumption activities can be determined decreases and the amount of data processing and storage requirements decreases.

[0057] Fig. 7 is an example data structure 220 that may be used to store consumption site signature information using the technique depicted in Fig. 6. In general, the example data structure 220 is formed as an array of signature values (i.e., S(N), S(N+1), etc.) and associated time stamps (i.e., T(N), T(N+1), etc.). First and second signatures sets 222 and 224 correspond to the signature sets 200 and 202, respectively, of Fig. 6. By way of example, each of the signature sets 222 and 224 includes thirty-two signature values. However, due to the delay 204 (Fig. 6), signature values for 864 data packets are skipped in this example and, as a result, the signatures for data packets N+32 to N+927 are not generated. In the case where the data stream provides data packets at a rate of 31.25 per second (e.g., an AC-3 audio data stream), 864 skipped packets corresponds to about twenty-seven seconds.

[0058] In addition to the example signature generation methods discussed in connection with Figs. 4-7, other methods of generating signature information within the consumption and references sites 18 and 20 are possible. For example, in another example method, signatures may be formed for every m^{th} CRC within data streams processed by the consumption site 18 and every n^{th} CRC within data streams processed by the reference site 20, where m and n are relatively prime. In this manner, matching signatures will only be generated at every m*n packets. Each of the signatures may be, for example, composed of twenty bits taken from two consecutive CRCs. However, any other number of consecutive CRCs and/or bits may be used instead.

[0059] In still another example method, reference signature information may be generated at the reference site 20 by dividing CRCs by a predetermined whole

number and storing only those CRCs that are evenly divisible by the whole number along with the number of CRCs since the last evenly divisible CRC was stored in the reference site database 34. Thus, under this method, the reference site database 34 includes data pairs including the number of CRCs since the last CRC evenly divisible by the predetermined whole number was recorded and an associated CRC value. With this example method, data pairs are generated in the same manner as in the reference site 20 over a period of time sufficient to enable reliable comparisons to be performed. Under this method it is possible for a relatively large number of CRCs to be skipped (i.e., that are not evenly divisible by the predetermined whole number). As a result, it is possible to select a maximum number of CRCs that are allowed to elapse. When this maximum number of CRCs has elapsed, regardless of whether the current CRC is divisible by the predetermined whole number, the current CRC value is stored along with the number of CRCs occurring since the last CRC was stored.

[0060] More generally, signatures may be formed using one or more predetermined portions of the data packets composing a digital program stream. For example, rather than CRCs (or portions thereof), signatures may be generated using portions of data packets that are offset a predetermined number of bits from the header portion of the data packets. Additionally, signatures may be formed using all or part of the digital metadata that may form a portion of the digital audio or digital video content.

[0061] Fig. 8 is an example digital broadcast system 300 that may use the signature-based program identification apparatus and methods described herein. The digital television system 300 includes a digital broadcast station 302 that receives digital video and/or audio programs from a plurality of digital content providers 304 and 306. The digital content providers 304 and 306 may provide television programs,

advertisements, audio (e.g., radio) programs, still image information (e.g., web pages), etc. in known manners to the digital broadcast station 302. The digital broadcast station 302 transmits one or more signals containing digital program information to a reference site 308 and at least one consumption or home site 310 via communication paths or links 312, 314. The communication paths or links 312 and 314 may be similar to the communication paths or links 14 and 16 (Fig. 1) and, thus, may include any combination of hardwired or wireless links such as, for example, satellite links, wireless land-based links, cable links, etc. The signals conveyed via the links 312 and 314 may contain multi-program data streams, which are commonly employed with existing digital television transmission systems.

[0062] The reference site 308 and the consumption or home site 310 receive and process the digital signals provided by the digital broadcast station 302 using the program identification apparatus and methods described herein. More specifically, the reference site 308 includes a plurality of decoders (e.g., set-top boxes or the like) 316, 318 and 320 that demodulate, demultiplex and decode audio, video and/or other data packets received from the digital broadcast station 302. In an example, each of the decoders 316, 318 and 320 provides data packets associated with a different program that is currently being broadcast to a reference site processor 322. In other words, the digital decoder 316 may provide data packets associated with a program A while the decoders 318 and 320 provide data packets associated with respective programs B and C. In any case, the reference site processor 322 is configured to control and/or has information indicating to which program each of the decoders 316, 318 and 320 is currently tuned.

[0063] The reference site processor 322 includes the apparatus and methods described herein for generating reference signature information for a plurality of

simultaneously broadcast television programs. In particular, the reference site processor 322 may include the signature generator 28, the time stamper 30 and the program identification stamper 32, all of which are shown and described in connection with Fig. 1. In addition, the reference site processor 322 can be implemented to use any of the reference signature generation methods described herein such as, for example, the method described in connection with Figs. 4 and 5. The reference site processor 322 sends the reference signature information it generates to a central processing facility 324, which stores the reference signature information in a database 326 using, for example, the data structure 170 of Fig. 5.

[0064] The consumption site 310 could be, for example, a statistically selected home containing a digital television, a digital radio, a computer, etc. The consumption site 310 includes an output unit 328 (e.g., a video display, speaker, etc.) The consumption site 310 also includes a decoder (e.g., a set-top box) 330, which may be similar or identical to the decoders 316-320. Such decoders are well-known and, thus, are not described in greater detail herein. The decoder 330 provides audio and/or video signals 334 to the output unit 328 that are used to output the program currently selected for consumption. In addition, the decoder 330 also provides signals containing information 336 associated with a currently tuned program to the site unit 332. Such signals may, for example, be audio signals provided using the well-known Sony/Phillips Digital Interface Format (S/PDIF), or using any other desired format that provides data packets associated with digital broadcasts.

[0065] The site unit 332 processes the signals 336 received from the decoder 330 to generate signature information therefrom and conveys the signature information to the central processing facility 324. Thus the site unit 332 includes a signature generator such as, for example, the signature generator 38, and a time stamper such

as, for example, the time stamper 40, both of which may be used as described in connection with Figs. 6 and 7 to generate consumption site signature information.

[0066] The central processing facility 324, among other tasks, is configured to perform the functions of the program consumption analyzer 22 discussed in connection with Figs. 1 and 2. Thus, the central processing facility 324 compares signature information generated at the consumption site 328 to the reference signature information stored in the database 326 to identify the programs consumed at the consumption site 310. The central processing facility 324 may additionally analyze the program consumption information it generates for the consumption site 310 and, possibly, other consumption sites (not shown), to ascertain the consumption behaviors at those consumption sites and/or to develop ratings.

[0067] Although certain methods, apparatus and articles of manufacture have been described herein, the scope of coverage of this patent is not limited thereto. To the contrary, this patent covers all embodiments including apparatus, methods and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

What is claimed is:

1. A method of identifying a digital data stream having at least one of audio content and video content, comprising:

receiving first signature information associated with a content consumption site, wherein the first signature information is generated using digital information extracted from predetermined portions of the digital data stream;

comparing the first signature information to second signature information associated with a reference site; and

identifying the digital data stream based on the comparison of the first and second signature information.

2. A method as defined in claim 1, wherein each of the predetermined portions of the digital data stream are computed based on another portion of the digital data stream

3. A method as defined in claim 1, wherein the predetermined portions of the digital data stream are associated with non-payload portions of the digital data stream.

4. A method as defined in claim 3, wherein the non-payload portions of the digital data stream include a checksum.

5. A method as defined in claim 4, wherein the checksum is a cyclical redundancy check.

6. A method as defined in claim 1, wherein the predetermined portions of the digital data stream are extracted from at least one of an audio data packet and a video data packet.

7. A method as defined in claim 1, wherein the first signature information includes a plurality of digital values associated with a plurality of data packets extracted from the digital data stream.

8. A method as defined in claim 7, wherein each of the plurality of digital values is generated by combining information extracted from at least two of the plurality of data packets.

9. A method as defined in claim 8, wherein combining the information extracted from the at least two of the plurality of data packets includes concatenating the information extracted from the at least two of the plurality of data packets.

10. A method as defined in claim 1, further comprising receiving a time value associated with the digital information.

11. A method as defined in claim 1, further comprising determining if at least a portion of the first signature information matches at least a portion of the second signature information.

12. A method as defined in claim 11, wherein the at least one portion of the first signature information is a first digital value and the at least one portion of the second signature information is a second digital value.

13. A method as defined in claim 1, wherein comparing the first and second signature information includes comparing the first signature information to digital signatures associated with a plurality of digital data streams, each digital data stream having at least one of digital audio content and digital video content.

14. A method as defined in claim 13, wherein the digital signatures associated with the plurality of digital data streams are generated at the reference site.

15. A method as defined in claim 1, wherein comparing the first and second signature information includes using time values to select a relevant portion of the second signature information.

16. A method as defined in claim 1, wherein the digital data stream is at least one of a digital television program and a digital radio program.

17. A method as defined in claim 1, wherein the digital data stream is in a format suitable for transmission via the Internet.

18. A method as defined in claim 1, wherein the audio content is in a format that is compliant with an audio transmission standard.

19. A method as defined in claim 18, wherein the audio transmission standard is compliant with at least one of AC-3, MPEG, and MPEG advanced audio coding.

20. An apparatus for identifying a digital data stream having at least one of audio content and video content, comprising:

a program consumption analyzer programmed to:

receive first signature information associated with a content consumption site, wherein the first signature information is generated using digital information extracted from predetermined portions of the digital data stream;

compare the first signature information to second signature information associated with a reference site; and

identify the digital data stream based on the comparison of the first and second signature information.

21. An apparatus as defined in claim 20, wherein each of the predetermined portions of the digital data stream are computed based on another portion of the digital data stream

22. An apparatus as defined in claim 20, wherein the digital information is extracted from at least one of an audio data packet and a video data packet.

23. An apparatus as defined in claim 20, wherein the first signature information includes a plurality of digital values associated with a plurality of data packets extracted from the digital data stream.

24. An apparatus as defined in claim 23, wherein each of the plurality of digital values is generated by combining information extracted from at least two of the plurality of data packets.

25. An apparatus as defined in claim 24, wherein combining the information extracted from the at least two of the plurality of data packets includes concatenating the information extracted from the at least two of the plurality of data packets.

26. An apparatus as defined in claim 20, wherein the digital information includes a checksum.

27. An apparatus as defined in claim 26, wherein the checksum is a cyclical redundancy check.

28. An apparatus as defined in claim 20, wherein the first signature information includes a time value associated with the digital information.

29. An apparatus as defined in claim 20, wherein the program consumption analyzer determines if at least a portion of the first signature information matches at least a portion of the second signature information.

30. An apparatus as defined in claim 29, wherein the at least one portion of the first signature information is a first digital value and the at least one portion of the second signature information is a second digital value.

31. An apparatus as defined in claim 20, wherein the program consumption analyzer compares the first and second signature information by comparing the first signature information to digital signatures associated with a plurality of broadcast programs.

32. An apparatus as defined in claim 31, wherein the digital signatures are generated at a reference site.

33. An apparatus as defined in claim 20, wherein the program consumption analyzer compares the first and second signature information using time values to select a relevant portion of the second signature information.

34. An apparatus as defined in claim 20, wherein the digital data stream includes at least one of a digital television program, and a digital radio program.

35. A method as defined in claim 20, wherein the digital data stream is in a format suitable for transmission via the Internet.

36. An apparatus as defined in claim 20, wherein the audio content is in a format that is compliant with an audio transmission standard.

37. An apparatus as defined in claim 36, wherein the audio transmission standard is compliant with at least one of AC-3, MPEG and MPEG advanced audio coding.

38. A machine readable medium having instructions stored thereon that, when executed, cause a machine to:

receive first signature information associated with a content consumption site, wherein the first signature information is generated using digital information extracted from predetermined portions of a digital data stream associated with the content;

compare the first signature information to second signature information associated with a reference site; and

identify the content based on the comparison of the first and second signature information.

39. A machine readable medium as defined in claim 38, wherein the content is audio content.

40. A machine readable medium as defined in claim 38, wherein the content is video content.

41. A machine readable medium as defined in claim 38, wherein each of the predetermined portions of the digital data stream are computed based on another portion of the digital data stream.

42. A machine readable medium as defined in claim 38, wherein the digital information is extracted from at least one of an audio data packet and a video data packet.

43. A machine readable medium as defined in claim 38, wherein the first signature information includes a plurality of digital values associated with a plurality of data packets extracted from the content.

44. A machine readable medium as defined in claim 43, wherein each of the plurality of digital values is generated by combining information extracted from at least two of the plurality of data packets.

45. A machine readable medium as defined in claim 44, wherein combining the information extracted from the at least two of the plurality of data packets includes concatenating the information extracted from the at least two of the plurality of data packets.

46. A machine readable medium as defined in claim 38, wherein the digital information includes a checksum.

47. A machine readable medium as defined in claim 46, wherein the checksum is a cyclical redundancy check.

48. A machine readable medium as defined in claim 38 having instructions stored thereon that, when executed, cause the machine to receive a time value associated with the digital information.

49. A machine readable medium as defined in claim 38 having instructions stored thereon that, when executed, cause the machine to determine if at least a portion of the first signature information matches at least a portion of the second signature information.

50. A machine readable medium as defined in claim 49, wherein the at least one portion of the first signature information is a first digital value and the at least one portion of the second signature information is a second digital value.

51. A machine readable medium as defined in claim 38 having instructions stored thereon that, when executed, cause the machine to compare the first and second signature information by comparing the first signature information to digital signatures associated with a plurality of digital data streams.

52. A machine readable medium as defined in claim 51, wherein the digital signatures are generated at the reference site.

53. A machine readable medium as defined in claim 38 having instructions stored thereon that, when executed, cause the machine to compare the first and second signature information using time values to select a relevant portion of the second signature information.

54. A machine readable medium as defined in claim 38, wherein the content includes at least one of a digital television program, and a digital radio program.

55. A machine readable medium as defined in claim 38, wherein the content includes content that is in a format that is suitable for transmission via the Internet.

56. A machine readable medium as defined in claim 38, wherein the content is in a format that is compliant with an audio transmission standard.

57. A machine readable medium as defined in claim 56, wherein the audio transmission standard is compliant with at least one of AC-3, MPEG and MPEG advanced audio coding.

58. A method of generating digital data stream signatures, comprising:

acquiring a plurality of data packets associated with a digital data stream;

extracting digital values from at least some of the plurality of data packets; and

generating a plurality of signatures based on the digital values.

59. A method as defined in claim 58, further comprising:

associating at least one of an identifier indicative of a content contained in the digital data stream and a time value with the plurality of signatures.

60. A method as defined in claim 58, wherein each of the digital values is computationally related to a corresponding one of the plurality of data packets.

61. A method as defined in claim 58, wherein the digital data stream includes audio content and wherein each of the plurality of data packets is associated with the audio content.

62. A method as defined in claim 61, wherein each of the plurality of data packets is formatted according to an audio transmission standard.

63. A method as defined in claim 62, wherein the audio transmission standard is compliant with at least one of AC-3, MPEG and MPEG advanced audio coding.

64. A method as defined in claim 58, wherein the digital data stream includes content comprising at least one of a digital television program and a digital radio program.

65. A method as defined in claim 58, wherein the digital data stream is formatted for transmission via the Internet.

66. A method as defined in claim 58, wherein extracting the digital values from the at least some of the plurality of data packets includes extracting checksums from the at least some of the plurality of data packets.

67. A method as defined in claim 58, wherein generating the plurality of signatures based on the digital values includes combining at least portions of the digital values to generate the signatures.

68. A method as defined in claim 67, wherein combining the at least portions of the digital values to generate the signatures includes concatenating the at least portions of the digital values.

69. A method as defined in claim 58, wherein the digital values are checksums.

70. An apparatus for generating signatures, comprising:

a signal processor that acquires at least one data packet associated with a content comprising at least one of digital audio content and digital video content; and

a signature generator that extracts values from the at least one data packet and generates a signature based on the extracted values.

71. An apparatus as defined in claim 70, wherein each of the extracted values is computationally related to a corresponding one of the at least one data packet.

72. An apparatus as defined in claim 70 including a time stamper that associates time values with the extracted values.

73. An apparatus as defined in claim 70 including a program stamper that associates an identifier indicative of the content with the signature.

74. An apparatus as defined in claim 70, wherein the at least one data packet is associated with audio information contained in the content.

75. An apparatus as defined in claim 70, wherein the at least one data packet is formatted to comply with an audio transmission standard.

76. An apparatus as defined in claim 75, wherein the audio transmission standard is compliant with at least one of AC-3, MPEG and MPEG advanced audio coding.

77. An apparatus as defined in claim 70, wherein the content is a digital television program.

78. An apparatus as defined in claim 70, wherein the signature generator is configured to extract the values from the at least one data packet by extracting a checksum from the data packet.

79. An apparatus as defined in claim 70, wherein the signature generator is configured to generate the signature based on the extracted values by combining at least portions of the extracted values to generate the signature.

80. An apparatus as defined in claim 79, wherein the signature generator is configured to combine the at least portions of the extracted values to generate the signatures by concatenating the at least portions of the extracted values.

81. An apparatus as defined in claim 80, wherein the extracted values are checksums.

82. A method of identifying a digital television program, comprising:

receiving consumption site signature information associated with the digital television program from a consumption site;

comparing the consumption site signature information to reference site signature information associated with the digital television program, wherein the consumption site signature information and the reference site signature information are generated using predetermined data packets; and

identifying the digital television program based on the comparison of the consumption site signature information and the reference site signature information.

83. A method as defined in claim 1, wherein the predetermined data packets are computationally related to other data packets.

84. A method as defined in claim 1, wherein receiving the consumption site signature information includes receiving a plurality of digital values and time values associated with the digital values.

85. A method as defined in claim 84, wherein the digital values are generated using checksums extracted from a digital television signal.

86. A method as defined in claim 1, including determining if at least some of the consumption site signature information matches at least some of the reference signature site information.

87. A method as defined in claim 1, wherein identifying the digital television program based on the comparison of the consumption site signature information and the reference site signature information includes using a program identifier associated with the reference site signature information to identify the digital television program.

88. An apparatus for identifying a digital television program, comprising:

a processing site; and

a database coupled to the processing site, wherein the processing site is programmed to:

receive consumption signature information associated with the digital television program from a consumption site, wherein the consumption signature information is generated based on one or more predetermined data packets;

compare the consumption signature information to reference signature information associated with the digital television program; and

identify the digital television program based on the comparison of the consumption signature information and the reference signature information.

89. An apparatus as defined in claim 88, wherein at least portions of the predetermined data packets are computationally related to at least portions of other data packets.

90. An apparatus as defined in claim 88, wherein the processing site is programmed to receive the consumption signature information including a plurality of digital values and time values associated with the digital values.

91. An apparatus as defined in claim 90, wherein the digital values are generated using checksums extracted from a digital television signal.

92. An apparatus as defined in claim 88, wherein the processing site is programmed to determine if at least some of the consumption signature information matches at least some of the reference signature information.

93. An apparatus as defined in claim 88, wherein the processing site uses a program identifier associated with the reference signature information to identify the digital television program.

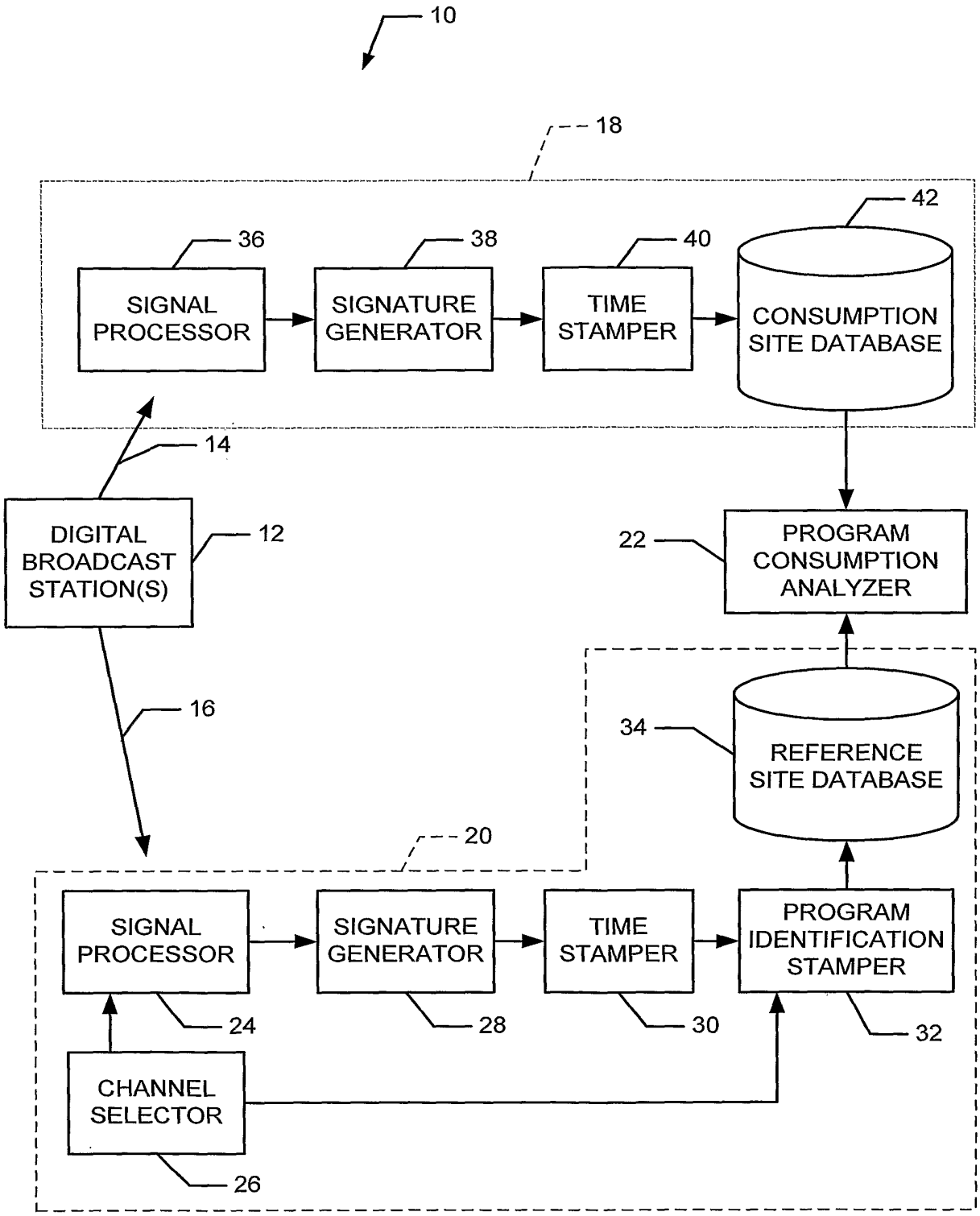
10
18
42
36
38
40
SIGNAL PROCESSOR
SIGNATURE GENERATOR
TIME STAMPER
CONSUMPTION SITE DATABASE
14
DIGITAL BROADCAST STATION(S)
12
22
PROGRAM CONSUMPTION ANALYZER
16
34
REFERENCE SITE DATABASE
20
SIGNAL PROCESSOR
SIGNATURE GENERATOR
TIME STAMPER
PROGRAM IDENTIFICATION STAMPER
24
28
30
32
CHANNEL SELECTOR
26

FIG. 1

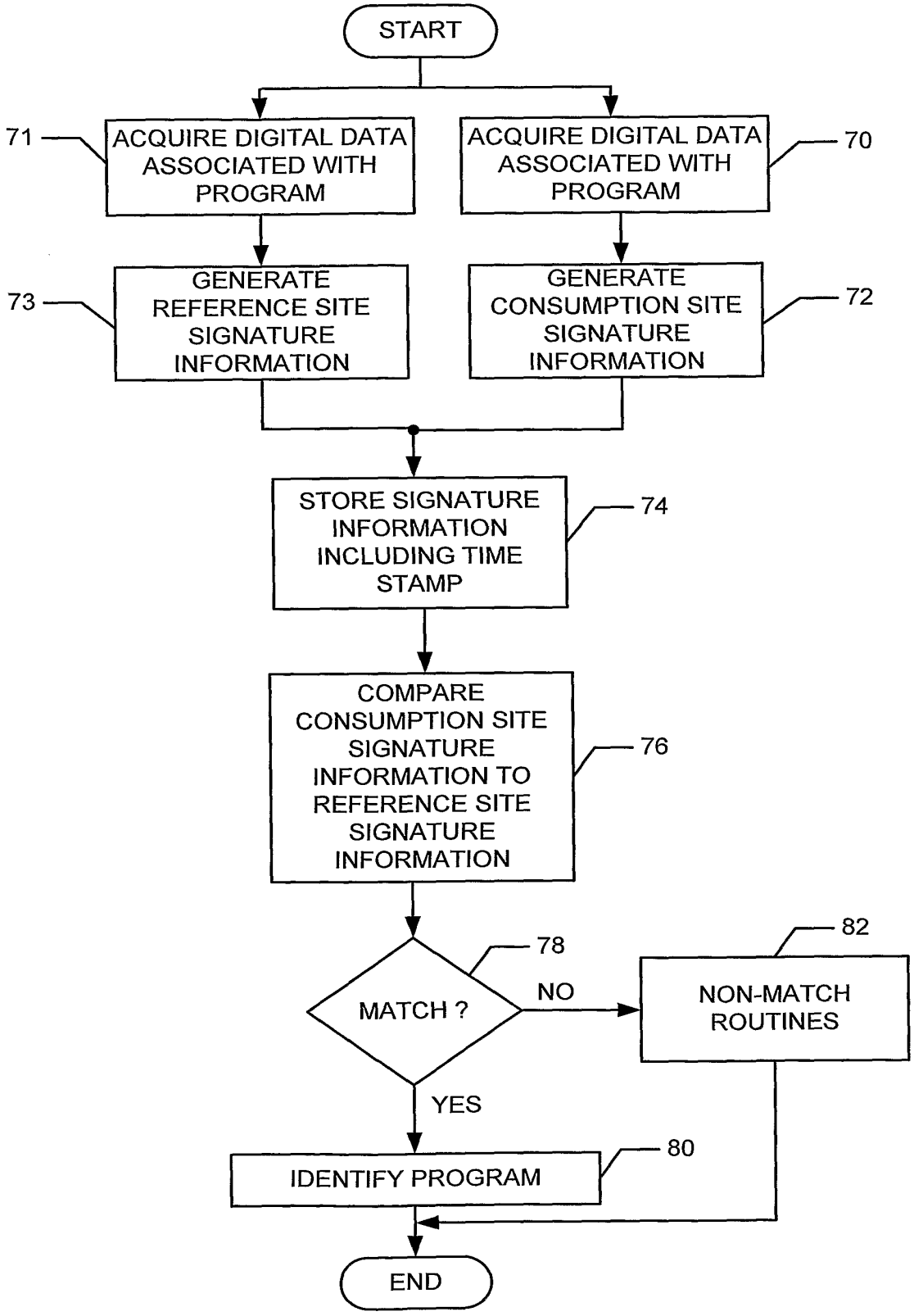
START
71
ACQUIRE DIGITAL DATA ASSOCIATED WITH PROGRAM
ACQUIRE DIGITAL DATA ASSOCIATED WITH PROGRAM
70
73
GENERATE REFERENCE SITE SIGNATURE INFORMATION
GENERATE CONSUMPTION SITE SIGNATURE INFORMATION
72
STORE SIGNATURE INFORMATION INCLUDING TIME STAMP
74
COMPARE CONSUMPTION SITE SIGNATURE INFORMATION TO REFERENCE SITE SIGNATURE INFORMATION
76
78
MATCH ?
NO
82
NON-MATCH ROUTINES
YES
80
IDENTIFY PROGRAM
END

FIG. 2

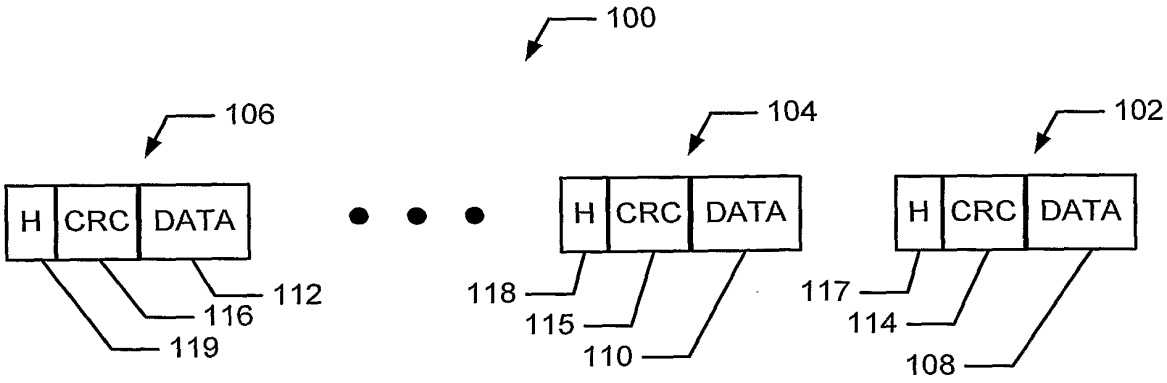

FIG. 3

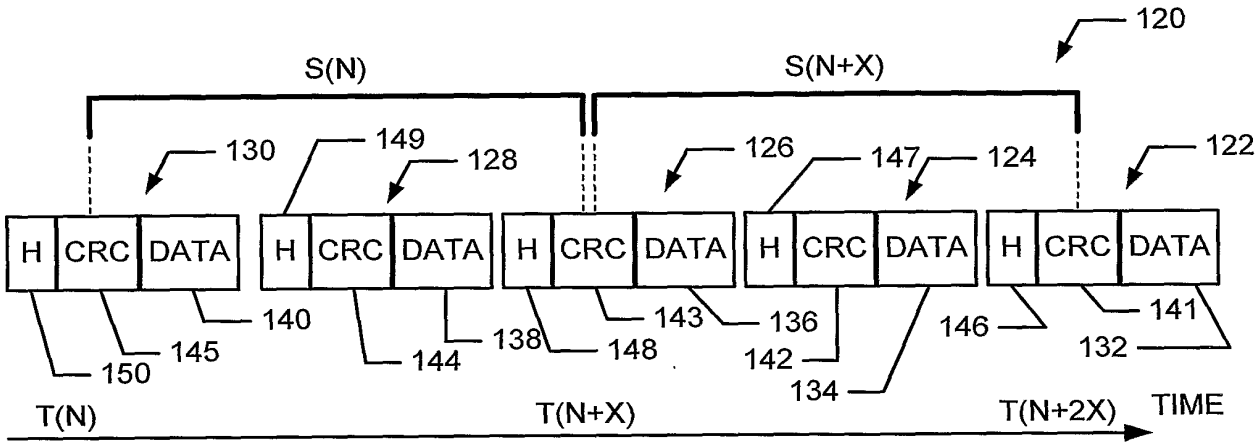

FIG. 4

170

172
174
176

Program ID	T(N)	T(N+X)	T(N+2X)	T(N+3X)	...
A	$S_A(N)$	$S_A(N+X)$	$S_A(N+2X)$	$S_A(N+3X)$	...
B	$S_B(N)$	$S_B(N+X)$	$S_B(N+2X)$	$S_B(N+3X)$	...
C	$S_C(N)$	$S_C(N+X)$	$S_C(N+2X)$	$S_C(N+3X)$	...

FIG. 5

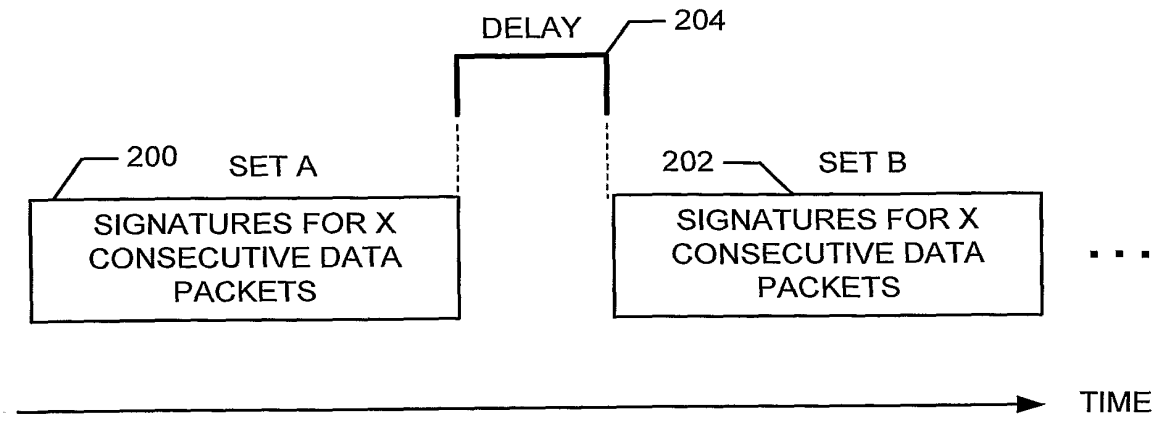
DELAY
204
200
SET A
202
SET B
SIGNATURES FOR X CONSECUTIVE DATA PACKETS
SIGNATURES FOR X CONSECUTIVE DATA PACKETS
TIME

FIG. 6

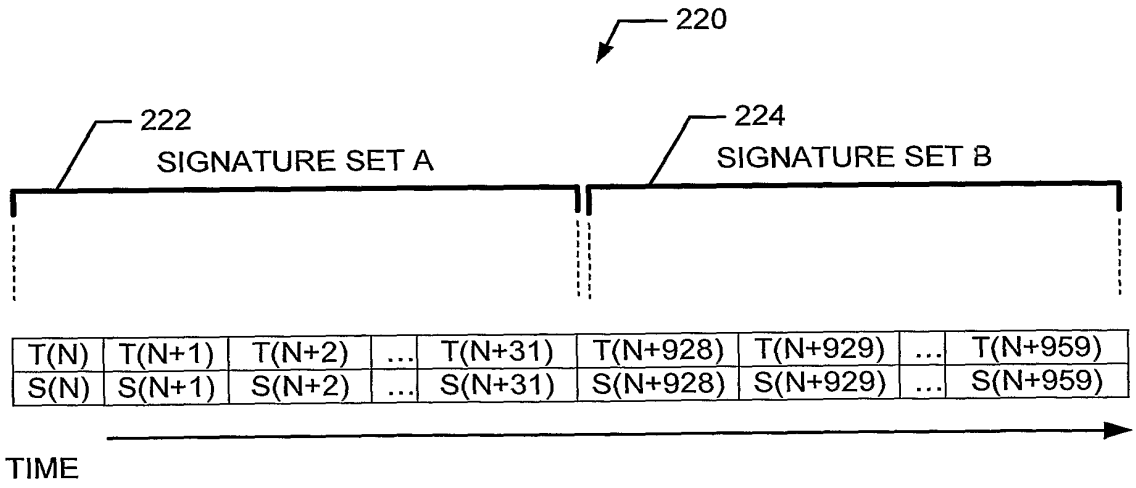
220
222
SIGNATURE SET A
224
SIGNATURE SET B
T(N) T(N+1) T(N+2) ... T(N+31) T(N+928) T(N+929) ... T(N+959)
S(N) S(N+1) S(N+2) ... S(N+31) S(N+928) S(N+929) ... S(N+959)
TIME

FIG. 7

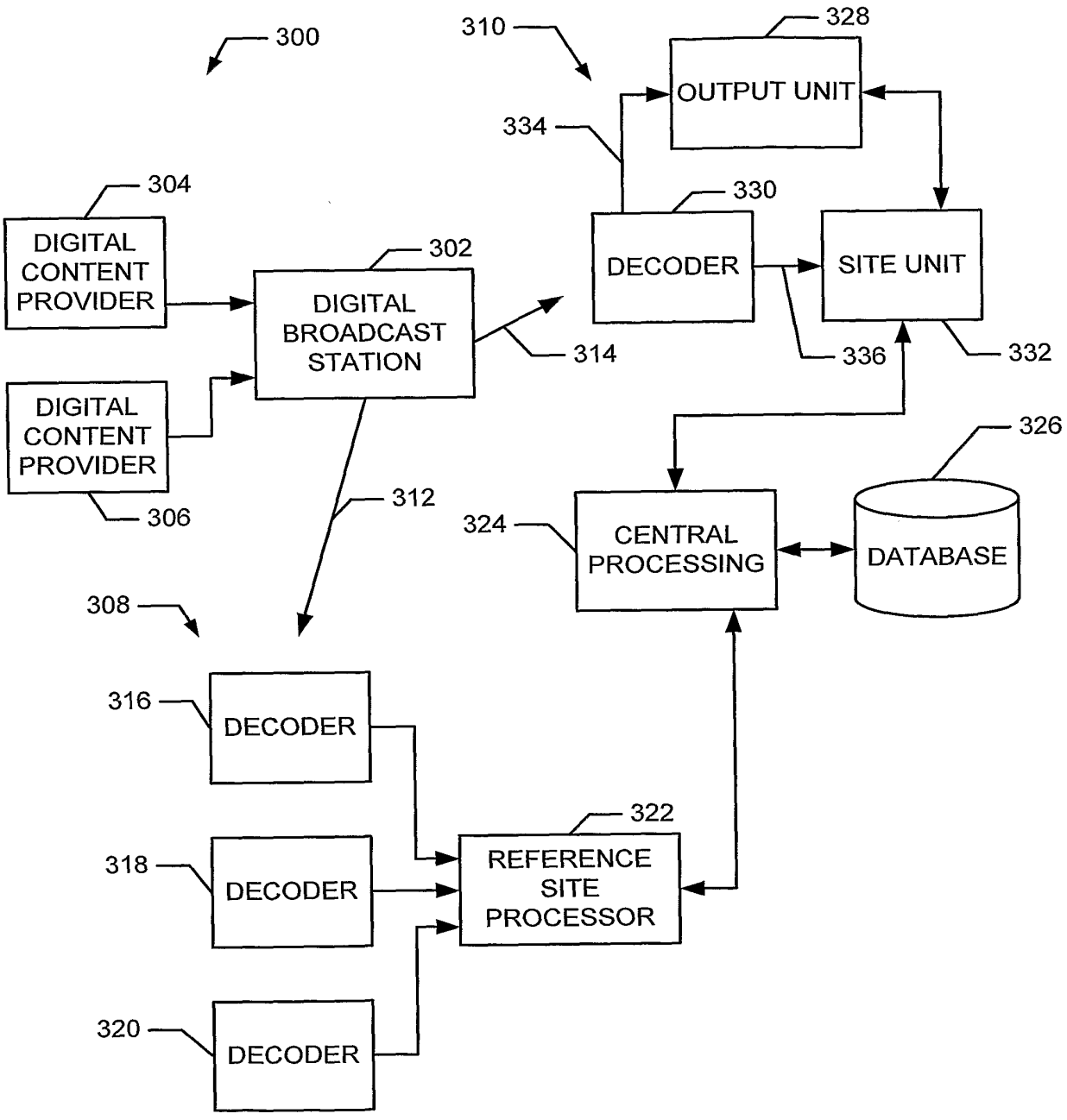
300
310
328
OUTPUT UNIT
334
304
DIGITAL CONTENT PROVIDER
330
DECODER
SITE UNIT
302
DIGITAL BROADCAST STATION
314
336
332
DIGITAL CONTENT PROVIDER
306
326
312
324
CENTRAL PROCESSING
DATABASE
308
316
DECODER
322
318
DECODER
REFERENCE SITE PROCESSOR
320
DECODER

FIG. 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/22562

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04N 9/00, 7/16, 7/00
US CL : 725/9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21; 348/465

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 725/9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21; 348/465

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2002/0010919 A1 (Lu et al.) 24 January 2002 (24.01.2002), [0031-0052]	1-3,6-11,14,16-19,20-25,28,29,32,34-36-38,40-45,48,49,52,54-56-58-64,65,67,68,70-77,79,80 --- 4,5,12,13,15,17,19,26,27,30,31,33,35,37,39,46,47,50,51,53,55,57,63,65,66,69,76,78,81
X --- Y	US 2003/0005430 A1 (Kolessar) 02 January 2003 (02.01.2003), [0030-0056]	82-84,86,87,88,89,90,92,93 --- 4,5,26,27,46,47,78,81,85,91

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
31 December 2003 (31.12.2003)

Date of mailing of the international search report
22 JAN 2004

Name and mailing address of the ISA/US
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Johnny Ma

Telephone No. (703) 308-HELP

Form PCT/ISA/210 (second sheet) (July 1998)

PCT/US03/22562

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 4,739,398 (Thomas et al.) 19 April 1988 (19.04.1988), columns 3-10	1,2,6-9,11,20-25,29,38,39,40,41-45,49 --- 39
Y	US 5,621,454 (Ellis et al.) 15 April 1997 (15.04.1997), column 10, lines 31-50	2,21,41,60,71,83,89
Y	US 5,481,294 (Thomas et al.) 02 January 1996 (02.01.1996), column 15, lines 1-55	12,13,15,30,31,33,50,51,53,72
Y	US 5,689,509 (Gaytan et al.) 18 November 1997 (18.11.1997), column 4, lines 27-41	
Y	US 5,404,160 (Schober et al.) 04 April 1995 (04.04.1995), column 3, lines 55-63; column 4, lines 37-44.	87,93
A	US 5,485,518 (Hunter et al.) 16 January 1996 (16.01.1996)	
A	US 6,577,346 B1 (Perlman) 10 June 2003 (10.06.2003)	
A	US 4,677,466 (Lert, Jr. et al.) 30 June 1987 (30.06.1987)	
A	US 6,112,053 (Dunki-Jacobs et al.) 29 August 2000 (29.08.2000)	
A	US 2002/0186768 (Dimitrova et al.) 12 December 2002 (12.12.2002)	
A	US 5,974,299 (Massetti) 26 October 1999 (26.12.1999)	
A	US 6,469,749 B1 (Dimitrova et al.) 22 October 2002 (22.10.2002)	
A	US 5,019,899 (Boles et al.) 28 May 1991 (28.05.1991)	
A	US 2003/0023967 A1 (Kim) 30 January 2003 (30.01.2003)	

Electronic Acknowledgement Receipt

EFS ID:	12022603
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	Media usage monitoring and measurement system and method
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Victoria Wilson
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	07-FEB-2012
Filing Date:	11-SEP-2008
Time Stamp:	18:50:22
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		100042000113SIDS7.pdf	69576 d51cd3c1faaf1a54dfa6da9efded246cef86af4e	yes	5

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	4	
	Information Disclosure Statement (IDS) Form (SB08)		5	5	
Warnings:					
Information:					
2	Foreign Reference	WO2005036877A1Deng.pdf	3305789 2e9d34e2cb422038ede6661c0a083b8b7107341e	no	82
Warnings:					
Information:					
3	Foreign Reference	WO2005006768Lee_et_al.pdf	2248459 45dae1fc4dd9c9c5b175d8b884fd777b39bdb774	no	53
Warnings:					
Information:					
		Total Files Size (in bytes):	5623824		

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.

PATENT
Docket No. 10004-2000113

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:	Examiner: 2421
Jonathan S. Steuer et al.	Group Art Unit: Smith, Chenea
Serial No.: 12/283,355	
Filing Date: September 11, 2008	
For: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD	

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

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

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08A. The Examiner is requested to make these document(s) of record.

This Information Disclosure Statement is submitted:

☒ **This Information Disclosure Statement is submitted before the mailing of a first Office action after the filing of a Request for Continued Examination under § 1.114 in accordance with § 1.97(b)(4); accordingly, no fee or separate requirements are required.**

☐ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

- ☐ The fee set forth in 37 CFR 1.17p is paid herewith.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly, no fee is believed to be due.
  - ☐ 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.
  - ☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

☐ The fee set forth in 37 C.F.R. § 1.17p is paid herewith and a Certification under 37 C.F.R. § 1.97(e) is provided below:

☐ 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.

☐ 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 § 1.56(c) more than three months prior to the filing of the information disclosure statement.

Applicants would appreciate the Examiner initialing and returning the PTO/SB/08A, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. 50-4242, referencing docket no. 10004-2000113.

Dated: February 7, 2012

Respectfully submitted,

By: _____
Michael Mauriel
Reg. No. 44,226

Mauriel Kapouytian & Treffert LLP
151 First Avenue #23
New York, NY 10003
Telephone: (212) 529-5131
Facsimile: (212) 529-5132

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

51417 7590 06/14/2012

Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

EXAMINER
SMITH, CHENEA

ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 06/14/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

TITLE OF INVENTION: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$870	$300	$0	$1170	09/14/2012

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 SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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)

51417 7590 06/14/2012
Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

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.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

TITLE OF INVENTION: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$870	$300	$0	$1170	09/14/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
SMITH, CHENEA	2421	725-018000

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)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/283,355	09/11/2008	Jonathan S. Steuer	10004-2000113	6876

51417 7590 06/14/2012

Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

EXAMINER	
SMITH, CHENEA	
ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 06/14/2012

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 350 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 350 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.

Notice of Allowability	Application No.	Applicant(s)	
	12/283,355	STEUER ET AL.	
	Examiner	Art Unit	
	CHENEA SMITH	2421	

-- 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 *2/7/2012*.
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 *1-11*.
4. ☐ 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 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. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ 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).
7. ☐ 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. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/KRISTINE KINCAID/
Supervisory Patent Examiner, Art Unit 2421

DETAILED ACTION

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Mauriel on 5/10/2012.

2. The Application has been amended as follows:

Claim 1 has been amended as follows:

A media measurement method comprising:

using one or more computers to generating generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member; and

using one or more computers to ~~utilizing~~ utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein utilizing comprises, for a particular plurality of submitted data samples and corresponding

content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

Claim 9 has been amended as follow:

A media measurement method comprising:

using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member; and

using one or more computers to ~~utilizing~~ utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream~~.~~, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein utilizing comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

Allowable Subject Matter

3. Claims 1-11 are allowed.

4. The following is an examiner's statement of reasons for allowance: claims 1-11 are allowed because the prior art fails to specifically disclose or suggest the combined elements/steps of "using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein utilizing comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results" as recited in the independent claims.

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHENEA SMITH whose telephone number is (571)272-9524. The examiner can normally be reached on 8:00 am - 4:00 pm, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on 571-272-4063. 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.

/CHENEA SMITH/
Examiner, Art Unit 2421

/KRISTINE KINCAID/
Supervisory Patent Examiner, Art Unit 2421

PTO/SB/08a (07-09)
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 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Smith, Chenea
Attorney Docket Number	10004-2000113

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
	1	US- 5,436,653	07-1995	Ellis et al.	
	2	US- 2004/0001161	01-2004	Herley, Cormac	
	3	US- 2002/0072982	06-2002	Barton et al.	
	4	US- 2008/0154401 A1	06-2008	Wang, Avery Li-Chun	
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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]
	5	WO 2005036877 A1	04-2005	Deng, Kevin		
	6	WO 2005006768 A1	01-2005	Lee et al.		

Examiner Signature	/Chenea Smith/	Date Considered	05/16/2012

*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. /C.S./

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	59	("20020059577" | "4677466" | "20020038456" | "20020083060" | "7444353" | "20020161741" | "20040224638" | "20060059277" | "3919479" | "7483975" | "20030009469" | "20040001161" | "20080154401" | "6990453" | "20020072982" | "4697209" | "6513161" | "5095382" | "20050086682" | "20040122679" | "5594934" | "5945988" | "5436653" | "20020010919" | "5758257" | "5512933" | "20070143777" | "5437050").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:20
S2	163638	("20080154401")".PN"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:22
S3	163638	("20080154401")".PN"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:23
S4	2	"20080154401".PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:23
S5	11	(compar$3 with log$4 with (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:58
S6	0	(compar$3 with log$4 with (deduc$4 determin$3 identif$4 recofniz$3) with (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:58
S7	2436	(deduc$4 determin$3 identif$4 recogniz$3) with (trick$1play$3 (trick	US-PGPUB;	OR	OFF	2012/04/23 15:59

		near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT			
S8	0	(compar$3 with log$4 with (deduc$4 determin$3 identif$4 recogniz$3) with (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:59
S9	28688675	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:59
S10	1062	S7 and S9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 15:59
S11	30375	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:00
S12	158	S10 and S11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:00
S13	2289	(audience with measur$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:01
S14	10	S12 and S13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:01
S15	2	"20030154493"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:15

S16	5245	((tim$3 position$3) near2 offset$1) and (captur$3 with tim$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:16
S17	60	S16 and S7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:17
S18	22	S9 and S17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:17
S19	2	"20050210181".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:31
S20	0	S19 and sampl$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:31
S21	0	S19 and clip$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:31
S22	184	((samp$3 clip$4) near sequen$4) with (determin$6 deduc$5) with (channel$1 sourc$2 station$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:33
S23	95	S9 and S22	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:34
S24	7	((clip$4) near sequen$4) with ((determin$6 deduc$5) with (channel$1 sourc$2 station$1 track$1 title$1 album$1 cd dvd))	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2012/04/23 16:41

			EPO; JPO; DERWENT			
S25	5	S9 and S24	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:43
S26	33	((clip$4) with sequen$4) with ((determin$6 deduc$5) with (channel$1 sourc$2 station$1 track$1 title$1 album$1 cd dvd))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:44
S27	28	S26 not S25	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:44
S28	8	S9 and S27	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:45
S29	1557	((sampl$3) with sequen$4) with ((determin$6 deduc$5) with (channel$1 sourc$2 station$1 track$1 title$1 album$1 cd dvd))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:46
S30	4	(sampl$3 with song$1 with sequen$4) with ((determin$6 deduc$5) with (station$1 track$1 title$1 album$1 cd))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:47
S31	4	S9 and S30	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:48
S32	352	((sampl$3 song$1 clip$5) with sequen$4) with ((determin$6 deduc$5) with (station$1 track$1 title$1 album$1 cd))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:48
S33	197	S9 and S32	US-PGPUB; USPAT;	OR	OFF	2012/04/23 16:48

			USOCR; FPRS; EPO; JPO; DERWENT			
S34	4	S11 and S33	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 16:49
S35	2	"20070266400".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:24
S36	39	(compar$3 with (captur$3 with tim$3) with (offset$1))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:36
S37	2436	(deduc$4 determin$3 identif$4 recogniz$3) with (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:37
S38	28688675	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:37
S39	0	S36 and S37	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:40
S40	17	S36 and S38	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:40
S41	14495	(deduc$4 determin$3 identif$4 recogniz$3) with (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:41
S42	0	S40 and S41	US-	OR	OFF	2012/04/23

			PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT			18:41
S43	4369	nielsen.as. neilsen.as. arbitron.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:43
S44	20	S41 and S43	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:43
S45	8	S38 and S44	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:43
S46	0	S36 and S43	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/23 18:43
S47	1	12/283355	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 12:58
S48	59	("20020059577" | "4677466" | "20020038456" | "20020083060" | "7444353" | "20020161741" | "20040224638" | "20060059277" | "3919479" | "7483975" | "20030009469" | "20040001161" | "20080154401" | "6990453" | "20020072982" | "4697209" | "6513161" | "5095382" | "20050086682" | "20040122679" | "5594934" | "5945988" | "5436653" | "20020010919" | "5758257" | "5512933" | "20070143777" | "5437050").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:01
S49	2	"20030154493".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:17

S50	1	S49 and offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:17
S51	3699	(deduc$4 determin$3 identif$4 recogniz$3) near2 (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:34
S52	28688809	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:34
S53	30407	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:34
S54	193188	"455".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:34
S55	14026	S52 and S53	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:34
S56	90907	S52 and S54	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:34
S57	82	S51 and S55	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:35
S58	60	S51 and S56	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2012/04/24 13:35

			EPO; JPO; DERWENT			
S59	2884	(deduc$4 determin$6) near2 (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:35
S60	55	S59 and S55	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 13:35
S61	58194	"381".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:07
S62	211612	"348".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:07
S63	193188	"455".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:07
S64	2884	(deduc$4 determin$6) near2 (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:07
S65	33	S61 and S64	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:08
S66	165	S62 and S64	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:08
S67	96	S63 and S64	US-PGPUB; USPAT;	OR	OFF	2012/04/24 15:08

			USOCR; FPRS; EPO; JPO; DERWENT			
S68	28688809	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:08
S69	17	S65 and S68	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/24 15:08
S70	71367	"702".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:12
S71	28688811	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:12
S72	37727	S70 and S71	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:13
S73	62541	(content$1 sampl$3 media segment$1 portion$1 clip$5) near offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:17
S74	295	455/2.01.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:17
S75	2051	725/9-21.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:17
S76	73662	S70 S74 S75	US-	OR	OFF	2012/04/26

			PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT			09:18
S77	38726	S71 and S76	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:19
S78	151	S73 and S77	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:19
S79	3513	700/94.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:28
S81	1115	S71 and S79	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:29
S82	10	S73 and S81	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:30
S83	2018	702/79,89,176-178,87.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:31
S84	1158	S71 and S83	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:31
S85	6	S73 and S84	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/04/26 10:32

			DERWENT			
S86	62919	(content$1 sampl$3 media segment$1 portion$1 clip$5 audio) near offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:32
S87	6	S84 and S86	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:32
S88	19	S81 and S86	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:33
S89	9	S88 not S82	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:33
S90	2887	(deduc$4 determin$6) near2 (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:34
S91	10	(S81 S84) and S90	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:34
S92	0	S91 and S86	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:35
S93	6	("20020038456" | "20020083060" | "20070143777").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:17
S94	1	"12283332"	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/04/26 12:30

			FPRS; EPO; JPO; DERWENT			
S95	0	S94 and (channelo$1 with album$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:30
S96	1	S94 and (channel$1 with album$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:30
S97	2508	704/231,243.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:31
S98	28688811	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:32
S99	1589	S97 and S98	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:32
S100	62919	(content$1 sampl$3 media segment$1 portion$1 clip$5 audio) near offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:32
S101	5	S99 and S100	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:33
S102	20	S99 and (music song$1) near2 recogni$7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:33
S103	399082	(position$3 sequen$4) near (sampl$4 clip$4 portion$1 segment$1)	US-PGPUB;	OR	OFF	2012/04/26 12:34

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT			
S104	2	S102 and S103	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:35
S105	2	"8131389".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:42
S106	1	S105 and sampl$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:42
S107	1	S105 and (part near2 audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 12:43

5/ 4/ 2012 9:47:55 PM
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	28688949	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:52
L2	2058	725/9-21.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:52
L3	3525	700/94.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:52
L4	2962	702/79,89,176-178,187.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:52
L5	58319	"381".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:52
L6	295	455/2.01.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:52
L7	66097	2 3 4 5 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:53
L8	31165	1 and 7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:53
L9	62966	(content$1 sampl$3 media segment$1 portion$1 clip$5 audio) near offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:53
L10	84	8 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:53
L11	1564	((sampl$3) with sequen$4) with ((determin$6 deduc$5) with (channel$1 sourc$2 station$1 track$1 title$1 album$1 cd dvd))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:54
L12	990327	10 nd 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:54

L13	0	10 and 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:54
L14	45	9 and 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:55
L15	31	1 and 14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/05/04 21:55

EAST Search History (Interference)

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L16	0	(content$1 near offset$1) with (tim$3 near position$3) with sampl$3	US-PGPUB; USPAT; UPAD	OR	OFF	2012/05/04 21:56
L17	66	(offset$1) with (tim$3 near position$3) with sampl$3	US-PGPUB; USPAT; UPAD	OR	OFF	2012/05/04 21:56
L18	60	(compar$5 with (captur$3 with tim$3) with offset$1)	US-PGPUB; USPAT; UPAD	OR	OFF	2012/05/04 21:57
L19	0	17 and 18	US-PGPUB; USPAT; UPAD	OR	OFF	2012/05/04 21:57

5/4/2012 9:58:10 PM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	**Art Unit**
	CHENEA SMITH	2421

✓	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	09/10/2010	05/06/2011							
1	1	✓	=							
2	2	✓	=							
3	3	✓	=							
4	4	✓	=							
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7	7		=							
8	8		=							
9	9		=							
10	10		=							
11	11		=							

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	**Art Unit**
	CHENEA SMITH	2421

ORIGINAL		INTERNATIONAL CLASSIFICATION														
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED									
725	18	H	0	4	H	60 / 33 (2008.01.01)										

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
725	9	14	19		
455	2.01				
702	79	89	761	177	178
702	187				
700	94				
381	56				

☒ **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
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	9														
	10														
	11														

/CHENEA SMITH/ Examiner.Art Unit 2421 (Assistant Examiner)	5/16/12 (Date)	**Total Claims Allowed:** 11
/KRISTINE KINCAID/ Supervisory Patent Examiner.Art Unit 2421 (Primary Examiner)	06/04/2012 (Date)	O.G. Print Claim(s): 1 O.G. Print Figure: 5

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12283355	STEUER ET AL.
	Examiner	Art Unit
	CHENEA P SMITH	2421

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Updated EAST search results included	5/4/2012 10:12:17 PM	CS
Updated Invenor search included - see search results printout	5/4/2012 10:12:20 PM	CS
725/$$, 455/$$- text search only, see search results printout	5/4/2012 10:12:22 PM	CS
classes/subclasses 725/9-21;455/2.01;class 381; 702/79,89,176-178,187;700/94	5/4/2012 10:13:07 PM	CS
Consulted Jason Salce, 725;Philp Sobutka, 455; Lu Zhiyu, 455;Huyen Le, 381;Vic Kostak, 348;Jeffrey West, 702;Marjorie Moran, 702	5/4/2012 10:16:17 PM	CS

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
	SEE SERACH RESULTS PRINTOUT	5/4/2012 10:17:03 PM	CS

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	((deduce$1 deducing) near2 (channel$1 source$1 data information station)) with (clip$4 sampl$3) near sequenc$2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:35
S2	2	((deduce$1 deducing) near2 (channel$1 source$1 data information station)) with ((clip$4 sampl$3) near sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:35
S3	4	((deduce$1 deducing) with (channel$1 source$1 data information station)) with ((clip$4 sampl$3) near sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:35
S4	14765210	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:36
S5	42	((deduce$1 deducing) with (channel$1 source$1 data information station)) with ((clip$4 sampl$3) with sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:36
S6	26	S4 and S5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:36
S7	3228	((deduce$1 deducing infer$4 determin$6) with (data information)) with ((clip$4 sampl$3) with sequenc$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:38
S8	1729	S4 and S7	US-	OR	OFF	2011/05/06

			PGPUB; USPAT; USOCR; FPRS; EPO; JPO			13:38
S9	802	S8 and (video$1 media music audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
S10	27294	"725".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
S11	176739	"455".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
S12	5	S9 and S10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:39
S13	5	S8 and S10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:40
S14	27	("20020010919" | "20020038456" | "20020059577" | "20020072982" | "20020083060" | "20020161741" | "20030009469" | "20040001161" | "20040122679" | "20040224638" | "20050086682" | "20060059277" | "20070143777" | "3919479" | "4677466" | "4697209" | "5095382" | "5437050" | "5512933" | "5594934" | "5758257" | "5945988" | "6513161" | "6990453" | "7444353" | "7483975").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 13:46
S15	4952	(deduce$1 deducing infer$4 determin$6) with ((trick$3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:28
S16	1569	(deduce$1 deducing infer$4 determin$6) near2 ((trick$3 near play$3) (time near	US-PGPUB;	OR	OFF	2011/05/06 14:28

		shift$3) (time$1shift$3))	USPAT; USOCR; FPRS; EPO; JPO			
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S18	13	S4 and S17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:28
S19	83	(deduce$1 deducing infer$4) with ((trick$3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
S20	13745	S4 and S10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
S21	0	S19 and S20	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
S22	4952	(deduce$1 deducing infer$4 determin$6) with ((trick$3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
S23	1569	(deduce$1 deducing infer$4 determin$6) near2 ((trick$3 near play$3) (time near shift$3) (time$1shift$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29
S24	14	S20 and S23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:29

S25	6	((JONATHAN) near2 (STEUER)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/06 14:45
S26	10	((CHRISTOPHER) near2 (OTTO)).INV.	US-PGPUB	OR	OFF	2011/05/06 14:45
S27	15	((CHRISTOPHER) near2 (OTTO)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/05/06 14:45
S28	23563	"2627"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:46
S29	15	S26 S27	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2011/05/06 14:46

5/4/2012 9:47:14 PM
C:\Users\csmith3\Documents\EAST\Workspaces\Steuer 355.wsp

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	71367	"702".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:12
L2	28688811	@ad<"20040527"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:12
L3	37727	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:13
L4	62541	(content$1 sampl$3 media segment$1 portion$1 clip$5) near offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:17
L5	295	455/2.01.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:17
L6	2051	725/9-21.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:17
L7	73662	1 5 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:18
L8	38726	2 and 7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:19
L9	151	4 and 8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:19
L10	3513	700/94.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:28

L12	1115	2 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:29
L13	10	4 and 12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 09:30
L14	2018	702/79,89,176-178,87.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:31
L15	1158	2 and 14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:31
L16	6	4 and 15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:32
L17	62919	(content$1 sampl$3 media segment$1 portion$1 clip$5 audio) near offset$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:32
L18	6	15 and 17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:32
L19	19	12 and 17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:33
L20	9	19 not 13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:33
L21	2887	(deduc$4 determin$6) near2 (trick$1play$3 (trick near play$3) (play near alter$3) play$1alter$3 (fast near forward$3) fast$1forward$3 paus$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:34
L22	10	(12 15) and 21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:34
L23	0	22 and 17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2012/04/26 10:35

EAST Search History (Interference)

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4/26/2012 10:37:31 AM

PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/283,355
Filing Date	September 11, 2008
First Named Inventor	Jonathan S. Steuer
Art Unit	2421
Examiner Name	Smith, Chenea P.
Attorney Docket Number	10004-2000113

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-			
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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]
	1	WO 2005/006768 A1	01-20-2005	Lee et al.		
	2	WO 2005/036877 A1	04-21-2005	Deng, Kevin		

Examiner Signature	/Chenea Smith/	Date Considered	05/16/2012

*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. /C.S./

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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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)

5147 75xx 09/14/2012
Mauriel Kapouytian & Treffert LLP
151 1st Avenue
#23
New York, NY 10003

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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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.
12/203,355	09/11/2008	Jonathan S. Stone	10004-20080113	5875

TITLE OF INVENTION: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEES DUE	DATE DUE
nonprovisional	YES	$870	$300	$0	$1170	09/14/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
SMITH, CHENEA	2421	725-018000

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 Michael Mauriel
2 Mauriel Kapouytian & Treffert LLP
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: Anonymous Media Research LLC
(B) RESIDENCE: (CITY and STATE OR COUNTRY): New York, New York

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)
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4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)
☐ A check is enclosed.
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☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-4342. (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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: Michael Mauriel
Date: 8-23-12
Typed or printed name: Michael Mauriel
Registration No. 44,220

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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Attorney Docket No.: 10004-2000113
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:
Jonathan S. Steuer

Application No.: 12/283,355 Group Art Unit: 2421

Filing Date: September 11, 2008 Examiner: Smith, Chenea

Title: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

AMENDMENT UNDER 37 CFR § 1.312

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

This is in response to the Notice of Allowance dated June 14, 2012. Reconsideration and allowance of the pending claims, as amended, in light of the remarks presented herein are respectfully requested.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows, where additions are underlined and deletions are indicated by ~~strikethrough~~ or enclosed in [[double brackets]]:

Claim 1 (Currently Amended): A media measurement method comprising:

using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member; and

using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein ~~utilizing~~ to utilize comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

Claim 2 (Original): The method of claim 1 further comprising:

generating a play list including content offset data as part of deducing media play-altering actions of a monitored audience member.

Claim 3 (Original): The method of claim 1 further comprising:

utilizing sample sequence data together with corresponding channel data to deduce play-altering actions of a monitored audience member.

Claim 4 (Original): The media measurement method of claim 1 wherein a clean play list is generated including deduced play-altering actions.

Claim 5 (Previously Presented): The media measurement method of claim 1 wherein the play stream is a raw play stream.

Claim 6 (Previously Presented): The media measurement method of claim 1 wherein the play stream is a clean play stream.

Claim 7 (Previously Presented): The method of claim 1 wherein utilizing further comprises determining if one or more discontinuities exist in the progression of content offsets.

Claim 8 (Previously Presented): The method of claim 1 wherein the content offset data is derived from a comparison conducted by a computerized content identification system comparing the submitted data samples against known content such that content offset data is obtainable without using time codes accompanying the captured audio data samples.

Claim 9 (Currently Amended): A media measurement method comprising:

using one or more computers to generate a play stream of content identification results corresponding to a sequence of submitted data samples, the submitted data samples corresponding to audio data samples captured at a monitoring device associated with a monitored audience member; and

using one or more computers to utilize sample sequence data and content offset data to deduce play-altering actions of the monitored audience member, the sample sequence data corresponding to a sequence of the content identification results, wherein play-altering actions include actions that alter at least one of a pace and a sequence of a media stream, the content offset data including content offsets associated with the content identification results, a content offset indicating a time position of a content identification result within identified content, wherein ~~utilizing~~ to utilize comprises, for a particular plurality of submitted data samples and corresponding content identification results, comparing a progression of log times associated with capture timing of each of the particular plurality of submitted data samples and a progression of content offsets of the corresponding content identification results.

Claim 10 (Previously Presented): The method of claim 9 wherein play-altering actions include at least one of fast forwarding, rewinding, and pausing a media stream.

Claim 11 (Previously Presented): The method of claim 9 wherein play-altering actions include at least one of skipping forward and skipping backward in a media stream.

REMARKS

Claims 1-11 were allowed in the present application. By virtue of this amendment, Claims 1 and 9 have been amended. Minor, non-substantive changes have been made to claims 1 and 9 to make the language more completely consistent with modifications made by the Examiner's Amendment mailed with the Notice of Allowance. Specifically, the Examiner's Amendment, inter alia, changed "utilizing" to "to utilize" in claims 1 and 9 and so the present After Allowance Amendment simply makes corresponding changes elsewhere in claims 1 and 9. Applicants submit that the claim would have been clear to one skilled in the art without this change and therefore the amendment is not related to patentability, but rather is made merely for formal, non-substantive reasons.

Amendment of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new matter has been added. Entry of the above-mentioned amendments is respectfully requested.

CONCLUSION

In view of the above, each of the claims in this application is believed to be in immediate condition for allowance. If it is determined that a telephone conversation would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time. The Director is hereby authorized to charge any fees which may be required by this paper to Deposit Account No. 50-4242, referencing docket no. 10004-2000113.

Dated: August 31, 2012

Respectfully submitted,

By _____
Michael Mauriel
Registration No.: 44,226
Mauriel Kapouytian & Treffert LLP
27 West 24th Street, Suite 302
New York, New York 10010
(212) 529-5131
Attorney(s) for Applicant

Electronic Patent Application Fee Transmittal

Application Number:	12283355
Filing Date:	11-Sep-2008
Title of Invention:	MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Filer:	Michael John Mauriel/Jasmine Habbas
Attorney Docket Number:	10004-2000113

Filed as Small 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	2501	1	870	870
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1170**

Electronic Acknowledgement Receipt

EFS ID:	13641981
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Jasmine Habbas
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	31-AUG-2012
Filing Date:	11-SEP-2008
Time Stamp:	17:18:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Electronic Funds Transfer
Payment was successfully received in RAM	$1170
RAM confirmation Number	5583
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	100042000113_IssueFeeTrans.pdf	1933797 6c47fd5f289bf14ecc5f55f598bb6935ebffbc3b	no	1
Warnings:					
Information:					
2		100042000113_Amendment.pdf	4416109 0c93b9c65f9a4a4d19fc69661e5c87388806ac8f	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment after Notice of Allowance (Rule 312)	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	6

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31466 38c7e5d553105b48a05cebfaaa383cf53861c372	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	6381372		

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.

Response to Rule 312 Communication	Application No.	Applicant(s)
	12/283,355	STEUER ET AL.
	Examiner	Art Unit
	CHENEA SMITH	2421

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

1. ☒ The amendment filed on *31 August 2012* under 37 CFR 1.312 has been considered, and has been:

a) ☐ entered.

b) ☒ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

Please Enter
/C.S/

Attorney Docket No.: 10004-2000113
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:
Jonathan S. Steuer

Application No.: 12/283,355 Group Art Unit: 2421

Filing Date: September 11, 2008 Examiner: Smith, Chenea

Title: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

AMENDMENT UNDER 37 CFR § 1.312

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

This is in response to the Notice of Allowance dated June 14, 2012. Reconsideration and allowance of the pending claims, as amended, in light of the remarks presented herein are respectfully requested.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 5 of this paper.

PTO/SB/08A (09-06)
Approved for use through 03/31/2007. 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 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	Not Yet Assigned
Filing Date	Concurrently Herewith
First Named Inventor	Jonathan S. STEUER
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	10004-2000113

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- 3,919,479	11-11-1975	Moon et al.	
		US- 4,677,466	06-30-1987	Lert et al.	
		US- 4,697,209	09-29-1987	Kiewit et al.	
		US- 5,594,934	01-14-1997	Lu et al.	
		US- 5,945,988	08-31-1999	Williams et al.	
		US- 6,513,161 B2	01-28-2003	Wheeler et al.	
		US- 6,990,453 B2	~~08-27-2002~~ January 24, 2006	Wang	
		US- 2002/0010919 A1	01-24-2002	Lu et al.	
		US- 2002/0059577 A1	05-16-2002	Lu et al.	
		US- 2002/0072982A1	06-13-2002	Barton et al.	
		US- 2002/0161741A1	10-31-2002	Wang et al.	
		US- 2004/0122679 A1	06-24-2004	Neuhauser et al.	
		US- 2006/0059277 A1	03-16-2006	Zito et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

Change(s) applied to document, /M.H.E./ 7/28/2012

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]
		WO 2004/040475 A2	05-13-2004	Koninklijke Philips N.V.	All	
		WO 03/091990 A1	11-06-2003	Shazam Entertainment, LTD	All	
		WO 02/27600 A2	04-04-2002	Shazam Entertainment, LTD	All	

Examiner Signature	/Chenea Smith/	Date Considered	09/09/2010

*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. /C.S./

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.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/283,355	10/23/2012	8296791	10004-2000113	6876

51417 7590 10/03/2012

Mauriel Kapouytian & Treffert LLP
27 W. 24th Street
Suite #302
New York, NY 10010

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 296 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):

Jonathan S. Steuer, New York, NY;
Christopher W. Otto, Fremont, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PTO/SB/44 (09-07)
Approved for use through 08/31/2013. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 8,296,791 B2

APPLICATION NO.: 12/283,355

ISSUE DATE : October 23, 2012

INVENTOR(S) : Jonathan S. Steuer; Christopher Otto

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In claim 1, line 2, delete "generating".

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Michael Mauriel
27 West 24th Street, Suite 302, New York, New York 10010

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. 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 1.0 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: Attention Certificate of Corrections Branch, 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.

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.

Electronic Acknowledgement Receipt

EFS ID:	14741516
Application Number:	12283355
International Application Number:	
Confirmation Number:	6876
Title of Invention:	MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD
First Named Inventor/Applicant Name:	Jonathan S. Steuer
Customer Number:	51417
Filer:	Michael John Mauriel/Jasmine Habbas
Filer Authorized By:	Michael John Mauriel
Attorney Docket Number:	10004-2000113
Receipt Date:	18-JAN-2013
Filing Date:	11-SEP-2008
Time Stamp:	16:28:46
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		100042000113_RequestforCorrection.pdf	141354 edea3dd1d38a0e4fc36ac4d71cc3308a3668d6a7	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	1
	Request for Certificate of Correction	2	3
Warnings:			
Information:			
	Total Files Size (in bytes):	141354	

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.

Attorney Docket No.: 10004-2000113
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors:
Jonathan S. Steuer; Christopher Otto

Patent Number: 8,296,791 B2

Application No.: 12/283,355

Title: MEDIA USAGE MONITORING AND MEASUREMENT SYSTEM AND METHOD

Issue Date: October 23, 2012

REQUEST FOR CORRECTION TO PATENT

Commissioner for Patents
Office of Data Management Attention: Certificates of Correction Branch
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Applicant hereby asserts that an error appears in claim 1 on the printed patent. Specifically, in line 2 of claim 1 the word "generating" should be deleted. The prosecution history indicates that the claim as allowed did not include "generating" between "to" and "generate". Applicants respectfully request that a Certificate of Correction be issued as indicated in the attached.

Dated: January 18, 2013

Respectfully submitted,

By _____
Michael Mauriel
Registration No.: 44,226
Mauriel Kapouytian & Treffert LLP
27 West 24th Street, Suite 302
New York, New York 10010
(212) 529-5131
Attorney(s) for Applicant

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.	: 8,296,791 B2
APPLICATION NO.	: 12/283355
DATED	: October 23, 2012
INVENTOR(S)	: Jonathan S. Steuer et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 14, line 39, delete "generating".

Signed and Sealed this
Nineteenth Day of February, 2013

Teresa Stanek Rea
Acting Director of the United States Patent and Trademark Office

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
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/283,355	Filing Date 09/11/2008	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) 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	05/15/2014	(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))	* 22	Minus	** 24	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	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
/DAVID SASFAI/

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.